

**STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL**

**Petition of BNE Energy Inc. for a
Declaratory Ruling for the Location,
Construction and Operation of a 4.8 MW
Wind Renewable Generating Project on
Winsted-Norfolk Road in Colebrook,
Connecticut (“Wind Colebrook North”)**

Petition No. 984

March 25, 2011

PRE-FILED TESTIMONY OF MATTHEW DAVISON

Q1. Please state your name and profession.

A. Matthew Davison and I am a registered soil scientist and Connecticut certified forester (#193) with Vanasse Hangen Brustlin, Inc. (“VHB”). VHB is located at 54 Tuttle Place in Middletown, Connecticut.

Q2. Please summarize your professional background and experience.

A. I have a B.S. in forestry from the University of Massachusetts. I have 13 years of experience as a natural resource professional. My experience includes various activities related to wetlands delineation, evaluation, forest management and permitting before local, state and federal bodies. In addition, I have worked on a number of utility projects including substations and transmission corridor studies, conducting state and federal wetlands delineation, wetland functions and values assessments, habitat assessments and consultations with the Department of Environmental Protection (CTDEP) regarding state listed species. My resume is attached hereto as Exhibit 1, which details my qualifications and experience.

Q3. What did you do to determine the existence of wetlands on the proposed wind energy project site?

A. I performed an on-site inspection of the approximate 125.00 acre parcel located at Winsted-Norfolk Road and Rock Hall Road in Colebrook, Connecticut (the “Property”). The Property was inspected in its entirety in order to properly evaluate potential turbine locations and access options. This inspection was generally conducted over four dates, July 27 through 29 and August 2, 2010. A Wetlands Delineation Report, dated August 11, 2010 was prepared and provided in the Petition, Volume 3, Exhibit I, Attachment A.

Q4. Based upon your inspection are there any wetlands located on the Property, and if so, please describe these wetlands?

A. Yes. Four wetland areas were delineated on the Property. Wetland 1 consists of a broad bordering forested wetland associated with Mill Brook. This bordering system, which is dominated by a hemlock overstory, is characterized by hummock-hollow topography and

numerous small upland inclusions which are commonly associated with this type of wetland. Several larger upland inclusions were also delineated. Mill Brook, a perennial watercourse, originates at a corrugated metal culvert on the south side of Rock Hall Road and flows southeast through the center of the Property. The stream is characterized as having a well defined bank with decreasing gradient from the culvert flowing south. The streambed is characterized as a large particle sand bottom with mixed cobble/gravel and a few bedrock outcrops. Finfish and crawfish were observed within shallow pools. As Mill Brook flows south to the southern property boundary it opens into a large emergent marsh and scrub/shrub wetland dominated by *Juncus spp.*, *Carex spp.*, and various wetland shrub species. Several hillside seep wetlands and associated intermittent watercourses were identified and delineated on the Property. These seeps convey storm water runoff during high water events, spring melt, and sheet flow from the open field upslope to the west into the perennial stream. The most significant of which is an intermittent watercourse which flows into Wetland 1 from the north Property boundary. This watercourse flows within a deeply scoured channel at its upper extent before discharging into Wetland 1 within a shallow braided channel.

Wetland 2 is a small forested wetland depression located at the base of a western facing slope. Several surface indicators of hydrology were observed, such as water stained leaves and detritus, which indicate this area may be subject to shallow seasonal inundation.

Wetland 3 is a small linear shaped forested hillside seep wetland draining easterly towards Wetland 1. No surface water or wetland connections were identified between this wetland and Wetland 1.

Wetland 4 is a series of small forested hillside seep wetlands located along an eastern facing slope. They are generally interconnected via subsurface groundwater flows or shallow surface water flows. No surface water or wetland connections were identified between this wetland and Wetland 1.

Q5. Based upon your investigation, are there any vernal pools located on the Property?

A. Based on guidance provided by the CTDEP, to meet the definition of a vernal pool, four criteria must be met:

- It contains water for approximately two months during the growing season;
- It occurs within a confined depression or basin that lacks a permanent outlet stream;
- It lacks any fish population;
- It dries out most years, usually by late summer.

While Wetland 2 is characterized as a confined depression that lacks a permanent outlet stream, this feature exists within a very shallow depression. The depth of this depression did not appear during the wetland delineation to be capable of supporting breeding habitat for obligate vernal pool species. Additionally, this feature is located approximately 180 feet from the clearing limits associated with Turbine Location 2. Given the distance from the proposed development and clearing proposed within 750 feet of this wetland (critical terrestrial habitat), if this feature was found to provide breeding habitat for obligate vernal pool species, the proposed development

would comply with recommendations outlined in Calhoun & Klemens, Best Development Practices: Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in Northeastern United States (Metropolitan Conservation Alliance 2002).

The potential may exist within portions of the interior of the delineated wetland areas, particularly within Wetland 1, for “cryptic” vernal pool habitat to exist. Cryptic vernal pools are areas within wetlands that provide the appropriate hydrology to provide breeding habitat for obligate vernal pool species. BNE Energy has retained the services of Michael W. Klemens, PhD to evaluate the on-site wetlands for the presence of obligate vernal pool species. The evaluation will be undertaken in April, 2011.

