

15-F-0122 Baron Winds LLC 3/21/2019

NEW YORK STATE

BOARD ON ELECTRIC GENERATION SITING AND THE ENVIRONMENT

15-F-0122 APPLICATION OF BARON WINDS LLC FOR A CERTIFICATE
OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED PURSUANT TO
ARTICLE 10 TO CONSTRUCT A WIND ENERGY FACILITY

EVIDENTIARY HEARING

Thursday, March 21, 2019 9:00 a.m.

Fremont Volunteer Fire Department,

Route 21 and Cream Hill Road

Arkport, New York 14807

A.L.J. ANTHONY BELSITO, DPS

A,L.J. JAMES COSTELLO, DPS

A.L.J. MARIA VILLA, DEC

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A.L.J. COSTELLO: I call case 15-F
3 dash 0122.

4 We're at day 2 of the hearings in this
5 matter and we'll begin by taking appearances,
6 starting with the Applicant.

7 MR. MUSCATO: Good morning, your
8 Honor.

9 My name is Jim Muscato and I'm here on
10 behalf of the -- the Applicant, Baron Winds, along
11 with my colleague, Jessica Klami.

12 A.L.J. COSTELLO: Good morning.

13 Department of Public Service? We're
14 doing appearances.

15 MS. BEHNKE: Oh.

16 Heather Behnke, on behalf of the
17 Department of Public Service Staff.

18 A.L.J. COSTELLO: All right.
19 Department of Environmental Conservation?

20 MR. KING: Thomas King and Larry
21 Weintraub.

22 A.L.J. COSTELLO: Okay.

23 MR. KING: With our witness, Scott
24 Jones.

25 A.L.J. COSTELLO: Okay. Dr. Sokolow?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 MS. SOKOLOW: I am here speaking for
3 four parties. Do I have to go through parties again,
4 or do you want me to give --

5 A.L.J. COSTELLO: That's -- that's
6 okay.

7 MS. SOKOLOW: It's okay?

8 A.L.J. COSTELLO: It's on the record
9 from -- okay.

10 Tara Wells, from Agriculture and
11 Markets, has been excused. She's not here.

12 I don't --.

13 (Off the record discussion)

14 A.L.J. COSTELLO: For -- do we have
15 anybody here for the town's?

16 MR. PULLEN: Yes.

17 Your Honor, from the town of Fremont,
18 Seth Pullen, Attorney for the town.

19 Also, present today here are the Town
20 Supervisor, Emily Murray (phonetic spelling) and Town
21 Supervisor, Kevin Smith (phonetic spelling).

22 A.L.J. COSTELLO: Good morning.

23 MR. PULLEN: And Michael Keith --

24 A.L.J. COSTELLO: Keith.

25 MR. PULLEN: -- Engineer with Hunt,

1 15-F-0122 Baron Winds LLC 3/21/2019
2 for the -- for the Town of Fremont and personal
3 appearance.

4 MR. KEITH: Michael Keith, here on
5 behalf of not only the town of Fremont, but the town
6 of Wayland.

7 Also with me is Assistant -- Assistant
8 Supervisor, Ms. Carol Michaels (phonetic spelling).

9 A.L.J. COSTELLO: Okay. Good morning.
10 Is there anyone else that I -- that's
11 making an appearance today, that I did not get? No?

12 Okay. With that, we're -- we'll go
13 right into the first witness, who is W. Scott Jones.

14 Mr. Jones, could you just state your
15 name and business address for the record?

16 MR. JONES: W. Scott Jones, N.Y.S.,
17 D.E.C. 6274 East Avon Road, Lima -- or Avon, New York
18 14414.

19 A.L.J. COSTELLO: Thank you.

20 May you raise your right hand?

21 Do you swear, or affirm that the
22 testimony you will give, it will be the whole truth?

23 MR. JONES: Yes.

24 WITNESS; W. SCOTT JONES; Sworn

25 A.L.J. COSTELLO: Okay. Thank you.

15-F-0122 Baron Winds LLC 3/21/2019

You may take a seat.

Mr. King?

MR. KING: Your Honors.

DIRECT EXAMINATION

BY MR. KING:

Q. Mr. Jones, did you file pre-filed testimony, in this matter?

A. (Jones) Yes.

MR. KING: Your Honors, I'd like to move to enter Mr. Jones' pre-filed testimony in to the record.

A.L.J. COSTELLO: Okay. Do you -- do you want him to lay the foundation, or we -- we had indicated before you'll waive --?

MR. MUSCATO: Yes.

A.L.J. COSTELLO: That's fine?

MR. MUSCATO: Yeah.

A.L.J. COSTELLO: Okay. At this point, we will accept the direct -- direct testimony of W. Scott Jones, pre-filed testimony, as if orally given here today and the file will be N.Y.S. D.E.C. Direct Testimony of W. Scott Jones. **

**NEW YORK STATE BOARD ON ELECTRIC GENERATION
SITING AND THE ENVIRONMENT**

In the Matter of the Application of

Baron Winds Project

Case No.: 15-F-0122

for a Certificate of Environmental Compatibility
and Public Need Pursuant to Article 10 to
Construct a Wind Energy Project.

**DIRECT TESTIMONY OF
W. SCOTT JONES**

Regional Bureau of Ecosystem Health Manager
Division of Fish and Wildlife
New York State Department of Environmental Conservation

February 22, 2019

1 WITNESS INTRODUCTION

2 **Q. Will you please state your name, employer, title and business location?**

3 A. My name is Scott Jones. (“NYSDEC” or “Department”) in the Division of Fish
4 and Wildlife, as the Region 8 Manager of the Bureau of Ecosystem Health for the past 3
5 years. Prior to that I was employed as a Biologist 1 (Ecology) for approximately 15 years
6 in NYSDEC’s Region 8 headquarters in Avon, NY.

7 **Q. Will you please describe your educational background and professional**
8 **certifications?**

9 A. Please see a copy of my resume marked as NYSDEC-CB-1.

10 **Q. What are your responsibilities in your position at the Department?**

A. In my position, I am responsible for programmatic oversight of the State's statutory and regulatory freshwater wetland program in NYSDEC Region 8 which includes Steuben County. In this capacity, I oversee the implementation of Article 24 of the Environmental Conservation Law (ECL) (Article 24 or Freshwater Wetlands Act) and associated State regulations, Article 15 of the ECL and associated State regulations, and, as applicable, State water quality standards applicable to projects under Section 401 of the federal Clean Water Act (CWA) and associated State regulations. Included in this oversight is my responsibility to ensure the proper delineation of State-regulated wetland boundaries.

19 **Q. Will you please summarize your experience regarding wetlands and review of**
20 **proposed wind farm projects?**

1 A. I have delineated several hundred wetlands and reviewed the permit applications
2 that went with the delineations for activities in and near wetlands. I have reviewed several
3 wind farm projects that required or will require compliancy with relevant statutory and
4 regulatory requirements of an individual freshwater wetland permit under Article 24, a
5 State water quality certificate under Section 401 of the CWA, or protection of waters permit
6 under Article 15 to be constructed. These projects include those projects subject to Article
7 10 of the Public Service Law (PSL), and those which were reviewed pursuant to the State
8 Environmental Quality Review Act (SEQR).

9 **Q. What is the purpose of your testimony today?**

10 A. The purpose of my testimony is to provide an overview of the Department's
11 implementation of NYSDEC's (i) freshwater wetlands preservation and protection
12 program in Article 24 and the associated regulations found at Parts 663 and 664 of Title 6
13 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6
14 NYCRR) (Part 663 or 664), (ii) ECL Article 15, Title 5 and the associated regulations
15 found at Part 608 of Title 6 of the Official Compilation of Codes, Rules and Regulations
16 of the State of New York (6 NYCRR) (Part 608) and (iii) the Department's implementation
17 of Section 401 of the CWA, and the associated regulations found at 6 NYCRR Parts 608,
18 701, 702, 703, 704 and 750.

19 In that context, I will discuss: (i) the factors the Department considers in making
20 regulatory determinations pursuant to the applicable statutes and regulations; (ii) how these
21 factors apply to the Project; and (iii) whether the Project has met the applicable State

1 standards. I am advised by Department Counsel that this wetlands program with its
2 attendant statutory and regulatory authority, use and protection of waters program with its
3 attendant statutory and regulatory authority, as well as State water quality standards, apply
4 to the Baron Wind Project (Project) as proposed, and to the New York State Board on
5 Electric Generation Siting and the Environment's (Siting Board's) deliberations and
6 required findings pursuant to PSL Article 10. Accordingly, my testimony discusses how
7 the Siting Board must apply the State's statutory and regulatory (i) wetlands program, (ii)
8 protection of waters program and (iii) the CWA, as implemented by the above-referenced
9 State statutes and regulations, to its deliberations and required findings under PSL Article
10 10 to ensure the Project's compliance therewith, should it decide to approve the Project.

11 **Q. What information has provided the basis for your testimony?**

12 A. My testimony is based on the Project application (Application) filed November 29,
13 2017 by Baron Winds, LLC (Applicant), specifically Exhibits 22 and 23 and corresponding
14 Appendices, including but not limited to Appendix BBB (Wetland and Waterbody
15 Delineation Report) Appendix CCC (Wetland Functions and Values Assessment),
16 supplemental filings filed March 12, 2018, June 15, 2018 and February 1, 2019. and the
17 proposed certificate conditions filed by the Applicant on January 16, 2019. I also
18 conducted site visits of the Project site on August 30, 2017 and December 14, 2018. I have
19 reviewed all the above-referenced materials in the context of compliance with Article 24
20 and 6 NYCRR Parts 663 (Freshwater Wetlands Permit Requirements) and 664 (Freshwater

Case No. 15-F-0122

JONES

1 Wetlands Maps and Classification), ECL Article 15 (Protection of Waters) and Section 401
2 of the CWA and 6 NYCRR Parts 608, 701, 702, 703, 704 and 750.

3 **Q. Do you have any comments regarding the adequacy of the plans provided by the**
4 **Applicant?**

5 A. The plans as submitted are adequate to complete a review consistent with Part 663
6 and Part 608 to determine, respectively, if Article 24 and Article 15 jurisdictions are
7 applicable.

8 **HABITAT PROTECTION AND ECOSYSTEM HEALTH PROGRAMS**

9 **Q. Can you describe the Department's policy with respect to freshwater**
10 **wetlands?**

11 A. As articulated in Article 24, the State's policy with regard to wetlands is to preserve,
12 protect, and conserve freshwater wetlands and the benefits that wetlands provide, to
13 prevent the despoliation and destruction of freshwater wetlands, and to regulate use and
14 development of such wetlands to secure the natural benefits of freshwater wetlands,
15 consistent with the general welfare and beneficial economic, social and agricultural
16 development of the State. The Department must consider this policy when reviewing any
17 proposed project that may impact regulated freshwater wetlands, or the associated
18 regulated adjacent areas (being the area within 100 feet of a State-regulated wetland).
19 Accordingly, if the Department determines that a project with potential adverse impacts to
20 freshwater wetlands does not satisfy an economic or social need and does not meet specific

Case No. 15-F-0122

JONES

1 permit issuance standards, the Department may find that the project does not meet statutory
2 and regulatory standards.

3 **Q. How is ECL Article 24 implemented?**

4 A. The Department's regulations contain the standards that implement the Freshwater
5 Wetlands Act (*see, e.g.*, Parts 663 and 664). Through Part 663, the Department has
6 established procedures and standards to guide the review of permit applications for projects
7 which propose to construct in, or adjacent to, freshwater wetlands. Part 664 contains the
8 mapping and classification standards and procedures of all wetlands protected under ECL
9 Article 24.

10 **Q. Can you describe how a regulatory review of proposed activities within a**
11 **State-regulated wetland, or the associated regulated adjacent area, is conducted?**

12 A. In general, the burden is on an applicant to demonstrate that any proposed activity
13 within a State-regulated wetland, or the associated regulated adjacent area, will comply
14 with the implementing regulations (see above), and all other applicable laws and
15 regulations (6 NYCRR § 663.5[a]).

16 **Q. What information must an applicant provide for the Siting Board to conduct**
17 **its review to ensure consistency with the State's freshwater wetlands program?**

18 A. I have been advised by Department Counsel that activities regulated by Article 10
19 of the PSL do not require the Department to issue an Article 24 freshwater wetlands permit.
20 However, the standards of Article 24 and its implementing regulations, including those in
21 subdivision 6 NYCRR § 663.5(e), must be applied by the Siting Board in determining

Case No. 15-F-0122

JONES

1 whether to issue a Certificate of Environmental Compatibility and Public Need pursuant to
2 PSL Article 10. In order for the Department to conduct a technical review of any project
3 that will occur, in part or in its entirety, within a State-regulated wetland, or the associated
4 regulated adjacent area, an applicant must provide detailed project plans of sufficient scale,
5 including, at minimum: (1) a delineated boundary for all wetlands on or near the project
6 site; (2) the precise location of all temporary and permanent structures; and (3) the extent
7 of all temporary and permanent disturbances, including clearing and grading. This
8 information is not exhaustive – on a case-by-case basis, additional information may be
9 required for the Siting Board, as well as the Department, to review the project and to make
10 regulatory determinations, including whether the project has met State statutory and
11 regulatory standards. Under the Department’s review process, once all the needed
12 information has been submitted, the examination of the project continues with a
13 consultation of the Department’s mapped regulatory wetlands, as well as those unmapped
14 wetlands that meet State criteria for jurisdiction, and geographical information systems
15 data to determine if a protected wetland is located within 100 feet of the proposed project.
16 If a regulated wetland is likely located on or near the project, the Department then considers
17 the proposed activities associated with the project in relation to the delineated boundary of
18 the wetlands, the activities listed in 6 NYCRR § 663.4(d), and the standards set forth in 6
19 NYCRR § 663.5(e), before making an ultimate determination whether the project meets
20 statutory and regulatory standards under Article 24.

21 **Q. What do you mean by “delineated boundary” of a wetland?**

Case No. 15-F-0122

JONES

1 A. A “delineated boundary” is a wetland boundary that Department Staff has
2 determined will accurately represent the actual extent of the wetlands. This should not be
3 confused with the extent of wetlands shown on the Department’s wetlands maps or on the
4 National Wetlands Inventory Maps, which is a comprehensive master geodatabase of the
5 nation’s wetlands maintained by the United States Fish and Wildlife Service. The
6 Department’s wetlands maps approximate the extent of the wetlands and inform
7 landowners, potential applicants, and the public regarding the approximate extent of
8 wetlands regulated under Article 24. The maps were developed using 1970’s-era aerial
9 photography and were not intended to depict actual wetlands boundaries to the extent
10 provided by on-site inspection or delineation. In fact, I have seen many situations where
11 the actual extent of wetlands was underestimated by the maps. Field inspections are always
12 required for projects such as this to refine the approximations shown on wetlands maps and
13 to accurately determine the extent of wetlands near proposed projects. A surveyed
14 boundary of field-delineated wetlands must be included on project plans. Without such
15 information on the precise location and extent of wetlands, Department Staff cannot
16 determine the full extent of proposed project impacts on identified State-regulated
17 wetlands, or the associated regulated adjacent areas.

18 **Q. In general, what are the Part 663 standards applicable to proposed activities**
19 **within a State-regulated wetland, or the associated regulated adjacent area?**

20 A. The standards under 6 NYCRR § 663.5(e) apply to determine if the proposed
21 project meets regulatory standards. The first step in determining the applicable standards

1 is identifying which activity or activities apply to the proposed project (*see* activities list in
2 6 NYCRR § 663.4[d]). This step will, in turn, determine which standards must be
3 considered in the review of the project. This Project involves the construction of an
4 industrial facility and, as such, is considered incompatible with a wetland and its functions
5 and benefits (6 NYCRR § 663.4[d][43]). Thus, pursuant to 6 NYCRR § 663.5(e), this
6 Project must be reviewed in accordance with the weighing standards contained in 6
7 NYCRR § 663.5(e)(2).

8 **Q. Can you describe the weighing standards?**

9 A. In general terms, the weighing standards require an applicant to first demonstrate
10 that any activities in, and impacts to, a wetland and its adjacent area cannot be avoided
11 entirely. If avoidance is impossible, impacts on the functions or benefits of a wetland must
12 be minimized. Finally, any remaining loss of wetland acreage or function, or both, must be
13 mitigated, unless it can be shown that the losses are inconsequential or that, on balance,
14 economic or social need for the project outweighs the loss. The degree of balancing
15 required is commensurate with the classification of an affected wetland and the severity of
16 the remaining impacts. The higher the class of wetland or the greater the impact to a
17 wetland or its adjacent area, the greater the burden upon an applicant to demonstrate an
18 overriding need not to fully compensate for unavoidable impacts. The standards that must
19 be demonstrated as set forth in the implementing regulations at 6 NYCRR § 663.5 are
20 “compelling” need for Class I wetlands and “pressing” need for Class II wetlands. More
21 specifically, the standards are organized into two tiers, varying according to the class of

Case No. 15-F-0122

JONES

1 the wetland. The first tier requires avoidance and minimization of impacts. For wetland
2 Classes I, II, III and IV, the proposed activity must be compatible with the public health
3 and welfare, be the only practicable alternative that could accomplish the applicant's
4 objectives and have no practicable alternative on a site that is not a freshwater wetland or
5 adjacent area. For wetland Classes I, II, and III, the proposed activity must minimize
6 degradation to, or loss of, any part of the wetlands or adjacent areas and must minimize
7 any adverse impacts on the functions and benefits that the wetland provides. For wetland
8 Class IV, the proposed activity must make a reasonable effort to minimize degradation to,
9 or loss of, any part of the wetland or its adjacent area. The second tier of conditions only
10 applies once the first tier of conditions has been satisfied.

11 These conditions vary with the class of wetlands as follows:

12 Class I Wetlands: Class I wetlands provide the State's most critical wetland
13 benefits. Loss of or detriment to a Class I wetland is acceptable only in the most unusual
14 circumstances – only if a determination is made that the proposed activity satisfies a
15 compelling economic or social need that clearly and substantially outweighs the loss of or
16 detriment to the wetland benefits. (*See* 6 NYCRR § 663.5(e)(2)).

17 Class II Wetlands: Class II Wetlands provide important benefits. A loss of or
18 detriment to a Class II wetland is acceptable only in limited circumstances. A proposed
19 activity meets applicable standards, and the Department would issue a permit, only if the
20 Department determines that the proposed activity satisfies a pressing economic or social

Case No. 15-F-0122

JONES

1 need that clearly outweighs the loss of or detriment to the wetland benefits. (*See* 6 NYCRR
2 § 663.5(e)(2)).

3 Class III Wetlands: Class III Wetlands supply wetland benefits. A loss of or
4 detriment to a Class III wetland is acceptable only after the exercise of caution and
5 discernment. A proposed activity meets applicable standards, and the Department would
6 issue a permit, only if the Department determines that the proposed activity satisfies a
7 pressing economic or social need that outweighs the loss of or detriment to the wetland
8 benefits. (*See* 6 NYCRR § 663.5(e)(2)).

9 Class IV Wetlands: Class IV Wetlands provide some wildlife and open space
10 benefits and may provide other benefits cited in the Freshwater Wetlands Act. Therefore,
11 wanton or uncontrolled degradation or loss of Class IV wetlands is unacceptable. A
12 proposed activity meets applicable standards, and the Department would issue a permit,
13 only if the Department determines that the activity is the only practicable alternative which
14 could accomplish the applicant's objectives. *See* 6 NYCRR § 663.5(e) (2).

15 **Q. Can you describe the criteria on which the Department bases its decision as to**
16 **whether a project meets freshwater wetlands permitting standards?**

17 A. The regulations (6 NYCRR Part 663) provide a step by step process that requires
18 projects to:

- 19 1) avoid wetland impacts by keeping all regulated activities landward of the regulated
20 adjacent area;
- 21 2) minimize impacts by maximizing setbacks within the regulated adjacent area; *and*

Case No. 15-F-0122

JONES

1 3) provide mitigation for all unavoidable impacts to wetlands.

2 Once the Department reviews its mapped regulatory wetlands, as well as those unmapped
3 wetlands that meet State criteria for jurisdiction and confirms the presence of a State-
4 regulated wetland, the Department checks its classification sheet to determine if a particular
5 wetland is a Class I, II, III, or IV. Based on the wetland class, the Department uses the
6 appropriate weighing standards to determine whether a proposed project or activity meets
7 applicable standards.

8 **Q. If it is determined that impacts to wetlands are unavoidable, what information**
9 **must the Applicant provide regarding wetland mitigation to demonstrate compliance**
10 **with Department's requirements?**

11 A. A plan that meets the regulatory requirements of 6 NYCRR § 663.5(g) and the
12 Department's Guidelines on Compensatory Mitigation. For example, the plan must include
13 the following details:

- 14 • A detailed location relative to proposed wetland impact areas and other state-
15 jurisdictional freshwater wetlands;
- 16 • A Project construction timeline;
- 17 • Documentation of ownership of the mitigation site, or a conservation easement with
18 participating landowners unless such an agreement can be shown to not be practical,
19 in which case, a deed restriction may be employed;

- 1 • A monitoring plan including at least five years of monitoring, quarterly the first
- 2 year and twice per year thereafter. The monitoring may need to be extended if
- 3 problems arise;
- 4 • A commitment to maintain an 85% survival rate of tree and shrub plantings with
- 5 replacements in kind when the survival rate is not met; and
- 6 • An invasive species management plan.

7 **Q. Are there other applicable standards that would apply to the Project?**

8 A. Yes. The Project is subject to review as it relates to the Protection of Waters
9 program pursuant to Article 15 and Part 608.

10 **ARTICLE 15 – NAVIGABLE WATERS AND PROTECTED STREAMS**

11 **Q. Can you describe the Department’s policy with respect to protection of the**
12 **State’s waters?**

13 A. Yes. The policy of New York State, set forth in Title 5 of ECL Article 15,
14 recognizes that New York is rich with valuable water resources, and directs us as
15 stewards of the environment to preserve and protect certain lakes, rivers, streams, and
16 ponds. These rivers, streams, lakes, and ponds are necessary for fish and wildlife habitat;
17 drinking and bathing; and agricultural, commercial and industrial uses. In addition, New
18 York's waterways provide opportunities for recreation; education and research; and
19 aesthetic appreciation. Certain human activities can adversely affect, even destroy, the
20 delicate ecological balance of these important areas, thereby impairing the uses of these
21 waters.

1 **Q. What information must an applicant provide for the Siting Board to conduct its**
2 **review to ensure consistency with the State's Protection of Waters Program?**

3 A. I have been advised by Department Counsel that activities regulated by Article 10 of
4 the PSL do not require the Department to issue an ECL Article 15 protection of waters
5 permit. However, the standards set forth in ECL Article 15 and its implementing
6 regulations, including those in subdivision 6 NYCRR § 608.8, must be applied by the
7 Siting Board in determining whether to issue a Certificate of Environmental
8 Compatibility and Public Need pursuant to PSL Article 10.

9 **Q. How is ECL Article 15 implemented with respect to stream protection?**

10 A. To implement the policies set forth in ECL Article 15, NYSDEC created the
11 Protection of Waters Program (*see* Part 608) to prevent undesirable activities on water
12 bodies by establishing and enforcing regulations that: (1) are compatible with the
13 preservation, protection and enhancement of the present and potential values of the water
14 resources; (2) protect the public health and welfare; and (3) are consistent with the
15 reasonable economic and social development of the State. The objectives of the
16 Department's Protection of Waters Program are to (i) minimize the disturbance of
17 streams and water bodies and (ii) prevent unreasonable erosion of soil; increased turbidity
18 of the waters; irregular variations in velocity; temperature and level of waters; the loss of
19 fish and aquatic wildlife; the destruction of natural habitat; and the danger of flood or
20 pollution. The activities regulated under this Program include but are not limited to the
21 following regulatory provisions: modification or disturbance of the bed or banks of

Case No. 15-F-0122

JONES

1 “protected streams” (6 NYCRR § 608.2) and excavation and fill in navigable waters or
2 wetlands adjacent to and contiguous to the navigable waters (6 NYCRR § 608.5).

3 **Q. What are considered protected streams?**

4 A. Protected streams are defined in 6 NYCRR § 608.1(aa) as streams or portions of
5 streams that have any of the following water quality classifications or standards (in
6 declining order of water quality): AA, AA(T), AA (TS), A, A(T), A(TS), B, B(T),
7 B(TS), C(T), or C(TS). The designation of “T” means that the waters provide habitat in
8 which trout can survive and grow; “TS” means that the waters provide conditions in
9 which trout eggs can be deposited, fertilized, develop, hatch, and grow.

10 **Q. What are the standards applicable to proposed activities that would impact**
11 **State streams?**

12 A. Section 608.8 requires a determination that the proposed activity is in the public
13 interest, in that the Applicant has shown that the proposal:

- 14 1) is reasonable and necessary;
- 15 2) will not endanger the health, safety, and welfare of the people of the State of New
16 York; and
- 17 3) will not cause unreasonable, uncontrolled or unnecessary damage to the natural
18 resources of the State, including soil, forests, water, fish, shellfish, crustaceans,
19 and aquatic and land-related environment.

20 The State must consider the following factors in reviewing each proposal:

- 1 a. the environmental impacts of the proposal, including effects on fish and
- 2 wildlife habitat, water quality, hydrology, and watercourse and water body
- 3 integrity;
- 4 b. the adequacy of project design and construction techniques;
- 5 c. operational and maintenance characteristics;
- 6 d. safe commercial and recreational use of water resources;
- 7 e. the water dependent nature of a use;
- 8 f. the safeguarding of life and property; and
- 9 g. natural resource management objectives and values.

10 **Q. Are there any other applicable State standards that apply to the Project?**

11 A. Yes. The Project will require a Water Quality Certification pursuant to Section
 12 401 of the CWA. State water quality standards are set forth in 6 NYCRR § 608.9, with
 13 related regulations at 6 NYCRR Parts 701, 702, 703, 704 (Qualifications and Standards)
 14 and 750 (State Pollutant Discharge Elimination System (SPDES) Permits).

15 **Q. What are the standards for issuing a Section 401 WQC?**

16 A. Section 401 of the CWA requires that any applicant for a federal license or permit
 17 to conduct an activity that may result in a discharge into navigable waters must obtain a
 18 water quality certification from the State where the activity occurs. The standards for
 19 issuing a water quality certification are contained in 6 NYCRR § 608.9, with the burden
 20 placed on the applicant to demonstrate compliance with the following:

- 21 1) New York State effluent limitations and standards,

Case No. 15-F-0122

JONES

- 1 2) New York State water quality standards and thermal discharge criteria,
 - 2 3) New York State new source standards,
 - 3 4) New York State prohibited discharges, and
 - 4 5) other New York State regulations and criteria otherwise applicable.
- 5 These standards require that the certifying agency require compliance with the
- 6 Department's water quality regulations set forth at 6 NYCRR Parts 701, 702, 703, 704
- 7 and applicable provisions of Part 750. Other State regulations and criteria applicable to
- 8 this Project include ECL Article 15, Title 5 and its implementing regulation at Part 663
- 9 (Freshwater Wetlands).

10

ENVIRONMENTAL IMPACT

11 **Q. Are there State-regulated wetlands within this Project's proposed boundary that**

12 **will be adversely affected?**

13 A. Yes. Based on my desktop review of the Application using the Department's

14 geographic information system (GIS), and site visits I conducted on August 30, 2017, and

15 December 14, 2018, the following wetlands identified in the Project's wetland delineation

16 report were determined to be State-regulated wetlands delineated for the Project:

- 17 • Freshwater Wetland HK-3 is a Class II wetland and is approximately 145.31 acres
- 18 in size. Approximately 1.02 acres of Freshwater Wetland HK-3 is located within
- 19 the project study area.

Case No. 15-F-0122

JONES

- 1 • Freshwater Wetland HK-4 is a Class III wetland and is approximately 13.5 acres in
2 size. Approximately 0.5 acres of Freshwater Wetland HK-4 is located within the
3 project study area.
- 4 • Freshwater Wetland HK-8, is a Class III wetland is approximately 17.80 acres in
5 size. Approximately 0.15 acres of Freshwater Wetland HK-8 is located within the
6 project study area.

7 **Q. Will the Project, as proposed, involve activities regulated by ECL Article 24?**

8 A. Yes. The Project includes installation of underground electrical connection lines (FID
9 #’s 1 & 102) within HK-3 and clearing of approximately 14, 826 square feet (0.34 acres)
10 of forested 100-foot freshwater wetland adjacent area for construction/installation of the
11 underground electrical connection lines.

12 **Q. Will the Project, as proposed, avoid State-regulated wetlands and adjacent**
13 **areas?**

14 A. No.

15 **Q. Are there State-regulated waterbodies within the proposed Project site for**
16 **the Project, as proposed?**

17 A. Yes. The Project study area included 33 jurisdictional streams. The Project site
18 includes HDD crossings of 5 Class C(T) or higher streams: 2 Class A(T), 1 Class A, 2
19 crossings of C(TS) Neils Creek. In addition, as a partner in the Eastern Brook Trout Joint
20 Venture initiative (EBTJV), the Department has identified 7 Class C streams and 1 Class
21 A stream as having known or probable self-sustaining wild brook trout (*Salvelinus*

1 *fontinalis*). Goals of the initiative are to identify, protect, and enhance streams and
2 watersheds with wild, self-sustaining brook trout populations. A short-term subset of
3 those goals is reclassification of brook trout streams to correctly reflect their cold-water
4 fishery resource. These 8 streams are proposed for reclassification to the (TS) standard.

5 **Q. Can you describe the Project's negative impacts on State-regulated**
6 **waterbodies?**

7 A. Yes. The Project will result in approximately 1,067 linear feet of temporary
8 impacts to classified waters of the state. I understand this to mean a linear distance
9 following the course of the stream bed. The Project will also result in approximately 517
10 linear feet of permanent stream impacts. In addition, the Project includes installation of
11 an underground electrical connection (FID 23) beneath a Class A stream (PA-3-57-5-49-
12 9-2) that was not delineated or mapped by the Applicant, and construction of a Tower
13 T76-to-Tower T87 access road (FID 55) across this stream, which will entail an
14 unquantified level of direct and indirect impacts. This Class A stream is proposed for
15 reclassification to an A(TS) standard as part of the EBTJV initiative. Direct impacts
16 include: 1) the direct placement of fill in surface waters to accommodate road crossings,
17 causing suspension of sediments and turbidity; 2) disturbance of stream banks and/or
18 substrates resulting from buried cable installation; 3) an increase in water temperature
19 and conversion of cover type due to clearing of vegetation; and 4) siltation and
20 sedimentation due to earthwork, such as excavating and grading activities. These impacts

Case No. 15-F-0122

JONES

1 directly and adversely affect the best usages of a stream, such as for fish propagation and
2 survival, pursuant to 6 NYCRR § 701.8.

3 **Q. Has the Applicant demonstrated that the Project, as proposed, meets the**
4 **permitting standards described above?**

5 A. No. With regard to Article 15 and 6 NYCRR Part 608, the Applicant has not
6 demonstrated that it has considered reasonable alternatives such as relocating access road
7 55 or electrical connection 23, or considered other alternatives including construction of a
8 bridge, HDD or aerial placement of electric lines, nor has the Applicant quantified the
9 direct and indirect impacts to this stream. With regard to Article 24, to meet permitting
10 standards the Applicant would need to submit plans and specifications detailing how
11 wetland impacts would be avoided, and if unavoidable, mitigated through a properly
12 designed construction plan, including a Frac-out Risk Assessment and Contingency Plan,
13 and a Storm Water Pollution Prevention Plan.

14 **Q. Does the Project, as proposed, meet the water quality standards, as**
15 **referenced previously in your testimony?**

16 A. No. The proposed Project does not meet ECL Article 15, Title 5 standards, as well
17 as other standards contained in Part 608.9. The Applicant has failed to minimize impacts
18 to PA-3-57-5-49-9-2, a Class A protected stream, by installing underground transmission
19 lines under and an access road across this stream.

20 **Q. What are the standards for issuing a Section 401 WQC?**

Case No. 15-F-0122

JONES

1 A. The CWA requires that any applicant for a federal license or permit to conduct an
2 activity that may result in a discharge into navigable waters must obtain a water quality
3 certification from the State where the activity occurs. The standards for issuing a WQC are
4 contained in 6 NYCRR § 608.9, with the burden placed on the applicant to demonstrate
5 compliance with the following:

- 6 1) New York State effluent limitations and standards,
- 7 2) New York State water quality standards and thermal discharge criteria,
- 8 3) New York State new source standards,
- 9 4) New York State prohibited discharges, and
- 10 5) other New York State regulations and criteria otherwise applicable.

11 These standards mandate that the certifying agency require compliance with the
12 Department's water quality regulations set forth at 6 NYCRR Parts 701, 702, 703, 704 and
13 applicable provisions of Part 750.

14 **Q. Does the Project, as proposed, meet its statutory and regulatory burden under**
15 **ECL Article 24, ECL Article 15 and Parts 663 and 608?**

16 A. No, as described above the project does not meet the standards for permit issuance
17 in 6 NYCRR Part 663.5(e) (Freshwater Wetlands Standard for Permit Issuance) or in 6
18 NYCRR Part 608.8 (Protection of Waters Standards).

19 **Q. Does the Project, as proposed, meet the water quality standards, as referenced**
20 **previously in your testimony?**

Case No. 15-F-0122

JONES

1 A. No, reasons described above the Project does not Article 15 Part 608. *See* 6
 2 NYCRR § 608.9(a)(6). The Project if constructed in accordance with the proposed
 3 Certificate Conditions referenced below, does meet the requirements of ECL Article 24, 6
 4 NYCRR § 663.

