ABUTTER NOTIFICATION
OF
WETLANDS PERMIT APPLICATION

VIA CERTIFIED MAIL

August 3, 2012

Tuttle Mountain Leasing LLC
1580 Bennington Road
Francestown, NH 03043

RE: Wetlands Permit Application Amendment
Antrim Wind Energy LLC
155 Fleet Street
Portsmouth, NH 03801-4050
Tax Map-Lot #: 211-004, 222-002, 222-005, 222-012

Dear Sir or Madam:

This letter is to inform you that a permit application amendment 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 amendment, 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

ABUTTER NOTIFICATION
OF
WETLANDS PERMIT APPLICATION

VIA CERTIFIED MAIL

August 3, 2012

Meadowsend Timberlands LIM PAR
P.O. Box 966
New London, NH 03257

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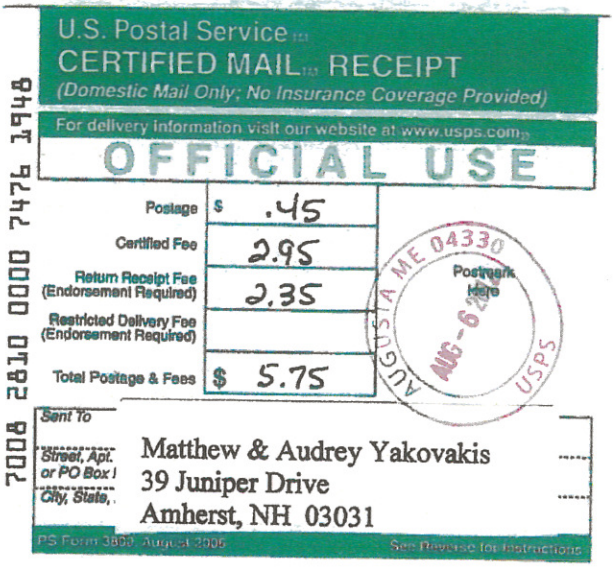

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SUPPLEMENTAL

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

July 2012

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1.0 INTRODUCTION

For purposes of assisting in constructing the Project, property has been leased from another landowner for use as a temporary staging or laydown yard, for use during construction as the location of contractor offices, materials and equipment handling, and storage in addition to the one described on page 33 of the SEC Application as submitted on January 31, 2012. This additional property consists of approximately 4 acres and is located off Route 9, west of the proposed entrance to the Project. See Attachment A, Figure 1 for the location of the parcel.

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 supplemental 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

The proposed laydown area is currently a cleared and graded area of bare soil and regenerating vegetation, with herbaceaous and shrub growth.

2.2 Historic Land Use

The proposed laydown area was previously disturbed and utilized as a gravel borrow pit and a log landing for forestry operations. The lot has direct access to Route 9 via a gravel driveway.

3.0 WETLAND DELINEATION METHODOLOGY

3.1 Siting Alternatives

The layout of development is a function of several siting factors that balance the location of each project element and environmental compatibility. These factors include:

- minimizing tree clearing, wetland impacts, and the acquisition of land (the Project proposes to lease the land needed for the Project facilities); and

These siting factors inherently create the need for a Project survey area that iss 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. The survey area for this laydown yard was approximately 4 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 July 2012 (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, 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

Four wetlands and one intermittent stream channel segment were found onsite. The wetlands found on the eastern and western extents of the site (AN-LD-1&3) are broad-leaved deciduous forested wetlands dominated by red maple (*Acer rubrum*) trees and were found to drain in a northerly direction where overland stormwater flow entered 30 inch concrete culverts and traversed under Route 9 to a larger wetland complex. A third isolated broad leaved deciduous scrub-shrub wetland (AN-LD-2) dominated by meadowsweet (*Spiraea latifolia*) was found along the southern border of the site. This wetland was previously forested but has had trees removed by prior logging activity. The fourth wetland (AN-LD-4) is found within the borrow pit and is dominated by speckled alder (*Alnus rugosa*) shrubs. This wetland appears to have been created during the excavation of the material in the borrow pit.

The intermittent stream channel (AN-LD-INT-1) was found to enter the site from the south and flowed towards Route 9. Before reaching Route 9, the channel dispersed within wetland AN-LD-3. It was observed that much of the flow reaching this intermittent channel came from stormwater flowing down an old logging road found just off the site to the South. The channel was observed to be dry at the time of the delineation but averaged 1-2 feet in width and up to 6 inches in depth with a sandy substrate. Table 4-1 provides a summary of the wetlands identified, including their classification in accordance with Cowardin et al. (1979).