Q6. On page 25 of Exhibit I of the Petition, you provided a Preliminary Wetland Impact Analysis. Have you finalized this analysis, and if so what were your findings?

The original analysis was preliminary in nature due to the absence of topographic survey of the wetlands crossing. The information relied on for this preliminary analysis was based on site plans prepared by Zapata, Inc. dated November, 2010 and based on publically available LiDAR topographic data. As such, the impact numbers provided and design specifications referenced were preliminary in nature. Since this time the topographical survey of the wetland crossing has been completed.

The location of the original wetland crossing, which includes two watercourse crossings, was chosen to minimize square footage of permanent wetland impacts. Following incorporation of the updated topographical data, it was determined that wetland impacts would increase as a result of filling on the south side of the road in the vicinity of the easternmost watercourse crossing that would extend further into the wetland than originally anticipated. As a result, the recommendation was made to relocate the road approximately 50 feet to the north. This relocation will allow for the proposed access road to intersect the easternmost and more significant watercourse at an existing woods road crossing. This relocation, in conjunction with a reduction of the access road width to accommodate a narrow tracked crane, will result in a negligible increase in square footage of wetland impacts from the previous access road location. More importantly, locating the crossing at the intersection of an existing logging road will minimize tree clearing and potential impacts to the watercourse feature by utilizing a historic crossing.

Three-sided box culverts will be utilized to span each of the two watercourse crossings. These crossings will be constructed in accordance with CTDEP Inland Fisheries Division Stream Crossing Guidelines, dated February 26, 2008. These guidelines have been established to minimize impacts to resident fish and wildlife. As required by CTDEP, unconfined in-stream work associated with the culvert installation will occur between June 1 and September 30. If possible, impacts associated with the installation of the box culvert should be located outside of the stream channel. Erosion and sedimentation controls will be installed as outlined in the *2002 Connecticut Guidelines for Erosion and Sediment Control* prior to construction in order to decrease the likelihood of sediment inputs into the streams. Following construction activities, cleared or disturbed areas in proximity to the streambanks will be adequately stabilized to prevent erosion and sedimentation of the downstream resource. A detailed restoration plan

identifying these measures will be submitted during the development and Management phase of the Project. Wildlife Habitat and Sediment/Shoreline Stabilization have been identified as the principal functions associated with the wetland area at the proposed access road crossing. Effective installation of the three-sided box culvert and stabilization of the streambanks as described will adequately protect these functions.

Q7. Describe the efforts that were undertaken to determine whether or not the proposed wind project could impact any state listed Endangered, Threatened and Special Concern species?

A. I performed a review of the CTDEP's Natural Diversity Data Base (NDDB) which identifies general areas of concern with regards to state and federally listed Endangered, Threatened, and Special Concern species and significant natural communities. I found that the most recent (updated August 2010) digitally available NDDB map depicted a NDDB area of concern with regard to threatened or endangered species and/or significant natural communities approximately 150 feet south of the southern Property boundary. As such, VHB completed and submitted a NDDB Review Request Form and supporting materials to the CTDEP for confirmation. CTDEP responded that smooth green snake (*Liochlorophis [Opheodrys] vernalis*), a state species of special concern, occurs in the vicinity of the Property. As a result, VHB prepared and submitted a smooth green snake habitat survey to CTDEP which details the likelihood this species may occur on the Property. Provided below is a summary of the smooth green snake habitat survey.

The smooth green snake favors open, unforested habitats including meadows, pastures, fens, coastal grasslands, mountaintop "balds", but is also found in transitional and lightly forested habitats such as grassy old fields with scattered shrubs and trees, as well as oak-pitchpine woodland¹. While a large maintained lawn area exists on the Property, it is associated with a golf driving range and will not be subject to disturbance as a result of the proposed development activities. Additionally, this area is subject to regular mowing and would not provide favorable habitat for the smooth green snake. The areas that will be subject to disturbance activities are characterized as upland forest (more specifically, variations of a northern hardwood forest type). Therefore, the proposed development will not adversely affect smooth green snakes or their preferred habitat. VHB received a letter from CTDEP, dated January 20, 2011 concurring with these findings.

In addition, VHB environmental scientists Linda Vanderveer and Jeffrey Peterson conducted a site visit to document vegetative and structural habitat features on the Property. Copies of their resumes are attached hereto as Exhibit 2. Using this field collected information, as well as information I collected during various site visits, Ms. Vanderveer used DeGraaf and Yamasaki's *New England Wildlife: Habitat, Natural History, and Distribution* (2001) as a reference and general predictive tool to identify potential terrestrial mammals and herpetofauna (of note, VHB did not evaluate the Property with respect to birds and bats) that may be occupying the Property. Potential species that may be utilizing the Property are described in the Terrestrial Wildlife

¹ Klemens, M. W. (1993). Amphibians and Reptiles of Connecticut and Adjacent Regions. State Geological and Natural History Survey of Connecticut, Bulletin 112.