5 **PROPOSED CERTIFICATE CONDITIONS**

6 **Q. What would your recommended Proposed Certificate Conditions include with**
 7 **respect to state regulated freshwater wetlands, protected waterbodies and water**
 8 **quality standards?**

9 A. Based on the foregoing, to ensure compliance with the applicable State statutory
 10 and regulatory standards I previously described in my testimony, and subject to Applicant
 11 avoiding potential and foreseeable unanticipated impacts to State-regulated streams and
 12 wetlands and wetland adjacent areas to the maximum extent practicable, I recommend the
 13 following proposed Certificate Conditions related to State-regulated freshwater wetlands
 14 and streams and State water quality standards be included in any Article 10 Certificate
 15 ultimately issued by the Siting Board:

16 **Plans and Reports**

- 17 • The following plans and reports shall be submitted as a Compliance Filing after
 18 consultation, and approved by, NYSDEC and NYSDPS;
 - 19 ○ A final Invasive Species Control Plan (ISCP) that includes the
 20 following:
 - 21 ▪ An updated preconstruction survey;

Case No. 15-F-0122

JONES

- 1 ▪ Specific methods the Certificate Holder proposes to use to
2 ensure that imported fill and fill leaving the site will be free of non-
3 native invasive plant and insect species or material to the extent
4 practicable;
- 5 ▪ A specification that fill material brought to the facility site
6 for use in will be free of non-native invasive plant and insect
7 species;
- 8 ▪ Specific methods the Certificate Holder proposes to use to
9 prevent the introduction, proliferation and spread on non-native
10 invasive plant and insect species associated with site grading, and
11 overall construction activities;
- 12 ▪ Details of procedures for preventing the spread of invasive
13 insects and diseases, such as the emerald ash borer and oak wilt,
14 and a discussion of how the Applicant will comply with the state
15 quarantine and protective zones, where applicable;
- 16 ▪ Implementation plans for ensuring that equipment and
17 personnel arrive at and depart from the Facility Site clean and free
18 of non-native invasive plant and insect species, including
19 description of options for cleaning equipment, personnel, and
20 proper disposal of materials known to be infested;

Case No. 15-F-0122

JONES

- 1 ▪ A detailed description of the Best Management Practices or
2 procedures that will be implemented, and the education measures
3 that will be used to educate workers;
- 4 ▪ a post-construction monitoring program (MP) to be
5 conducted in year 1, year 3, and year 5 following completion of
6 construction and restoration with reports submitted to NYSDEC and
7 NYSDPS following each year of monitoring. The MP shall collect
8 information to facilitate evaluation of ISCP effectiveness. At the
9 conclusion of the MP, a final report shall be submitted to DPS Staff,
10 DEC, and DAM, and filed with the Secretary, that assesses how well
11 the goal of no net increase of invasive species compared to the
12 Invasive Plant Species Survey Baseline Report (Baseline Species
13 Report) is achieved.
- 14 ▪ If, after five years, post-construction, all invasive species
15 control requirements have not been achieved, the Certificate Holder
16 must evaluate the likely reasons for these results and submit an
17 “Invasive Species Remedial Plan” to the Secretary for approval. The
18 “Invasive Species Remedial Plan” must describe the likely reasons
19 for not achieving NYSDEC requirements, describe the actions
20 necessary to correct the situation, and the schedule for conducting

1 the remedial work. Once approved, the “Invasive Species Remedial
2 Plan” will be implemented according to the approved schedule.

3 • A final NYSDEC-approved Storm Water Pollution Prevention Plan
4 (SWPPP) shall be prepared as part of the State Pollutant Discharge Elimination
5 System General Permit for Construction Activities and in accordance with the 2016
6 New York State Standards and Specifications for Erosion and Sediment Control
7 (Blue Book).

8 • A final Spill Prevention, Containment and Counter Measures (SPCC) Plan
9 to minimize the potential for unintended releases of petroleum and other hazardous
10 chemicals during Facility construction and operation shall be filed in the
11 Compliance Filing. The SPCC Plan must be consistent with NYSDEC Spill
12 Reporting and Initial Notification Requirements Technical Field Guidance. The
13 SPCC Plan shall be applied to all relevant construction activities and contain
14 information about water bodies, procedures for loading and unloading of oil,
15 discharge or drainage controls, procedures in the event of discharge discovery, a
16 discharge response procedure, a list of spill response equipment to be maintained
17 on-site (including a fire extinguisher, shovel, tank patch kit, and oil-absorbent
18 materials), methods of disposal of contaminated materials in the event of a
19 discharge, and spill reporting information. Any spills shall be reported in
20 accordance with State and/or federal regulations.

- 1 • A “Stream Crossing Plan (Bridges & Culverts)” must include detailed site-
2 specific plans that describe and illustrate the layout and alignment of each crossing,
3 and the proposed crossing method. At a minimum, the plan must include:
- 4 ○ the alignment of roads, bridges, and culverts;
 - 5 ○ construction details including elevation details for culverts and the
6 adjoining streambed;
 - 7 ○ drainage area and flow calculations for the crossing location.
 - 8 ○ the location, quantity, and type of any fill associated with construction;
 - 9 ○ the location and installation details of any dewatering measures; and
 - 10 ○ a description of the dry crossing methods that will be used to install the
11 crossing
- 12 • The Certificate Holder must submit a “Stream Crossing Plan (Cables)” that
13 includes the following a site specific plan for each cable crossing of a stream and
14 addresses the following;
- 15 ○ Site-Specific Constructability Assessment. The Site-Specific
16 Constructability Assessment shall be conducted by an experienced and
17 qualified, professional engineer licensed in New York State and shall
18 include a detailed analysis of the site-specific conditions that lead to the
19 conclusion that all trenchless crossing methods are not constructible or not
20 feasible at the particular stream crossing.

Case No. 15-F-0122

JONES

- 1 ○ Trench Stream Crossing Assessment. For all stream crossings
2 determined not to be crossed via a trenchless method, a site specific trench
3 crossing assessment must be conducted. The assessment should address the
4 following;
- 5 ▪ the alignment of the cable crossings;
 - 6 ▪ the location and installation details of any dewatering
7 measures; and
 - 8 ▪ a description of the dry crossing methods that will be used to
9 install the crossing
- 10 ○ For all trench crossings a site-specific Vertical Adjustment Potential
11 (VAP) analysis and Lateral Adjustment Potential (LAP) for each stream
12 crossing not located in bedrock to determine that the separation between the
13 top of the buried interconnect and the stream bed is sufficient to prevent
14 exposure of the line from stream erosion both vertically and horizontally.
15 The “Exposure of Cable by Stream Report” shall be conducted and certified
16 by a qualified engineer licensed to work in New York and must include all
17 calculations associated with the VAP and LAP analysis as well as a
18 definitive statement by the engineer that the separation will prevent
19 exposure of the line at each stream crossing as a result of stream erosion.
20 Stream crossings may only be started after NYSDEC provides written
21 approval of the report.

- 1 • To the extent that wetland impacts cannot be avoided a Wetland Mitigation
2 Plan must be prepared, adhere to all state and federal requirements and include the
3 following;
- 4 ○ The creation of compensatory wetlands at a ratio that is consistent
5 with state and federal regulations;
- 6 ○ Performance standards for determining wetland mitigation
7 success;
- 8 ○ Specifications for post construction monitoring for at least 5 years
9 after completion of the wetland mitigation;
- 10 ○ After each monitoring period the Certificate Holder shall take
11 corrective action for any areas that do not meet the above referenced
12 performance standards to increase the likelihood of meeting the
13 performance standards after 5 years;
- 14 ○ If, after 5 years, monitoring demonstrates that the wetland
15 mitigation is still not meeting the established performance standards the
16 Certificate Holder must submit a “Wetland Mitigation Remedial Plan”. The
17 remedial plan must evaluate the likely reasons for not achieving
18 performance standards, describe the actions necessary to correct the
19 situation to ensure a successful mitigation, and the schedule for conducting
20 the remedial work. Once approved, the “Wetland Mitigation Remedial
21 Plan” will be implemented according to an approved schedule.

Case No. 15-F-0122

JONES

1 • A Wetland Crossing Plan (Cables) shall be submitted and include the
2 following information;

3 ○ Site Constructability Plan. The Site-Specific Constructability
4 Assessment shall be conducted by an experienced and qualified,
5 professional engineer licensed in New York State and shall include a
6 detailed analysis of the site-specific conditions that lead to the conclusion
7 that all trenchless crossing methods are not constructible or not feasible at
8 the particular wetland crossing.

9 ○ Trench Wetland Crossing Assessment. For all wetland crossings
10 determined not to be crossed via a trenchless method, a site specific trench
11 crossing assessment must be conducted. The assessment should address the
12 following;

- 13 ▪ Specific plans and alignment for each wetland crossing;
14 ▪ Construction measures that meet the standards set forth in
15 this certificate.

16 **Notifications**

17 • The Certificate Holder shall notify the NYSDEC Region 8 Regional Supervisor of
18 Natural Resources via e-mail one week prior to the start of (i) ground disturbance in
19 each state-regulated wetland or adjacent area, or (ii) any clearing within 100 feet of
20 streams and/or installation of temporary or permanent stream crossing for access or
21 travel routes.

1 **Water Quality Standards**

- 2 • All necessary precautions shall be taken to preclude contamination of any wetland
3 or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy
4 coatings, paints, concrete, leachate or any other environmentally deleterious materials
5 associated with the Project.
- 6 • Turbid water resulting from dewatering operations, including water that has
7 infiltrated the construction site, shall not be discharged directly to or allowed to enter
8 any wetland, stream or water body within the Project area. Visibly turbid discharges
9 from blasting, land clearing, grading, excavation, dewatering or dredging operations
10 and from construction activities, including water that has infiltrated the construction
11 site or shall not enter any wetland or surface waterbody, including those downstream
12 or outside the construction zone.
- 13 • Waste concrete or concrete from truck clean out activity and/or any wash water
14 from trucks, equipment or tools if done on site, must be contained in a manner that will
15 prevent it from escaping into the streambank or into the stream channel and entering
16 the stream, or entering wetland, or any other waterbody. If a discharge occurs,
17 NYSDEC Region 8 Supervisor of Natural Resources and NYSDEC Region 8 Regional
18 Water Engineer shall be contacted within 2 hours of the event. Disposal of waste
19 concrete or wash water must occur greater than 100 feet from any wetland or
20 waterbody.

- 1 • Equipment operation in the water is prohibited. With heavy equipment, the bucket
2 may enter the water as long as water clarity is not impacted.

3 **Spills**

- 4 • All equipment and machinery, excluding dewatering pump, shall be stored
5 and safely contained greater than 100 feet landward of the regulated wetland or
6 water body at the end of each work day. This will serve to avoid the inadvertent
7 leakage of deleterious substances into the regulated area. Dewatering pumps
8 operated closer than 100 feet from the wetland or waterbody must be on an
9 impervious surface and absorbents capable of containing any leakage of petroleum
10 products.
- 11 • Fuel or other chemical storage tanks shall be contained and located at all
12 times in an area greater than 300 feet landward of the regulated wetland. If the
13 above requirement cannot be met by the Certificate Holder, then the storage areas
14 must be designed to completely contain any and all potential leakage. Such a
15 containment system must be approved by NYSDEC staff in writing prior to
16 installation of the storage tank.
- 17 • All equipment used within bed or banks of streams or in regulated wetlands
18 and 100-foot adjacent areas must be inspected daily for leaks of petroleum, other
19 fluids, or contaminants; equipment may only enter a stream channel if found to be
20 free of any leakage. A spill kit must be available at the immediate work site and

1 any equipment observed to be leaking must be removed from the work site, and
2 leaks must be contained, stopped and cleaned up immediately.

3 **Waste and Debris**

- 4 • All fill material shall consist of clean soil, sand and/or gravel that is free of
5 the following substances: asphalt, slag, fly ash, broken concrete, demolition debris,
6 garbage, household refuse, tires, woody materials including tree or landscape
7 debris, metal objects, and all invasive species. The introduction of materials toxic
8 to aquatic life is expressly prohibited.
- 9 • Any construction debris (e.g., building materials, excess sediment, refuse
10 from the work site) from the Project shall be completely removed prior to
11 completion of restoration of state-regulated freshwater wetland and adjacent areas,
12 as applicable, and disposed of at a permitted waste disposal facility authorized to
13 receive such material. No debris shall remain in state-regulated freshwater wetlands
14 or adjacent areas, or mapped floodplains.
- 15 • Cleared vegetation and slash from wetland and adjacent areas will not be
16 burned or buried within the wetland or adjacent area. The vegetation must be
17 disposed of outside of the wetland and adjacent area, but slash that is cut may be
18 left in place (drop and lop or piled in dry or seasonally saturated portions of state-
19 regulated wetlands and adjacent areas to create wildlife brush piles).

20 **Pre-construction Requirements**

- 1 • Markers used to delineate/define the boundary of regulated freshwater
2 wetlands, their associated adjacent areas, as well as streams, and the demarcated
3 limits of disturbance for the project shall be left in place and remain undisturbed
4 until completion of construction activities and restoration of the impacted area.
- 5 • Legible “protected area” signs, exclusionary fencing, and erosion controls
6 pursuant to the approved Storm Water Pollution Prevention Plan (SWPPP) shall be
7 installed along the approved work area to protect and clearly identify the boundaries
8 of non-work areas associated with wetlands, waterbodies, and wetland/waterbody
9 setbacks (e.g., Additional Temporary Work Space setbacks, refueling restrictions,
10 etc.). This shall be done prior to any disturbance or vehicular traffic through such
11 areas. Signs, fencing, and silt fence must be removed following completion of the
12 project and after all disturbed areas are appropriately stabilized and planted as
13 described in the SWPPP and in certificate conditions.

14 **Wetlands**

15 **Wetland Construction Requirements**

- 16 • All construction activities completed within state-regulated wetlands shall adhere
17 to the following requirements;
- 18 ○ Excavation, Installation, and backfilling must be done in one continuous
19 operation.
- 20 ○ Work should be conducted during dry conditions without standing water or
21 when the ground is frozen, where practicable.

Case No. 15-F-0122

JONES

- 1 ○ In areas containing amphibian breeding areas, work in wetlands or adjacent
2 areas should not occur during the peak amphibian breeding season (April 1 to
3 June 15).
- 4 ○ Before trenching occurs, upland sections of the trench shall be backfilled or
5 plugged to prevent drainage of possible turbid trench water from entering the
6 stream or wetland;
- 7 ○ Trench breakers/plugs shall be used at the edges of wetlands as needed to
8 prevent wetland draining during construction;
- 9 ○ If there is an inadvertent puncturing of a hydrologic control for a wetland,
10 then the puncture shall be immediately sealed, and no further activity shall take
11 place until NYSDPS and NYSDEC staff are notified and a remediation plan to
12 restore the wetland and prevent future dewatering of the wetland has been
13 approved by the agency staffs;
- 14 ○ Only the excavated wetland topsoil and subsoil shall be utilized as backfill;
- 15 ○ In wetland areas, the topsoil shall be removed and stored separate from
16 subsoil. The top 12 inches of wetland top soil shall be removed first and
17 temporarily placed onto a geo-textile blanket running parallel to the trench, if
18 necessary.
- 19 ○ Wide-track or amphibious excavators shall be used for wetland
20 installations.

- 1 ○ Subsoil dug from the trench shall be sidecast on the opposite side of the
- 2 trench on another geo-textile blanket running parallel to the trench, if
- 3 necessary.
- 4 ○ The length of the trench to be opened shall not exceed the length that can
- 5 be completed in one day. This length of trench generally should not exceed
- 6 1,500 feet in a wetland.
- 7 ○ Trench shall be backfilled with the wetland subsoil and the wetland top soil
- 8 shall be placed back on top. All excess materials shall be completely removed
- 9 to upland areas more than 100 feet from the wetland and suitably stabilized.
- 10 ○ When backfilling occurs, the subsoil shall be replaced as needed, and then
- 11 covered with the top soil, such that the restored top soil is the same depth as
- 12 prior to disturbance.

13 **Wetland Construction Access**

- 14 • Construction access within state-regulated wetlands shall adhere to the following;
- 15 ○ Swamp mats must be used in any regulated freshwater wetlands for
- 16 construction activities;
- 17 ○ Where any temporary or permanent access roads are to be constructed
- 18 through wetlands, a layer of geotextile fabric shall be placed across the wetland
- 19 after removal of vegetation and before any backfilling occurs. The final road
- 20 surface shall be covered with a minimum 1-inch depth of gravel in the area of
- 21 the wetland crossing.

1 ○ Prior to installation in state-regulated wetlands and adjacent areas, as
2 applicable, swamp mats must be cleaned of invasive species following
3 protocols described in the final “Invasive Species Monitoring and Control
4 Plan”;

5 ○ Swamp mat removal must be conducted from adjacent mats (i.e., removal
6 equipment always stationed on a mat) as soon as practicable, but no later than
7 four months following installation of the overhead line. The Environmental
8 Monitor shall provide notification to the NYSDEC Region 8 Natural Resources
9 Supervisor and the NYSDEC Chief of the Major Project Management, Division
10 of Environmental Permits, 625 Broadway, Albany, NY when compliance with
11 this condition has been achieved.

12 Wetland Restoration

13 ○ Restored to pre-construction contours within 48 hours of final
14 backfilling of the trench within the wetland and state-regulated adjacent
15 area boundary. Immediately upon completion of grading, the area shall be
16 replanted with native shrubs and herbs at densities as existed prior to
17 construction. Seeding with an appropriate native wetland species mix such
18 as an Ernst Wetland Mix (OBL-FACW Perennial Wetland Mix, OBL
19 Wetland Mix, Specialized Wetland Mix for Shaded OBL-FACW, or
20 equivalent) shall be completed to help stabilize the soils. Replanted areas
21 shall be monitored for 5 years and an 85% cover of native species has been

Case No. 15-F-0122

JONES

1 reestablished over all portions of the replanted area. At the end of the first
2 year of monitoring, the certificate holder shall replace lost wetland and/or
3 wetland adjacent area plantings if the survival rate of the initial plantings is
4 less than 80%. If at the end of the second year of monitoring, the criteria for
5 restoration plantings (85% cover, 80% survival of plantings) are not met,
6 then the certificate holder must evaluate the reasons for these results and
7 submit an approvable "Wetland Planting Remedial Plan" for NYSDEC
8 approval. The "Wetland Planting Remedial Plan" must describe the reasons
9 for poor survival, describe the actions necessary to correct the situation to
10 ensure a successful restoration, and the schedule for conducting the
11 remedial work. Once approved, the "Wetland Planting Remedial Plan" will
12 be implemented according to the approved schedule. Performance
13 requirements contained in the approved "Invasive Species Monitoring and
14 Control Plan" must also be achieved.

15 ○ These replanted areas shall also be monitored for invasive species
16 to ensure there is zero percent net increase in areal coverage of invasive
17 species compared with pre-construction conditions. If at any time during the
18 monitoring the invasive species criteria above are not met, the certificate
19 holder shall take immediate action to ensure control of the invasive
20 species. Such actions shall be part of an invasive species control plan
21 approved by the NYSDEC.

- 1 ○ Disturbed areas will be monitored for 5 years following installation
 2 to assure an 85% cover of native species, unless the invasive species
 3 baseline survey indicates a smaller percentage of native species exists prior
 4 to construction. If after one complete growing season the pre-construction
 5 percentage of native species is not achieved, the Certificate Holder must,
 6 consult with NYSDEC and evaluate the reasons for these results, obtain
 7 NYSDEC approval for remediation steps, and submit a “Wetland Planting
 8 Remedial Plan” to the Secretary for review and approval. The “Wetland
 9 Planting Remedial Plan” must describe the reasons for the achieved level of
 10 survival, describe the actions necessary to correct the situation to ensure a
 11 successful restoration, and the schedule for conducting the remedial work.
 12 Once approved, the “Wetland Planting Remedial Plan” will be implemented
 13 according to the approved schedule.
- 14 • This certificate does not authorize any permanent alteration of wetland
 15 hydrology.

16 **Streams**

17 **One time and temporary crossings**

- 18 • If a one-time crossing of a stream occurs as part of an installation of a temporary
 19 bridge and a tire mat is used, the following restrictions apply;
- 20 ○ The mat must follow the contour of the streambed and allow for a low flow
 21 channel and not change the flow path of the stream thalweg.

Case No. 15-F-0122

JONES

- 1 ○ The mat shall be removed immediately after the crossing of the stream
2 occurs.
- 3 • Certificate holder shall utilize free span temporary equipment bridges to cross all
4 streams with flow at the time of the proposed crossing with a classification of A, AA,
5 A-S, B or C, with or without a standard of (T) or (TS). Temporary stream crossings
6 are not authorized at waterbodies utilizing trenchless pipeline installation
7 techniques. All structures must be placed at bankfull elevation or higher and be able
8 to pass no less than a Q5 flow interval and be capable of withstanding any higher flow
9 intervals likely to be experienced within a specific waterbody without causing damage
10 to the stream bed or banks. Bridges may not be dragged through the stream and must
11 be suitably anchored to prevent downstream transport during a flood. Fill may not be
12 placed within the stream channel below bankfull elevation and placement of abutments
13 or fill is authorized only above and outside bankfull boundaries. Geotextile fabric must
14 be placed below and extending onto the bank and suitable side rails built into the
15 bridges to prevent sediment from entering the waterbody. Bridges with a total length
16 of 20' or less must be installed only from one side of the stream. Bridges greater than
17 20' long may be installed with equipment from both sides of the stream. Under such
18 scenarios, only one piece of equipment may cross the stream one time only via a ford
19 located directly over the centerline of the installed pipeline path. Center supports may
20 be used on bridges 30' or greater and placed no closer than 15' to one another and may
21 use solid materials or a single round culvert.

1

2 **Stream Stabilization & Restoration**

3 • In-stream work not associated with either Stream Crossing Plan (Bridges &
4 Culverts) or Stream Crossing Plan (Cables) shall only occur in the dry. Trenchless
5 methods or dewatering measures (e.g., dam and pump or flume) must be used. If
6 approved measures fail to divert all flow around the work area, in-stream work must
7 immediately stop until dewatering measures are in place and properly functioning
8 again.

9 • The restored stream channel shall be equal in width, depth, gradient, length and
10 character as the pre-existing stream channel and tie in smoothly to profile of the stream
11 channel upstream and downstream of the project area. The planform of any stream
12 shall not be changed.

13 • Any instream work or restoration authorized by this certificate, including the
14 installation of structures and bed materials, shall not result in an impediment to passage
15 of native aquatic organisms, including fish. Any in-stream work (excluding dewatering
16 practices associated with dry trench crossings) and restoration shall be constructed in a
17 manner which maintains low flow conditions and preserves water depths and velocities
18 similar to undisturbed upstream and downstream reaches necessary to sustain the
19 movement of native aquatic organisms. Any in-stream structures placed in a stream
20 must not create a drop height greater than 6”.

- 1 • All disturbed stream banks below the normal high water elevation must be graded
2 no steeper than 1 vertical to 2 horizontal slope, or to the original grade as appropriate,
3 and adequately stabilized. All other areas of soil disturbance above the ordinary high
4 water elevation, or elsewhere, shall be stabilized with natural fiber matting, seeded with
5 an appropriate perennial native conservation seed mix, and mulched with straw within
6 two (2) days of final grading. Mulch shall be maintained until suitable vegetation cover
7 is established. Destroyed bank vegetation shall be replaced with shrub willow or silky
8 dogwood planting, native trees, or other suitable species.

9 **Vegetation Management in Stream Corridors**

- 10 • If any trees and shrubs growing within 50 feet of streams need to be cut in the
11 process of constructing overhead power line crossings, they shall be cut off with at least
12 two feet of the stump remaining. Stumps and root systems shall not be damaged to
13 facilitate stump sprouting. Trees shall not be felled into any stream or onto the
14 immediate stream bank. All trees and shrubs cut within the 50-foot buffer area shall be
15 left on the ground.
- 16 • Clearing of natural vegetation shall be limited to that material which poses a hazard
17 or hindrance to the construction activity. Snags which provide shelter in streams for
18 fish shall not be disturbed unless they cause serious obstructions, scouring or erosion.
19 Trees shall not be felled into any stream or onto the immediate stream bank.
- 20 • To reduce thermal impacts to exposed streams, native woody plants such as shrub
21 willows, dogwoods, appropriate native trees, or other native riparian species will be

1 planted at all stream crossings, which have less than 50% cover due to construction
2 impact of any such vegetation and is to be restored following a temporary impact, to
3 shade the project area. Planting may be done at top of bank and/or among rocks along
4 toe of slope.

5 **Stream Construction Requirements (Trenching)**

- 6 • All instream work requiring trenching (see Site Specific Constructability
7 Assessment) will comply with the following;
- 8 ○ all stream crossings shall be done in the dry.
 - 9 ○ Trenches shall be opened for the installation and backfilled in one
10 continuous operation.
 - 11 ○ Before trenching through stream banks occurs, upland sections of the trench
12 shall be backfilled or plugged to prevent drainage of possible turbid trench
13 water from entering the stream.
 - 14 ○ Intermittent and ephemeral streams must be crossed during times of no
15 flow, while perennial streams must be crossed using a temporary water control
16 device such as a dam and pump or cofferdam to isolate the work area and
17 redirect the water around the work site.

18 **Stream Construction - Water Control Devices**

- 19 • All Temporary water control devices/cofferdams must adhere to the following:
- 20 ○ Any temporary cofferdam shall be constructed of clean materials such as
21 sheet piling, jersey barriers, inflatable dams, or sandbags that will not contribute

Case No. 15-F-0122

JONES

- 1 to turbidity or siltation of the waterbody or wetland, and non- erodible
2 materials, so that failure will not occur at Q2 or higher flow conditions. Where
3 practicable, an upstream or interior membrane shall be installed to control
4 percolation and erosion. Sandbags shall be of the filter fabric type, double
5 bagged and individually tied to prevent sand leakage and only clean sand (e.g.
6 free of debris, silt, fine particles or other foreign substance) shall be used as fill.
7 They shall be placed and removed manually to prevent spillage. Straw bale
8 sediment control basins are prohibited;
- 9 ○ Fill materials must not come from the waterbody or wetland;
 - 10 ○ The water control structure/cofferdam shall not impair downstream water
11 flow in the waterbody or water flow into and/or out of a wetland;
 - 12 ○ If exposed for an extended period of time, excavated or temporarily
13 stockpiled soils or other materials should be covered and protected to reduce
14 runoff of fines which may cause a turbidity problem and to prevent rainwater
15 from soaking the materials and rendering them unsuitable for backfill;
 - 16 ○ The work area shall remain isolated from the rest of the stream or wetland
17 until all work in the streambed or bank, or wetland is completed, concrete is
18 thoroughly set and the water clarity in the coffered area matches that of the open
19 water;

Case No. 15-F-0122

JONES

- 1 ○ If a dam and pump diversion is used as part of a dry open-cut crossing, the
- 2 pump and diversion must be monitored continuously from time of installation
- 3 until crossing is completed, streambed restored, and diversion is removed;
- 4 ○ Dewatered sections of stream cannot exceed 50 linear feet (measured from
- 5 the inside edges of the cofferdams) for each stream crossing unless the
- 6 Certificate Holder has prior written approval from the NYSDEC Region 8
- 7 Supervisor of Natural Resources, which approval shall not be unreasonably
- 8 delayed, conditioned or withheld and shall be subject to the terms of the dispute
- 9 resolution procedures contained in this Certificate;
- 10 ○ All temporary water control structures shall be removed in their entirety
- 11 upon completion;
- 12 ○ All fish trapped within the cofferdam shall be netted and returned, alive and
- 13 unharmd, to the water outside the confines of the cofferdam, in the same
- 14 stream, before the dewatering process;
- 15 ○ Dewatering within the coffer(s) shall be performed so as to minimize
- 16 siltation and turbidity. Water taken from the coffered area will be passed
- 17 through settling basins, filter bag, or well-vegetated upland areas more than 100
- 18 feet from the stream bank to prevent the discharge of turbid water into any
- 19 wetland, stream or river. The pump discharge must be directed against a solid
- 20 object (concrete slab, stone or steel container), or other effective method to
- 21 prevent erosion by dissipating energy;

Stream Construction – Trenchless Crossings

- All trenchless crossings must adhere to the following;
 - Erosion and sediment control will be used at the point of horizontal directional drilling, so that drilling fluid shall not escape the drill site and enter streams or wetlands. The disturbed area will be restored to original grade and reseeded upon completion of directional drilling;
 - Drilling fluid circulation for horizontal directional drilling installations shall be maintained to the extent practical. If inadvertent surface returns occur in upland areas, the fluids shall be immediately contained and collected. If the amount is not enough to allow practical collection, the affected area will be diluted with freshwater and allowed to dry and dissipate naturally. If the amount of surface return exceeds that which can be collected using small pumps, drilling operations shall be suspended until surface volumes can be brought under control.
 - A Frac-Out Risk Assessment and Contingency Plan shall be prepared that addresses the inadvertent drilling fluids surface returns in any environmentally sensitive area (i.e. wetlands and water bodies). In the event this does occur the returns shall be monitored and documented as described in the Frac-Out Risk Assessment and Contingency Plan. Drilling operations must be suspended if the surface returns pose a threat to the resource or to public health and safety. Removal of released fluids from environmentally sensitive areas will take place

1 only if the removal does not cause additional adverse impacts to the resource.

2 If inadvertent drilling fluids surface returns occur in an environmentally

3 sensitive area the NYSDEC Region 8 Supervisor of Natural Resources shall be

4 notified immediately and a monitoring report summarizing the location of

5 surface returns, estimated quantity of fluid and summary of cleanup efforts shall

6 be submitted within 48 hours of the occurrence; and

7 ○ While conducting horizontal directional drilling operations under wetlands,

8 100-foot adjacent areas, and streams, the Certificate Holder will maintain close

9 monitoring for possible “frac-outs” that would result in the release of drilling

10 fluids to sensitive areas as described in the Frac-Out Risk Assessment and

11 Contingency Plan. The Certificate Holder will maintain a horizontal directional

12 drilling spill response plan and the necessary response equipment will be kept

13 on-site for the duration of the drilling. All releases of drilling fluids to sensitive

14 areas (e.g., wetlands, state-regulated 100-foot adjacent areas, waterbodies) shall

15 be reported to the NYSDEC Region 8 Supervisor of Natural Resources and DPS

16 Staff within 2 hours or as soon as practicable considering internet and cell phone

17 coverage in the area.

18 **Stream Construction – Work Windows**

- 19 • Construction in streams protected under Environmental Conservation Law Article
- 20 15 shall comply with work period restrictions established in consultations with
- 21 NYSDEC that are protective of fish spawning and migration. In protected streams with

1 the standard of supporting trout species, all instream work, as well as any work that
 2 may result in the suspension of sediment, is prohibited during the trout spawning and
 3 incubation period commencing October 1 and ending May 31, unless the Certificate
 4 Holder receives prior approval from the NYSDEC Region 8 Supervisor of Natural
 5 Resources, which approval shall not be unreasonably delayed, conditioned or withheld,
 6 shall be subject to the dispute resolution procedures contained herein and shall be
 7 finally approved through the Compliance Filing Process.

8 • Dates for the seasonal work period restrictions on in-stream work during Facility
 9 construction, shall be included in the plans filed in the Compliance Filing and noted on
 10 final construction detail drawings.

11 • Except where crossed by permitted access roads or through use of temporary
 12 matting, streams shall be designated “No Equipment Access” or similar on the final
 13 Facility construction drawings and ROW clearing plans, and marked in the field. The
 14 use of motorized equipment shall be prohibited in these areas.

15 **Stream Construction – Culvert Installation Requirements**

16 • Where permanent crossings are required (See Stream Crossing Plan (Bridges &
 17 Culverts)) bridges should be utilized where practicable. If culverts are used they should
 18 be designed as follows;

- 19 ○ To safely pass the 2% annual chance storm event;
- 20 ○ Embedded beneath the existing grade of the stream channel;

Case No. 15-F-0122

JONES

- 1 ○ Width of the structure must be a minimum of 1.25 times (1.25X)
2 width of the mean high water channel; and
3 ○ The slope shall remain consistent with the slope of the adjacent
4 stream channel. For slopes greater than 3%, an open bottom culvert must
5 be used.

6 **Q. Do you hold your opinions to a reasonable degree of scientific certainty?**

7 A. Yes, I do.

8 **Q. Does this conclude your direct testimony on these topics at this time?**

9 A. Yes, it does.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 BY MR. KING: (Cont'g.)

3 Q. Mr. Jones, do you have any
4 changes to the testimony?

5 A. (Jones) No.

6 Q. Okay. Mr. Jones, I'm giving you
7 a document here, labeled Interrogatory Document
8 Request, Applicant 4, directed to New York State,
9 Department of Environmental Conservation from
10 Applicant, Ben Brazell.

11 Are you familiar with this document?

12 A. Yes.

13 MR. KING: Your Honors, I'd like to
14 move to enter into evidence, the I.R. 4 response.

15 A.L.J. COSTELLO: Okay. Could you
16 provide copies, too?

17 MR. KING: Yes.

18 MR. MUSCATO: We --

19 A.L.J. COSTELLO: Okay.

20 MR. MUSCATO: -- we don't need copies.

21 I would just like --

22 A.L.J. COSTELLO: You have --?

23 MR. MUSCATO: -- to see what he --

24 A.L.J. COSTELLO: Okay.

25 MR. MUSCATO: -- what it is he's

1 15-F-0122 Baron Winds LLC 3/21/2019

2 providing the witness.

3 MR. KING: All right.

4 A.L.J. COSTELLO: Thank you.

5 MS. BEHNKE: Thank you.

6 MR. MUSCATO: Thanks, Tom.

7 MR. KING: Anyone else?

8 MR. MUSCATO: So, that's going to be
9 Hearing Exhibit -- hold on.

10 (Off the record discussion)

11 A.L.J. COSTELLO: I'm going to mark
12 this, Mr. King, as Hearing Exhibit 280.

13 MR. KING: 280.

14 BY MR. KING: (Cont'g.)

15 Q. All right. All right. Mr.
16 Jones, I'm handing you another document, which is a
17 memo, from W. Scott Jones, myself, to the file,
18 regarding a March 14th, 2019 field visit, regarding
19 the Baron Winds, L.L.C., Article 10, case number 15-
20 F-0122, with regards to the T-76 to T-87 access
21 route, along Kenfield Road and the associated stream,
22 water-index number P.A. 3 dash 57 dash 5 dash 49 dash
23 9 dash 2, dated March 15th.

24 Are you familiar with this document?

25 A. (Jones) Yes.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 MR. KING: Your Honors, I'd like to
3 move to enter this into --

4 A.L.J. COSTELLO: Okay.

5 MR. KING: -- the record --

6 A.L.J. COSTELLO: Okay. Could you
7 also provide us with --

8 MR. KING: -- as Exhibit --.

9 A.L.J. COSTELLO: -- copies and --?

10 MR. KING: Sure.

11 A.L.J. COSTELLO: Okay. Thank you.

12 MR. MUSCATO: This one.

13 Thank you.

14 Actually, can we have multiple copy --
15 thank you.

16 MR. KING: An extra one?

17 MR. MUSCATO: Just two.

18 MS. BEHNKE: That's fine.

19 MR. MUSCATO: Thank you.

20 A.L.J. COSTELLO: Just let everybody
21 have an opportunity to look at that and if there are
22 any objections --

23 MR. MUSCATO: Your --

24 A.L.J. COSTELLO: -- please raise
25 them.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 MR. MUSCATO: -- your -- your Honor, I
3 -- I -- we'd object.

4 We have not had an opportunity to
5 review this. Our -- our consultants haven't had an
6 opportunity to review any of the statements in this
7 material, or -- or provide cross-examination
8 questions potentially to this witness, on this
9 exhibit.

10 It looks like this was prepared almost
11 a week ago. It could have been provided to us
12 earlier, but it was not.

13 So, we would -- we would object to
14 this document being introduced at this time, without
15 the opportunity to at least inspect the documents for
16 its veracity.