Narrative descriptions of vegetation, wetland hydrology, and soils 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 proposed laydownyard area, vegetative communities consist of forested upland and wetland and scrub-shrub wetlands. The forested wetlands contained red maple and green ash (*Fraxinus pennsylvanica*). The scrub-shrub wetlands contained speckled alder and meadowsweet.

Upland tree species found throughout the Project area include red oak (*Quercus rubra*), American beech (*Fagus grandifolia*), white pine (*Pinus strobus*), quaking aspen (*Populus tremuloides*), and red maple (*Acer rubrum*). 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

The intermittent stream within the survey area drains to the north (Route 9) toward the North Branch River. 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 laydown yard survey area, one soil type has 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 proposed laydown area and indicates that the area soils are mapped with a slope of 8-15 percent. The soil type mapping has also been overlain on the Project location map (see Figure 3 in Attachment A). The mapped soil type is excessively drained soil. 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 very dark grayish (10YR 3/2) surface horizon (A horizon) overlying dark grayish brown (2.5Y 4/2) to grayish brown (2.5Y 5/2), sandy loam subsoils with common redoximorphic features. As described below, this is typical of the sandy gravelly 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.

Table 4-1
Summary of Wetlands within the Additional Laydown Survey Area

Wetland ID	Wetland Types and Associations	Cowardin Classification	Associated Wetland Impact
AN-LD 1	Isolated forested wetland.	PFO1	No direct impact
AN-LD 2	Isolated scrub-shrub wetland.	PFO/PSS1	No direct impact
AN-LD 3	Isolated forested wetland	PFO1	No direct impact
AN-LD 4	Isolated scrub-shrub wetland. Formerly borrow pit area.	PFO1	0.02 acre/955 sq. ft.
Laydown Impact			**.02 acre/955 sq. ft.**
Initial Impact			**0.192 acre/8,350 sq. ft.**
REVISED TOTAL IMPACT			**0.212 acre/9,305 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.

Wetland AN-LD 1 is a deciduous forest wetland dominated by red maple (*Acer rubrum*). It is located within a depression on a terrace located above the North Branch River valley. Soils are saturated and are sandy with a cemented restrictive layer.

Wetland AN-LD 2 is a deciduous forest wetland dominated by red maple with a lesser component of highbush blueberry and meadowsweet. It is located in a flat area on a terrace above the North Branch River valley. An old borrow pit is directly adjacent to the wetland boundary. Soils are saturated and are sandy.

Wetland AN-LD 3 is deciduous forested wetland dominated by red maple. It is located within a depression on a terrace located above the North Branch River valley. Soils are saturated and are sandy. An intermittent stream channel (AN-LD-INT 1) carries surface water and disperses in this wetland area.

Wetland AN-LD 4 is a deciduous scrub-shrub wetland dominated by speckled alder. It is located within an old borrow pit excavation on a terrace above the North Branch River valley. Soils are sandy, saturated and surface water was present at the time of survey.

4.5 Waterbody Descriptions

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

Table 4-2
Summary of Streams within Project Area

Stream ID	Flow Regime	Associated Impact	Associated Wetland(s)
AN-LD-INT 1	Intermittent	No direct impact	AN_LD 3

Stream AN-LD-INT 1 is an intermittent stream with a sandy substrate that originates in a logging trail upslope and south of the site. The average width of the stream is 1-2 feet and the bank height is less than one foot. The channel was dry at the time of the wetland delineation survey (in July 2012). The stream channel disperses within wetland AN-LD 3.

4.6 Natural Resource Conservation Service Soil Series Descriptions

Following is the abbreviated descriptions of each of the relevant soil type for the site 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, and soil mapping is provided in Attachment A, Figure 3.

Table 4-3
Soil Description Summary

Soil Names	Symbol	% Slopes	Hydric (y/n)	Parent Material	Drainage Class
Colton Loamy Sand	22C	8-15	N	Sandy and Gavelly Outwash	Excessively Drained

Colton Series

These excessively drained soils formed in sandy and gravelly glacial outwash derived mainly from granite till. They are found on outwash terraces, kames, and eskers. Slope ranges from 0 to 50 percent. The solum ranges from 18 to 36 inches in thickness. The content of rock fragments ranges from 10 to 55 percent in the solum and 35 to 70 percent in the C horizon. Some pedons have an A horizon that is dark reddish brown. The E horizon has gray to dark gray. The A and E horizons range from loamy coarse sand to find sandy loam. The B horizon is dark reddish brown to reddish yellow. It ranges from coarse sand to loamy sand. The C horizon is dark reddish gray to reddish yellow.

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