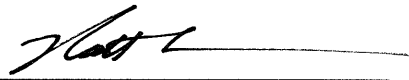
Habitat and Wetland Impact Analysis report (Exhibit I), Mammal and Herpetofauna Evaluation section. This methodology complies with a Tier 2 assessment as detailed in the U.S. Fish and Wildlife Service *Wind Turbine Guidelines Advisory Committee Recommended Guidelines* (March 4, 2010) regarding wildlife assessments at proposed wind energy developments.

As a result of the findings within the Tier 2 assessment, and primarily due to the diversity of wetland habitat types found on the Property, the proximity of these resource areas to the proposed Project area and the proposed crossing of two watercourse features, BNE Energy, Inc. has retained the services of Michael W. Klemens PhD to perform an assessment of the site for obligate vernal pool amphibians and northern spring salamander.

The statements above are true and accurate to the best of my knowledge.

3-25-2011

Date



Matthew E. Davison

EXHIBIT 1

Matthew E. Davison

Soil Scientist

Mr. Davison provides natural resource permitting support including wetland delineation (including state of Connecticut and Federal methods), soil mapping and classification, wetland evaluation, wetland impact assessments, local, state and federal permitting, habitat surveys and components of NEPA documentation. Mr. Davison has expertise in a variety of activities related to forest management including forest mensuration, management planning, forest products harvesting and marketing.

Representative projects are summarized below.

On Call Environmental Services, Northeast Utilities Transmission Group

Supported various Connecticut projects, including assessment and permitting of bulk power substations, transmission lines/structures, underground utility installations, and environmental investigations of existing and proposed facilities. Provided natural resources inventories of existing flora and fauna, habitat evaluations, wetland delineations, wetland evaluations, site layout and design impact assessments, preparation of technical documents, coordination with State and local agencies, and permitting support.

Northeast Utilities, Central Connecticut Reliability Project

Managed and performed field efforts for natural resource and constructability evaluation along 35 miles of transmission lines in Central Connecticut. Natural resource evaluation included Connecticut and Federal wetland delineation, Army Corps of Engineers data plots, wetland functions and values assessment, inventory of State and Federal Threatened and Endangered species and cover type mapping. Constructability evaluation included documenting and mapping potential construction and maintenance access routes and transmission tower locations with respect to wetland and natural resource impacts and constructability constraints.

Northeast Utilities, Greater Springfield Reliability Project

Performed data collection, documentation and evaluation of constructability issues along 57 miles of transmission lines in Connecticut and Massachusetts. Evaluated potential construction and maintenance access routes and transmission tower locations with respect to wetland and natural resource impacts and constructability constraints.

Due Diligence Site Assessment, Utility Client, Connecticut

Provided technical support for due diligence site assessment regarding a proposed utility substation in Waterford, Connecticut. Tasks included habitat assessment, wildlife survey, wetland delineation, coordination of field work and documents necessary to show zoning compliance.

East Hartford Multi-Use Trail, East Hartford, CT

Provided wetland and permitting support services for a proposed 2.75-mile extension of the Charter Oak Greenway multi-use trail. Wetland services included Connecticut and Federal wetland delineations and wetland evaluation. Prepared CTDEP Stream Channel Encroachment Line (SCEL) Permit and Flood Management Certification Applications for activities conducted within the SCEL and 100-year floodplain of the Connecticut River. Coordinated proposed design within these resources with CTDEP and ConnDOT Environmental Planning regarding permitting implications of the proposed design of the trail and alterations that would minimize impact to floodplain resources to facilitate permitting effort.

Mr. Davison is a Registered Soil Scientist and Connecticut Certified Forester working in VHB's Middletown, Connecticut office. His areas of expertise include state and federal wetland delineation and evaluation, public testimony, federal, state and local permit preparation and a variety of activities related to forest management including forest mensuration, management planning, harvesting and forest products marketing.

13 years professional experience

Waterford High School Expansion, Waterford, CT

Responsible for wetland delineations, wetland functions and values assessment, site layout and design impact assessments, preparation of technical documents, coordination with State and local agencies and permitting support. Responsible for wetland environmental permitting, as well as attending public meetings.

Verizon Wireless Permitting Support

Provide technical support including wetland delineation and site assessments for Verizon Wireless' wetland program. Responsible for wetland delineation, assessment, USFWS compliance documentation, design review for permit feasibility of telecommunications facilities in Connecticut and Massachusetts.

CVS/Pharmacy

Responsible for wetland delineations, wetland evaluations, site layout and design impact assessments, preparation of technical documents, coordination with State and local agencies and permitting support. Responsible for wetland environmental permitting, as well as attending public meetings.

Price Chopper, Oxford, CT

Responsible for wetland delineations, wetland evaluations, site layout and design impact assessments, preparation of technical documents, coordination with State and local agencies and permitting support.

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Education	B.S., Forestry, University of Massachusetts, 1997 New England Regional Soil Science Certificate, UMass and University of Connecticut, 2000
Registration	Member, Society of Soil Scientists of Southern New England , since 2001
Certifications	Connecticut Certified Forester #193, since 1999