17 A.L.J. COSTELLO: How much time would
18 you need to --?

19 MR. MUSCATO: Well, your -- your
20 Honor, I mean, we would also want to prepare --
21 potentially prepare cross-examination questions, with
22 respect to this document. And so, just receiving
23 here for the first time today, you -- I, you know, I
24 -- I think we need to -- I need to consult with my
25 con -- witness and be able to prepare questions --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A.L.J. COSTELLO: Could --?

3 MR. MUSCATO: -- on the document --

4 A.L.J. COSTELLO: Okay.

5 MR. MUSCATO: -- potentially.

6 A.L.J. COSTELLO: What I -- what we're
7 going to do, again, we're -- we're not entering the
8 exhibits into evidence at this time. We're just
9 marking them for identification, so we'll mark this
10 for identification, as Exhibit 281.

11 We'll go ahead with the -- whatever
12 testimony and give you an opportunity to review this
13 and have an opportunity for cross.

14 MR. MUSCATO: That -- that's fine,
15 your Honor.

16 I -- I -- I would reserve our right
17 for further cross-examination, with respect to this
18 witness, on this document.

19 A.L.J. COSTELLO: Okay. That's
20 understood and that's -- that's acceptable.

21 MR. MUSCATO: This -- sorry.

22 This document being the document
23 introduced today, at the --

24 A.L.J. COSTELLO: As --

25 MR. MUSCATO: -- at the --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A.L.J. COSTELLO: -- Exhibit --

3 MR. MUSCATO: -- at the hearing.

4 A.L.J. COSTELLO: -- 281?

5 MR. MUSCATO: Correct.

6 A.L.J. COSTELLO: Okay. Mr. King?

7 MR. KING: Thank you.

8 And we'll open it up for cross-
9 examination.

10 MR. MUSCATO: Your --

11 A.L.J. COSTELLO: Well, then --

12 MR. MUSCATO: -- your Honor --

13 A.L.J. COSTELLO: -- Mr. --?

14 MR. MUSCATO: -- can I just have five
15 minutes then --

16 A.L.J. COSTELLO: Sure.

17 MR. MUSCATO: -- in light of this
18 document.

19 A.L.J. COSTELLO: Certainly.

20 MR. MUSCATO: Just --.

21 A.L.J. COSTELLO: Go off the record.

22 (Off the record discussion)

23 A.L.J. COSTELLO: Mr. King, you

24 indicated you wanted to respond to the objection to
25 the Exhibit --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 MR. KING: Yeah.

3 A.L.J. COSTELLO: -- 281?

4 MR. KING: This is a -- a report that
5 goes over some facts, that are included within Mr.
6 Jones' direct testimony, with regard to the -- the
7 stream at issue that, that is P.A. 3-57-5-49-9-2.
8 So, it's not a new issue, or anything that is
9 different, than what is contained within Mr. Jones'
10 direct pre-filed testimony.

11 It's additional backup material --

12 A.L.J. COSTELLO: Okay.

13 MR. KING: -- supporting that
14 determination.

15 A.L.J. COSTELLO: Okay. Thank you.

16 MR. KING: Thank you.

17 MR. MUSCATO: Your -- your Honor, just
18 -- with respect to that, we -- the schedule for this
19 case has been very clear.

20 This appears to us to be additional
21 direct testimony, as compared with any type of
22 rebuttal testimony. This is information that could
23 have been included in the direct testimony, the first
24 time the direct testimony was submitted.

25 So, the fact that this was late

1 15-F-0122 Baron Winds LLC 3/21/2019

2 submission, in and of itself, would be a basis to
3 reject to submission and -- and oppose the -- the --
4 it being added as -- or introduced as a hearing
5 exhibit, at this time.

6 A.L.J. COSTELLO: Okay. Again, what
7 we're -- what we're going to do, is -- is allow it to
8 be introduced.

9 Your arguments as to the introduction
10 into the record are reserved. We'll make them when
11 we -- we address the exhibits at the end of the
12 hearing.

13 MR. MUSCATO: Okay.

14 A.L.J. COSTELLO: And to the extent
15 that the exhibit is for whatever reason, not accepted
16 into the record. We could also strike any testimony
17 that's -- that's related to it.

18 MR. MUSCATO: Okay.

19 A.L.J. COSTELLO: Okay.

20 MR. KING: And I would just add that -
21 - your Honors, that this is equivalent to any other
22 exhibit in this entire hearing. It's a base -- it's
23 a basis of support for assertions that are within the
24 pre-filed testimony.

25 A.L.J. COSTELLO: Okay. Yeah.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 What we're doing right now, is --

3 MR. KING: Okay.

4 A.L.J. COSTELLO: -- we're going to go
5 forward.

6 What we're -- we're marking the
7 exhibits for identification. None of the exhibits
8 are going in -- none of the hearing exhibits are
9 going into evidence, at this point in time. So,
10 arguments as to their admission will be entertained,
11 at -- towards the end of the hearing, after all
12 witnesses have gone and you can -- you can make your
13 arguments as to the admission of the exhibit, at that
14 time.

15 MR. KING: Thank you.

16 MR. MUSCATO: Sure.

17 A.L.J. COSTELLO: And before we go to
18 the cross-examination, I do want to raise something.

19 We had an off-record conversation
20 earlier, with Dr. Sokolow, who had indicated she had
21 wanted cross-examination of D.E.C.'s witness, with
22 respect to certificate conditions.

23 I don't know if you want to put that
24 on the record. I just wanted to give you the
25 opportunity.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 MS. SOKOLOW: Yes.

3 I -- I would like to put it up on the
4 record because I really was confused because we were
5 going in to confidential information and mine were
6 not confidential information, so I do not know the
7 sequence was changed and since it came the next day
8 and -- I would have liked to have cross-examined
9 Charles Redling (phonetic spelling).

10 A.L.J. COSTELLO: Okay. And as I
11 indicated -- we --

12 MS. SOKOLOW: I know.

13 A.L.J. COSTELLO: -- specifically
14 indicated on the record, that we were addressing
15 certificate conditions, D.P.S. specifically went in
16 detail on certificate conditions. I asked you if you
17 had any cross-examination at that time.

18 MS. SOKOLOW: Uh-huh.

19 A.L.J. COSTELLO: You indicated that
20 you did not.

21 So, what we --

22 MS. SOKOLOW: Yeah.

23 A.L.J. COSTELLO: -- stated off the
24 record and which I'm going to repeat, is that we are
25 not going to recall Mr. Read -- Redling for testimony

1 15-F-0122 Baron Winds LLC 3/21/2019

2 on the certificate conditions. Okay.

3 MS. SOKOLOW: Your Honor, do I have
4 the ability to rebuttal, or I -- do I just include it
5 in my briefs?

6 A.L.J. COSTELLO: You -- you can make
7 arguments in your briefs, to the extent that you --
8 you have arguments, based on the record.

9 MS. SOKOLOW: Okay. Thank you.

10 A.L.J. COSTELLO: Okay. Mr. Muscato?

11 MR. MUSCATO: Thank you, your Honor.

12 This is a clunky setup for cross-
13 examination, so if I stand up.

14 CROSS EXAMINATION

15 BY MR. MUSCATO:

16 Q. Good morning, Mr. Jones.

17 A. (Jones) Good morning.

18 Q. So, it -- it appears, based on
19 your -- your testimony and the testimony of Mr.
20 Brazell, that there is some potential disagreement,
21 regarding the existence of a stream in the vicinity
22 of the access road, between Turbine 76 and 87.

23 Did -- do -- do you recall that
24 location on the map?

25 A. Yes.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Okay. And -- and with respect to
3 that, re -- regardless of the stream location --
4 well, in this potential stream location, would --
5 would you agree that the primary concern is
6 protecting the stream from sedimentation and
7 turbidity, during construction and operation of the
8 facility?

9 A. I think the primary concern is --
10 sedimentation and turbidity, are potential adverse
11 impacts that stream, but the integrity of the stream
12 and the fish downstream. That stream has a trout
13 population, as the Department's identified and we're
14 very conservative about those streams and that
15 particular stream, within the project site that your
16 access road has to cross, is we believe an important
17 piece of that stream, as it's head water --

18 Q. So --

19 A. -- or --

20 Q. -- well, it --

21 A. -- should have been.

22 Q. -- and so there -- so, there's a
23 couple of things, with respect to your testimony,
24 that -- you're indicating that the crossing -- that
25 the impact to the trout in the stream -- farther

1 15-F-0122 Baron Winds LLC 3/21/2019

2 downstream, is related to changes in sedimentation
3 and turbidity, that could result from the
4 construction of the access road, correct?

5 A. And changes to the streams
6 hydrology and morphology.

7 Q. So, in -- in -- in -- with
8 respect to changes in the stream, hydrology and --
9 well, at -- at what location is that change proposed
10 by this Applicant?

11 A. I'm sorry.

12 Q. Is it --?

13 A. I don't --.

14 Q. Are you indicating the location
15 would -- will have potential change to be the
16 location of the -- the access road, the 70 foot wide
17 during construction and potentially less, with during
18 con -- during operation of that access road, that
19 that would -- your -- your testimony is it would
20 potentially alter the -- the course of the stream?

21 A. I'm saying that I -- I -- in my
22 testimony, can you -- where am I at in --

23 Q. No.

24 You --

25 A. -- that you --?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. -- in -- in what you just
3 testified to, not -- not in --

4 A. Okay.

5 Q. -- your -- your pre-filed.

6 A. That there is a -- there is a
7 stream that runs generally, northeast/southwest, but
8 that access road --

9 Q. Uh-huh.

10 A. -- is to traverse and what we
11 would like to see, is that stream, up and downstream
12 be maintained, to the extent that it can't be, or
13 avoid if at all possible.

14 Q. Okay. Again, so recognizing that
15 there has been a disagreement about the existence of
16 the stream at the location of the access road --

17 A. Okay.

18 Q. -- but agreement on the location
19 of the stream as it's mapped in the regulation
20 further to the south of that access road, would you
21 agree that the -- the -- that -- so irrespective of
22 the disagreement about the location of the stream,
23 that the best way to protect the stream would be to
24 address -- would -- would be through conditions that
25 addressed sedimentation and turbidity?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. I -- I don't know that I can say
3 at this point, that that's all that we're going to be
4 concerned about.

5 Q. Okay.

6 A. Those are always considerations.
7 There will be on this one, but the -- how one
8 constructs an access road, or installs an underground
9 electrical connection through, under, or across a
10 stream corridor, which in this case is a -- I -- I
11 believe it to be and the Department -- the Department
12 believes it to be a Class A running stream.

13 Q. Is --

14 A. We --

15 Q. -- it --?

16 A. -- we would like to see how the
17 construction can minimize adverse impact at that site
18 and downstream.

19 (Off the record discussion)

20 BY MR. MUSCATO: (Cont'g.)

21 Q. Okay. Well, Mr. Jones, so with
22 respect to protection of that stream, would -- would
23 you agree, that if -- if there was a -- a grass
24 filter, for example, between the stream and the
25 proposed access-road location, that that would

1 15-F-0122 Baron Winds LLC 3/21/2019

2 address the Department's concern with respect to
3 protection of the stream?

4 A. (Jones) I would consider because
5 I'm only a portion of the Region 8 D.E.C., Division
6 of Fish and Wildlife Reviewers of this, along with
7 our Bureau of Fisheries, yes. That's a much better
8 alternative, but I don't know without having seen
9 your proposal and -- and having my colleagues to
10 review that, whether it will adequately address it or
11 not.

12 It -- I think that that's the sort of
13 alternative design, or consideration that we
14 typically ask for, in Article 15 stream crossing.
15 So, that's -- by acknowledging that there can be
16 adverse impacts to that stream, from your road and
17 developing a design that minimizes those, that's
18 certainly an -- what we discussed, as -- as a
19 reasonable alternative.

20 Q. And if -- and if the Applicant
21 agreed to -- to consult with D.E.C., with respect to
22 the proposed design of -- of that condition, that --
23 that would be something the Department would support,
24 correct?

25 A. Yes.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Yeah.

3 And -- and -- and again, just for
4 clarity, I'm only speaking with respect to you, since
5 you've submitted testimony in this case, not with
6 respect to, you know, any other individuals at Region
7 8, but -- but I'm correct that the testimony that you
8 provided in this case, that was your testimony,
9 correct?

10 A. I just wanted to make -- make
11 sure that you understood, that I'm, again, not the
12 only Division of Fish and Wildlife person --

13 Q. Yes.

14 A. -- that -- that reviews this type
15 of stream projects and -- and this one, so --.

16 Q. And -- and I'm only asking you
17 with respect to your opinion, that's -- that's
18 correct?

19 A. Yes.

20 Q. So -- so Mr. Jones, along these
21 same lines, if -- if a -- a buffer strip, or some
22 other agreed upon location and design, with -- with
23 the Department, like a grass strip, if that was
24 proposed would that address the testimony that you
25 submitted in this case, regarding water-quality

1 15-F-0122 Baron Winds LLC 3/21/2019

2 standards?

3 A. I think that it could go a long
4 way toward that. It's hard for me to say it will, or
5 does, without having seen that proposal or design. I
6 can't pre-review a plan I haven't seen.

7 Q. Right.

8 But -- but assuming --

9 A. But --

10 Q. -- again that the --

11 A. -- again --

12 Q. -- Applicant were to --

13 A. -- again --

14 Q. -- consult with --?

15 A. -- those are -- those are the
16 typical construction and enhancement pieces, that we
17 ask for in stream crossings. That -- that would be
18 completely consistent with all of our other
19 regulatory reviews.

20 Q. Okay. And with respect to
21 wetlands, you -- you testified that the facility does
22 not meet the permitting standards, for Article 24,
23 correct?

24 A. Yes.

25 Q. And can -- can you explain that

1 15-F-0122 Baron Winds LLC 3/21/2019

2 determination, Mr. Jones?

3 A. A determination? I'm --

4 Q. The -- you're -- you had
5 determined --.

6 A. -- I'm sorry.

7 Q. In your testimony, your opinions
8 -- sorry. Your opinion was that the -- the facility
9 did not meet standards under Article 24.

10 Can -- can you explain that opinion?

11 A. Do we -- can you point me, as to
12 where exactly, so I --

13 Q. Sure.

14 A. -- don't misspeak.

15 Q. It's -- it's in -- on page 20 of
16 your testimony, lines 9 through 13.

17 (Off the record discussion)

18 A. (Jones) Okay. And -- and you
19 could repeat your question?

20 BY MR. MUSCATO: (Cont'g.)

21 Q. Sure.

22 So, based on your testimony in this
23 case, is it your opinion that the -- it's your
24 opinion that the facility does not meet Article 24
25 standards, correct?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. (Jones) Yes.

3 That's correct.

4 Q. Can -- can you explain the basis
5 for that opinion?

6 A. Well, I don't know that I could
7 do any better than reading the final two sentences of
8 my --.

9 Q. No -- no need to. The
10 testimony's there.

11 Mr. Jones, have you reviewed the
12 rebuttal testimony in this case, filed by Mr. Bruce -
13 - Ben Brazell?

14 A. Yes.

15 Q. Okay. With -- with respect to
16 that rebuttal testimony, Mr. Brazell indicated that
17 the Applicant was agreeable to providing and in fact
18 had all -- already agreed on, a condition for frac-
19 out risk assessment and contingency plan and a -- and
20 a SWPPP, the submission of a SWPPP.

21 Does -- does that address your
22 concerns with respect to Article 24?

23 A. Not fully.

24 Q. Okay. What -- what other
25 concerns do you have, with respect to Article 24?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. Well, a -- a -- an acknowledgment
3 that a -- a SWPPP, or Storm Water Pollution
4 Prevention Plan will be prepared, is not the same
5 thing as having a Storm Water Plan -- Pollution
6 Prevention Plan to review, for its potential adverse
7 impacts to the wetland.

8 Q. Okay.

9 A. Ab -- absent a -- a -- a final
10 SWPPP, or more fully-developed SWPPP, at least under
11 review by the Department, I -- I can't say that that
12 will, or will not meet permit-issuance standards.
13 There's no way for me to --

14 Q. Right.

15 A. -- to affirm that the impacts are
16 going to be whatever, at this point.

17 Q. So, but -- but let me -- so, I'm
18 just trying to understand the testimony.

19 So, assuming then that there was a
20 final SWPPP submitted that was acceptable to the
21 Department, it's -- it's your opinion that the
22 project would then meet Article 24 permitting
23 standards?

24 A. I think that then we would have
25 the basis to make that determination and -- and

1 15-F-0122 Baron Winds LLC 3/21/2019

2 having made a determination, be able to refer to that
3 SWPPP, as not just a condition that needs to be
4 followed, but also the justification for a
5 determination that the impacts are avoidable and
6 minimized and the SWPPP also was piece -- a piece of
7 this, with respect to permit issuance standards.

8 Q. I -- I --.

9 A. That's a -- maybe that's a long-
10 winded way of saying it.

11 The SWPPP needs to be a part of our
12 determination, for wetland permit issuance.

13 Q. We -- we agree on that.

14 A. Okay.

15 Q. So beyond that, if the SWPPP is
16 provided and that isn't -- is acceptable to the
17 Department, is there anything else that would be
18 needed -- based on the impacts associated with this
19 project, is there anything else that would be needed
20 for purposes of the Department's issuance of an
21 Article 24 permit?

22 A. Well, at this point, we don't
23 have full -- fully-designed construction plans, at
24 all. And again, it's hard to make a determination,
25 as the extent, or degree of wetland impacts and --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 and impacts to wetland function.

3 Q. Okay. So, Mr. Jones, it -- I --
4 I'm just -- again, I'm sorry. I'm just trying to
5 understand your testimony.

6 It's -- is it your testimony that the
7 Applicant has to provide final design plans, in order
8 for you to give us an opinion, as to whether or not
9 the project has met the standards, under Article 24?

10 A. I don't know what final design
11 plans, but we have to have considerably more detail
12 in it, than provided in any of the submissions so
13 far.

14 Q. Well, what additional detail, Mr.
15 Jones? I --.

16 (Off the record discussion)

17 BY MR. MUSCATO: (Cont'g.)

18 Q. I -- Mr. Jones, the question was
19 -- actually, let me -- let me take a step back.

20 Mr. Jones, do you -- are you aware of
21 the amount of wetland impacts proposed by the
22 Applicant in this case?

23 A. (Jones) Yes.

24 Q. Do -- do you -- do you know what
25 those numbers are off the top of your head?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. For state-regulated freshwater
3 wetlands, not off the top of my head, but --

4 Q. Okay.

5 A. -- it's in my testimony and I
6 believe Mr. Brazell's.

7 Q. What -- if I -- if I said that
8 the impacts were proposed for this project, for --
9 for it was -- is 0.03 acre of temporary impact and
10 0.07 acre of permanent forested conversion.

11 Not holding you to those numbers, does
12 that sound about correct?

13 A. Yeah.

14 That sounds like the areal, or
15 acreage, or extent of the impact proposed.

16 Q. Okay.

17 A. And if --

18 Q. And so --

19 A. -- the --

20 Q. -- with respect to --

21 A. -- the range --

22 Q. -- with respect --

23 A. -- the range --

24 Q. -- to that --

25 A. -- of potential --.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. -- level of impacts, you're
3 indicating that the Applicant has not provided
4 sufficient design details, to offer an opinion as to
5 whether or not the Applicant has met the permitting
6 standards for Article 24?

7 A. Having -- having a number of
8 areal temporary and permitted impact is fine, but
9 what we're concerned about in the freshwater wetland
10 program, is what are the eventual construction-
11 related impacts, aside from that actual occupational
12 clearing, or use of a specific square footage of
13 wetland, or adjacent area.

14 What we're concerned about is what are
15 the attendant and perhaps inadvertent adverse impacts
16 associated with the construction and installation of
17 some of these features, in and under and adjacent to
18 the wetland.

19 Q. To -- to wetlands, or to another
20 natural resource?

21 A. No.

22 To the freshwater wetland. I think
23 were -- we were talking about the freshwater wetland
24 --

25 Q. I'm --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. -- correct?

3 Q. -- I'm just checking.

4 A. What -- do you have a specific
5 crossing that might help me, that you're referring
6 to, or --?

7 Q. No.

8 You -- you -- my -- my question was,
9 is I'm trying to understand -- so, you testified that
10 with respect to Article 24, if the Applicant
11 submitted a frac-out plan and a SWPPP, that was
12 acceptable to the Department, that the Applicant
13 could then meet the standards for Article 24
14 issuance?

15 MR. KING: Objection.

16 It's mischaracterization of the
17 statement.

18 MR. MUSCATO: I withdraw that --

19 A.L.J. COSTELLO: What's that?

20 MR. MUSCATO: -- your Honor.

21 MR. KING: Okay.

22 BY MR. MUSCATO: (Cont'g.)

23 Q. With -- with respect to Article

24 24 --

25 A. (Jones) Yes.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. -- you -- you -- you testified
3 that to meet the permitting standards, the Applicant
4 would have to provide a frac-out plan and a SWPPP.
5 The Applicant has now indicated, it will provide a
6 frac-out plan and a SWPPP.

7 So, I'm asking you, in addition to
8 that, there's nothing else in your testimony that was
9 identified, that the Applicant would have to provide.
10 But on -- you just testified that that still wouldn't
11 be enough to issue a -- an Article 24 permit, or --
12 or to meet the standards under Article 24.

13 MR. KING: Objection.

14 BY MR. MUSCATO: (Cont'g.)

15 Q. So, I'm asking you --

16 MR. KING: Miss --.

17 BY MR. MUSCATO: (Cont'g.)

18 Q. -- what other information would
19 need to be provided?

20 MR. KING: It's -- objection.

21 Misleading question. There's an
22 additional construction plan, that was referenced,
23 that also would need to be provided, Mr. Muscato did
24 not reference.

25 A.L.J. COSTELLO: It's referenced in

1 15-F-0122 Baron Winds LLC 3/21/2019

2 the -- the --

3 MR. KING: Yeah. Yeah.

4 Page --

5 A.L.J. COSTELLO: -- direct --

6 MR. KING: -- 20 --

7 A.L.J. COSTELLO: -- testimony?

8 MR. KING: -- of Mr. Jones' testimony.

9 Lines 9 through 13, with regard to
10 Article 24 to meet permitting standards the Applicant
11 will need to submit plans and specifications,
12 detailing wetland impacts and how they would be
13 avoided and then if an -- unavoidable, mitigated
14 through a properly designed construction plan that
15 includes a frac-out assessment and contingency plan -
16 -

17 MR. MUSCATO: Yeah.

18 MR. KING: -- for storm water
19 pollution prevention.

20 MR. MUSCATO: Your Honor, I withdraw
21 the question.

22 A.L.J. COSTELLO: Okay.

23 BY MR. MUSCATO: (Cont'g.)

24 Q. What -- Mr. Jones, you indicated
25 earlier, that you're familiar with Mr. Brazell's

1 15-F-0122 Baron Winds LLC 3/21/2019

2 rebuttal testimony, correct?

3 A. (Jones) Yes.

4 Q. Do you have a copy of -- of Mr.
5 Brazell's rebuttal testimony?

6 A. If you've got one, it'll save me
7 from flipping. If not, I can find it.

8 I got one. Okay.

9 Q. Oh. Great.
10 Do you have -- also have the exhibits?

11 MR. KING: Which ones?

12 MR. MUSCATO: Exhibit 4, I believe.

13 MR. KING: Yes.

14 THE WITNESS: Yes.

15 MR. MUSCATO: Thank you.

16 BY MR. MUSCATO: (Cont'g.)

17 Q. Mr. Jones, have you reviewed
18 Exhibit 4? It -- this is --.

19 (Off the record discussion)

20 MR. MUSCATO: Your Honor, I'm
21 referring to B.R.B. 4. I -- don't know what number
22 that is, on the hearing exhibit list.

23 A.L.J. COSTELLO: That's -- that's
24 fine.

25 You can refer to B.R.B. 4. And that's

1 15-F-0122 Baron Winds LLC 3/21/2019

2 page -- there's 63 pages to B.R.B. 4? Is that --?

3 MR. MUSCATO: Yes.

4 A.L.J. COSTELLO: Okay.

5 A. (Jones) Yes.

6 That's what I have here.

7 BY MR. MUSCATO: (Cont'g.)

8 Q. Yes.

9 A. (Jones) So --.

10 Q. Have -- have you reviewed the
11 plans in B.R.B. 4, Mr. Jones?

12 A. Yes.

13 Q. So, in your testimony, when you
14 indicate that the Applicant would need to submit
15 plans and specifications, are the plans and
16 specifications you're referring to, the -- the
17 details that are provided in B.R.B. 4?

18 A. There were details there -- my
19 review of this -- these plans in this B.R.B. 4
20 document, from March of this year, is that's
21 insufficiently detailed plans, on which to base a
22 construction-related freshwater wetland permit.

23 Q. Mr. -- well, Mr. Jones, what --
24 what additional information would need to be
25 provided?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. I can tell you that the
3 information that is provided in here, lacks
4 topography. Lacks any consideration of the soils
5 adjacent to the wetlands, or any potential adverse
6 impacts associated with construction.

7 All this is, is a -- essentially a
8 plan view. Its -- there are no profiles. There are
9 -- it's -- it's not --.

10 Q. Well, Mr. --

11 A. I mean --

12 Q. -- Mr. --

13 A. I --

14 Q. -- Jones --

15 A. -- under -- I --

16 Q. -- we can take --

17 A. -- understand --.

18 A.L.J. COSTELLO: Wait. Wait.

19 BY MR. MUSCATO: (Cont'g.)

20 Q. -- it one --.

21 A.L.J. COSTELLO: Mr. -- Mr. Muscato,
22 let him finish.

23 MR. MUSCATO: Okay.

24 A. (Jones) Yeah.

25 I mean, I understand that it does show

15-F-0122 Baron Winds LLC 3/21/2019

each crossing and the limits of the -- the wetland and stream and where there are -- the areal extent of permanent and temporary impacts, but it's on a -- essentially a flat sheet, that doesn't show vegetation type, plan-community type. Any kind of information or reference to soils, or topography and those are all serious considerations, in development of -- of construction plans, on which we base a wetland permit.

BY MR. MUSCATO: (Cont'g.)

Q. Mr. Jones, can you turn to page -
- I don't have the page numbers on this one.

(Off the record discussion)

BY MR. MUSCATO: (Cont'g.)

Q. Mr. Jones, can you change -- turn to page, this is B.R.B. 4, page 58. Just let me know when you -- when you get there.

(Off the record discussion)

A. (Jones) Yes. Okay.

BY MR. MUSCATO: (Cont'g.)

Q. Mr. Jones, do you see the -- the temporary state-regulated wetland impacts, identified on that page?

A. (Jones) Yes.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. And do you see the vegetation
3 types, identified on that page?

4 A. Yes.

5 (Off the record discussion)

6 A. (Cont'g.) (Jones) But I -- the
7 two areas that are identified as -- as areas of
8 permanent and temporary impact, are on generally the
9 east side of the wetlands and it does show the
10 vegetation type on that side.

11 The wetland continues and particularly
12 the vegetative 100 foot adjacent area is also on the
13 east side of that -- I'm sorry, the disturbances on
14 the west or right downstream facing and there is a
15 regulated adjacent area on the other side, beyond
16 which that H.D.D. bore pit is shown.

17 Now, the -- these type of plans tell
18 me very little about how this could affect that and
19 what's there. That's the sort of thing that I would
20 need to see, is how this is going to be constructed,
21 relative to these site specific conditions, that are
22 at both sides of the wetland. That -- that a bore
23 pit is more than a 100 feet from the wetland, doesn't
24 mean that there can't be adverse impact associated
25 with its construction, or particularly if there's an

1 15-F-0122 Baron Winds LLC 3/21/2019

2 inadvertent return of drilling, through a --.

3 BY MR. MUSCATO: (Cont'g.)

4 Q. Right. Right.

5 And we -- like we said before, again,
6 if it's with respect to inadvertent return, that
7 would -- that would be addressed in the frac-out risk
8 assessment, right?

9 A. (Jones) Well, it would have to be
10 very much more site specific because if we don't know
11 what that looked like, or how long it gets to it.
12 The frac-out contingency plan would have to be
13 specific to this site and those conditions.

14 Q. So, with -- with respect to the -
15 - the west bore pit, that you identified, you agree
16 that's outside the regulated area, correct?

17 A. No.

18 Now, let me -- let me say that the
19 west bore pit, between State Route 21 and the
20 wetland, is within the 100 foot adjacent area. The
21 east bore pit is just outside. That's the bore pit.

22 (Off the record discussion)

23 BY MR. MUSCATO: (Cont'g.)

24 Q. I -- I confused my direction.

25 A. (Jones) Me too.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. So, just for -- for purposes of
3 clarity, the east bore pit is outside the regulated
4 area.

5 The west bore pit is in?

6 A. Yes.

7 Q. Would -- would you agree, that
8 this is the entirety of the wetland impacts
9 associated with this project?

10 A. It's certainly not the entirety
11 of the potential wetland impacts associated with a --
12 hydraulic direction would drill under the class
13 C.P.S. stream and the freshwater wetland.

14 The reason we want to regulate this
15 and -- and do is there -- there can't be the impact
16 other than the bore-pit location. If there is an
17 inadvertent return, if there is a need for
18 contingency plan actions, how this one would do that,
19 on the site --

20 Q. I -- I understand.

21 A. -- because if it frac -- if
22 there's a frac-out or an inadvertent return,
23 somewhere in this area, we have to know how that's
24 going to be addressed. That's an adverse impact,
25 that we are saying --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Right. Right.

3 A. -- has to be minimized and unless
4 we have that kind of information, it's difficult to
5 say that that has in fact been minimized.

6 Q. Again, Mr. Jones, the materials
7 that you just identified, those would be details that
8 would be provided, as part of a frac-out contingency
9 plan, or an inadvertent return plan, correct?

10 A. Generally.

11 That's --

12 Q. It --.

13 A. -- exactly what we'd ask for, but
14 in -- and again, well, the -- the -- that plan would
15 have to be very specific to this particular site and
16 it's site conditions and that's what I'm -- that's
17 what I'm saying about the detail that we require and
18 that I don't see here.

19 (Off the record discussion)

20 BY MR. MUSCATO: (Cont'g.)

21 Q. Mr. Jones, just going back again
22 to the impacts, I -- I think you testified earlier
23 and -- and perhaps it was just I misheard you, but
24 you're not identifying other wetlands, besides what's
25 identified on this figure, as wetlands where there is

1 15-F-0122 Baron Winds LLC 3/21/2019

2 a potential impact from this project, correct?

3 A. (Jones) No.

4 This is -- with respect to the Article
5 24 freshwater wetlands consideration, this is the
6 sole wetland along this project, that --

7 Q. Correct. And just for --

8 A. -- with --

9 Q. -- purposes --

10 A. -- which --

11 Q. -- of the --

12 A. -- we're concerned --

13 Q. -- record --

14 A. -- from a --.

15 Q. -- this is H.K. 3, correct?

16 A. Yes.

17 Q. Thank -- thank you, Mr. Jones.

18 So, I -- I'm sure -- so, you indicated
19 that if a -- we -- the Applicant is willing to
20 stipulate and has stated on the record this, that we
21 will provide a frac-out contingency plan and the
22 details that you just described, the Applicant would
23 submit as part of that frac-out contingency plan, I -
24 - but what I'm try -- I -- is there anything beyond
25 the frac-out contingency plan, then, that you would

1 15-F-0122 Baron Winds LLC 3/21/2019

2 need to review, in order to determine whether the
3 project meets Article 24 standards?

4 A. Well, let -- let me hit on the
5 frac-out contingency plan for here.

6 Again --

7 Q. But Mr. -- Mr. --

8 A. -- you asked --

9 Q. -- Jones --.

10 A. -- if that met permanent --

11 Q. I'm asking --

12 A. -- issuance --

13 Q. -- about other --

14 A. -- standards?

15 Q. -- other than the frac-out
16 contingency plan, just so we're clear.

17 A. Again, it's site -- a site
18 specific to this crossing, frac-out contingency plan,
19 is what I -- what I would need to see.

20 Now, is that part of the frac-out
21 contingency plan, that I've got in front of me from -
22 - no. I don't think that it has -- is -- has that
23 level of detail.

24 (Off the record discussion)

25 BY MR. MUSCATO: (Cont'g.)

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Give -- given the Department --
3 given your -- your -- the testimony you just
4 provided, with respect to your concerns on the frac-
5 out contingency plan, would -- would you prefer to
6 see a plan that proposes a -- a trench, through --
7 through the wetland area?

8 A. (Jones) No.

9 I don't think that was my testimony at
10 all.

11 (Off the record discussion)

12 BY MR. MUSCATO: (Cont'g.)

13 Q. Okay. Mr. Jones -- Mr. Jones, I
14 --?

15 MR. MUSCATO: At this time, your
16 Honor, I'm referring to the hearing exhibit that was
17 introduced at the hearing. I -- and I apologize, I
18 don't recall --

19 MS. SOKOLOW: 281.

20 MR. MUSCATO: -- what -- what number?

21 MS. SOKOLOW: 281.

22 A.L.J. COSTELLO: 281.

23 MR. MUSCATO: 281.

24 We just re -- received this this
25 morning and -- and so, this is not the limit of -- of

1 15-F-0122 Baron Winds LLC 3/21/2019

2 our testimony and as I indicated on the record
3 earlier, we reserve our right for additional cross-
4 examination on this new direct testimony.

5 BY MR. MUSCATO: (Cont'g.)

6 Q. But Mr. -- Mr. Jones, with
7 respect to this Hearing Exhibit 29 -- 281 --

8 MS. SOKOLOW: 81.

9 BY MR. MUSCATO: (Cont'g.)

10 Q. -- it -- I -- I'm understanding
11 this to be a -- a memo, where you took pictures of --
12 at -- let's see. The property. Where's the
13 property?

14 This is at parcel 096.00 dash 01 dash
15 042 -- well, let's see. I -- I -- strike that.

16 The -- Mr. Jones, can you describe for
17 me, where these pictures -- the pictures that are
18 included as part of this exhibit, where they were
19 taken from?

20 A. They were taken south of and to
21 the access road, between Tower 76 and Tower 87, in
22 the area of the Class A tributary stream, to Cohocton
23 River ---

24 Q. Okay.

25 A. -- Canisteo River.

15-F-0122 Baron Winds LLC 3/21/2019

(Off the record discussion)

BY MR. MUSCATO: (Cont'g.)

Q. Mr. Jones, who took the photo on
page five?

A. (Jones) Ms. Ashley Reed (phonetic
spelling), a Seasonal Fish and Wildlife Technician,
in our office.

Q. Mr. -- Mr. Jones, for -- for
clarity of the record, do you know landowner on -- on
these properties, the --

A. I --

Q. -- you've taken these pictures
from?

A. -- I do not.

Q. Did you have any contact with the
landowner?

A. No.

Q. Mr. Jones, did you obtain
permission from anyone, to take these pictures?

A. Direct permission that day? No.

A.L.J. COSTELLO: Mr. Muscato, I just
-- let me ask one question.

MR. MUSCATO: Yeah.

A.L.J. COSTELLO: If, in an attempt to

1 15-F-0122 Baron Winds LLC 3/21/2019

2 -- so that we don't have to call the witness back,
3 would it be sufficient, to take a 15, or 20-minute
4 break, so that you can consult with and -- and con --
5 consider further cross-examination? Is -- would that
6 be sufficient to --?

7 MR. MUSCATO: It -- your Honor, I -- I
8 -- actually, I think what I would propose is -- and -
9 - and I appreciate that opportunity and -- and I
10 would very like to complete this today, but I -- I
11 would like to review this memo with our consultant
12 and if -- if we did -- if -- have the opportunity for
13 cross later in the day, I -- I can commit to being
14 able to do that, but we have --.

15 A.L.J. COSTELLO: That -- that's fine
16 then.

17 MR. MUSCATO: Okay.

18 A.L.J. COSTELLO: That's fine.

19 MR. MUSCATO: We have a -- a busy
20 schedule today and -- and I just want to make sure
21 that we've given this the attention it -- it desire -
22 - it --

23 A.L.J. COSTELLO: Sure.

24 MR. MUSCATO: -- needs.

25 A.L.J. COSTELLO: That's fine.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 MR. MUSCATO: Your -- and your Honor,
3 with respect to the -- this witness, I -- I don't
4 have any further questions for the witness.

5 A.L.J. COSTELLO: At this time.

6 MR. MUSCATO: At this time.

7 A.L.J. COSTELLO: Okay.

8 MR. KING: I'd like --

9 A.L.J. COSTELLO: Mr. King?

10 MR. KING: -- to re-direct, your
11 Honors.

12 A.L.J. COSTELLO: Sure.

13 MR. KING: Thank you.

14 REDIRECT EXAMINATION

15 BY MR. KING:

16 Q. Mr. Jones, you were just asked
17 some questions about your March 15th report, that was
18 submitted as an exhibit today.

19 I'm -- looking at your report, I see
20 that you have observed flows in the area, the general
21 vicinity of the stream crossing that's proposed by
22 the Applicant, is that correct?

23 A. (Jones) Yes.

24 MR. MUSCATO: Objection, your Honor.

25 He's asking the witness questions

1 15-F-0122 Baron Winds LLC 3/21/2019

2 about an exhibit that they introduced today. It's
3 additional direct testimony.

4 All -- I asked him one question about
5 this, which was whether or not he had permission to
6 access the property.

7 MR. KING: Well, I would -- I would
8 just say that I -- I thought it was open, given that
9 he had asked questions on cross about it.

10 A.L.J. COSTELLO: Well, it's limited
11 to redirect. If -- if there's new information that
12 he raised, you can ask questions and it's not open to
13 further direct testimony, you know, completely.

14 MR. KING: Okay.

15 BY MR. KING: (Cont'g.)

16 Q. With regard to B.R.B. 4, which
17 was page 58 of B.R.B. 4, you were asked by Mr.
18 Muscato about the information that was included on
19 this.

20 Do you -- in -- in reviewing this, do
21 you see any information regarding geology of the
22 area, for -- for the proposed bore pits and -- and
23 horizontal drilling?

24 A. (Jones) No.

25 Q. Do you see any area, or any

15-F-0122 Baron Winds LLC 3/21/2019

information regarding a cross section, or a profile of the wetland, with the wetland depths, the stream depths, the associated depth of the proposed drilling?

A. No.

Q. In your opinion, is that information that would be necessary, to make a permanent determination, under a typical issuance criteria?

A. Yes.

Those and again, topography and the vegetative type, or plant community, or forest community in the soils, are all important considerations, both through -- in the area of the bore itself and with respect to if there's a problem and an inadvertent return, how does one implement the frac-out contingency planning in it.

Q. Mr. Muscato also asked you about your direct testimony -- your pre-filed direct testimony and I'll point you to page 20. He specifically asked you about the Article 24 issuance standards and the frac-out risk assessment and contingency plan.

Would you say that understanding the

1 15-F-0122 Baron Winds LLC 3/21/2019

2 site-specific conditions of a stream crossing, where
3 you're using horizontal drilling, would you say that
4 understanding those geological conditions and
5 understanding the depths of the proposed drilling, is
6 part of understanding the risk associated with
7 crossing?

8 A. Yes.

9 Our -- we would typically ask an
10 Applicant, to provide that information in the
11 development of their H.D.D. planning, so that we
12 understand and have some assurance that they are
13 planning to do something that they can do and that
14 they have an -- the ability to address something that
15 goes wrong --

16 Q. To your --?

17 A. -- with the frac-out contingency
18 plan.

19 Q. It --?

20 A. Both have to be there. It has to
21 be possible and -- and reasonable and doable for the
22 H.D.D. bore installation of a utility and it -- it
23 also has to be possible to implement the frac-out
24 contingency plan.

25 Now, without all that other

1 15-F-0122 Baron Winds LLC 3/21/2019

2 information, we -- we don't know that. We -- how do
3 we -- how do we say that that can meet the Article 24
4 permit issuance stuff.

5 MR. KING: Okay. No further
6 questions.

7 Thank you.

8 MR. MUSCATO: Your Honor, can I just -
9 -

10 A.L.J. COSTELLO: Did you --?

11 MR. MUSCATO: -- have a minute,
12 please?

13 A.L.J. COSTELLO: Sure.

14 (Off the record discussion)

15 RE CROSS EXAMINATION

16 BY MR. MUSCATO:

17 Q. Mr. Jones, have -- have you
18 reviewed the -- I'll speak up.

19 Mr. Jones, have you reviewed Exhibit
20 21 of the Applicant -- of the application, the
21 Article 10 application for this project?

22 A. (Jones) Exhibit 21?

23 Q. Exhibit 21 is topography, geo --
24 geology and soils.

25 Has that been provided to you?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. Yes.

3 I mean, I'm not a geologist or a soil
4 scientist, but I use those things.

5 Q. Yeah.

6 And you'd know a --

7 A. But --

8 Q. -- 2-foot --

9 A. -- that there's --

10 Q. -- contour, if you --

11 A. -- do I --?

12 Q. -- saw it?

13 A. Right.

14 Do I suspect there's topography out
15 there? Yeah. Well, I know that.

16 Q. And you'd know a 2-foot contour,
17 if you saw it.

18 A. Right.

19 I -- it -- but what I want is a -- is
20 a construction plan, that has that, or greater level
21 of detail --

22 Q. Yeah.

23 A. -- by somebody qualified to put
24 that together.

25 Q. Yeah.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. My -- my role is to say there are
3 these things in place, I know what kind of impacts
4 can occur and how do we develop a plan, or project,
5 that can minimize those impacts, so --

6 Q. Yeah.

7 A. -- that I can -- I can affirm
8 that it does meet our issuance standards.

9 Q. Right. Right.

10 I -- I understand your testimony, Mr.
11 Jones.

12 With -- with -- with respect to the --
13 that level of detail that you're talking about for
14 the frac-out plan, is -- is -- is there an -- a
15 project that had an Article 24 permit issued, that
16 had the frac-out plan in the detail that you're
17 describing, submitted, as part of the application for
18 the Article 24 permit?

19 A. Yes.

20 Q. What -- which project was that?

21 A. I can't specify which project,
22 but that's a very typical level of detail that is
23 required for any linear projects, small or large.

24 Q. Yeah.

25 A. The hydraulic directional

1 15-F-0122 Baron Winds LLC 3/21/2019

2 drilling, is a very common installation practice that
3 we often permit because we understand it's
4 advantageous. We'd like to just make sure that we
5 understand enough about the -- what the potential
6 adverse impact and disadvantages are.

7 Q. Yeah.

8 A. So, yes.

9 Q. And -- and I -- I -- I'm asking
10 because again, you -- you said typical and -- and so,
11 I'm just trying to figure out, for -- so that the
12 Applicant can prepare a -- a frac-out plan that's
13 consistent with what the Department has accepted in
14 the past, what your view of typical is and if the --
15 if you could give me a specific project, that would
16 be helpful?

17 A. Well, I -- I don't know that
18 typical is useful because a typical --

19 Q. You said typical.

20 A. -- or -- a typical permanent that
21 we issue. The details and the specifics and the
22 site-specific conditions, for every project, are
23 different. Q. Understood.

24 A. So --

25 Q. But the -- but --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. -- typical --

3 Q. -- the level of --

4 A. -- typically --

5 Q. -- detail.

6 A. -- the level of detail is -- is
7 going to be commensurate with the complexity, or
8 difficulties of the site.

9 Q. Yeah.

10 A. I -- so, it's -- it's hard for me
11 to say what we want in a Orleans County water
12 district, versus a Steuben County fiber-optic line,
13 or gas pipeline. The -- the site conditions are all
14 different and what I'm saying here, is that
15 recognition of that, beyond saying that we will have
16 these generic and generally okay, but not complete
17 items, in a frac-out plan.

18 We need to know exactly what is going
19 on at -- here for this crossing.

20 Q. Right.

21 A. And -- and --

22 Q. For the --

23 A. -- that it will --

24 Q. -- .07 --?

25 A. -- it'll be --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Right.

3 A. -- the --.

4 Q. For the --

5 A. My --

6 Q. -- .07 --

7 A. -- my answer --

8 Q. -- above --

9 A. -- to this will --

10 Q. -- and --

11 A. -- have been --

12 Q. -- .03?

13 A. -- yes, we asked what we asked

14 for and they provided, ultimately I hope, with
15 typical level of detail and controls.

16 Q. Yeah.

17 A. So, it -- it -- it's hard to use
18 a typical permit. We typically issue permits based
19 on this type of information, provided by the
20 Applicant.

21 MR. MUSCATO: No further questions,
22 your Honor.

23 A.L.J. COSTELLO: Okay. When we went
24 off the record earlier, I had asked if there were any
25 other parties that had cross-examination questions

1 15-F-0122 Baron Winds LLC 3/21/2019

2 for Mr. Jones and the only party that indicated they
3 did, is the town of Fremont and it's Mr. Pullen.

4 MR. PULLEN: Thank you, your Honor.

5 CROSS EXAMINATION

6 BY MR. PULLEN:

7 Q. Mr. Jones, based on -- based on
8 your direct testimony submitted and in light of the
9 additional information that's been proposed as an
10 exhibit here, is it fair to say, that the -- the
11 proposed project, as -- as presented by the
12 Applicant, would have an impact on water flows and
13 the wetlands in this vicinity?

14 A. (Jones) And it can have, as -- as
15 proposed, for the particular stream crossing, which
16 was the subject of this exhibit, between tower 76 and
17 tower 87. It crosses the Class A perennial stream
18 and the -- the construction sheets and the -- what
19 was provided did not address the fact that it is
20 crossing the stream, which is what the -- what I
21 testified about in my written testimony and again,
22 with Mr. Muscato.

23 Q. Okay. And based on the -- the
24 documents that have been submitted by the Applicant,
25 does it appear that that impact has been fully

1 15-F-0122 Baron Winds LLC 3/21/2019

2 addressed in your -- in your opinion?

3 A. It hasn't, to this point.

4 Q. Okay. In your opinion, does it -
5 - does that impact have the potential to affect water
6 quality and water flow, into the -- the -- the
7 shallow aquifers?

8 MR. MUSCATO: Your honor, I -- I
9 object to the question.

10 It -- it's repetitive to the direct
11 testimony and it -- and cross-examination should not
12 --

13 A.L.J. COSTELLO: This --.

14 MR. MUSCATO: -- be unduly repetitive.

15 A.L.J. COSTELLO: Mr. Pullen, do you
16 have questions that -- that are not just continuing
17 on, with what the direct testimony was, or what the
18 testimony was be -- before, during cross-examination?

19 MR. PULLEN: Your Honor, the intent is
20 to identify whether this -- this new proposed exhibit
21 changes, in any fashion, the -- the assessed impact,
22 on the -- the water aquifer and wells.

23 A.L.J. COSTELLO: Okay. Well, you can
24 ask that question.

25 MR. PULLEN: Okay. All right.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 BY MR. PULLEN: (Cont'g.)

3 Q. I -- I'll try to restate this in
4 a -- in a good way.

5 As you've -- you've submitted this
6 proposed exhibit --

7 A.L.J. COSTELLO: Are we talking about
8 Exhibit 80 -- 182?

9 MR. PULLEN: 182, submitted --

10 A.L.J. COSTELLO: 282.

11 MR. PULLEN: -- today.

12 A.L.J. COSTELLO: I'm sorry.

13 MR. PULLEN: 2 --

14 A.L.J. COSTELLO: 281 --

15 MR. PULLEN: -- 281.

16 A.L.J. COSTELLO: I apologize.

17 MR. PULLEN: That's -- yes. That --
18 that does match my notes, your Honor.

19 BY MR. PULLEN: (Cont'g.)

20 Q. 281, the proposed supplemental
21 exhibit here.

22 In your opinion, does that show
23 anything different, or additional, to your submitted
24 testimony of an impact on what the water quality and
25 flow into the shallow-water aquifers and -- and

1 15-F-0122 Baron Winds LLC 3/21/2019

2 wells?

3 A. (Jones) Well, my testimony
4 doesn't say, I'm afraid, much about shallow-water
5 aquifers and, you know, my expertise is streams and -
6 - and wetlands. The innerconnect between them and
7 subsurface water, groundwater, that's not my area of
8 expertise.

9 I'm sorry. I can't answer that.

10 MR. PULLEN: All right. That --
11 that's all we have at this time.

12 Thank you.

13 A.L.J. COSTELLO: Okay. All right.
14 At this time, any -- what?

15 UNIDENTIFIED SPEAKER: Redirect.

16 A.L.J. COSTELLO: Yeah.

17 Does anyone have any redirect with
18 respect to that?

19 MR. KING: No, sir.

20 A.L.J. COSTELLO: I'm sorry.

21 Mr. Jones, at this time, your
22 testimony is over, but you're subject to -- you're
23 still subject to first -- further cross-examination,
24 so you will remain under oath and be subject to
25 cross-examination we anticipate later on today, by

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Mr. Muscato.

3 Thank you.

4 (Off the record discussion)

5 A.L.J. COSTELLO: Mr. Muscato, do you
6 care to call a witness?

7 MR. MUSCATO: Yes, your Honor.

8 We call Mr. Ben Brazell.

9 A.L.J. COSTELLO: Mr. Brazell, just
10 state your name and business address for the record,
11 please?

12 MR. BRAZELL: Benjamin Brazell,
13 Environmental Design and Research, 238 Montgomery
14 Street, Syracuse, New York, 13202.

15 A.L.J. COSTELLO: Okay. I just have
16 to ask you to stand and raise your right hand.

17 Do you swear, or affirm that the
18 testimony you'll give -- you -- today, is the truth?

19 MR. BRAZELL: I do.

20 WITNESS; BENJAMIN BRAZELL; Sworn

21 A.L.J. COSTELLO: Okay. You may
22 proceed, Mr. Muscato?

23 MR. MUSCATO: Sorry.

24 DIRECT EXAMINATION

25 BY MR. MUSCATO:

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Good morning, Mr. Brazell.

3 A. (Brazell) Good morning.

4 Q. Mr. Brazell, have you filed pre-
5 filed and rebuttal testimony, in this proceeding?

6 A. Yes, I did.

7 MR. MUSCATO: Your Honor, can we go
8 off the record, for one second?

9 A.L.J. COSTELLO: We're off the
10 record. Sure.

11 (Off the record discussion)

12 BY MR. MUSCATO: (Cont'g.)

13 Q. Mr. Brazell, do you have any
14 corrections to the pre-filed --

15 MS. VILLA: Are we -- are back on the
16 record?

17 A.L.J. COSTELLO: We're back on the
18 record? Yeah.

19 THE REPORTER: Yeah.

20 MS. VILLA: Okay.

21 BY MR. MUSCATO: (Cont'g.)

22 Q. -- Mr. Brazell, do you have any
23 corrections to the pre-filed testimony, or rebuttal
24 testimony, filed in this proceeding?

25 A. (Brazell) I do not.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 MR. MUSCATO: Your Honor, I move to
3 have that testimony introduced into the record?

4 A.L.J. COSTELLO: Okay. At this
5 point, we will accept the Pre-filed Direct and
6 Rebuttal Testimony of Benjamin R. Brazell.

7 MR. MUSCATO: And Mr. --?

8 A.L.J. COSTELLO: I --.

9 MR. MUSCATO: Sorry.

10 Your Honors, I -- just for a
11 clarification in the record Mr. Brazell also
12 sponsored a panel and so, I believe his testimonies,
13 with respect to the agricultural panel, is -- his
14 portion of the agriculture panel --

15 A.L.J. COSTELLO: Agricultural panel.

16 MR. MUSCATO: -- as --

17 A.L.J. COSTELLO: Okay.

18 MR. MUSCATO: -- well as his portion
19 of the shadow-flicker panel.

20 A.L.J. COSTELLO: Okay. So, I --
21 we'll -- we'll accept the pre-filed testimony, as --
22 as if orally given here today and the files that
23 should be put in, are Applicant Direct Testimony of
24 Benjamin R. Brazell, Applicant Rebuttal Testimony of
25 Benjamin R. Brazell and then we have -- and then it

1 15-F-0122 Baron Winds LLC 3/21/2019
2 would be Applicant Rebuttal Testimony of the
3 Agricultural Panel.

4 (Off the record discussion) **
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STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Application of Baron Winds Project for
a Certificate under Article 10 of the Public Service Law

Case No. 15-F-0122

PRE-FILED TESTIMONY OF
BENJAMIN R. BRAZELL
PRINCIPAL
ENVIRONMENTAL DESIGN & RESEARCH,
LANDSCAPE, ARCHITECTURE, ENGINEERING
& ENVIRONMENTAL SERVICES, D.P.C.
217 MONTGOMERY STREET, SUITE 1000
SYRACUSE, NEW YORK, 13202

1 **Q: Please state your name, employer, and business address.**

2 A: Benjamin R. Brazell, Environmental Design & Research, Landscape, Architecture, Engineering &
3 Environmental Services, D.P.C. ("EDR"), 217 Montgomery Street, Suite 1000, Syracuse, NY 13202-
4 1942.

5 **Q: What is your position at EDR?**

6 A: Principal

7 **Q: How long have you been employed with EDR?**

8 A: I have been employed by EDR since 2004.

9 **Q: Please describe your educational background and professional experience.**

10 A: I received a Bachelor of Science Degree in Natural Resources Ecosystem Assessment from North
11 Carolina State University in Raleigh, North Carolina in 2001. I have been employed by EDR since
12 February 2004. Since that time, I have worked in the capacity as Ecologist, Project Manager, Senior
13 Project Manager, and Director of the Environmental Division before becoming Principal of
14 Environmental Services in 2014. I have over 15 years of experience performing and/or supervising
15 projects involving wetlands delineations, state and federal wetland permitting, habitat and ecosystem
16 analysis, environmental impact assessments, and preparation of numerous state siting board
17 applications and environmental impact statements. My resume is attached.

18 **Q: Please describe your current responsibilities with EDR.**

19 A: As Principal, I oversee all aspects of EDR's environmental assessment projects.

20 **Q: Have you previously testified before the New York State Public Service Commission or Siting
21 Board on Electric Generation?**

22 A: I have previously provided written rebuttal and sur-rebuttal testimony, and as an expert witness I was
23 subject to cross examination under oath, in the Matter of Cassadaga Wind LLC's Application for a
24 Certificate of Environmental Compatibility and Public Need (Case No. 14-F-0490). In addition, I

previously sponsored testimony in the Matter of National Grid's petition to Amend the Article VII Certificate of Environmental Compatibility and Public Need for the 115 kV Fenner to Cortland #3 (formerly the Oneida to Cortland #3, PSC Case 70346) Transmission Line.

Q: Have you previously served as an expert witness before any other court, agency, or other body on the subject you plan to offer testimony on today?

A: I previously served as an expert witness in the Matter of the Application of Paulding Wind Farm III LLC for a Certificate of Environmental Compatibility and Public Need, for the Timber Road III Transmission Line, before the Ohio Power Siting Board (Case No. 15-1737-EL-BTX).

Q: What is the purpose and scope of your testimony in this proceeding?

A: To sponsor certain portions of the Baron Winds Project Application or the Exhibits thereto.

Q: What portion(s) of the Application is your testimony sponsoring?

A: Exhibit 1: General Requirements, Exhibit 3: Location of Facilities, Exhibit 4: Land Use, Exhibit 6: Wind Power Facilities, Exhibit 9: Alternatives, Exhibit 11: Preliminary Design Drawings, Exhibit 17: Air Emissions, Exhibit 21: Geology, Seismology and Soils, Exhibit 22: Terrestrial Ecology and Wetlands, Exhibit 23: Water Resources and Aquatic Ecology, Exhibit 28: Environmental Justice.

Q: Were these Exhibits, Application sections, or studies prepared by you or under your direction and supervision?

A: Yes.

Q: In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data or documents produced by persons other than yourself/your company? If so, please cite these sources. [These are independent studies, etc.]

A: References are provided in the corresponding Exhibits.

Q: Does this conclude your testimony?

A: Yes.

NEW YORK STATE BOARD ON ELECTRIC
GENERATION SITING AND THE ENVIRONMENT

Application of Baron Winds LLC for
a Certificate under Article 10 of the Public Service Law

Case No. 15-F-0122

REBUTTAL TESTIMONY OF
BENJAMIN R. BRAZELL
PRINCIPAL
ENVIRONMENTAL DESIGN & RESEARCH,
LANDSCAPE, ARCHITECTURE, ENGINEERING
& ENVIRONMENTAL SERVICES, D.P.C.
217 MONTGOMERY STREET, SUITE 1000
SYRACUSE, NEW YORK, 13202

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 **Q: Please state your name, employer, and business address.**

2 A: Benjamin R. Brazell, Environmental Design & Research, Landscape, Architecture,
3 Engineering & Environmental Services, D.P.C. (EDR), 217 Montgomery Street, Suite 1000,
4 Syracuse, NY 13202-1942.

5 **Q: Did you file pre-filed testimony in this matter?**

6 A: Yes. Please see attached as Exhibit ____ (BRB-1) my pre-filed testimony and
7 credentials.

8 **Q: Do you have any additional experience conducting environmental impact**
9 **assessments for wind power projects in New York State and elsewhere since filing**
10 **your pre-filed testimony that you would like to add?**

11 A: Yes. Specific to New York State, I am serving as Principal-in-Charge of the Bluestone Wind
12 Farm (Case No. 16-F-0559), and the Article 10 Application for this project was found to
13 comply with PSL 164 on December 27, 2018. Elsewhere, I am serving as Principal-in-
14 Charge and recently prepared testimony for the Icebreaker Wind Project, the testimony for
15 which was filed with the Ohio Power Siting Board (OPSB) in September 2018 (OPSB Case
16 No. 16-1871-EL-BGN).

17 **Q: What is the purpose and scope of your testimony in this proceeding?**

18 A: To provide rebuttal testimony for certain environmental impacts associated with the Baron
19 Winds Project ("Project" or "Facility"), proposed by Baron Winds LLC (the "Applicant").
20 Specifically, this rebuttal addresses certain portions of direct testimony provided by Scott

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 Jones from the New York State Department of Environmental Conservation ("NYSDEC")
2 and Lilly Schelling from the New York State Department of Public Service ("NYSDPS").

3 **Q. Are you sponsoring any additional evidence with your testimony?**

4 A. Yes. The following additional documents are included as part of my testimony.

- 5 - Exhibit ____ (BRB-2): Applicant IR-4 to NYSDEC
6 - Exhibit ____ (BRB-3): NYSDEC Freshwater Wetlands Determination Issued in
7 November 2017.
8 - Exhibit ____ (BRB-4): Applicant's Joint Application for Permit wetland and stream
9 detailed impact drawings (Figure 6. Federal
10 Wetland/Stream Impacts; Figure 7. State Regulated
11 Impact; Figure 8. Culvert Crossing Details)

12 Wetlands and Streams

13 **Q: Can you briefly describe where in the record information can be found regarding the**
14 **Facility's impacts to wetlands and streams?**

15 A: A significant amount of information is in the record regarding the identification of wetlands
16 and streams and an evaluation of impacts on such resources. This information is briefly
17 summarized as follows:

- 18 • Exhibit 22 of the November 2017 Application identifies wetland resources and
19 discusses wetlands impacts,
20 • Exhibit 22, Table 22-8 (Wetland Impacts) of the November 2017 Application,

Case No. 15-F-0122

Benjamin R. Brazell
EDR

- 1 • Exhibit 22, Figure 22-2 of the November 2017 Application depicts delineated
- 2 wetlands,
- 3 • Exhibit 23 of the November 2017 Application identifies stream resources and
- 4 discusses stream impacts,
- 5 • Exhibit 23, Table 23-3 (Impacts to Streams) of the November 2017 Application,
- 6 • Exhibit 23, Figure 23-3 of the November 2017 Application depicts surface waters,
- 7 including delineated streams,
- 8 • Appendix M of the November 2017 Application contains detailed Preliminary Design
- 9 Drawings that includes wetland and stream resources,
- 10 • Appendix BBB of the November 2017 Application contains the Wetland Delineation
- 11 Report,
- 12 • Appendix CCC of the November 2017 Application contains detailed Wetland and
- 13 Stream Impact Drawings,
- 14 • Appendix EEE of the November 2017 Application contains photographs of existing
- 15 access examples, which depict and briefly describe some areas where
- 16 wetland/stream resources will be avoided or impacts will be minimized,
- 17 • An updated Wetland Delineation map set (Figure 22-2) and associated
- 18 memorandum was filed on August 2, 2018 as a supplement to the Application,

Case No. 15-F-0122

Benjamin R. Brazell
EDR

- 1 • An update to Table 22-8 (Wetland Impacts) reflecting updates to the Project layout
2 was included in the February 2019 Application Update,
- 3 • An update to Table 23-3 (Impacts to Streams) reflecting updates to the Project
4 layout was included in the February 2019 Application Update,
- 5 • Updated Figure 22-2 of the February 2019 Application Update depicts delineated
6 wetlands based on the updated Project layout,
- 7 • Updated Figure 23-3 of the February 2019 Application Update depicts surface
8 waters, including delineated streams, based on the updated Project layout.
- 9 • Following review of the Direct Testimony of Scott Jones, Applicant IR-4 was served
10 on the NYSDEC on February 28, 2019 (Exhibit ____ (BRB-2)), and the NYSDEC
11 has not provided a response.

12 **Q: Can you describe how wetland and stream resources were identified within the**
13 **Facility Site?**

14 A: Yes. Investigations were first conducted in the summer of 2016, associated with an initial
15 Facility layout provided by the Applicant, which included a total of 120 turbines. In support
16 of these investigations, EDR created a set of field maps (depicting the preliminary location
17 of Project components along with mapped wetlands and streams on aerial base mapping)
18 and conducted reconnaissance-level field investigations of the initial layout. EDR provided
19 the results of our field investigations to the Applicant, along with specific layout/component
20 alignment changes that were recommended to avoid/minimize impacts to resources such as

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 wetlands and streams. Subsequently, wetland and stream delineations were conducted by
2 EDR personnel during the fall of 2016 and the spring/summer of 2017, in accordance with
3 the three-parameter methodology described in the U.S. Army Corps of Engineers (Corps)
4 *Wetland Delineation Manual* (Environmental Laboratory, 1987), and further described by the
5 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: North Central*
6 *and Northeastern Region* (USACE, 2012). Wetland boundaries were defined in the field by
7 sequentially numbered pink surveyor's flagging marked "wetland delineation," the locations
8 of which were documented using Global Positioning System (GPS) technology with sub-
9 meter accuracy. The results of the on-site wetland delineations are summarized in Exhibit
10 22 of the November 2017 Application, the results of the stream delineations are summarized
11 in Exhibit 23 of the November 2017 Application, and the results of the total delineation effort
12 (both wetlands and streams) is further detailed in the stand-alone Wetland Delineation
13 Report, which was included as Appendix BBB to the November 2017 Application. Additional
14 wetland boundary flagging was conducted during the 2018 growing season, and as a result
15 Figure 22-2 (Wetland Delineations) was updated and filed as a supplement to the Application
16 on August 2, 2018.

17 **Q: Did representatives from the NYSDEC conduct site visits of the Facility to review**
18 **wetland and stream delineations?**

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 A: Yes. Following receipt of maps depicting the results of wetland and stream delineations, on
2 August 30, 2017, Steven Miller, Biologist with the NYSDEC Region 8 office, conducted a
3 site visit with EDR personnel.

4 **Q: Were other NYSDEC representatives present during the August 30, 2017 site visit that**
5 **was conducted specifically to review wetland and stream delineations?**

6 A: No. However, the direct testimony of Scott Jones indicates that he personally conducted a
7 site visit on August 30, 2017 (Jones Testimony P 4, L 18; P 17, L 14). As discussed more
8 below, not only was Mr. Jones not present at the August 30, 2017 site visit, contrary to his
9 testimony, but also, the Jones testimony is not consistent with the observations made by the
10 DEC personnel at site visit on August 30, 2017 and the NYSDEC Freshwater Wetlands
11 Determination included as Exhibit ____ (BRB-3).

12 **Q: Did the August 30, 2017 site visit with Steven Miller, Biologist Region 8, result in a**
13 **NYSDEC determination of wetland and stream jurisdiction?**

14 A: Yes. The NYSDEC issued a Freshwater Wetlands Determination in November 2017,
15 included as Exhibit ____ (BRB-3), which identified State-regulated wetlands and streams
16 associated with the Facility. Specifically, the Freshwater Wetlands Determination indicated
17 NYSDEC jurisdiction over the following resources:

- 18 • NYSDEC Wetland HK-3
19 • NYSDEC Wetland HK-8

Case No. 15-F-0122

Benjamin R. Brazell
EDR

- 1 • NYSDEC protected stream Seeley Creek north of State Route 21 near Conderman
- 2 Road, and its tributaries along Canfield Road (the Freshwater Wetlands Determination
- 3 specifically noted that the headwaters of the tributary to Seely Creek located north of
- 4 Canfield Road does not extend into the Facility Study Area).
- 5 • NYSDEC protected stream unnamed tributary (UT) to the Cohocton River north of State
- 6 Route 21.
- 7 • NYSDEC protected stream UT to the Cohocton River north of Gruber Road.

8 **Q: Is the Direct Testimony of Scott Jones consistent with the NYSDEC Freshwater**
9 **Wetlands Determination with respect to wetlands?**

10 A: No. Mr. Jones identified an additional NYSDEC wetland (wetland HK-4) (P 18, L 1-3) not
11 included in the NYSDEC Freshwater Wetlands Determination. However, no impacts to this
12 wetland or 100-foot adjacent area have been proposed or are anticipated.

13 **Q: Are there other aspects of the Direct Testimony of Scott Jones relating to wetlands**
14 **that you have concerns with?**

15 A: Yes. Mr. Jones indicates that the Project as proposed does not avoid State-regulated
16 wetlands and adjacent areas (P 18, L 12-14). This statement is incorrect. As set forth in the
17 February 2019 Application Update, the Project will not temporarily or permanently impact
18 any State-regulated wetlands, and would only result in 0.05 acre of temporary impact to a
19 State-regulated Adjacent Area and 0.34 acre of permanent forest conversion within a State-
20 regulated Adjacent Area (both associated with a HDD bore pit for installation of buried

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 electrical collection under State Wetland HK-3). Subsequent to the February 2019
2 Application Update, additional engineering and impact avoidance/minimization has taken
3 place, which has reduced these impacts to 0.03 acre of temporary impact and 0.07 acre of
4 permanent forest conversion, as depicted on Figure 7, Sheet 6.3 of Exhibit ____ (BRB-4).
5 Based on the detailed impact drawings included in Exhibit ____ BRB-4, temporary and
6 permanent wetland impacts will only occur in USACE-regulated wetlands and total only 0.27
7 acre and 0.10 acre, respectively. In my experience, this is a very small amount of wetland
8 impacts, particularly for a 242 MW project containing up to 69 turbines. In designing the
9 Project layout, the Applicant continuously assessed the potential impact of Project
10 components on wetlands and other sensitive resources and endeavored to avoid those
11 impacts where possible. As indicated in Exhibit 9 of the November 2017 Application, "Field
12 reconnaissance and associated analysis conducted on the 120-turbine layout determined
13 that wetland impacts would be significantly greater under this scenario. In order to
14 approximate the impacts associated with this early 120-turbine layout, the location of
15 wetlands were estimated based on field notes taken during the reconnaissance level site
16 review, and standard impact assumptions were applied to the various project components.
17 This analysis resulted in approximately 68 acres of temporary wetland impact and 11.5 acres
18 of permanent wetland impact associated with the initial 120-turbine layout. See Exhibit 22
19 of this Application for more detailed information on impacts to wetlands from the proposed
20 Facility, which have been significantly reduced..."

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 Where crossing wetlands could not be avoided, the Applicant has proposed impact
2 avoidance measures that are clearly described in the record. For instance, the February
3 2019 Application Update, when discussing wetland impacts in Exhibit 22(m), states “It is
4 currently anticipated that wetland HK-3 will be crossed by underground electrical collection,
5 using HDD installation. Therefore, no direct impacts to this wetland are anticipated during
6 construction or operation...” In addition, the February 2019 Application Update, when
7 discussing wetland impact avoidance and minimization in Exhibit 22(n), states “...HDD
8 installation will be used where buried interconnect crosses forested wetlands and NYSDEC-
9 protected streams, and buried interconnect is the only component crossing such features.”
10 Therefore, the Applicant anticipates using HDD installation as practicable to avoid/minimize
11 impacts.

12 **Q: Are there additional inaccuracies in the Direct Testimony of Scott Jones with respect**
13 **to wetlands?**

14 **A:** Yes. With respect to Article 24 permitting standards, Mr. Jones states that such permitting
15 standards have not been met because the Applicant needs to submit plans and
16 specifications detailing how wetland impacts would be avoided, and if unavoidable, mitigated
17 through a properly designed construction plan, including a frac-out risk assessment and
18 contingency plan, and a Stormwater Pollution Prevention Plan (P 20, L 9-13). However, as
19 previously stated detailed wetland and stream impact drawings were prepared and provided
20 as Appendix CCC of the November 2017 Application. These impacts are based on the

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 preliminary engineering assessment and associated limits of disturbance defined in relation
2 to the Preliminary Design Drawings provided as Appendix M of the November 2017
3 Application. All resulting impacts are quantified in Appendix CCC and also in Table 22-8
4 (Wetland Impacts) of Exhibit 22. Avoidance and minimization measures were discussed
5 and described in Exhibit 22(n). In addition, the November 2017 Application contained a Draft
6 Inadvertent Return Plan for directionally drilled installations (Appendix JJ) and a Preliminary
7 Stormwater Pollution Prevention Plan (Appendix II). Therefore, the information that Mr.
8 Jones identifies as outstanding was, in fact, included with the Application.

9 **Q: Do you believe the Project as proposed meets the standards for permit issuance**
10 **under ECL Article 24?**

11 A: Yes. Based on the identification of resources, analyses associated with avoidance and
12 minimization, quantification of temporary and permanent impacts (as summarized above),
13 and identification of appropriate mitigation measures.

14 **Q: Is the Direct Testimony of Scott Jones consistent with the NYSDEC Freshwater**
15 **Wetlands Determination with respect to State-regulated waterbodies (i.e., protected**
16 **streams)?**

17 A: No. Mr. Jones indicates that a Class A state-protected stream (referenced by Mr. Jones as
18 stream PA-3-57-5-49-9-2) was not delineated or mapped by the Applicant and this stream
19 will be impacted by the access road and electrical collection line between turbines 76 and
20 87 (P 19, L 10-14). However, during on-site delineations EDR personnel investigated the

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 access road/collection line corridor between proposed turbines 76 and 87 and determined
2 no wetlands or streams were present along this corridor. Regardless, because a state-
3 protected stream is mapped in this location EDR personnel specifically visited this area with
4 Mr. Miller, during the August 30, 2017 site visit, and it was confirmed that no stream was
5 present. As stated above, Mr. Jones was not present during this site visit. The NYSDEC
6 documented the confirmation that a stream does not exist in this location in the attached
7 Freshwater Wetlands Determination, which on page 2 states “the headwaters of the tributary
8 to Seely Creek located north of Canfield Road does not extend into the Facility Study Area.
9 (Exhibit ____ (BRB-3 at P 2).

10 **Q: With respect to this stream, do you believe that the Direct Testimony of Scott Jones**
11 **is inaccurate?**

12 A: Yes. As indicated above, site-specific delineations were conducted by EDR personnel
13 during the fall of 2016 and the spring/summer of 2017, this location was specifically
14 investigated, and during the site-specific delineations it was concluded that there is no
15 stream located along the access road/collection line corridor between proposed turbines 76
16 and 87. This conclusion was confirmed with NYSDEC Region 8 biologist Steven Miller
17 during the August 30, 2017 site visit, and subsequently documented in the NYSDEC
18 Freshwater Wetlands Determination (see Exhibit ____ BRB-3).

19 **Q: Does this inaccuracy have any implications for the Direct Testimony of Scott Jones?**

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 A: Yes. With respect to meeting permitting standards associated with Article 15 and 6 NYCRR
2 Part 608, Mr. Jones states that the Applicant has not demonstrated that it considered
3 reasonable alternatives to the access road/collection line between turbines 76 and 87, and
4 has not quantified the direct and indirect impacts to this stream (P 20, L 5-9). With respect
5 to meeting water quality standards associated with Environmental Conservation Law (ECL)
6 Article 15, Title 5, Mr. Jones states that the Applicant has failed to minimize impacts to Class
7 A protected stream PA-3-57-5-49-9-2 (P 20, L 16-19). With respect to meeting standards
8 for permit issuance associated with 6 NYCRR Part 608.8 (Protection of Waters) Mr. Jones
9 indicates that the Project as proposed does not meet its statutory and regulatory burden (P
10 21, L 14-18). Lastly, with respect to Article 15, Part 608, Mr. Jones states that the Project
11 as proposed does not meet water quality standards (P 21, L 19-20; P 22, L 1-2).

12 **Q: Are those portions of the Direct Testimony of Mr. Jones referenced immediately above**
13 **accurate?**

14 A: No. According to his Direct Testimony, Mr. Jones's basis for the Project not meeting the
15 various standards for permit issuance associated with Article 15 and 6 NYCRR Part 608 are
16 based on an incorrect claim that the Class A stream PA-3-57-5-49-9-2 was not delineated
17 and will incur impacts. However, as stated above, this stream is not present in the location
18 where Mr. Jones claims impacts will occur. This lack of presence was confirmed in the field
19 by NYSDEC Biologist Mr. Miller and documented in the NYSDEC Freshwater Wetlands
20 Determination (Exhibit ____, BRB-3).

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 **Q: Do you believe that the proposed Project meets the various standards for permit**
2 **issuance associated with ECL Article 15 and 6 NYCRR Part 608?**

3 A: Yes. If the Siting Board ignores the portion of the Jones' Testimony that is erroneously
4 based on the existence of a Class A stream to be crossed by Project components, the
5 Application meets all applicable standards for issuance of an ECL Article 15 permit.

6 **Q: Have you reviewed the proposed certificate conditions included in the Direct**
7 **Testimony of Scott Jones?**

8 A: Yes.

9 **Q: Does the Direct Testimony of Scott Jones include proposed certificate conditions**
10 **related to wetlands and streams?**

11 A: Yes. It should first be noted that essentially all conditions proposed by the NYSDEC in the
12 Direct Testimony of Scott Jones have already been addressed by conditions proposed by
13 the Applicant and provided to the parties, as reflected in Exhibit ____ (SPP-2) of the Direct
14 Testimony prepared by the DPS Staff Panel Policy. As such, the Applicant requests that the
15 language set forth in the Staff Panel Policy Exhibit ____ (SPP-2) supersede similar language
16 proposed by the NYSDEC. Generally, the Applicant is in agreement with the proposed
17 conditions included in the Direct Testimony of Scott Jones with the exception of the following:

- 18
 - The Certificate Holder must submit a "Stream Crossing Plan (Cables)

19 that...addresses the following:

Case No. 15-F-0122

Benjamin R. Brazell
EDR

- 1 ○ Site-Specific Constructability Assessment...shall include a detailed
2 analysis of the site-specific conditions that lead to the conclusion that all
3 trenchless crossing methods are not constructible or not feasible at the
4 particular stream crossing (Jones Testimony P26, L15-20). Trench Stream
5 Crossing Assessment...a site-specific trench crossing assessment must be
6 conducted.” (Jones Testimony P27, L1-9).

7 **Response:** As previously indicated, the Article 10 record contains a significant
8 amount of information regarding the Applicant’s identification of resources and
9 proposed impact avoidance and minimization (e.g., Appendix CCC of the
10 November 2017 Application contains detailed Wetland and Stream Impact
11 Drawings, Table 23-3 (Impacts to Streams) of the November 2017 Application,
12 an update to Table 23-3 (Impacts to Streams) in the February 2019 Application
13 Update). As such, the Applicant has already conducted all analyses necessary
14 to identify proposed impacts to streams. Most recently, in support of the Joint
15 Application for Permit (JAP) to be submitted to the U.S. Army Corps of
16 Engineers (Corps) and Siting Board in relation to Section 404 and 401 of the
17 Clean Water Act, the Applicant has further advanced engineering and quantified
18 impacts to streams and wetlands. The Applicant anticipates submitting the JAP
19 to the Corps and the Siting Board in March 2019, and in support of the JAP the
20 Applicant has updated detailed wetland and stream impact drawings, which are

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 included with this rebuttal as Exhibit ____ (BRB-4). These plans indicate where
2 the Applicant intends on using HDD (trenchless) crossing methodology and
3 where the Applicant intends on installing buried electrical collection lines
4 through use of a trench.

- 5 ○ For all trench crossings a site-specific Vertical Adjustment Potential (VAP)
6 analysis and Lateral Adjustment Potential (LAP) for each stream crossing
7 not located in bedrock...The “Exposure of Cable by Stream Report” shall
8 be conducted by a certified and qualified engineer licensed to work in New
9 York and must include all calculations associated with the VAP and LAP...
10 (Jones Testimony P 27, L 10-21).

11 **Response:** This is a very unusual condition, which EDR has not previously
12 seen associated with any permits issued for wind power projects. A condition
13 similar to this was originally proposed by the NYSDEC in direct testimony
14 prepared for Case No. 14-F-0490 (Cassadaga Wind); however, the respective
15 condition was mistakenly taken by NYSDEC from a permit associated with a
16 pipeline facility (NYSDEC’s proposed condition in this case called for
17 preparation of an “Exposure of Pipe by Stream Report” by a New York State-
18 licensed engineer that includes a Vertical Adjustment Potential [VAP] analysis
19 and a Lateral Adjustment Potential [LAP] analysis). For a pipeline facility that
20 has the potential to release pollutants/hazardous material directly into streams,

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 this may be a reasonable condition. However, any exposure of buried electrical
2 cables associated with the proposed Baron Winds Facility will not present a risk
3 of releasing pollutants into streams. Additionally, the Siting Board rejected
4 NYSDEC's proposed condition and did not impose a VAP/LAP condition in
5 Case No. 14-F-0490. It is my opinion that it is not an appropriate condition in
6 this proceeding. Please also note that the Application contains typical civil
7 details, including a Collection Line Cable Trench detail, which indicates a typical
8 minimum burial depth, typical compaction of material above the buried cable,
9 etc. (see Sheet C-601 of Appendix M of the November 2017 Application).

10 ○ A Wetland Crossing Plan (Cables) shall be submitted and include the
11 following information... (Jones Testimony P 29, L 1-15).

12 **Response:** Consistent with to the response above associated with the
13 proposed "Stream Crossing Plan (Cables)", the Applicant anticipates submitting
14 the JAP to the Corps and the Siting Board in March 2019, and in support of the
15 JAP the Applicant has updated detailed wetland and stream impact drawings,
16 which are included with this rebuttal as Exhibit ____ (BRB-4). These plans
17 indicate where the Applicant intends on using HDD (trenchless) crossing
18 methodology and where the Applicant intends on installing buried electrical
19 collection lines through use of a trench. Please also note that Exhibit ____
20 (SPP-2) of the Direct Testimony prepared by the DPS Staff Panel Policy allows

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 for installing buried cable in wetlands through use of a trench. Specifically, DPS
2 Staff Panel Policy proposed condition 107 identifies the requirements that must
3 be met associated with trench installation in wetlands, and the Applicant is
4 agreeable to all such requirements.

- 5 ○ The Certificate Holder shall notify the NYSDEC Region 8 Supervisor of
6 Natural Resources via e-mail one week prior to the start of (i) ground
7 disturbance in each state-regulated wetland or adjacent area, or (ii) any
8 clearing within 100 feet of streams and/or installation of temporary or
9 permanent stream crossing for access or travel routes (Jones Testimony
10 P29, L16-21).

11 **Response:** The proposed condition required individual notifications prior to
12 each individual activity associated with stream/wetland crossings. Rather than
13 multiple individual notifications, the Applicant proposes the following condition:
14 “The Certificate Holder shall submit a Notice of Intent to Commence Work to
15 the Region 8 Supervisor of Natural Resources, DEC Region 8 Headquarters,
16 6274 E. Avon-Lima Road, Avon, NY 14414-9519, the NYSDEC Chief of the
17 Major Project Management, Division of Environmental Permits, 625 Broadway,
18 Albany , and NYS DPS at least 72 hours in advance of the commencement of
19 construction and shall also notify them within 10 business days in writing of the
20 completion of work.”

Case No. 15-F-0122

Benjamin R. Brazell
EDR

- 1 ○ Fuel or other chemical storage tanks shall be contained and located at all
2 times in an area greater than 300 feet landward of the regulated wetland...
3 (Jones Testimony P 31, L 11-16).

4 **Response:** The Applicant supports the more specific language set forth in the
5 Exhibit ____ (SPP-2) of the Direct Testimony prepared by the DPS Staff Panel
6 Policy. Specifically, DPS proposed Condition 99 requires “Fuel or other
7 chemical storage containers shall be located at least 100 feet from wetlands
8 and waterbodies.”

- 9 ○ In areas containing amphibian breeding areas, work in wetlands and
10 adjacent areas should not occur during the peak amphibian breeding
11 season (April 1 to June 15) (Jones testimony P 34, L 1-3).

12 **Response:** There is no indication from NYSDEC that potential impacts to
13 amphibian breeding areas are an issue in this proceeding. Thus, the proposed
14 condition is unnecessary. As indicated in the Article 10 record (i.e., an update
15 to Table 22-8 [Wetland Impacts] in the February 2019 Application Update) this
16 Facility will result in only 0.12 acre of permanent wetland impact and 0.65 acre
17 of temporary wetland impact. This is extremely minor in comparison to the total
18 extent of wetland resource within the 500-foot wetland delineation study area
19 as depicted on Figure 22-2 of the February 2019 Application Update. In addition,
20 according to the Applicant this timeframe represents a critically important

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 construction period over the course of the construction season, which will likely
2 begin close to April 1 for access road construction followed by turbine pad and
3 collection line installation. According to the Applicant, road building must begin
4 in the early spring to allow for appropriate construction sequencing, culminating
5 in turbine erection in mid-to late summer. Therefore, the Applicant is not
6 agreeable to this condition.

- 7 ○ Before trenching occurs, upland sections of the trench shall be backfilled or
8 plugged to prevent drainage of possible turbid trench water from entering
9 the stream or wetland (Jones Testimony P 34, L 4-6).

10 **Response:** The Applicant prefers flexibility with respect to how turbidity will be
11 controlled. As such, the Applicant supports the specific language set forth in
12 DPS proposed Certificate Condition 103 of Exhibit ____ (SPP-2) of the Direct
13 Testimony prepared by the DPS Staff Panel Policy.

- 14 ○ Wide-track or amphibious excavators shall be used for wetland installation
15 (Jones Testimony P 34, L 19-20).

16 **Response:** This is in conflict with the following condition proposed by Mr.
17 Jones: Swamp mats must be used in any regulated freshwater wetlands for
18 construction activities (Jones Testimony P 35, L 15-16). Conditions associated
19 with wetland installations should not restrict such installations to only wide-track

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 or amphibious excavators, and should not conflict with other conditions that
2 allow for the use of timber mats/swamp mats.

- 3 ○ Disturbed areas will be monitored for 5 years following installation to assure
4 an 85% cover of native species, unless the invasive species baseline
5 survey indicates a smaller percentage of native species exists prior to
6 construction (Jones Testimony P 38, L 1-4).

7 **Response:** The Applicant supports the specific language set forth in the Exhibit
8 ____ (SPP-2) of the Direct Testimony prepared by the DPS Staff Panel Policy.
9 Specifically, DPS proposed Condition 105 requires “monitoring shall continue
10 until 80% cover of appropriate species has been reestablished...”

- 11 ○ Temporary stream crossings are not authorized at waterbodies utilizing
12 trenchless pipeline installation techniques (Jones Testimony P 39, L 5-7).

13 **Response:** Given the fact that no pipelines are proposed in association with
14 the Baron Winds Project, the Applicant requests clarification on this condition.
15 Nevertheless, equipment crossing may be necessary, regardless of the use of
16 trenchless installation, if multiple resources are located between a given access
17 point (e.g. two or more streams are present along a section of collection line
18 connecting project turbines).

Case No. 15-F-0122

Benjamin R. Brazell
EDR

- 1 ○ Before trenching through stream banks occurs, upland sections of the
2 trench shall be backfilled or plugged to prevent drainage of possible turbid
3 trench water from entering the stream (Jones Testimony P 42, L 11-13).

4 **Response:** The Applicant prefers flexibility with respect to how turbidity will be
5 controlled. As such, the Applicant supports the specific language set forth in
6 DPS proposed Condition 103 of Exhibit ____ (SPP-2) of the Direct Testimony
7 prepared by the DPS Staff Panel Policy.

- 8 ○ Width of the structure must be a minimum of 1.25 times (1.25X) width of the
9 mean high-water channel (Jones testimony P 48, L 1-2).

10 Response: The Applicant prefers to include flexibility in this condition that may
11 be needed due to site-specific design constraints. As such, the Applicant
12 supports the specific language set forth in DPS proposed Condition 115(c) of
13 Exhibit ____ (SPP-2) of the Direct Testimony prepared by the DPS Staff Panel
14 Policy.

15 **Q: Have you reviewed the Direct Testimony of Lilly Schelling (NYSDPS)?**

16 A: Yes. In her Direct Testimony, Ms. Schelling describes her role in this case as being
17 responsible for reviewing the Project's probable environmental impacts on terrestrial
18 ecology, wetlands, and streams for NYSDPS (P 2, L 14-20).

19 **Q: Does Ms. Schelling believe that all information necessary to show the probability of**
20 **environmental impacts was provided by the Applicant?**

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 A: Yes. In her Direct Testimony Ms. Schelling indicates that the Applicant adequately
2 performed studies to show the probability of environmental impacts (P 3, L 11-13). When
3 discussing avoidance, minimization, and mitigation Ms. Schelling states that “Based on the
4 information provided in the Application and supplements, I believe the Applicant has done
5 its due diligence to avoid, minimize and mitigate impacts in consultation with the NYSDEC...”
6 (P 4, L 6-10). Further, Ms. Schelling states that “...the Application also proposes mitigation
7 for any impacts that are unavoidable” (P 5, L 5-7). Lastly, with respect to mitigation, Ms.
8 Schelling also indicates that the Applicant will prepare a wetland mitigation plan to address
9 permanent wetland impacts in accordance with proposed ordering condition 65 (P 6, L 16-
10 19). Recognizing the potential for further reductions of permanent wetland impacts for the
11 Project, the Applicant agrees with this statement as the Project is currently proposed but
12 indicates that additional impact avoidance could result in the Project reducing wetland
13 impacts below 0.1 acre and may not require mitigation.

14 **Q: In her Direct Testimony, Ms. Schelling describes an alternate electrical collection**
15 **route and her preference for the route that runs northeast from turbine 78. Do you**
16 **agree with her opinion that this route is preferable?**

17 A: Yes. This collection route would ultimately connect the turbines in the southwestern portion
18 of the Facility with the point of interconnect (POI) substation. Absent this route, the only
19 other option identified to date runs between turbines 81 and 46, and this route has numerous
20 constraints and engineering/construction challenges (i.e., a portion of this route would need

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1 to be located between a state-protected stream and the right-of-way of Dereeves Road west
2 of State Route 21, and subsequent bore pits/HDD crossings of a State-regulated
3 stream/wetland complex on the east side of State Route 21).

4 Invasive Species

5 **Q: In her Direct Testimony, Ms. Schelling indicates that the Applicant conducted a**
6 **baseline study of invasive species (included in Application Appendix MM). However,**
7 **she indicates that the Applicant did not provide an updated invasive species survey**
8 **for the alternate collection routes identified in the Application Update. Is this correct?**

9 A: Yes. A comprehensive invasive species baseline survey was conducted during the growing
10 season of 2017 in association with the Facility layout as presented in the November 2017
11 Application. In the February 2019 Application Update, alternate collection lines were
12 identified in addition to minor Facility layout shifts/updates, as described in the Application
13 Update Overview Section (b). These alternate collection lines and minor Facility
14 shifts/updates were not subject to the baseline invasive species survey.

15 **Q: In relation to those portions of the Facility that were not subject to the baseline**
16 **invasive species survey, Ms. Schelling indicates that the Applicant should perform a**
17 **pre-construction invasive species survey. Do you agree with this recommendation?**

18 A: I agree that a pre-construction invasive species survey should be conducted in those
19 portions of the Facility that were not subject to previous invasive species surveys. The results
20 of these surveys will be depicted on the final plans developed for the Project.

Case No. 15-F-0122

Benjamin R. Brazell
EDR

- 1 **Q:** Does this conclude your testimony?
- 2 **A:** Yes.

Case No. 15-F-0122

Benjamin R. Brazell
EDR

1

INDEX OF EXHIBITS

2

BRB-1 Pre-Filed Testimony of Benjamin Brazell (with resume), 9 pages

3

BRB-2 Applicant IR-4, 3 pages

4

BRB-3 NYSDEC Freshwater Wetlands Determination Issued in November 2017, 2 pages

5

BRB-4 Applicant's Joint Application for Permit wetland and stream detailed impact drawings, 63

6

pages

NEW YORK STATE BOARD ON ELECTRIC
GENERATION SITING AND THE ENVIRONMENT

Application of Baron Winds LLC for
a Certificate under Article 10 of the Public Service Law

Case No. 15-F-0122

SUR-REBUTTAL TESTIMONY OF
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1 **Q: What is the purpose and scope of your sur-rebuttal testimony in this proceeding?**

2 A: To respond to new information provided by W. Scott Jones, Manager of Bureau of
3 Ecosystem Health, New York State Department of Environmental Conservation ("NYSDEC")
4 Region 8, while he was under oath during the administrative hearings in this proceeding.

5 **Q. What new information did Mr. Jones present?**

6 A. Mr. Jones presented a memorandum dated March 15, 2019 ("memorandum"), which
7 summarizes the results of a visit to the site of the proposed T76 – T87 access road on
8 Canfield Road (Parcel PA-3-57-5-49-9-2) conducted by Mr. Jones and his colleague,
9 Seasonal Fish & Wildlife Technician Ashleigh Read, on March 14, 2019.

10 Process and Consultation

11 **Q: Were you aware that Mr. Jones conducted the site visit on March 14, 2019 and**
12 **documented the results of the site visit in a memorandum?**

13 A: No.

14 **Q: When did you first learn of this site visit and the associated memorandum?**

15 A: During the administrative hearings, specifically on the morning of March 21, 2019 while Mr.
16 Jones was under oath and answering questions asked by NYSDEC's attorney.

17 **Q: Did not have an opportunity to address the memorandum in the rebuttal testimony**
18 **you prepared for this proceeding?**

19 A: No.

20 **Q: Is it your understanding that Mr. Jones prepared the memorandum documenting the**
21 **March 14, 2019 site visit?**

1 A: Yes.

2 **Q: The memorandum indicates that Mr. Jones revisited the Canfield Road site on March**
3 **14, 2019, which suggests he conducted previous site visits. Do you know when Mr.**
4 **Jones conducted the previous site visits?**

5 A: According to the Direct Testimony of Mr. Jones, he previously visited the Canfield Road site
6 on August 30, 2017 and December 14, 2018.

7 **Q: Did Mr. Jones notify the Applicant of any of the three site visits he conducted?**

8 A: No.

9 **Q: Did Mr. Jones provide reports documenting the results of the previous visits to the**
10 **Canfield Road site on August 30, 2017 and December 14, 2018?**

11 A: No.

12 **Q: Why is the fact that Mr. Jones conducted these site visits without notifying the**
13 **Applicant relevant?**

14 A: This fact is relevant because the Applicant was effectively denied the ability to consult with
15 Mr. Jones regarding these site visits or to make simultaneous observations of conditions at
16 the site.

17 **Q: Did the Applicant attempt to consult with Mr. Jones for the purpose of attempting to**
18 **arrange a joint site visit?**

19 A: Yes. Prior to submitting the Article 10 Application in November 2017, NYSDEC requested
20 that the Applicant conduct a jurisdictional determination ("JD") site visit with personnel from
21 the NYSDEC's Region 8 Office. Central Office advised the Applicant in June 2017 that Mr.

1 Jones should be contacted to schedule the site visit. Starting in June 2017 the Applicant
2 made repeated attempts to contact Mr. Jones in 2017 as summarized below:

- 3 • June 20: On behalf of the Applicant, EDR sent Mr. Jones an email inquiring about his
4 availability to conduct a JD site visit. This email included shapefiles of delineated
5 wetlands and streams to allow Mr. Jones to review relevant information prior to the site
6 visit.
- 7 • June 23: EDR sent a follow-up email to Mr. Jones asking about his availability to conduct
8 a JD site visit.
- 9 • July 10: EDR sent another follow-up email to Mr. Jones asking about his availability to
10 conduct a JD site visit. In this email, EDR also advised Mr. Jones that facility-specific
11 shapefiles (e.g., turbine locations, access roads, electrical collection lines, etc.) had
12 been provided to NYSDEC counsel.
- 13 • July 10 – July 21: EDR placed four phone calls to Mr. Jones.
- 14 • July 24: EDR emailed Mike Higgins in Central Office and described our difficulties
15 arranging the required JD site visit with Region 8 and asked for his help.
- 16 • July 28: EDR sent a follow-up email to Mr. Higgins in Central Office asking about the
17 status of his outreach efforts with Region 8.
- 18 • August 4: EDR received an email from Mr. Higgins indicating that he spoke with Steve
19 Miller (NYSDEC Region 8 Biologist) regarding our attempts to get in contact with Mr.
20 Jones.

Benjamin R. Brazell
Sur-Rebuttal
EDR

- 1 • August 24: EDR received an email from Mr. Higgins indicating that he reached out to
2 Mr. Jones to ask him to coordinate with us on a JD site visit.
- 3 • August 28: EDR received an email from Mr. Miller to schedule the JD site visit.
- 4 • August 30: The JD site visit was conducted with Mr. Miller as the NYSDEC
5 representative.

6 **Q: If needed, could you provide documentation of the correspondence summarized**
7 **above?**

8 A: Yes.

9 **Q: Was Mr. Jones present during the August 30, 2017 JD site visit, which was conducted**
10 **specifically to review wetland and stream delineations?**

11 A: No. However, the Direct Testimony of Scott Jones indicates that he personally conducted a
12 site visit on August 30, 2017 (Jones Testimony P 4, L 18; P 17, L 14). In addition, in response
13 to Applicant Information Request (IR)-4, Mr. Jones indicated that he conducted a separate
14 and independent site visit on August 30, 2017 (NYSDEC response to Applicant IR-4 P 1,
15 response to question 1.b.) (Hearing Exhibit 280).

16 **Q: Did the August 30, 2017 site visit with Steven Miller, Biologist Region 8, result in a**
17 **NYSDEC determination of wetland and stream jurisdiction?**

18 A: Yes. The NYSDEC issued a Freshwater Wetlands Determination in November 2017,
19 included as Hearing Exhibit 26 (BRB-3) to my Rebuttal Testimony, which identified State-
20 regulated wetlands and streams associated with the Facility.

Benjamin R. Brazell
Sur-Rebuttal
EDR

1 **Q: In response to Applicant IR-4, does Mr. Jones address the NYSDEC Freshwater**
2 **Wetlands Determination issued by Region 8?**

3 A: Yes. Mr. Jones indicates that he reviewed the Freshwater Wetland Determination prior to
4 preparing his Direct Testimony (NYSDEC response to Applicant IR-4 P 1, response to
5 question 1.a.), and that his December 14, 2018 site visit superseded the Freshwater
6 Wetlands Determination (NYSDEC response to Applicant IR-4 P 2, response to question
7 1.c.).

8 **Q: Did Mr. Jones notify the Applicant that the Freshwater Wetlands Determination issued**
9 **by NYSDEC Region 8 (for which he serves as the Manager of the Bureau of Ecosystem**
10 **Health) had been superseded?**

11 A: No. The first time the Applicant learned that the Freshwater Wetlands Determination had
12 been superseded is when the NYSDEC provided its response to Applicant IR-4, which was
13 received on March 13, 2019—the day after the Applicant was required to file its Rebuttal
14 Testimony.

15 **Q: What is the significance of the NYSDEC deciding not to consult with or otherwise**
16 **notify the Applicant of Mr. Jones's findings?**

17 A: The NYSDEC's failure to consult with the Applicant denied the Applicant any ability to modify
18 or otherwise react to decisions made by the NYSDEC's Region 8 Manager of the Bureau of
19 Ecosystem Health. Since November 2017, the Applicant has operated under the
20 assumption that the Freshwater Wetlands Determination issued by Region 8 was valid.
21 Specifically, after receiving the Freshwater Wetlands Determination in November 2017, the

1 Applicant adjusted the Facility design as needed to accommodate the results of this
2 determination and filed its Article 10 Application. More than a year later, Mr. Jones conducted
3 an independent site visit on December 14, 2018 that purported to supersede NYSDEC's
4 earlier Freshwater Wetlands Determination. However, the Applicant was not provided with
5 an opportunity to participate in the site visit, nor was it notified that NYSDEC's earlier JD
6 determination had been superseded until shortly before the hearing in this matter. In the
7 interim, the Applicant prepared a detailed Application Update, which was filed on February
8 1, 2019. Had the Applicant been made aware of the fact that the Freshwater Wetlands
9 Determination was superseded in December 2018, it would have addressed this fact in the
10 Application Update and proposed a certificate condition to address the issue.

11 **Q: With respect to Mr. Jones deciding to supersede the Freshwater Wetlands**
12 **Determination, what aspects of this decision are most at issue?**

13 A: In his Direct Testimony, Mr. Jones alleges that a Class A state-protected stream (referenced
14 by Mr. Jones as stream PA-3-57-5-49-9-2) was not delineated or mapped by the Applicant
15 and this stream will be impacted by the access road and electrical collection line between
16 turbines T76 and T87 (P 19, L 10-14). The entirety of the memorandum prepared by Mr.
17 Jones concerning his March 14, 2019 site visit is focused on this stream. However, during
18 on-site delineations, EDR personnel investigated the access road/collection line corridor
19 between proposed turbines T76 and T87 and determined no wetlands or streams were
20 present along this corridor. Regardless, because a state-protected stream is identified in
21 the state's GIS layer in this location, EDR personnel specifically visited this area with Mr.

1 Miller from NYSDEC during the August 30, 2017 site visit and confirmed that no stream was
2 present. Mr. Jones purported to supersede this determination on December 14, 2018, more
3 than a year later, although there is no documentation in the record to support his decision.
4 In particular, the record does not contain any report documenting the results of his December
5 14, 2018 site visit nor does it contain any letters or other communications informing the
6 Applicant that the November 2017 Freshwater Wetlands Determination on which it had relied
7 had been superseded.

8 Stream at Issue

9 **Q: What did the Applicant do upon receiving Mr. Jones's Direct Testimony on February**
10 **22, 2019 and learning of his conclusion that a stream is located along the access road**
11 **between turbines T76 and T87?**

12 A: After learning that Mr. Jones had identified a stream along the access road between turbines
13 T76 and T87 in his Direct Testimony, the Applicant proactively initiated consultations with
14 Mr. Jones and the NYSDEC in an attempt to address his concerns. EDR placed phone calls
15 to Mr. Jones on consecutive days during the week of February 25, 2019. After receiving no
16 response, the Applicant was notified by NYSDEC counsel that any consultations with Mr.
17 Jones must occur through interrogatory requests. Therefore, the Applicant submitted
18 Applicant IR-4 to the NYSDEC on February 28, 2019. Following receipt of the NYSDEC's
19 response to this IR on March 13, 2019 declaring for the first time that NYSDEC's Freshwater
20 Wetlands Determination had been superseded, the Applicant's attorney submitted a request

Benjamin R. Brazell
Sur-Rebuttal
EDR

1 through the NYSDEC's attorney to conduct a site visit to review the location of the stream in
2 question. This site visit took place on March 19, 2019.

3 **Q: Who attended this site visit?**

4 A: Patrick McCarthy, James Muscato, and Ben Brazell represented the Applicant, and
5 Lawrence Weintraub, Thomas J. King, Mike Higgins, and Scott Jones represented the
6 NYSDEC during the March 19, 2019 site visit.

7 **Q: Did Mr. Jones identify his concerns during this site visit?**

8 A: Yes. Mr. Jones indicated that his primary concerns were protecting the downstream water
9 resources from turbidity and sedimentation during construction and operation of the Facility.

10 **Q: Were resolutions to this concern discussed during this site visit?**

11 A: Yes. At the location in question, the access road currently traverses an active row crop
12 (corn) field. During the site visit, it was determined that: the access road could be re-located
13 slightly south towards the field edge; a grass filter strip could be placed between the access
14 road and the edge of the field/stream in question; the Applicant would consult with the
15 NYSDEC during design of this erosion and sediment control feature/protective measure; and
16 the agreed-upon design would be documented in the final Stormwater Pollution Prevention
17 Plan (SWPPP) prepared for the Facility. In addition, the Applicant offered to prepare a
18 condition to memorialize these protective measures. The suggested language for this
19 condition was circulated to the various parties on March 25, 2019.

20 **Q: What is the proposed condition?**

1 A: The Applicant will minimize the potential impacts to stream P-3-57-5-49-9-2 resulting from
2 sedimentation and turbidity during construction and operation of the facility by developing
3 the following measures in consultation with NYSDEC:

- 4 a. Implementation of appropriate stormwater controls (e.g., silt fence, filter sock, straw
5 bales) during construction of the facility;
- 6 b. Installation of a 10-foot grass filter strip to be located between the access road and
7 the stream; and
- 8 c. Designing the access road such that water will pass over or through the road without
9 creating any upslope ponding.

10 The agreed-upon measures will be included in the facility's SWPPP.

11 **Q: Were any other relevant observations made during the March 19, 2019 site visit?**

12 A: Yes. It was observed that the area of the corn field north of the proposed access road
13 location drains to the north into a wetland.

14 **Q: Is this consistent with the memorandum prepared by Mr. Jones?**

15 A: No. The memorandum indicates that water "flows southward from the emergent/scrub-shrub
16 wetland," which contradicts observations made during the March 19, 2019 site visit. The
17 memorandum also provides as attachments a number of photographs taken during the
18 March 14, 2019 site visit conducted by Mr. Jones. As indicated in these photographs, there
19 was still snow cover on March 14, 2019 and perhaps this snow obscured any northward flow
20 into the emergent/scrub-shrub wetland. By comparison, there was no snow cover during the

1 March 19, 2019 site visit when representatives from the Applicant and NYSDEC observed
2 evidence of this northward flow.

3 **Q: Do you have any other concerns with the memorandum prepared by Mr. Jones?**

4 A: Yes. The memorandum states, "The relocated, ditched channel flows southward from the
5 emergent/scrub-shrub wetland near the parcel 096.00-01-062.000 boundary, then west
6 along and north of that boundary to its confluence with the original channel..." The east-
7 west oriented ditch was observed during the March 19, 2019 site visit; however, no ditch that
8 runs south from the emergent/scrub-shrub wetland exists. In addition, while under oath Mr.
9 Jones repeatedly referenced the stream in this location as a perennial stream. This is
10 inconsistent with the response to Applicant IR-4, where Mr. Jones classifies this stream as
11 intermittent.

12 **Q: Do you agree with either of these classifications?**

13 A: No. A perennial stream is a stream that essentially flows year-round, and the primary source
14 of hydrology is groundwater, whereas an intermittent stream is a stream that does not flow
15 year-round and both groundwater and precipitation contribute to its hydrology. In addition,
16 from a geomorphology perspective both perennial and intermittent streams typically have a
17 well-defined bed and bank. At the location where the access road between turbines T76 and
18 T87 crosses the corn field/alleged stream there is not a well-defined stream bed or bank,
19 and there is no evidence that groundwater contributes to any flows in this location at any
20 point during a given year.

21 **Q: What experience do you have that provides a basis for your opinion?**

Benjamin R. Brazell
Sur-Rebuttal
EDR

1 A: As indicated in the resume included with my pre-filed testimony, I have experience with
2 stream restoration and mitigation. This experience is the result of professional training prior
3 to joining EDR, specifically attendance at a week-long training class (Wildland Hydrology's
4 Level I – Applied Fluvial Geomorphology) instructed by Dave Rosgen. In addition, prior to
5 joining EDR, I spent nearly three years working under multiple senior scientists who had
6 completed all levels of Wildland Hydrology's stream courses and training, and in this
7 capacity, I significantly participated in the field study and analysis of many different stream
8 reaches in all three physiographic regions (mountains, piedmont, coastal plain) of North
9 Carolina. These field studies included collecting detailed data on stream pattern, profile,
10 and dimension (e.g., field-identified geomorphologic indicators of stream bank width and
11 height) in support of various stream restoration projects, and in support of the development
12 of bankfull hydraulic geometry relationships and recurrence intervals for North Carolina's
13 coastal plain.

14 **Q: Is your North Carolina-based stream experience relevant to Steuben County, New**
15 **York?**

16 A: Yes. The stream-specific skills I developed in North Carolina are directly relevant to
17 accurately identifying perennial or intermittent streams in New York.

18 **Q: Does this conclude your testimony?**

19 A: Yes.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A.L.J. COSTELLO: Mr. Muscato, just to
3 make sure, did we cover all the testimony that --?

4 MR. MUSCATO: Yeah. Yes.

5 Thank you, your Honor.

6 A.L.J. COSTELLO: Okay. Okay. Is --?

7 MR. MUSCATO: Your Honor, the -- the
8 witness is available for cross-examination.

9 A.L.J. COSTELLO: Okay. We'll start
10 with --.

11 MR. MUSCATO: Your Honor, is it -- is
12 it okay -- I can't see the -- I can't really hear
13 very well here.

14 Can I move closer?

15 A.L.J. COSTELLO: You can move closer.

16 We also have a microphone, if that
17 would -- that would help, for the witness?

18 MR. MUSCATO: I was just thinking of
19 pulling a chair around.

20 A.L.J. COSTELLO: That's fine.

21 Mr. King, will --

22 MR. KING: Sure.

23 A.L.J. COSTELLO: -- will you be doing
24 the cross-examination?

25 MR. KING: Yes, your Honor.

15-F-0122 Baron Winds LLC 3/21/2019

A.L.J. COSTELLO: Okay.

MR. KING: Thank you.

UNIDENTIFIED SPEAKER: You're welcome.

CROSS EXAMINATION

BY MR. KING:

Q. Mr. Brazell, on page 8, lines 15 through 16 of your rebuttal testimony, you state, quote, Mr. Jones indicates the project as proposed, does not avoid state-regulated wetlands and adjacent areas. You then go on to say that this statement is incorrect.

Do you want to clarify, or amend the statement that it's incorrect -- that Mr. Jones was incorrect?

A. (Brazell) That statement should be specific to wetlands only, not adjacent areas.

Q. Okay. So, you acknowledge that there -- the project does impact wetland adjacent areas?

A. I do.

Q. Okay. On page 10, lines 2 through 6, you note that Exhibit 22M, to the February 2019 application update, states that wetland H.K. 3, will be crossed by an underground electrical

1 15-F-0122 Baron Winds LLC 3/21/2019

2 connection, using H.D.D., or horizontal directional
3 drilling installation.

4 Is that correct?

5 A. That is what my rebuttal says.
6 Correct.

7 Q. Is this crossing of New York
8 State Department of Environmental Conservation
9 freshwater wetland H.K. 3, which is a state-regulated
10 freshwater wetland, unavoidable?

11 A. There is an alternative
12 collection route proposed in the February 2019
13 application update, that would avoid this crossing.

14 Q. I see.

15 And what is the rational, for not
16 proposing that alternative?

17 A. At this time, it is my
18 understanding that the Applicant needs both options
19 available to them, until they can determine exactly
20 which option is feasible and which option will be
21 used.

22 Q. In crossing a freshwater wetland,
23 with the use of horizontal directional drilling, is
24 there a potential for negative adverse impacts, to
25 the wetland?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. There is a potential for frac-
3 out.

4 Q. So, would you then agree that
5 there is a potential for impact, by drilling
6 underneath a -- freshwater wetland H.K. 3, for
7 potential negative adverse impacts?

8 A. That potential exists.

9 Q. And would you agree, that the
10 proposal does not avoid that potential impact, as
11 currently before the ap -- the Department, in the
12 application as amended?

13 A. I -- I -- I don't think I would
14 agree with that. No.

15 The application includes a preliminary
16 frac-out contingency plan and if those measures are
17 followed, I believe that that activity would minimize
18 the potential for that adverse impact.

19 Q. Does the application as amended,
20 in February 2019, avoid the need to cross the wetland
21 H.K. 3?

22 A. As I just indicated, there are
23 two collection routes proposed, in the February 2019
24 application update and if one of those collection
25 routes is utilized, the one that's not in this

1 15-F-0122 Baron Winds LLC 3/21/2019

2 location, it would avoid this crossing.

3 Q. Well, so that alternative that
4 you're referencing, there are no cut sheets included
5 within your Exhibit B.R.B. 4, is that correct?

6 A. I would have to reference that,
7 to answer that definitively.

8 Q. Okay. Please reference it.

9 A. Okay. All right. There is a
10 sheet, specific to this crossing.

11 Q. Is there a sheet, specific to the
12 alternative crossing, that you mentioned, that --

13 A. Yes.

14 Q. -- avoids wetland H.K. 3?

15 A. Yes, sir.

16 Q. What page number is that on?

17 A. The copy of the document I have
18 in front of me, does not have the exhibit page
19 numbers on it. It's --

20 Q. Can -- can you reference --?

21 A. -- it's figure 7, sheet 6.14 of
22 B.R.B. 4.

23 Q. Does that alternative route
24 involve any wetland, or stream crossings?

25 A. It is page 60 of 63.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. 60 of 63. Okay.

3 A. Could you repeat the question,
4 please?

5 Q. Sure.

6 Does the alternative route involve any
7 wetland, or stream crossings?

8 A. Yes, it does.

9 Q. Okay. On page 10, lines 14
10 through 20 and page 11, lines 1 through 8 of your
11 rebuttal testimony, do you take issue with Mr. Jones'
12 testimony, specifically the assertion that the
13 application materials submitted to date, do not meet
14 E.C.L. Article 24 wetland permitting standards,
15 specifically, Mr. Jones' testimony on page 20, lines
16 9 through 13 of his pre-filed testimony, which notes
17 that, quote, to meet permitting standards, the
18 Applicant would need to submit plans and
19 specifications, detailing how wetland impacts would
20 be avoided and if unavoidable, mitigated, through a
21 properly designed construction plan, including a
22 frac-out risk assessment and contingency plan and a
23 storm water pollution prevention plan?

24 On line 7 through 8, on page 11 of
25 your rebuttal, you then state that this information

1 15-F-0122 Baron Winds LLC 3/21/2019

2 was included within the application.

3 Is this correct?

4 A. That is what my rebuttal states,
5 correct.

6 Q. Where in the record, might we
7 find an analysis of the alternatives to crossing
8 wetland H.K. 3, besides the cut sheet that you have
9 mentioned, which is on page 63 -- or 60 of 63, of
10 B.R.B. 4?

11 A. The February 2019 application
12 update, describes this, in Update Exhibit 22.

13 Q. Okay.

14 A. There are additional maps
15 included with the February 2019 application update.

16 Q. Uh-huh.

17 A. And off the top of my head, this
18 would be depicted on figure -- update figure 2 dash
19 2, update figure 22 dash 3, I believe and 23 dash 2,
20 I believe. I would have to look at the update to
21 confirm the numbers, but there's -- there's a number
22 of locations, where this is depicted.

23 Q. Thank you.

24 Exhibit 9 to the application, appears
25 to discuss a 120 turbine alternative, but does not

1 15-F-0122 Baron Winds LLC 3/21/2019

2 specifically speak to site-specific alternatives, for
3 the need to cross H.K. 3.

4 Beyond the documents you mentioned
5 there in Exhibit 22 updated and B.R.B. 4, are there
6 any other analysis of alternatives to this crossing,
7 within the application documents?

8 A. I would say there are.

9 The original application proposed the
10 crossing of this particular wetland that you're --
11 you're questioning me on, as an overhead crossing.

12 Q. Uh-huh.

13 A. It indicated that there would be
14 overhead -- overhead collection line structural poles
15 located in the adjacent area. There would be
16 clearing, associated with that overhead collection
17 line and so, as an alternative, the application in
18 the February 2019 update, indicated that it was going
19 to bury collection line which was in part, I should
20 say, to mitigate impacts identified by other parties
21 --

22 Q. Uh-huh.

23 A. -- specific -- specifically
24 visual impacts identified by D.P.S.

25 Q. Uh-huh.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Thank you.

3 A. You're very welcome.

4 Q. You've indicated that a properly-
5 designed construction plan, was included amongst the
6 application materials. On page 11, lines 2 through
7 5, you indicate that this was included within
8 Appendix M from 2017, Appendix CCC from 2017 and
9 Exhibit 22, as modified. Is that correct?

10 A. That's correct.

11 Q. These documents do not appear to
12 be final engineering plans.

13 Would you consider them to be final
14 engineering plans?

15 A. I would not.

16 Q. Those drawings and documents do
17 not appear to show information related to the H.D.D.,
18 or horizontal directional drilling effort, other than
19 the location of the bore pits. For example, the
20 documents contained information related to -- sorry.
21 Strike that.

22 For example, do these documents
23 contained information, related to vertical
24 clearances, necessary to ensure the drilling goes
25 beneath H.K. 3 and the associated stream?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. Can you repeat the question? I'm
3 sorry.

4 Q. Sure.

5 Do any of the documents referenced
6 above, that's Appendix M from 2017, Appendix CCC from
7 2017 or Exhibit 22 as modified and, I guess, also
8 B.R.B. 4 as submitted with your rebuttal testimony,
9 do any of those documents contained information
10 related to the vertical clearance necessary to ensure
11 the drilling goes beneath H.K. 3 -- the wetland H.K.
12 3 and associated stream, with enough clearance to
13 avoid potential impacts --

14 A. It -- it -- it --

15 Q. -- to the wetland --

16 A. -- it --.

17 Q. -- and stream?

18 A. None of those documents
19 specifically address vertical clearance underneath
20 wetland H.K. 3.

21 However, as I stated previously the
22 Article 10 record and the application does contain a
23 frac-out contingency plan, which if implemented, I
24 believe, would minimize potential impacts to this
25 wetland.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Okay. Well, let's -- let's talk
3 about the frac-out contingency plan.

4 Having reviewed this document, it does
5 appear to only address the -- what would happen and
6 what the procedure would be, should there be a frac-
7 out, or should there be an issue with the drill-head,
8 emerging into a river, or wetland, or other resource.
9 Does this frac-out -- or this inadvertent return
10 plan, as you described it, which is referenced in the
11 record, as I believe, Appendix JJ, does this include
12 any risk-assessment methodology, to plan for how the
13 boring, or drilling is to be done, in advance, to
14 avoid potential impacts?

15 A. Not that I recall.

16 Q. Okay. Do any of these plans
17 include information regarding depth of the bedrock in
18 this specific locations, where H.D.D. is proposed?

19 A. The application materials include
20 a preliminary geotechnical evaluation, which
21 addresses depth to the bedrock across the entire
22 facility.

23 Q. But not in these specific --?

24 A. So, I believe --

25 Q. Go -- go ahead.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. I --

3 Q. -- I'm sorry.

4 A. -- I believe it -- it would -- it
5 would probably be possible to extrapolate that
6 information, but is there -- if you're asking me if
7 there is a -- a list of a specific coordinate where a
8 H.D.D. bore pit would be placed and associated depth
9 to the bedrock, that does not exist.

10 Q. Okay. Thank you.

11 Does -- the inadvertent return control
12 plan, Appendix JJ, from 2017, does that address the
13 potential for either the lateral, or kind of
14 horizontal migration of streams, or the vertical
15 migration of streams over time, through fluvial
16 action? Does it include any of -- of that
17 information?

18 A. Not that I recall. No.

19 Q. Okay. Do any of the plans
20 include cross sections of their proposed H.D.D.
21 locations?

22 A. The 2017 application included, as
23 indicated in -- in the various materials, Appendix M,
24 which is the preliminary design drawings --

25 Q. Uh-huh.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. -- those preliminary design
3 drawings, indicate a plan and profile of all the
4 proposed components, at the time that the application
5 was proposed at that point in time. As indicated
6 previously, it was an overhead crossing.

7 Q. Uh-huh.

8 A. So, there is -- there's a profile
9 associated with that, but there is not a profile
10 associated with the H.D.D.

11 Q. Would you say that that's the
12 type of information that you would include, within
13 final engineering plans, for construction?

14 A. Potentially.

15 Q. Okay. On page 11, lines 5
16 through 6, you mentioned that the application
17 includes a document, from November 2017 titled Draft
18 and Written Return Plan.

19 Is this a site-specific plan, or is
20 this a general plan?

21 A. It -- it's a general plan.

22 Q. Does this plan include any
23 requirements for site-specific risk assessment?

24 A. Not that I recall.

25 Q. Okay. All right. Does the plan

1 15-F-0122 Baron Winds LLC 3/21/2019

2 include any requirements to do any geotechnical due -
3 - due diligence, prior to drilling beneath the
4 streams and wetlands?

5 A. Which plan are you referring to,
6 please?

7 Q. The same plan, the inadvertent
8 control return plan, or return control plan.

9 A. Not that I recall.

10 Q. Okay. Is this the type of thing
11 that would be included within final engineering
12 plans?

13 A. Not typically.

14 Q. Exhibit 23, which was submitted
15 within the original application, on page 16 of
16 Exhibit 23, you state that the Applicant will provide
17 final engineering plans, to the New York State
18 Department of Environmental Conservation and New York
19 State Department of Public Service, regarding each
20 proposed crossing, prior to the Siting Board's
21 determination of whether to issue an Article 10
22 Certificate to the facility.

23 Is that still an accurate statement?

24 A. I -- I don't -- I don't have this
25 information in front of me.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 MR. KING: Okay. Your Honors, may I
3 provide him with Exhibit 23.

4 A.L.J. COSTELLO: Yes.

5 BY MR. KING: (Cont'g.)

6 Q. So, I ask the question again.

7 On page 16 of Exhibit 23, it states
8 that, quote, the Applicant will provide final
9 engineering plans to the New York State Department of
10 Environmental Conservation and the New York State
11 Department of Public Service, regarding each proposed
12 crossing, prior to the Siting Board's determination
13 of whether to issue an Article 10 certificate to the
14 facility.

15 And my question to you, Mr. Brazell,
16 was is that still an accurate statement?

17 A. (Brazell) That is what Exhibit 23
18 states.

19 My understanding of the record, as it
20 currently stands is that the -- that is a condition -
21 - a proposed condition of the certificate.

22 Q. Would -- would submitting them
23 prior to a determination of whether to issue a
24 certificate, include -- well, how -- how -- I guess,
25 I'm -- I'm -- I'm confused as to how that could be

1 15-F-0122 Baron Winds LLC 3/21/2019
2 done, if that would be done prior to the Siting
3 Board's determination of whether to issue a
4 certificate. This says that plans would be submitted
5 prior to that determination.

6 A. Based upon the record as it
7 currently stands, this is information from the
8 November 2017 application.

9 Q. Correct.

10 A. The record, as it currently
11 stands, indicates a proposal to provide final
12 engineering plans, as a certificate of the condition
13 -- or a condition of the certificate. I'm sorry.

14 Q. However, is the application not -
15 - is this -- so, this is no longer accurate, is what
16 you're saying?

17 A. I'm saying it's evolved, since
18 then.

19 Q. In your amendment, or your -- in
20 all your documents submitted to amend various
21 exhibits, I don't recall a location from reviewing
22 them, where this statement was modified.

23 Do you -- can you point me to that
24 location?

25 A. I -- I can't.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Okay.

3 A. How -- I -- I could however,
4 point you to the Applicant's proposed conditions and
5 D.P.S.'s proposed conditions, which are more -- more
6 recent information in the record.

7 Q. Is it possible to include final
8 design plans, for part of a project and not the
9 entire project, prior to issuing a certificate --
10 prior to a certificate-issuance determination?

11 A. That -- I think anything is
12 possible. That potential exists.

13 We would need to understand the -- the
14 specific location that your -- your questioning us on
15 and -- and exactly what would be needed.

16 Q. The specific locations are the --
17 are the 10 crossings that this is referencing because
18 it's reference -- referencing each regarding proposed
19 crossing.

20 Would that be possible, to receive
21 final engineering plans for each crossing, prior to a
22 certificate issuance, as stated in Exhibit 23?

23 A. I don't have the ability to
24 answer that question, right now.

25 MR. KING: Okay. Thank you.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 All right. No further questions.

3 Thank you.

4 A.L.J. COSTELLO: Redirect, Mr.

5 Muscato?

6 MR. MUSCATO: Your Honor, can we have
7 a minute?

8 A.L.J. COSTELLO: Sure.

9 Off the record.

10 (Off the record discussion)

11 A.L.J. COSTELLO: Okay. Back on the
12 record.

13 REDIRECT EXAMINATION

14 BY MR. MUSCATO:

15 Q. Hi, Mr. Brazell.

16 Mr. Brazell, you were asked a number
17 of questions, regarding the level of detail in the
18 various plans, submitted as part of the Article 10
19 application as well as the various updates and
20 supplements.

21 Is -- is -- is the level of detail
22 that you were being asked about by the D.E.C. this
23 morning, the -- is that level of detail necessary to
24 provide an opinion on the probable environmental
25 impacts of the facility?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. (Brazell) I -- I believe the
3 level of detail that's been provided in the record
4 today, provides all the information necessary to
5 reach a conclusion in that regard.

6 Q. And is that the same level of --
7 I'm -- I'm sorry. Strike that.

8 Mr. Brazell, you were involved with
9 the Cassadaga Wind Facility, correct?

10 A. Correct.

11 Q. Is -- is this -- is the level of
12 detail that was included for -- at -- in the record
13 at this point, the same level of detail that was
14 included for the Cassadaga Wind Facility?

15 MR. KING: Objection.

16 Relevance. It's -- we're --

17 MR. MUSCATO: Your --

18 MR. KING: -- cross --

19 MR. MUSCATO: -- your --

20 MR. KING: -- examination.

21 MR. MUSCATO: -- your Honor, this goes
22 to whether or not the Applicant has provided a level
23 of detail that's consistent with the regulations and
24 the Article 10 certificate that's been issued in a
25 prior case.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A.L.J. COSTELLO: Okay. Overruled.

3 I'll allow -- allow him to ask the
4 question.

5 A. (Brazell) Could you repeat the
6 question, please?

7 BY MR. MUSCATO: (Cont'g.)

8 Q. Sure.

9 The -- the question was whether or not
10 the level of detail that's been included in the
11 record to date, is consistent with the level of
12 detail that was provided to the Siting Board, in the
13 Cassadaga Wind proceeding?

14 A. (Brazell) Yes.

15 It is consistent and in fact, I would
16 say that the -- the timing of the -- of the -- the
17 provision of the information in the Baron Winds'
18 case, improved upon the timing in Cassadaga. There
19 were -- there was much more detail in the application
20 itself, regarding impacts that would allow any party
21 to understand those in greater detail, as compared to
22 Cassadaga.

23 Q. And -- and then you're saying
24 that the level of detail in the Baron application?

25 A. Correct.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Okay. And the certificate was
3 issued by the Siting Board for the Cassadaga
4 Facility, correct?

5 A. Correct.

6 Q. Mr. Brazall, one last question.
7 Is -- is the level of detail that's
8 been provided in the record to date, for the Baron
9 Winds Facility, consistent with the level of detail
10 that has resulted in the issuance of both U.S. Army
11 Corp. wetlands and permits and D.E.C. jurisdictional
12 permits, in the past?

13 A. Correct.

14 It is.

15 MR. MUSCATO: Okay. No further
16 questions, your Honor.

17 A.L.J. COSTELLO: Mr. King?

18 MR. KING: I'm all set.

19 Thank you.

20 A.L.J. COSTELLO: All set.

21 Okay. Mr. Brazell, your testimony is
22 concluded, so you're excused.

23 Thank you.

24 THE WITNESS: Thank you.

25 MR. MUSCATO: Okay.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A.L.J. COSTELLO: Let's go off the
3 record.

4 (Off the record discussion)

5 A.L.J. COSTELLO: I just want to make
6 a clarification for the record.

7 During the testimony of Mr. Brazell, I
8 had indicated that we would admit the agricultural-
9 panel testimony, that had previously been admitted
10 into evidence, so it does not have to be -- in --
11 into the record. It doesn't have to be admitted
12 again, during that period of time, just for clarity
13 of the record.

14 MR. MUSCATO: For the clarity of the
15 record, then that may also be the case with respect
16 to the shadow flicker panel that was a panel with
17 Jacob Runner (phonetic spelling).

18 A.L.J. COSTELLO: Right.

19 MR. MUSCATO: And that was probably
20 previously --

21 A.L.J. COSTELLO: That was --.

22 MR. MUSCATO: -- submitted --

23 A.L.J. COSTELLO: Right.

24 MR. MUSCATO: -- as well, so I just
25 wanted -- I didn't know if that --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A.L.J. COSTELLO: Okay.

3 MR. MUSCATO: -- was an issue, as
4 well.

5 A.L.J. COSTELLO: Okay. Thank you.

6 THE REPORTER: Mr. Muscato, can you
7 just move that microphone for me?

8 MR. MUSCATO: Yeah.

9 THE REPORTER: Thank you.

10 MR. MUSCATO: I -- I will.

11 Thank you.

12 THE REPORTER: Okay.

13 MR. MUSCATO: Did you get that?

14 THE REPORTER: I do.

15 MR. MUSCATO: Okay. Yeah.

16 THE REPORTER: But could you just --

17 MR. MUSCATO: I don't have --

18 THE REPORTER: -- tilt it --

19 MR. MUSCATO: -- anything --

20 THE REPORTER: -- a little --

21 MR. MUSCATO: -- further.

22 THE REPORTER: -- bit towards you?

23 That's fine.

24

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15-F-0122 Baron Winds LLC 3/21/2019

PAGES 178-189 HAVE BEEN LEFT INTENTIONALLY
THE CONFIDENTIAL PORTION
CAN BE FOUND SEPARATELY FOR 3/21/2019

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A.L.J. COSTELLO: Okay. At this
3 point, we will put the testimony of Jenny Landry and
4 Scott Crocoll and I apologize if I state incorrectly
5 --

6 THE WITNESS: (Crocoll) No.

7 You got it right.

8 A.L.J. COSTELLO: -- into the record
9 as if orally given today and that will be
10 N.Y.S.D.E.C. Direct Redacted Testimony of Jenny
11 Landry and Scott Crocoll and N.Y.S.D.E.C. Direct
12 Confidential Testimony of Jenny Landry and Scott
13 Crocoll.

14 And my understanding is that Mr.
15 Weintraub will be providing p.d.f. files of that
16 corrected testimony of --.

17 MR. WEINTRAUB: Yes.

18 A.L.J. COSTELLO: Okay.

19 MR. WEINTRAUB: Yes.

20 A.L.J. COSTELLO: Thank you.

21 MR. WEINTRAUB: Okay.

22 MS. KLAMI: Thank you, your Honor.**

23

24

25

**NEW YORK STATE BOARD ON ELECTRIC GENERATION
SITING AND THE ENVIRONMENT**

[illegible]

In the Matter of the Application of

Bryn Ind LLC

C e N 1 -F-0122

Er Certificate Enrollment Center

nd Print Need Print to Article 10 to

Contract and Energy Pretest

[illegible]

**DIRECT REDACTED TESTIMONY OF
JENNY LANDRY AND SCOTT CROCOLL**

Discussion Findings

Ne York State Department of Environmental Conservation

Ferr222019

CASE NUMBER F-0122 CROCOLL LANDRY

1 **WITNESS INTRODUCTION**

2 **Q. Will the first witness please state her name, employer, title and business**
3 **address?**

4 A. My name is Jennifer Landry. I have been employed with the New York Department of
5 Environmental Conservation for DEC since 2011. I am
6 based in Albany in the Division of Field and Wildlife Bureau Wildlife
7 and Wildlife Enforcement for 12 years. Prior to that I was employed in the Division of
8 Environmental Permitting in Environmental Assessment for approximately 10 years. I
9 currently work in the DEC Region 8 Office Albany New York.

10 **Q. Will the first witness please describe her educational background and**
11 **professional certifications?**

12 A. Please see attached resume for DEC-NYSDEC-BA-1.

13 **Q. Will the second witness please state his name, employer, title and business**
14 **address?**

15 A. My name is Scott Crivello. I have been employed with DEC in the Division of Field
16 and Wildlife Bureau Wildlife and Wildlife Enforcement for approximately 38 years. I
17 currently work in the DEC Central Office Albany New York.

18 **Q. Will the second witness please describe his educational background and**
19 **professional certifications?**

20 A. Please see attached resume for DEC-NYSDEC-BA-2.

CCE N01 F-0122 CROCOLL LANDRY

1 **Q. Will the panel please summarize their collective responsibilities in their**
 2 **positions at the Department?**

3 A. As the Biodiversity Unit in the Environmental Protection for the State
 4 Department and the Regional Threatened and Endangered RTE Species Program Unit
 5 Unit, we are the implementation of Article 11 of the Environmental Conservation
 6 Law, ECL Article 11 and its implementing regulations set forth in Part 182 of Title 20
 7 of the Official Code of Regulations and Regulations of the State of New York
 8 NYCRR Part 182. Included in our environmental responsibilities are review of ECL Article
 9 11 permit applications, the review of ECL Article 11 for draft reviewed
 10 under Article 10 of the Public Service Law, PSL Article 10 and the development
 11 and review of the draft regulations in the development and the environmental review

12 **Q. Will the first witness please summarize her experience regarding RTE species?**

13 A. I have been the Regional Coordinator for the Environmental and the
 14 RTE review for the 11-month review of NYSDEC Region 8 Species. I am the
 15 Region 8 staff responsible for the coordination of the certain to the Bald Eagle *Haliaeetus*
 16 *leucocephalus* BAEA. I am the Region 8 manager for the review of the
 17 and the Region 8 BAEA nest territories. I conduct the review of the nest and the
 18 BAEA nest territories in the field and the review of the nest. In addition to
 19 the monitoring of the Region 8 I report the nest and the review of the nest
 20 to the Department and the field staff and the review of the nest. I review the
 21 the 7 BAEA nest territories in Region 8.

Ce N1-F-0122 CROCOLL LANDRY

1 I _____rte it _____nd ed _____te _____nd _____ner _____nei _____r _____nd _____t _____er _____t _____e _____der _____in _____t _____e
2 _____n _____er _____ti _____n _____nd _____n _____n _____e _____ent _____e _____e _____e _____r _____rid _____in _____te _____ni _____d _____ie _____nd _____n _____n _____e _____ent
3 _____ti _____n _____t _____r _____te _____t _____ne _____ti _____n _____e _____it _____t _____I _____r _____r _____it _____i _____en _____ed _____i _____d _____ie _____re _____i _____t _____t _____r _____t _____n _____i _____t _____te
4 _____nd _____in _____nd _____r _____ri _____te _____re _____e _____e _____re _____i _____t _____ted _____e _____e _____I _____r _____r _____rd _____in _____te _____re _____i _____n _____e _____e
5 _____r _____r _____e _____ti _____n _____r _____t _____e _____e _____e _____i _____i _____n _____t _____t _____in _____d _____t _____n _____ern _____in _____t _____enti _____e _____e _____ti _____n
6 _____t _____re _____t _____e

7 I receive a report in Re 8 for tentative of theft of RTE vehicle in dining area
8 under the University of Pennsylvania ECL Article 70 which is amended by NYCRR Part
9 21 for UPA of the State Environment and Heritage Act for SEER ECL Article 8
10 which is amended by NYCRR Part 17 and PSL Article 10. This includes in
11 which the vehicle is in dining area in the institution in the institution
12 the information is required in relation to the report of the institution
13 identify the tentative of identification of the individual and initiate the derelict of the RTE
14 vehicle in the area of the institution and the institution

15 □□ **Will the second witness please summarize his experience regarding RTE**
16 **species, and review of proposed wind energy projects?**

17 A I erlee De rt ent r r t r t i n d e t e
18 re tin t BAEA in Ne Yr St te A rt t t er i t I rdin te te
19 De rt ent nn BAEA rin ne tin r e ne BAEA ne ti n nd
20 e n e NYSDEC GIS er e t te ide BAEA ti n I re ie r ed
21 ind ener r e t r tenti i t t BAEA in din r e t r ed r nt

CCE N001-F-0122 CROCOLL - LANDRY

1 t PSL Article 10 I think and that there are certain BAEA not in territories and
 2 unitary BAEA not in the Hudson River

3 **Q. What is the purpose of your testimony today?**

4 A The purpose of my testimony is to provide an overview of the State RTE and
 5 the various State reformation and reorganization regarding the
 6 public utility and the various public utility companies and the various
 7 independent energy companies BAEA

8 Our testimony is to provide an overview and regarding the various and the various
 9 BAEA and the various utility companies regarding the various independent energy companies BAEA
 10 In addition my testimony is to provide an overview of the various defined in Part 182 BAEA State-
 11 owned utilities and the various regulated utilities

12 The various defined as Department of Commerce the RTE and the various
 13 attendant staff and the various staff of the various and the various
 14 the various and the New York State Board on Electric Generation and the
 15 Environmental Site Board definition and required finding pursuant to PSL Article
 16 10

17 According to my testimony and the various the Site Board of the various State
 18 staff and the various RTE and the various the various the various the various
 19 Article 11 and the various definition in Part 182 and the various Site Board and
 20 the various ECL Article 11 and Part 182 the various definition and required under PSL Article 10
 21 and it is to provide the various

CCE N01 F-0122 CROCOLL LANDRY

1 **Q. What information has provided the basis for your testimony?**

2 A. Our testimony is based on the Project Information Application submitted
3 Exhibit 22 and Martin's Affidavit filed with the State Board on November 29, 2017
4 BBAE's Indemnity Agreement and the referenced and included information
5 to document and identify the project as NYSDEC-BA-3 BBAE's Reference and
6 Martin's Information as the referenced and the referenced information in the
7 entire Environmental Application and Project Report to the requirement of ECL Article 11
8 and Part 182. Finally, we reviewed the Application and the information provided
9 in the draft February 2019 Environmental Information Statement Exhibit 22 and the entire
10 BBAE.

11 **OVERVIEW OF THE BIOLOGY AND BEHAVIORS OF BALD EAGLES**

12 **Q. Are BAEA a conservation concern?**

13 A. Besides being a Native American, the BAEA is an indigenous community
14 organization and reservation that endures the life in New York State and in
15 the state of the people and the life of the Department of the environment and
16 the state of the

17 BAEA is located in the Federated and the threatened life in 1977
18 and the Federated in the year 8 of the life of the reservation in New York
19 the year 1900. In 1971, New York State listed BAEA as endangered and at that time
20 there was a one documented life of the New York State. The State
21 reservation was established in 1971 and the life of the reservation 1988 ten years BAEA

Cape Nott F-0122 CROCOLL - LANDRY

1 There were no fish in the State. Sixteen years after the end of the Prohibition Ontario continued the
 2 the prohibition program initiated in the State. New York and Massachusetts
 3 established feeding programs. In 1990 the the US Fish and Wildlife Service (USFWS)
 4 discontinued the eagle feeding program. The threatened due to the eagle's recovery and
 5 in 2007 the eagle's recovery led to the federal withdrawal of New York's discontinued BAEA to
 6 threatened in 1999. (See exhibit NYSDEC-BA-3, NYSDEC 2010 Conservation Plan for
 7 Bald Eagle in New York State. The Bald Eagle in New York's eagle recovery program 22 feeding
 8 territories continued in the Prohibition era in the northeast territories.
 9 Although the prohibition program continued in the 1900s and in part to
 10 the Department of Conservation efforts there is no guarantee that the prohibition will
 11 continue to do so in the future. It is not continued prohibition efforts. The issue of the
 12 reinitiation of the USFWS's eagle program BAEA prohibition non-permitting of eagle
 13 is not the out-of-date prohibition program. (See exhibit NYSDEC-BA-3, US Fish and
 14 Wildlife Service 2009). Given the fundamental right of the BAEA program to
 15 the Fish and Wildlife Service's exhibit NYSDEC-BA-3 is not the issue of the eagle's
 16 in the eagle's BAEA prohibition in the State and define it as a reinitiation of the
 17 feeding program eagle's prohibition trend and be in the future and it is the difficult to detect
 18 whether the eagle's prohibition is in the future or the future of the eagle. The fact that
 19 New York's 22 territories is in the present era of the State's eagle's prohibition program
 20 the 1980s and 1990s. However, the fact that the eagle's prohibition in the New York and the
 21 the prohibition program is in the future of the prohibition program is not the issue.

Case No. 10-F-0122 CROCOLL v. LANDRY

1 ...it t...e...red t...e ...tion ...e ...er r...r ...e in t...e St...e F...
 2 t...e and t...er re...n...e BAEA re...in...St...e-...t...e t...e...e...t...e
 3 r...e...n...d re...re...ent...ECL Arti...e 11 and P...rt 182...

4 **Q. Please describe the biology and behavior of BAEA.**

5 A... BAEA re...re...n...-...ed ...rd...re...In Ne...Y...r...St...e...t...e...re ...nd ...r-
 6 r...nd in ...r...ri...te ...it...D...rin...t...e ...eedin...e...n...t...e...r...e...n...i...t...n...i...t...t...
 7 ...i...n...n...r...t...n...i...t...t...e...t...e...r...n...d...t...er...re...In...t...er...e...n...t...e...n...d...e...d
 8 ...n...t...er...ird...nd...n...d...n...i...n...r...t...n...i...t...t...e...d...n...r...ri...n...e...n...d...e...r
 9 ...r...e...n...in...inter...n...t...er...r...e...n...d...re...n...t...i...n...e...See...e...i...t...NYSDEC-
 10 BA-3...Gerr...rd...nd...B...rt...tti...1988...B...e...er...2000...

11 BAEA ...ir...r...i...e...n...ne...t...e...ir...die...r...i...t...er...i...e...re...e...d...r...t...e
 12 re...t...e...re...n...in...ird...i...t...te...t...t...ind...ne...t...e...nd...i...t...i...n...e...n...d...in...
 13 ...See...e...i...t...NYSDEC-BA-3...Herri...1932...Gr...1988...In...Ne...Y...r...e...e...n...ne
 14 t...t...ree...e...n...et...een...Fe...r...r...nd...A...ri...See...e...i...t...NYSDEC-BA-3...N...e...2010...

15 Ne...t...re...r...i...n...nd...r...t...i...r...r...r...r...t...t...e...e...n...in...e...ri...d...S...e...ne...t...
 16 re...r...i...n...nd...ne...ne...t...n...tr...ti...n...r...r...t...e...t...e...re...i...n...nd...i...nter...A...t...e
 17 n...er...t...errit...rie...e...in...re...ed...in...t...e...St...e...e...e...e...f...t...e...entire...i...nter...n...t...eir
 18 terr...it...rie...i...n...d...i...n...i...n...e...i...e...t...re...e...nt...t...er...indi...id...r...n...in...in...nd
 19 ...i...n...t...e...re...

20 D...rin...t...e...r...eedin...e...n...BAEA...ne...t...in...t...re...r...r...der...re...t...ne...r...t...er...die...
 21 ri...er...e...n...d...r...r...e...e...t...nd...re...See...e...i...t...NYSDEC-BA-3...NYSDEC 201...

Coe N01 F-0122 CROCOLL LANDRY

1 The nest is in the tree the nest is in the nest and the nest tend
 2 to be in the tree and the nest is in the nest. The nest is in the nest
 3 in the nest and the nest is in the nest. The nest is in the nest
 4 for the nest and the nest is in the nest. See e.g. NYSDEC-BA-
 5 3 NYSDEC 201

6 In addition the nest is in the nest and the nest is in the nest
 7 10 and 12 see the nest and the nest is in the nest. The nest is in the nest
 8 near the nest and the nest is in the nest. The nest is in the nest
 9 NYSDEC-BA-3 B. 2000 N. 2010

10 **Q. Have BAEA been documented in the Project area?**

11 Yes. E. 2013 has been documented in the Project area in the nest
 12 in the nest and the nest is in the nest. The nest is in the nest
 13 F. Bird Migration Survey in 2013. Breeding Bird Survey (BBS) in 2013 and the nest
 14 E. 2013 Survey in 2017. A. In addition the nest is in the nest and the nest
 15 is in the nest and the nest is in the nest. The nest is in the nest
 16 in the nest and the nest is in the nest.

17 The nest is in the nest and the nest is in the nest. The nest is in the nest
 18 the nest is in the nest and the nest is in the nest. The nest is in the nest
 19 in the nest and the nest is in the nest. The nest is in the nest
 20 N. 2013 11/2018 the nest is in the nest and the nest is in the nest. The nest is in the nest

21

Ce N1-F-0122 CROCOLL LANDRY

1 [REDACTED] bit in the Prout Report A second identified the the
2 Department identified the Termination on December 17, 2018 in verified the information and
3 documented additional attendance in the defendant's case. Department further recorded the
4 GPS coordinates of the net in nine feet [REDACTED] in the Ground Tree 20 GPS
5 to further identify the information and the [REDACTED] the net. See NYSDEC-BA- [REDACTED]
6 Confidentially the Net Location and Monitoring

[illegible]

17 In addition to the nine new Deertown residents identified three additional
18 title deeds were identified in the Project re-10-ile sewer and sewer re-tide the
19 10-ile sewer. In this portion of the Steiner's lot the nine new territories re-
20 duced to four sewer-die their territories are re-set and the Finer Lee
21 red sewer and it in the American Pipe Ene in New York the

Ce N1-F-0122 CROCOLL LANDRY

1 tre and et and the S e n n B in re e i i t i e d and d e n t e d
2 e e n e t i n i t t r t i r t e C t n R i e r C n i t e R i e r T i R i e r and
3 t e i r i t e d t r i t r i e and et and See NYSDEC-BA-C n i d e n t i E e N e t
4 L t i n P t and M T e r e r and t e e r i e r e e e e n d e n t e d
5 i e e e i r t i n r r i d r See NYSDEC-BA-3 M i 201

IMPACTS ON BALD EAGLES FROM WIND TURBINES

7 **Q. Please describe your understanding of impacts from wind turbines to BAEA**
8 **in North America.**

9 A BAEA side it ind t r ine d r in t e ne tin e n i ne t re ne r
10 t r ine d r in i r ti n i in t r n re ere t r ine e een ere ted r
11 in t e inter i t e e e nt r r t ne r t r ine See NYSDEC-BA-3 P e et
12 2013 re rtin i BAEA t r ine t t itie t in in in t ree in I and ne in
13 M r and and rit et 2018 re rtin n d dition 9 BAEA t r ine t t itie
14 et een 2013 nd 2018 in l t te in d in re rted ne in Ne Y r Ot er BAEA
15 t r ine t t itie e een d d d e nted in A t r See NYSDEC-BA-3 Br n nd
16 H i t n 200

17 The information is more little recorded and therefore little information is
18 obtained and in order better dated to the present in the case of
19 little or no information is obtained. See NYSDEC-BA-3, Gerrard and Bertotti 1988
20 Parker et al. 1988 and Becker 2000. The information is not
21 the same as in the information in the National Information System and is not

CCE N001-F-0122 CROCOLL - LANDRY

1 in accordance with BAEA to the ECL Article 11 and Part 182. Most
 2 perfluent site and the net of the effluent-nitrogen in
 3 effluent in the nitrate and the effluent is different/identified
 4 in the reed bed. See NYSDEC-BA-3 NYSDEC 201 CCE in the
 5 and denitrate bed and energy reflect the denitrate detected during
 6 the denitrate bed in the first 2-3 years after the effluent. See NYSDEC-BA-
 7 3 Madder and it is 200. Street 2007. DCE 2011 re-end
 8 effluent-nitrogen re-enters in the 1-2-3-10 and 1 year after the first effluent
 9 effluent to the nitrate bed and the effluent is different in
 10 effluent-nitrogen. Most effluent-nitrogen in the effluent bed and
 11 energy reflect the effluent re-enters to the effluent bed and
 12 indirect effluent reed bed and interin bed. State-ited RTE effluent. For
 13 and energy reflect the effluent re-enters to the indirect effluent State-ited RTE
 14 effluent-nitrogen in the effluent bed and the effluent bed and
 15 different effluent in the effluent bed and the effluent bed and the Project

APPLICATION OF PART 182

17 **Q. Does Part 182 apply to the Project?**

18 A. Yes. A re-identified effluent in the BAEA is State-ited the effluent
 19 effluent bed in the effluent bed and the Project re-enters BAEA to the effluent
 20 the effluent bed in the BAEA net in the Project re-enters the effluent bed and the Project

Coe N01 F-0122 CROCOLL LANDRY

1 and deconstructed activities that the project is then to find the line activities
2 in the Project that are affected by the project. There are Part 182 activities that the Project

3 **Q. Please summarize the application of Part 182 to the Project.**

4 A. Part 182 first requires that the Applicant should submit a detailed description in the
5 the BAEA that the extent of the activities that are identified in the
6 the in the Applicant that the identification is a requirement that the Applicant is
7 required to initiate in the BAEA that the extent of the activities that are
8 deconstructed to be identified in the Applicant that provide a rationale and effective
9 initiation requirements in net energy benefit NCB that BAEA is identified in the
10 definition.

11 **Q. Please explain in more detail what is required under Part 182 regarding**
12 **avoidance and minimization of take of listed species, specifically BAEA?**

13 A. The Department referred to the in the identification order is that
14 that the affected resources in the threatened and endangered species Act are
15 that there are no activities that are required and that the Applicant does not require Part
16 182 permit to the order that their project. In the the project that the PSL
17 Article 10 identification order is that the threatened and endangered species Act are
18 that in the Applicant in the that the additional requirements under ECL Article 11 and Part
19 182 that the recent project. It is identified that the identification is
20 indirect or direct impact to the affected species is a requirement that the
21 initiation and initiation are required under Part 182 to the NCB that

CCE N01-F-0122 CROCOLL LANDRY

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 2 nndnd reerereert d e de tirt iniie ndiret r
 3 indiret i t t t e eie In eie the rden i n the i t t rere nd
 4 eie eie nd eie ini i t i n nd it i t i n
 5 Mini i t i n i t t t BAEA r t e Pr e t re r e r e t e e n t
 6 nd t e r i n r t r t r e t e e d r e t e r t n i d n d r d i t t t 0 e e t r n e e
 7 n e t n d r e r e t e e n t n d t e r i n r t r t r e n t e d r t e n e t e n
 8 d e t e i e r r i e t e e d r e t e r t n e r t e r 1 / e i e i e 1 3 2 0 e e t
 9 r n e t A d d i t i n i n i i t i n i t t t BAEA i n d e n d t i n r n d
 10 d i t r n e t r e e r i n n t r i n r e t r i n n d i n t e n e t i t i e i t i n i
 11 n d r d i t t t 0 e e t n e t n e t e e n O t t e r 1 n d D e e e r 3 1 A n r e
 12 e r e t i t i e i e r i t i n e r t e r 1 / e i e n e t t t r e n t e d
 13 r t e n e t e n d e t e i e r r i e t e e r n e t e e n O t t e r 1 n d
 14 D e e e r 3 1

15 **Q. Does the Project, as proposed, adequately avoid and minimize impacts to**
 16 **BAEA?**

17 A N A r e d i n t e A i t i n t e P r e t i t i n e d B A E A
 18 i t t n d i n d e i t e n t e d e t n e t t n d 1 0 0 0 e e t r n
 19 t i e B A E A n e A d e r i e d e e t i i n i e n t t d e t e d r i n i i e
 20 i t t t B A E A T r i n e r e r e d t e e d e t e e n t e n e t n d B A E A
 21 r r i n r e r i n r e r i n t e r i d i r e t i t t d t r r i i n i n e t i n n d t

Coe N01-F-0122 CROCOLL - LANDRY

1 inter-neighbor distance of the DEC. The Agent conducted field
 2 work in 2017. The Agent's 2013 *Work Plan for Pre-Construction Avian and Bat*
 3 *Surveys* did not describe the nesting site in the Project re-territorialized the
 4 nesting site territory in the immediate Project area. In fact, the 3 *Baron Winds*
 5 *Project 2013-2014 Eagle Use Point Count Survey* indicates the immediate territory
 6 fieldwork site in the nesting site. The area of the 288 birds did not address
 7 the area of the site in the current territory. The area of the re-territorialized site
 8 re-territorialized 20 birds in the immediate current Project territory. The area of
 9 documented that the immediate area in the re-territorialized in 2013-2014 in the
 10 re-territorialized the nesting territory. [REDACTED]
 11 [REDACTED] were re-territorialized 11
 12 territories re-territorialized the re-territorialized between that nest and the Cattle River
 13 were field 32 territories in the re-territorialized. In addition, the 2017 *Targeted Eagle*
 14 *Use Survey* re-territorialized 3 territories in the re-territorialized and third
 15 re-territorialized the second nest. Based on the re-territorialized not be sufficient to the
 16 re-territorialized the nesting site. [REDACTED]
 17 [REDACTED] their site after
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 21 there were the Agent's re-territorialized de-territorialized re-territorialized in the

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1 **Q. Approximately how many BAEA could be taken on this project site over the**
2 **life of the project ?**

3 A e e ti te t r r i te BAEA d e t e r t e 30- e r i e t i
4 r e t T i e ti te i ed n t e t e n t i r t e n n i r e t e n e t i t i n
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6 t e d i n e e e t e e t e i r i r t i t t r t e n e t i n d t t e t t
7 n i t e t e r r t r i n e A e r e r d t i t t n e t i n e e e i n N e Y r S t e
8 i t t 1 3 e d i n e r n e t i i n t e n t i t t e t t 3 9 e e e e r t e r e
9 t e 30- e r i e t e t r i n e I n a d d i t i n e e e t i t e t t t a d d i t i n e e e n t
10 n r i n t i n r t e n e t i t i n t e r e t t r i n t r e i e t e t e n t e
11 t r t e r e d r e t r e e r t e i e t e r e t T i i e d n t e
12 t i n r e d t r i n e e t e e n n n n e t i n d i e r r i n r e e i e t e
13 n e r t e n i n t i n n e r t e n t i e e i e r e r r e n t e n d t r
14 n t r i n e r e t i t n t i e n e t i t i n i t t r i n t

15 **Q. Does the Applicant propose mitigation required under Part 182 for**
16 **unavoidable take of State-listed species, specifically BAEA?**

17 A N T e A i n t d e n t r e n i t i n e r e r i t B A E A
18 i d i e r e n d e d i n 2 0 1 7 a n d t h e r e i n e d t e t r e n e t
19 n e n t r e d i n 2 0 1 8 T e A i n t d i d n t d e t e n d e r t e n t i
20 i t t n e t i n e e n d t e r e r e n t r e d d e t e i t i n e r e
21 r e i r e d u n d e r P r t 1 8 2 t h e n i d t e B A E A T e D e r t e n t d

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 6 Part 182 of the Act is in the consideration of the initiation of

PROPOSED CERTIFICATE CONDITIONS

8 **Q. What would your recommended Proposed Certificate Conditions include with**
 9 **respect to impacts to BAEA?**

10 A. In order to ensure that the Project is in compliance with ECL Article
 11 11 and Part 182 of the Act the proposed Certificate Conditions are that
 12 in the BAEA is included in the Article 10 Certificate of the Site
 13 Board for the Project
 14 i. Not to increase the level of construction in the area of the Site
 15 i.e. to not increase the level of construction in the area of the Site
 16 to the extent of the proposed Certificate Conditions
 17 to the extent of the proposed Certificate Conditions
 18 to the extent of the proposed Certificate Conditions
 19 December 31. An increase in the level of construction in the area of the Site
 20 i.e. to not increase the level of construction in the area of the Site
 21 to the extent of the proposed Certificate Conditions

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- 1 ii. A Final Net Compensation Benefit Plan (NCBP) shall be filed with the SEC within 90 days
2 of the date of the first public offering of the NCBP shall be referred in
3 the NCBP to NYSDEC and USF shall be referred to
4 NYSDEC for review of the NCBP shall be the responsibility of the NYCRR Part
5 182 At the time of the NCBP shall be in the NCBP
- 6 A description of the NCBP shall be included in the NCBP shall
7 be in the NCBP and BAEA shall be not be in the NCBP
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Cape Nott F-0122 CROCOLL - LANDRY

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4 information during the the Project and the other State-aided
5 threatened and endangered bird species identified within the information
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10 NRS
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 2 directional line. The net is in the area under the Region 8 NRS.
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 4 State-issued TE the net is in the area under the net. The net is in the
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3 **Q. What other matters should be included in the mitigation plan?**

4 A The intent of the definition is to indicate that the
5 reformation is a retrition of the effective transition and the
6 finite end and retention and the next

7 Q. Do you hold your opinions to a reasonable degree of scientific certainty?

8 A Ye e d

9 **Q. Does this conclude your direct testimony on these topics?**

10 A Ye it de

15-F-0122 Baron Winds LLC 3/21/2019

PAGES 217-301 HAVE BEEN LEFT
INTENTIONALLY THE CONFIDENTIAL PORTION CAN BE
FOUND SEPARATELY FOR 3/21/2019

15-F-0122 Baron Winds LLC 3/21/2019

A.L.J. COSTELLO: Okay. At this point
that motion is granted and we will accept Mr.
Gravel's rebuttal testimony, as if orally given here
today and it -- the file that should be input at this
point, is entitled Applicant rebuttal testimony of
Adam Gravel. **

NEW YORK STATE BOARD ON ELECTRIC
GENERATION SITING AND THE ENVIRONMENT

Application of Baron Winds LLC for a Certificate
under Article 10 of the Public Service Law

Case No. 15-F-0122

CORRECTED REBUTTAL TESTIMONY OF:

ADAM GRAVEL, PROJECT MANAGER

STANTEC CONSULTING SERVICES INC.

30 PARK DRIVE

TOPSHAM, ME 04086

1 **Q: Please state your name, employer, and business address.**

2 A: Adam Gravel, Stantec Consulting Services (Stantec), Inc., 30 Park Drive, Topsham, ME
3 04086.

4 **Q: What is your position at Stantec?**

5 A: Project Manager.

6 **Q: How long have you been employed by Stantec?**

7 A: I have been employed with Stantec since 2004.

8 **Q: Please describe your educational background and professional experience.**

9 A: I received a Bachelor of Science degree in Wildlife Management from the University of New
10 Hampshire. I have spent the last 14 years of my career at Stantec where I have been
11 involved in and/or overseen the assessment of the risks to wildlife from wind energy projects.
12 During that time, I have managed and conducted pre-construction wildlife impact
13 assessments at proposed wind energy projects in the New England region, New York, and
14 other states. These assessments have included habitat analyses, critical issues analyses,
15 nocturnal migration surveys using marine radar, acoustic bat surveys, breeding bird surveys,
16 raptor migration surveys, eagle use surveys, and ecological community surveys. I have also
17 provided permitting and expert testimonial support to several New England Wind projects.
18 See Exhibit ____ (AG-1) which includes my resume for additional details.

19 **Q: Please describe your current responsibilities with Stantec.**

1 A: As a Project Manager at Stantec, I am responsible for overseeing and implementing
2 programs to assess the impacts of wind energy projects on birds, bats, and other wildlife.
3 My responsibilities include: developing wildlife assessment protocols and monitoring
4 programs; implementing or overseeing implementation of the assessments/monitoring
5 programs; serving as liaison between clients and regulatory agencies to ensure the studies
6 and monitoring satisfy federal and state requirements; and providing expert witness
7 testimony in support of projects.

8 **Q: Please describe Stantec and its experience in relation to avian and bat studies,**
9 **including risk assessments.**

10 A: Stantec is an environmental consulting company that provides services to a variety of
11 sectors, including the wind industry. Between 2002 and 2018, Stantec has conducted over
12 400 distinct seasons of pre-construction avian and bat studies on behalf of proposed wind
13 projects in twelve states, from Texas to Maine, and including New York.

14 **Q: What are typical pre-construction surveys for wind projects?**

15 Pre-construction surveys for wind projects typically include bird and bat surveys following
16 state and federal agency guidelines. Stantec maintains regular contact with State and
17 Federal resource agencies and seeks involvement with regional and national organizations
18 whose sole purpose is to better understand and minimize potential wind energy-associated
19 wildlife impacts. Stantec has directly participated in the development and review of proposed
20 guidelines and monitoring protocols sponsored by several State and Federal agencies.

1 Based on the results of on-site field surveys, Stantec has also prepared screening-level
2 avian and bat risk assessments for a variety of wind projects and has also designed and
3 conducted agency-approved post-construction surveys. Stantec has completed post-
4 construction bird and bat mortality surveys at existing wind projects in Maine, New
5 Hampshire, Vermont, New York, Pennsylvania, and West Virginia. The post-construction
6 efforts have allowed Stantec to further refine survey methodology to provide more
7 comprehensive data sets to the regulatory agencies and the regulated community.

8 **Q: Have you previously testified before the New York State Public Service Commission**
9 **or Siting Board on Electric Generation?**

10 A: No.

11 **Q: Have you previously served as an expert witness before any other court, agency, or**
12 **other body on the subject you plan to offer testimony on today?**

13 A: Yes. I provided testimony in Docket No. 7508 (Georgia Mountain Wind Project) in Vermont,
14 Docket No 7628 (Kingdom Community Wind Project) in Vermont, Docket No. 2010-03
15 (Groton Wind Project) in New Hampshire, Docket No. 2008-04 (Granite Reliable Wind
16 Project) in New Hampshire, Docket No. 2011-02 (Antrim Wind Project) in New Hampshire,
17 and Docket No. 4886 (Bull Hill Wind Project) in Maine.

18 **Q: What is the purpose and scope of your testimony in this proceeding?**

19 A: To sponsor certain portions of the Baron Winds Project Application or the Exhibits thereto
20 and to rebut certain direct testimony prepared by Michael B. Keith for the Town of Fremont
21 and Jenny Landry, Wildlife Ecologist, and Scott Crocoll, Wildlife Biologist, New York State

1 Department of Environmental Conservation (“NYSDEC”), relating to potential impacts of the
2 Baron Winds Project on bald eagles.

3 **Q: What portion(s) of the Application is your testimony sponsoring?**

4 A: I am sponsoring Exhibit 22, Terrestrial Ecology and Wetlands, as it relates to the impacts of
5 the proposed Baron Winds Project on bald eagles as well as the reports, studies, and other
6 submissions on bald eagle impacts accompanying the original Application and subsequent
7 submissions.

8 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your**
9 **direction and supervision?**

10 A: Yes.

11 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies, publications,**
12 **data or documents produced by persons other than yourself/your company? If so,**
13 **please cite these sources.**

14 A: References are provided in the corresponding Exhibits and Reports. See Exhibit ____ (AG-
15 2) for a list of references for my rebuttal testimony.

16 **Q: Can you summarize your testimony?**

17 A: The risk to bald eagles at the Project is very low, even with the presence of a new nest in
18 the Project area. Facility components have been sited according to NYSDEC’s Conservation
19 Plan for Bald Eagles in New York State (Conservation Plan; NYSDEC 2016) attached as
20 Exhibit ____ (AG-3) recommendations to avoid impacts to bald eagles ,and the evidence
21 does not support that the Project will take bald eagles as NYSDEC states.

1 **Q. Do you agree with the statements of bald eagle occurrences in the Project area as**
2 **described on pages 8-10 of the testimony of Crocoll & Landry?**

3 A. I agree generally with their statements on bald eagle occurrences from pre-construction bird
4 surveys conducted by Stantec, but I disagree with their use of the statement “numerous
5 occasions.” When considering eagle use or occurrences, it is important to consider how
6 frequent eagles were observed relative to the time spent looking for them. Bald eagle
7 occurrences observed in the Project area were documented during pre-construction bird
8 surveys that Stantec conducted on behalf of the Applicant.

9 **Q: Can you describe the eagle use surveys conducted by Stantec for the Project?**

10 The 2013/2014 eagle use surveys conducted at the project included 36 points or observation
11 locations. Since the time of these surveys the project layout has reduced significantly so that
12 10 of the original points (2,4,5,8,6,11,10, 12, 13, and 17) or their 800-meter buffer are within
13 the current project area. During 2013/2014 eagle use surveys, only 15 bald eagle minutes
14 were observed in the current project area, and t only 1 minute was observed at a point not
15 within the current project boundary making this data valid for documenting use of the current
16 project area and assessing potential risk. Bald eagle detections in the Project area include
17 the following:

18 Eagle Use Surveys

19 - September 2013 – September 2014 eagle use surveys were conducted at 36 points within
20 the larger project area totaling 19,440 survey minutes (324 hours). Based on 12 eagle

1 observations, only 15 minutes (0.08 %) of the total survey minutes detected bald eagles
2 inside the project area and within the height of proposed turbine rotor swept area.

- 3 - February – July 2017 targeted eagle use surveys were conducted over the course of six site
4 visits at three points nearest the active bald eagle nests in 2017 for a total of 1,080 survey
5 minutes (18 hours). Of the three points surveyed in 2017, only one of them (point 2) is within
6 the current project boundary. While the other two (points 18 and 16) are outside of the
7 current area. These two points are positioned between the Avoca nest and the current
8 project area, and if eagles from that nest were regularly using the project area they would
9 have been detected at these points. Only 2 bald eagle observations occurred during the
10 2017 survey, both at point 18, which is not within the current project boundary.

11 Other Bird Surveys

- 12 - Fall 2013 Bird Migration Survey occurred over 5 days between sunrise and 11:30 am each
13 day at 18 points, and only one bald eagle was observed.
- 14 - Spring 2015 Breeding Bird Surveys were conducted at 18 transects (each with 5 to 6 points
15 totaling 190 points). Only one bald eagle was observed over 16 days (approximately 15.5
16 hours) of surveys.

17 In summary, in nearly 400 hours of targeted eagle and other bird surveys in the Project and
18 surrounding areas over the course of years 2013, 2014, and 2017, only 17 eagle
19 observations were noted. I consider this to be very low eagle occurrence overall.

20 Bald eagles are found throughout the state, with over 500 nesting territories according to
21 NYSDEC testimony. Considering their presence throughout the state in relatively high

1 numbers, we would expect to see bald eagles at almost every wind project in the state. In
2 fact, a review of the reports submitted in other Article 10 Proceedings shows that bald eagles
3 have been recorded at every project, and the eagle minutes at Baron Winds are some of the
4 lowest.

5 Notably, the Eight Point Wind Project, which is also proposed in Steuben County just south
6 of the Baron Winds Facility Area, reported 176 total eagle minutes and 96 exposure-minutes
7 among 78 bald eagle observations. The Eight Point Wind Project has not been required to
8 obtain a take permit for eagles despite the higher number of eagles and eagle exposure
9 minutes reported during surveys. In addition, NYSDEC did not require an eagle take permit
10 for the Cassadaga proceeding which had a similar eagle minutes to Baron Winds with 16
11 eagle minutes.

12 **Q. Does discovery of a new eagle nest near the Project change your opinions about risk**
13 **to eagles?**

14 A. Eagle populations in New York have been steadily increasing (Nye 2010, NYSDEC 2016)
15 alongside a steady increase in operational wind projects in the state
16 (<https://windexchange.energy.gov/maps-data/321>) with no turbine related fatalities.
17 Attached as Exhibit ____ (AG-4) is a copy of the NYSDEC's New York State Bald Eagle
18 Report (Nye 2010). One eagle fatality was described as "reportedly" occurring in the
19 testimony of Crocoll & Landry; however, no supporting information was provided to indicate
20 if this fatality was verified or if it was the result of a turbine strike or some other cause (e.g.,
21 vehicle collisions, electrocution, etc.). Due to the work of NYSDEC and others who

1 contributed to the successful recovery of bald eagles in New York and the Northeast,
2 populations are not declining or static, they are increasing from year to year. The fact that a
3 new nest has been established since pre-construction surveys occurred is not surprising and
4 likely not unique to the Baron Winds Project. As a result, and to inform the Project's BBCS,
5 2019 surveys are currently underway to add to our understanding of eagle use in the Project
6 area, but, as described in detail in Appendix 22-1 of the Application Update filed on February
7 15, 2019, presence of a new nest is not expected to change the conclusion of low risk.

8 **Q. Do you agree with the statements of bald eagle occurrences in the region surrounding**
9 **the Project area as described on pages 9–10 of the testimony of Crocoll & Landry?**

10 Yes, I agree for the most part with these statements. However, Crocoll & Landry state,
11 "Within the Appalachian Plateau Ecozone in New York, the major streams and wetlands of
12 the Susquehanna Basin are heavily utilized and documented as eagle nesting habitat,
13 particularly the Cohocton River, Canisteo River, Tioga River and their associated tributaries
14 and wetlands (See NYSDEC-BA-5, Confidential Eagle Nest Locations, Photos and Maps)."
15 I do not disagree that these areas would be suitable nesting habitat. However, I do not agree
16 with the statement that "[t]he areas around these rivers have also been documented as a
17 high-use eagle migration corridor. (See NYSDEC-BA-3, Mojica 2016)." I reviewed Mojica et
18 al. (2016). As I interpret the cited paper, Mojica et al. (2016) do not identify those portions of
19 Cohocton, Canisteo, and Tioga rivers proximal to the Project area as part of a high-use eagle
20 migration corridor, but rather show the important migration corridors as occurring in eastern
21 New York. Mojica et al. (2016) identify the region surrounding the Project area as having

1 higher eagle utilization but identify the two main high-use eagle migration corridors further
2 east, one along the Appalachian Mountains (eastern New York) and one along the Atlantic
3 coast.

4 **Q. Do Crocoll & Landry accurately assess the potential for wind turbines to negatively**
5 **affect bald eagles, principally causing nest failure of locally nesting eagles?**

6 A. No. Breeding and wintering eagle populations in New York have increased over the past 20
7 years from 51 nesting territories in 2000 (Nye 2010) to 522 nesting territories in 2018 as
8 shown in Crocoll & Landry on page 6 line 19. During this same period, installed wind
9 generation capacity in New York has increased by roughly 100 times from 18.2 installed
10 megawatts (MW) in 2000 to approximately 1,900 installed MW as of 2018
11 (<https://windexchange.energy.gov/maps-data/321>). With bald eagle nesting territories in
12 New York increasing concurrent with wind energy, it appears that nesting success and
13 productivity have been unaffected by wind energy on a statewide scale.

14 **Q: What about the Project's potential impact to nests near the Project area?**

15 At a local project scale, we do not predict that Project construction or operation will affect
16 nesting bald eagles because the project has been sited in accordance with the
17 recommendations in NYSDEC's Conservation Plan. NYSDEC's Conservation Plan
18 recommends no construction of new structures within 1,320 feet of an eagle nest if there is
19 no visual buffer, or 660 feet if there is a visual buffer. The nearest turbines (T46 and T81)
20 are approximately 3,700 feet (0.7 miles) from the newly identified nest in the Town of
21 Wayland. This is greater than two times the distance that NYSDEC recommends for avoiding

1 disturbance to nesting eagles. The proposed alternative collection route that is nearest to
2 the nest is less than 1,000 feet from the nest, but greater than 800 feet from the nest. As
3 the lines in this area are proposed to be installed underground, there will be no structures
4 located within either 1,320 nor 660 feet from the nest, and project component locations
5 comply with NYSDEC's Conservation Plan recommended setbacks. Further, the Applicant
6 has proposed a preferred alternative to this route which is located more than 1 mile from this
7 nest.

8 **Q: Can you generally describe the location of the newly identified nest?**

9 While NYDEC's Conservation Plan recommendations are largely intended to provide
10 appropriate setbacks from eagle nests to avoid disturbance impacts, it is important to
11 characterize this new nest location and place its location in context. The nest is already
12 subject to significant human disturbance in proximity to the nest and not in a secluded area
13 where human encroachment would be of concern. The nest is in a small stand of trees
14 located between open water area/stream and a state route that experienced 1,501–4,000
15 vehicles per day in 2015 (according to the New York State Traffic Data Viewer). The nest is
16 approximately 75 feet from the road. The stand of trees contains a small impounded area,
17 which we understand contains stocked common carp. A quarry operation is located
18 immediately across the road from the nest (within approximately 200 feet), and a parking
19 area/road pullout is located adjacent to the nest site. This site is likely subject to moderate
20 levels of human intrusion, and the eagle pair that uses this nest does not appear to be easily
21 disturbed by human intrusion. The stocked pond likely serves as a significant attractant and

1 may be the primary driver for establishment of a nest in an area that otherwise appears to
2 be undesirable.

3 **Q: Has Stantec conducted post-construction eagle use surveys with eagles' nests**
4 **present near wind facilities at other locations?**

5 A: Yes. Further, and directly related to potential effects of nearby turbines on eagle behavior
6 and nest failure, Stantec conducted post-construction eagle use surveys at the Rollins and
7 Oakfield Wind Projects in Maine. Each of these projects has an eagle nest less than 1 mile
8 from turbines. At both projects, the eagle nests were active, and in the case of the Rollins
9 Project, the eagle nest was successful and produced one young. The nest near the Oakfield
10 project was occupied during aerial nest monitoring, but additional flights to determine
11 productivity were not conducted. At both projects, the presence of wind turbines did not
12 appear to affect nesting activities by eagles and no collision impacts occurred (Stantec 2012,
13 2016). See Exhibit ____ (AG-5).

14 **Q. Do Crocoll & Landry on pages 11–12 of their testimony accurately assess the potential**
15 **for wind turbines to negatively affect bald eagles, principally resulting in bald eagle**
16 **collisions with wind turbines?**

17 No. NYSDEC provided references related to eagle fatality from operational commercial wind
18 energy projects in the U.S., and their own references show a very low probability of eagle
19 take in the eastern U.S. as a result of turbine collision. Only two bald eagle fatalities have
20 occurred at operational commercial-scale wind energy projects in the eastern U.S. (Kritz et
21 al. 2018); one reportedly from New York as cited in Crocoll and Landry's testimony, but they

1 did not provide any supporting information to indicate if this fatality was verified or if it was
2 the result of a turbine strike or some other cause (e.g., vehicle collisions, electrocution, etc.)
3 The other fatality occurred at a project in North Carolina (Kritz et al. 2018). One possible
4 explanation of such low bald eagle mortality, according to Pagel et al. 2013, is that bald
5 eagles may be less vulnerable to collision. NYSDEC cited this same reference in their
6 testimony, and I agree. This may be because they have been shown to exhibit avoidance
7 behaviors when encountering wind turbines.

8 As described previously, Stantec has conducted post-construction eagle monitoring at two
9 operational wind power facilities in Maine, each with an active eagle nest within 1 mile of
10 operating turbines; the Oakfield and Rollins Wind Projects. During 3 years of monitoring at
11 both sites, eagles entered the facility area, but eagle fatalities were not detected during
12 fatality monitoring. Bald eagles were observed to continue to use the facility area at both
13 sites during operations and exhibited successful avoidance of collision with turbine
14 structures at different distance scales when their flight paths entered turbine areas. Not only
15 did eagles continue to use the facility area, monitoring documented nesting activity at both
16 nest sites adjacent to these projects. The Oakfield Project has been operating since 2015
17 and the Rollins Project since 2011, and no eagle impacts have been documented.

18 **Q. Based on the setback distances of project infrastructure to eagle nests and use of the**
19 **project area by eagles found during pre-construction surveys, would you expect the**
20 **construction and operation of the project to impact foraging efficiency?**

1 A. On pages 11–12 of their testimony, Crocoll & Landry discuss the Project’s potential to have
2 operational impacts to bald eagles related to reduced foraging efficiency and collision. Based
3 on past eagle use surveys at the Project and such low use by eagles, we do not expect the
4 project to be attractive to bald eagles for foraging. It is reasonable to assume that the pair at
5 the new nest may be foraging in Neils Creek. The nearest turbine to Neils Creek at any point
6 is more than 0.25 miles. The suggestion that these new eagles would navigate the turbines
7 to forage at either the Cohocton or Canisteo rivers is speculative and not supported by any
8 evidence in the testimony. It is also possible they would navigate Neils Creek to access other
9 larger rivers rather than commuting across uplands. It is also possible that the eagle pair
10 would forage locally, taking advantage of the common carp resource in the impounded pond.
11 Researchers in the Pacific northwest found breeding adult bald eagles traveled relatively
12 short distances each day during the breeding season, i.e., less than 5 miles (Kralovec 1994,
13 Wheat et al. 2017). I am not aware of similar data available for the northeast, but it is highly
14 likely that commuting distances are related to prey accessibility (Hunt et al.. 1992), and there
15 is no reason to presume that the new nest pair and any fledglings would have to travel to
16 either the Cohocton or Canisteo rivers to forage. A fledgling bald eagle’s range during the
17 nesting period may only extend up to 0.25 miles from the nest site (according to USFWS
18 National Bald Eagle Management Guidelines, dated May 2007). With the nearest turbine to
19 the nest being approximately 0.7-miles, the Project turbines are outside of the generally
20 expected range of the eagle fledglings.

1 **Q. On Page 12 of Crocoll and Landry they described activities that caused bald eagle**
2 **mortality between 2000 and 2017. Do you agree with how they characterized these**
3 **causes?**

4 A. No. While I don't disagree with the causes of bald eagle mortality in New York or the leading
5 cause being blunt trauma, I disagree with how wind energy was characterized in this context.
6 While it is true that bird mortality would be considered blunt trauma if colliding with a wind
7 turbine, the data presented in Exhibit NYSDEC-BA-4 show that the majority of blunt trauma
8 mortality of eagles is from motor vehicles or trains. This exhibit also shows that more bald
9 eagle fatalities have occurred from intentional shootings in New York State than from turbine
10 strikes at all wind projects in the eastern U.S. combined. The bald eagles in the Project area
11 are more at risk from vehicle strikes and other human induced cause (indirectly from
12 ingesting lead shot and directly from intentional shooting) than from collisions with the
13 turbines.

14 **Q. Do you agree with Crocoll and Landry that long-term impacts of wind energy on bald**
15 **eagle is understudied?**

16 A. No. While I am not aware of site-specific studies similar to what Crocoll and Landry describe
17 on lines 16-21 on page 12 and lines 1-13 on page 13 of their testimony, the fact that bald
18 eagle populations have continued to increase alongside an increase in wind energy in New
19 York and the northeast without a corresponding increase in turbine related mortality,
20 suggests that bald eagle persistence is not affected by wind energy. Additionally, I do not
21 agree that long-term post-construction monitoring, outside of the standard 2 to 3 years of

1 post-construction monitoring, is needed to account for annual fluctuations in populations or
2 to sufficiently evaluate the long-term direct and indirect impacts to breeding and wintering
3 birds as a result of wind energy because impacts to bald eagles from wind energy have been
4 shown to be so low. Further, these studies are difficult to conduct on a site-specific scale
5 because there are a large number of factors outside of a wind energy project that could
6 affect eagle populations (i.e., weather, winter habitat, other sources of direct mortality).
7 Rather than long-term monitoring at a wind project, time and money are likely better spent
8 focusing on offsetting the seemingly high level of statewide mortality of bald eagles in New
9 York from other sources as shown in Exhibit NYSDEC-BA-4 of Crocoll and Landry's
10 testimony.

11 In addition to formal post-construction monitoring, the Applicant will conduct incidental
12 carcass monitoring for the life of the Project through a Wildlife Incident Reporting System
13 (WIRS) implemented by the O&M employees working onsite. The WIRS is a protocol by
14 which employees working at and operating the Project record birds and bats they find
15 incidentally at the Project. Under the WIRS, Project O&M employees are given standardized
16 procedures to implement after discovery of dead or injured birds or bats in the Project area.
17 Project O&M employees will document any incidents on a datasheet, and this information
18 will ultimately be provided to the relevant agencies, as required.

19 **Q. Based on your experience with designing post-construction monitoring studies for**
20 **operational wind power facilities, how should the Applicant plan to conduct**
21 **monitoring at the proposed Project?**

1 A. On page 13 of their testimony, Crocoll & Landry state wind energy projects permitted to
2 affect state-listed species should have post-construction monitoring plans that include
3 multiple years of monitoring over the life of the project to evaluate the long-term
4 consequences of effects to listed species, such as mortality and displacement. The Applicant
5 is committed to monitoring the Project post-construction as described in NYSDEC's 2016
6 Guidelines. The Applicant will work with NYSDEC to develop a suitable post-construction
7 monitoring plan for birds and bats, including bald eagles.

8 Pagel et al. (2013) suggest that bald eagle fatalities are likely to be higher because the
9 records are from incidental discoveries. However, detecting bald eagle carcasses is not
10 difficult for two reasons; 1) they are large and very visible, even in obstructed terrain, and 2)
11 large raptor carcasses have high persistence (Hallingstad et al. 2018). This is likely because
12 they decompose very slowly and are not often scavenged. This would tend to promote
13 discovery during standard searches and incidentally. Therefore, long-term standardized
14 carcass searches may not be necessary to monitor bald eagle fatalities. Instead this can be
15 accomplished using operations staff who regularly make turbine visits to scan roads and
16 pads for bald eagles. These individuals can be easily trained to have a suitable search image
17 that would readily aid in the detection of such a large carcass as a bald eagle.

18 **Q. Does the take estimate provided in the Crocoll & Landry testimony align with your**
19 **opinion on the Project's potential take of bald eagles?**

20 A. No. On page 17 Lines 19–20 and page 18 lines 2–9 of their testimony, Crocoll & Landry
21 estimate “approximately 41 BAEA could be lost over the 30-year life of this project.” This is

1 derived using large assumptions. They assume that the project will result in annual nest
2 failure at the new nest (1.3 fledglings per year for 30 years = 39 eagles) and directly take 2
3 eagles as they fly through the project area. NYSDEC has provided no direct support for their
4 assumption of the direct take of 2 eagles. Crocoll & Landry base their take of 39 eagles on
5 the spatial relationship of the new nest, proposed turbines, and “likely” foraging areas such
6 as the Cohocton River, yet they admit they do not have data to support this. This assumption
7 suggests that the failure of this nest would mostly likely be from either disturbance or direct
8 mortality to fledglings, both presumably from the Project, and this would continue for the life
9 of the Project. This life-of-Project cumulative effect is based on the assumption that the pair
10 would continue to use a nest that fails every year.

11 Bald eagles show a range of sensitivity as measured in several studies (Stalmaster and
12 Newman 1978, Fraser et al. 1985, Buehler et al. 1991c, McGarigal et al. 1991). Historically,
13 bald eagles have been shown to avoid nesting, foraging, and roosting in areas of high human
14 activity (Andrew and Mosher 1982, Livingston et al. 1990, Buehler et al. 1991c, McGarigal
15 et al. 1991, Chandler et al. 1995b). However, evidence also suggests this sensitivity varies
16 among individuals, and some pairs are less sensitive and successfully nest near human
17 activity. Given the disturbances that preexisted establishment of this nest the pair is not
18 likely to exhibit high sensitivity. As discussed previously, the nest is located on a relatively
19 busy state highway, across from a commercial mining operation, and next to a vehicle pull-
20 out/parking area. Conversely, there are considerable data that show bald eagles tolerate
21 people climbing up into an active nest to band eaglets with no survivorship consequences

1 over successive years (Grier 1969, Fraser et al. 1985, Anthony et al. 1994). Researchers
2 did not find that aircraft and helicopters used to survey nests contributed to nest failure even
3 though birds exhibited agitation (Fraser et al. 1985, Watson 1993). The possibility of nest
4 failure as a result of construction and operation of the project is very low because project
5 construction and operations adhere to NYSDEC's setback recommendations found in
6 NYSDEC's Conservation Plan and will occur more than 1,320 feet of any eagle nest (actually
7 more than 0.7 miles from the new nest), making any kind of disturbance unlikely.

8 **Q. Does the Project, as proposed, adequately avoid and minimize impacts to bald**
9 **eagles?**

10 A. Yes. The Applicant is committed to avoiding and minimizing potential effects to bald eagles.
11 The Applicant has already implemented avoidance measures in project design, and the
12 proposed minimization measures are sufficient based on what we understand about risks to
13 bald eagles, as follows:

- 14 1) The Project design meets or exceeds the NYSDEC's recommended setback distances as
15 described in the Conservation Plan. No turbines or other project infrastructure are proposed
16 within 0.25 mile of any eagle nest.
- 17 2) The pre-construction data showed very low eagle use in the Project area.
- 18 3) There have been very few bald eagle fatalities as a result of collisions with wind turbines in
19 the northeastern U.S.

20 **Q. With regard to bald eagles, does the Applicant propose to conduct adequate post-**
21 **construction monitoring to address Project operations?**

1 A. Yes. The Applicant is proposing to conduct post-construction wildlife monitoring that will
2 include direct fatality studies. The details of the post-construction studies will be described
3 in a post-construction monitoring and adaptive management plan based in part on
4 NYSDEC's June 2016 Guidelines for Conducting Bird and Bat Studies at Commercial Wind
5 Energy Projects (June 2016 Guidelines). The work plan will be developed through
6 consultation with the NYSDEC, DPS, and USFWS and approved before the start of Project
7 operations.

8 **Q: Has the Applicant already implemented measures to avoid and minimize effects to**
9 **bald eagles?**

10 A: Yes. The Applicant has already implemented measures to avoid impacts to bald eagles
11 through reduction in the number of turbines that occurred prior to the application, particularly
12 in removing turbines proximal to previously identified nests, and by designing the Facility in
13 compliance with NYSDEC's 2016 Guidelines. In addition, the Applicant is developing a Bird
14 and Bat Conservation Strategy that will meet the requirements of that described in the
15 USFWS voluntary Land-based Wind Energy Guidelines (LWEG; dated March 23, 2012).
16 The Applicant will also implement the Avian Power Line Interaction Committee (APLIC)
17 standards on Project collector and project transmission lines to minimize the incidences of
18 eagle electrocutions.

19 **Q: Have you reviewed the Certificate Conditions proposed by NYSDPS and NYSDEC in**
20 **this matter related to avian species?**

Adam Gravel
Stantec

1 A: Yes. It should be noted that NYSDEC's conditions vary considerably from the conditions
2 proposed by NYSDPS in this matter. Generally, the Applicant agrees with NYSDPS's
3 proposed conditions related to avian species, with the exception of the preparation of a Net
4 Conservation Benefit Plan as explained above. I recommend that the Siting Board adopt
5 the conditions as proposed by NYSDPS, nevertheless I will provide comments to the
6 conditions proposed by DEC, and have prepared a redline of DEC's conditions consistent
7 with my comments which I have attached as Exhibit ____ (AG – 6).

8 **DEC Proposed Condition:** "No turbines or other project infrastructure will be placed within
9 one quarter (1/4) mile of any eagle nest. If it is necessary and unavoidable that some project
10 components must be placed within ¼ mile of an eagle nest, then all ground disturbance, tree
11 clearing, construction, restoration and maintenance activities occurring within 660 feet of an
12 eagle nest must occur only between October 1 and December 31. Any areas where
13 disturbance or construction will occur within ¼ mile of a nest that is not obscured from the
14 nest by an adequate visual barrier must also occur only between October 1 and December
15 31."

16 **Response:** This condition should allow for deviation from the condition with approval from
17 NYSDEC and NYSDPS. There may be situations where an eagle nest is found to be
18 abandoned or inactive in the year where construction is proposed. In those cases the
19 condition would be unnecessary. The Applicant should be able to work with NYSDEC and
20 NYSDPS to determine if deviation from the condition is permissible based on the status of
21 any nest at the time of the proposed activity.

1 **DEC Proposed Condition:** “A final Net Conservation Benefit Plan (NCBP) shall be filed at least
2 90 calendar days before the start of Project construction. The NCBP shall be prepared in
3 consultation with NYSDEC and USFWS, and the NCBP must be approved by NYSDEC prior to
4 filing. The NCBP must meet the requirements of 6 NYCRR Part 182. At a minimum, the NCBP
5 shall contain the following:

6 a. A demonstration that the mitigation actions described in the NCBP will result in a
7 positive benefit to BAEA species and not just an offset for any potential take of
8 individuals;

9 b. Adaptive management options and next steps to be implemented if the permitted
10 level of take is exceeded; and

11 c. A demonstration of the Applicant’s financial capability and commitment to fund and
12 execute such mitigation options, management, maintenance and monitoring for the 35-
13 year life of the Project.”

14 **Response:** As indicated above, this project is unlikely to take bald eagles and therefore
15 Part 182 would not apply. However, to the extent the Siting Board were to agree with
16 NYSDEC and adopt their condition, the Applicant will need time to work with NYSDPS and
17 NYSDEC to develop an appropriate NCBP. Therefore, this condition should allow for the
18 filing of the NCBP no sooner than 6 months after certification of the Facility. This is
19 consistent with the condition at the Cassadaga proceeding and allows all parties enough
20 time to prepare, review and approve the plan. The condition should also reflect that the life
21 of the Project is 30-years.

1 **DEC Proposed Condition:** “During construction, the onsite environmental monitors and
2 environmental compliance manager identified in the Environmental Compliance Manual
3 shall be responsible for recording all occurrences of TE species. All occurrences shall be
4 reported in the biweekly monitoring report submitted to NYSDEC and shall include the
5 information described below. If a TE avian species is demonstrating breeding behavior it
6 must be reported to the NYSDEC Region 8 Natural Resource Supervisor (NRS) within
7 twenty-four (24) hours.

8 **Response:** Twenty-four (24) hours is a very short period of time to confirm behavior and
9 report. The Applicant recommends allowing for forty-eight (48) hours, which is consistent
10 with the reporting conditions in the Cassadaga proceeding. This response applies to other
11 conditions proposed by DEC that also have twenty-four-hour reporting requirements.

12 **DEC Proposed Condition:** “If, at any time during the life of the Project, another nest of a
13 bald eagle, or a nest of a northern harrier, short-eared owl or upland sandpiper is located,
14 or if any of these species are observed in the Project area exhibiting breeding behavior, the
15 Region 8 NRS will be notified within twenty-four (24) hours of discovery or observation, and
16 prior to any disturbance of the nest or immediate area around the nest, or area where
17 eagles, northern harriers, short-eared owls or upland sandpipers were seen exhibiting any
18 breeding behavior. An area one quarter (1/4) mile in radius from the bald eagle nest tree,
19 and six hundred sixty (660) feet in radius from the nest of northern harrier, short-eared owl
20 and upland sandpiper, will be posted and avoided until notice to continue construction at that

1 site is granted by the Region 8 NRS. The nest(s) or nest tree(s) will not be approached under
2 any circumstances unless authorized by the Region 8 NRS.”

3 **Response:** DEC has not provided any support for the radius recommendations for northern
4 harriers, short-eared owls, or upland sandpipers and why this distance needs to be greater
5 than the distance for other threatened and endangered species which NYSDEC
6 recommends is five hundred (500) feet. Five hundred feet is protective for northern harriers,
7 short-eared owls, and upland sandpipers and is consistent with the Cassadaga Order. In
8 addition, the recommendations for Bald Eagles should be consistent with DEC's own
9 guidance and state setbacks of 660 feet if a visual buffer exists and ¼ mile if no visual buffer
10 is present.

11 Town of Fremont

12 **Q: Can you address the statement in Michael B. Keith's testimony that there is an**
13 **eagle's nest/sighting near the reservoir in the Town of Fremont?**

14 A: The Applicant is unaware of the “recently noted” eagle's nest sighting “near the reservoir” in
15 the Town of Fremont. The Fremont reservoir is over a mile from the Project, and as
16 discussed above, impacts to bald eagles at that distance are not expected, a new nest more
17 than a mile from the Project would not change the impact assessment for the Facility. The
18 Applicant has agreed to a Certificate Conditions regarding the discovery of bald eagle nests
19 within the Facility.

20 **Q: Does this conclude your testimony?**

21 A: Yes.

Index of Exhibits

AG-1	Resume of Adam Gravel
AG-2	References
AG-3	NYSDEC's Conservation Plan for Bald Eagles in New York State (Conservation Plan; NYSDEC 2016)
AG-4	NYSDEC's New York State Bald Eagle Report (Nye 2010)
AG-5	Stantec Post Construction Studies
AG-6	Proposed Changes to NYSDEC Certificate Conditions

15-F-0122 Baron Winds LLC 3/21/2019

PAGES 328-465 HAVE BEEN LEFT INTENTIONALLY THE
CONFIDENTIAL PORTION CAN BE FOUND
SEPARATELY FOR 3/21/2019

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A.L.J. COSTELLO: During the beginning
3 of the evidentiary hearing, we've had a more formal
4 process of accepting pre-filed testimony and we've
5 truncated that process, pursuant to a memorandum that
6 we sent out, earlier in -- in the case and I just
7 want to -- just for the clarity of the record, I want
8 to read into the record what that process is that
9 we've been following. So, here I go.

10 Upon a witness being called to the
11 stand, the examiners will swear in a witness. The
12 next step usually would be for the offering party to
13 ask the witness a series of introductory questions
14 about the pre-filed testimony, to move the pre-file
15 testimony into evidence, as if given orally, to ask
16 the witness a series of introductory questions
17 regarding sponsor's exhibits and to make the witness
18 available for cross-examination.

19 For this hearing it will be presumed
20 that each witness, 1, has prepared his or her own
21 pre-filed testimony, or had it prepared under his or
22 her own direction. 2, if asked at the hearing, the
23 questions contained in his/her -- or her pre-filed
24 testimony would give answers that are the same as the
25 answers given in the pre-filed testimony. 3, has

1 15-F-0122 Baron Winds LLC 3/21/2019

2 prepared his or her own sponsored pre-filed exhibits,
3 or had them prepared under his or her own direction.
4 And 4, believes the information contained in his or
5 her sponsored pre-filed exhibits, to be true to the
6 best of his or her knowledge.

7 Unless 1 or more of these
8 presumptions, is -- is incorrect, the only
9 introductory question the offering party should pose,
10 if necessary, is whether the witness has any
11 substantive corrections to make to the pre-filed
12 testimony and/or exhibits.

13 So, that is the process that we have
14 been following after the first few witnesses were
15 examined.

16 Before we get to the next witness, I
17 just want to alert the people that are in the
18 audience, the -- my understanding is that the
19 Applicant, for our next witness, does not intend to
20 quest -- question information that is confidential.
21 However, the answers that the witness gives may
22 involve confidential information.

23 If that is the case, the witness is
24 going to alert us to that fact and unfortunately, we
25 will have to ask you to step out for those portions

1	15-F-0122	Baron Winds LLC	3/21/2019
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2 of the testimony.

3 So, with that, we would like to call
4 Mr. Miguel Moreno-Caballero.

5 MR. MORENO-CABALLERO: Yes.

6 A.L.J. COSTELLO: Please stand.

7 MR. MORENO-CABALLERO: Yes.

8 A.L.J. COSTELLO: State your name and
9 business address, for the record.

10 MR. MORENO-CABALLERO: Miguel Moreno.
11 I work for D.P.S., at 1 Empire Plaza, Albany, New
12 York.

13 A.L.J. COSTELLO: Okay. And would you
14 raise your right hand?

15 Is the testimony -- do you swear or
16 affirm, that the testimony you will provide, is the
17 truth?

18 MR. MORENO-CABALLERO: I do.

19 WITNESS; MIGUEL MORENO-CABALLERO;

20	Sworn
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21 A.L.J. COSTELLO: Okay. Thank you.

22 THE WITNESS: (Moreno-Caballero)

23 You're welcome.

24 || A.L.J. COSTELLO: Please --.

25 DIRECT EXAMINATION

1 15-F-0122 Baron Winds LLC 3/21/2019

2 BY MS. BEHNKE:

3 Q. Mr. Moreno-Caballero, may we
4 refer to you as Mr. Moreno, for short, just --

5 A. (Moreno-Caballero) Sure.

6 Q. -- to --

7 A. Yes.

8 Q. -- for speed of getting through -
9 -

10 A. Yes.

11 Q. -- the --

12 A. Yes.

13 A.L.J. COSTELLO: Okay.

14 BY MS. BEHNKE: (Cont'g.)

15 Q. -- the testimony.

16 Do you have any substantive
17 corrections to the testimony, before you today, that
18 --

19 A. (Moreno-Caballero) No.

20 Q. -- that you submitted -- pre-
21 submitted?

22 A. No.

23 MS. BEHNKE: Okay. The witness is
24 ready.

25 A.L.J. COSTELLO: Okay.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 MS. BEHNKE: That's it for me.

3 A.L.J. COSTELLO: We will accept the
4 pre-file testimony of Miguel Moreno-Caballero, as if
5 orally given here today and the files that should be
6 input at this point are D.P.S. Direct Redacted
7 Testimony of Miguel Moreno-Caballero and D.P.S.
8 Direct Confidential Testimony of Miguel Moreno-
9 Caballero. **

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BEFORE THE
STATE OF NEW YORK
BOARD ON ELECTRIC GENERATION
SITING AND THE ENVIRONMENT

In the Matter of

Baron Winds LLC

Case 15-F-0122

February 22, 2019

Prepared Testimony of:

REDACTED

Miguel Moreno-Caballero
Utility Engineering
Specialist 3
(Acoustics)
Office of Electric,
Gas, and Water

State of New York
Department of Public
Service
Three Empire State
Plaza
Albany, New York 12223-
1350

CASE 15-F-0122

MORENO-CABALLERO

1 Q. Will you please state your name, employer, and
2 business address?

3 A. My name is Miguel Moreno-Caballero and I am
4 employed by the New York State Department of
5 Public Service (DPS or the Department), located
6 at Three Empire State Plaza, Albany, New York,
7 12223.

8 Q. Mr. Moreno what is your position at the
9 Department?

10 A. I am a Utility Engineering Specialist 3
11 (Acoustics) in the Environmental Certification
12 and Compliance section of the Office of
13 Electric, Gas and Water (Staff).

14 Q. Please summarize your educational background and
15 professional experience.

16 A. I attended the Pontifical Xaverian University in
17 Bogota, Colombia and received a Bachelor of
18 Science degree in Civil Engineering in 1986.
19 Thereafter, I continued my education at
20 Universidad del Norte in Barranquilla, Colombia
21 and graduated with a Masters in Business
22 Administration in 1992. I have accumulated more

CASE 15-F-0122

MORENO-CABALLERO

1 than 20 years of experience in the field of
2 acoustics and noise control. I owned and
3 operated my own business in Colombia, South
4 America for about 13 years, where I worked as an
5 acoustical consultant and acoustical contractor.
6 I designed and built noise abatement solutions
7 for emergency generators, industrial machinery,
8 HVAC equipment, and interior acoustical designs
9 for indoor spaces. I obtained extensive
10 experience in noise control including noise
11 surveys and computer simulations of aircraft
12 noise for two international airports.

13 After my arrival to the United States, I
14 was employed as a Senior Acoustical Consultant
15 by an acoustical consultant firm in Washington
16 D.C., from October 2005 until May 2008. There,
17 I analyzed sound surveys and performed computer
18 noise modeling for roadways and highways and
19 designed mitigation measures such as barriers
20 and selected building envelope specifications
21 for environmental noise control. I also
22 designed noise control solutions for mechanical

CASE 15-F-0122

MORENO-CABALLERO

1 equipment and interior acoustics for indoor
2 spaces for a variety of projects. From May 2008
3 to June 2009, I was employed by an acoustical
4 consultant company in Manhattan and worked for
5 several acoustical and noise control projects
6 including data centers and corporate projects.

7 I joined the Department in November 2013.
8 My duties include reviewing Public Service Law
9 (PSL) Article VII and Article 10 pre-
10 applications, applications, environmental noise
11 assessments, noise surveys and mitigation
12 measures. I also review sound collection
13 protocols and witness sound measurements to
14 ensure compliance with Certificate Conditions.
15 I am a full-member of the Institute of Noise
16 Control Engineering and an Associate member of
17 the Acoustical Society of America.

18 Q. Mr. Moreno, which projects have you reviewed
19 under PSL Article 10 and Article VII
20 regulations?

21 A. Under Article VII regulations, I have reviewed
22 the applications for the following certified

CASE 15-F-0122

MORENO-CABALLERO

1 cases: New York Power Authority, Case 13-T-0515;
2 DMP New York, Inc., Williams Field Services
3 Company LLC, Cases 13-T-0538 and 13-T-0350; PSEG
4 Power New York, Inc. Case 15-F-0040; and
5 Consolidated Edison Company of New York, Inc.,
6 Case 13-T-0586. Although currently pending or
7 uncertified, I also reviewed environmental noise
8 assessments for the following Article VII
9 projects: West Point Partners LLC, Case 13-T-
10 0292; Poseidon Transmission, LLC, Case 13-T-
11 0391; In the Matter of Alternating Current
12 Transmission Upgrades - Comparative Proceeding,
13 Case 13-E-048; Vermont Green Line Devco, LLCI,
14 Case 16-T-0260; and Niagara Mohawk Power
15 Corporation, Case 15-T-0305. I am currently
16 working on numerous PSL Article 10 proceedings
17 (and some potentially affiliated Article VII
18 filings) regarding wind generating facilities at
19 various stages including the following projects:
20 Cassadaga Wind, LLC, Case 14-F-0490 already
21 certified by the New York State Board on
22 Generation siting and the Environment (Siting

CASE 15-F-0122

MORENO-CABALLERO

1 Board); Lighthouse Wind, LLC, Case 14-F-0485;
2 Baron Winds, LLC, Case 15-F-0122; Bull Run
3 Energy, LLC, Case 15-F-0377; Eight Point Wind,
4 LLC, Case 16-F-0062; Atlantic Wind, LLC -Deer
5 River, Case 15-F-0267; Canisteo Wind Energy,
6 LLC, Case 16-F-0205; Case 16-F-0267;; Number
7 Three Wind LLC, Case 16-F-0328;; Heritage Wind
8 LLC, Case 16-F-0546; Bluestone Wind, LLC, Case
9 16-F-0559; Alle-Catt Wind Energy, LLC, 17-F-
10 0282 and Atlantic Wind, LLC, -Mad River-, Case
11 16-F-0713. I am also assigned on multiple PSL
12 Article 10 proceedings (and some potentially
13 affiliated Article VII filings) regarding solar
14 generating facilities at various stages
15 including the following projects: Mohawk Solar,
16 LLC, Case 17-F-0182; Hecate Energy Albany 1, LLC
17 and Hecate Energy Albany 2, LLC, Case 17-F-0617;
18 and Hecate Energy Greene County 1, LLC, Hecate
19 Energy Greene 2, LLC, and Hecate Energy Greene
20 County 3, LLC, Case 17-F-0619.

21 Q. Are you sponsoring or relying upon any other
22 exhibits?

1 A. Yes. I am sponsoring Exhibit__(MMC-1); through
2 Exhibit__(MMC-13).

3 Q. Please briefly describe those exhibits.

4 A. Exhibit__(MMC-1) contains the document entitled
5 "Guidelines for Community Noise," World Health
6 Organization, 1999 (WHO 1999), which I will
7 refer to as "WHO-1999."

8 Exhibit__(MMC-2) contains a link to download the
9 document entitled "Guidelines and
10 Recommendations," which I will refer to as "WHO-
11 2009."

12 Exhibit_(MMC-3) contains an executive summary of the
13 most recent guidelines from the World Health
14 Organization (WHO) regional office for Europe
15 entitled "Environmental Noise Guidelines for the
16 European Region," published in October 2018,
17 which I will refer to as "WHO-2018-ES."

18 Exhibit_(MMC-4) contains the most recent guidelines
19 from the WHO regional office for Europe entitled
20 "Environmental Noise Guidelines for the European
21 Region," published in October 2018, which I will
22 refer to as "WHO-2018."

1 Exhibit_(MMC-5), contains a study entitled
2 "Massachusetts Study on Wind Turbine Acoustics.
3 Prepared for: Massachusetts Clean Energy Center
4 and Department of Environmental Protection.
5 Submitted by RSG Inc. Report 2.18.2016," which I
6 will refer to as the "MA-STUDY-2016" in my
7 testimony.

8 Exhibit_(MMC-6) contains my notes on Figure 26, page
9 69 of the MA-STUDY-2016.

10 Exhibit__(MMC-7) contains a Sound Testing Compliance
11 Protocol that I have developed and am proposing
12 for this Project which I will refer to as "DPS-
13 Protocol."

14 Exhibit__(MMC-8) contains Table 2 of a reference
15 called "Percentiles of Normal Hearing-Threshold
16 Distribution Under Free-Field Listening
17 Conditions in Numerical Form." Kenji Kurakata,
18 Tazu Mizunami, and Kuzama Matsushita. Acoust.
19 Sci. & Tech. 26, 5 (2005), which I will refer to
20 as "KURAKATA-2005."

21 Exhibit__(MMC-9) contains a drawing showing the
22 turbines proposed for this Project and the

1 locations of non-participating residences
2 differentiated to indicate the non-cumulative
3 mitigated short-term noise levels reported in
4 the Application.

5 The Certificate Conditions that I am proposing on
6 noise and vibration are contained in Exhibit__
7 (SSP-2) which contains all Staff-Policy Panel
8 sponsored Certificate Conditions for this
9 Project.

10 Exhibit__(MMC-10) contains an alternative to the
11 certificate conditions on noise and vibration
12 for this Project that I am presenting for
13 consideration, including both a redlined and a
14 clean version.

15 Exhibit__(MMC-11) contains a redlined comparison
16 between the certificate conditions proposed by
17 the Applicant and the Certificate Conditions
18 imposed by the Siting Board in Case 14-F-0490.

19 Exhibit__(MMC-12) contains a drawing showing the
20 turbines proposed for this Project and the
21 locations of non-participating residences
22 differentiated to indicate the cumulative

1 mitigated short-term noise levels reported in
2 the Application.

3 Exhibit__ (MMC-13) contains my preliminary comments
4 and edits on the protocols presented in the
5 Application.

6 Q. Mr. Moreno, what is your role under PSL Article
7 10 regulation review?

8 A. Under Article 10, my duties include the review
9 of preliminary scoping statements, stipulations
10 and applications as they relate to the noise
11 assessments and avoidance or minimization of
12 environmental noise impacts from major electric
13 generation facilities. My role regarding wind
14 generating projects consists of the review of
15 sections of the Application related to noise
16 impact assessments from construction and
17 operation of the facilities, which includes pre-
18 construction ambient noise surveys, analysis of
19 existing or potential future prominent tones,
20 noise modeling parameters, assumptions and
21 results, amplitude modulation, low-frequency
22 noise, infrasound, potential for hearing damage,

CASE 15-F-0122

MORENO-CABALLERO

1 indoor and outdoor speech interference,
2 interference with the use of outdoor public
3 facilities and public areas, community complaint
4 potential or annoyance, and the potential for
5 interference with technological, industrial or
6 medical activities that are sensitive to
7 vibration or infrasound. In addition, my role
8 also includes the review of applicable noise
9 standards and guidelines, local regulations on
10 noise, design goals for the facilities, noise
11 abatement measures, complaint and resolution
12 plans for noise from construction and operation
13 of the Facility, and proposed post-construction
14 noise evaluations and compliance for conformance
15 with Certificate Conditions.

16 Q. Why is the noise expected to be generated from
17 the Baron Winds LLC Facility (Facility or
18 Project) an important issue for the Siting Board
19 to consider in this proceeding?

20 A. Public Service Law §164 and the implementing
21 regulations at 16 NYCRR §1001.19, require an
22 applicant for a Certificate of Environmental

1 Compatibility and Public Need (Certificate), to
2 provide certain information concerning the noise
3 and vibration impacts of the construction and
4 operation of a facility. In addition, the
5 various noise levels expected from a major
6 electric generating facility, including a wind
7 generating facility like this Project, are
8 important factors in determining the nature of
9 the probable environmental impacts of the
10 construction and operation of the proposed
11 facility and whether it avoids or minimizes
12 environmental impacts to the maximum extent
13 practicable.

14 Q. Can you please describe the different labels
15 such as L_{eq} , and the L_{90} , often used to describe
16 noise levels?

17 A. Noise levels frequently fluctuate over a wide
18 range and over time, so different sound
19 descriptors have been developed to describe
20 sound pressure levels over a period of time.
21 The "Leq" is the equivalent-continuous sound
22 pressure level of a noise source. It is the

1 single sound pressure level that, if constant
2 over a specified time period, would contain the
3 same sound energy as the actual monitored sound
4 that varies in level over the measurement
5 period. Guidelines for noise are sometimes
6 expressed in terms of maximum noise levels
7 specifying the period of time over which the
8 measurements are taken. For example, 45 dBA L_{eq}
9 (8 hours) means that the noise levels evaluated
10 during 8 hours have an energy average equivalent
11 to a constant level of 45 dBA.

12 Q. What is a percentile level?

13 A. The L_n is the percentile level, where n is any
14 number between 0 and 100. The number designated
15 by n corresponds to the percentage of the
16 measurement time period by which the stated
17 sound level has been exceeded. (James P. Cowan,
18 Handbook of Environmental Acoustics, J. Wiley
19 [1994], p. 41). For instance, the L_{90} is the
20 sound level that is exceeded 90 percent of the
21 time, usually regarded as the "residual level"
22 or the background noise without the source in

CASE 15-F-0122

MORENO-CABALLERO

1 question or discrete sound events (Cowan, p.
2 41).

3 Q. What does the designation "dBA" Mean?

4 A. "dB" is a designation for "decibel" which is
5 equivalent to a tenth of a "Bell" (a unit named
6 after Alexander Graham Bell). A Bell is too
7 large to describe the acoustic environment and
8 for that reason was broken into tenths or
9 "decibels." (Cowan, p. 41). The "A" letter after
10 the "dB" designation denotes one of the most
11 common weighting networks in acoustics and noise
12 control. The human ear does not sense all
13 frequencies in the same manner, and the human
14 ear does not hear sounds at different
15 frequencies the same way a typical microphone in
16 a sound level meter does. (Cowan p. 36). For
17 that reason, the "A-weighted" scale was
18 developed and is comprised of a series of
19 corrections applied to the sound levels measured
20 by a sound level meter at all frequencies of the
21 human audible spectra to resemble human hearing.
22 (Cowan p. 31). Although the normal hearing range

CASE 15-F-0122

MORENO-CABALLERO

1 in humans goes from 20 Hertz up to 20,000 Hertz,
2 humans are more sensitive to sound with
3 frequencies between 200 Hertz and 10,000 Hertz
4 (Cowan p. 36) and for that reason the greatest
5 corrections are applied to the low frequencies.
6 (e.g. minus 57 dB at 16 Hertz). In addition, we
7 hear the sound levels between 500 Hertz and
8 4,000 Hertz similar to the way it is perceived
9 by a sound level meter microphone and for that
10 reason the corrections are lower ranging from
11 minus 3.2 dB at 500 Hertz up to 1.0 dB at 4,000
12 Hertz. After all corrections are applied to each
13 frequency sound level, the individual
14 contributions to the dBA level are added up and
15 the result is noted as "overall," "broadband"
16 "dBA" or "dBA-weighted" noise level.

17 Q. Does the proposed Project avoid or minimize the
18 adverse environmental noise impacts to the
19 maximum extent practicable?

20 A. No. I believe that potential adverse
21 environmental noise impacts from operation of
22 the facility have not been avoided or minimized

1 to the maximum extent practicable. Forecasting
2 of operational noise levels from the Project
3 only shows conformance with relevant criteria if
4 noise reduction operations (NRO's) on the wind
5 turbines are incorporated in the computer noise
6 modeling during the design phase. Should actual
7 sound levels exceed relevant criteria at the
8 most potentially impacted noise receptors after
9 a project is built, the room for increasing
10 noise reduction operations further may be
11 limited and it will reduce power generation. In
12 addition, I recommend that the Project should be
13 evaluated not only based on its sound impacts on
14 sensitive noise receptors but more importantly
15 in a cumulative basis with the interaction of
16 noise emissions of the adjacent operational
17 Cohocton Generating Facility. Sound impacts are
18 greater when they are evaluated in conjunction
19 with the noise emissions from the existing
20 facility. In addition, I do not find the
21 Certificate Conditions proposed by the Applicant
22 and the protocol for post-construction

1 evaluations to be appropriate for this Project.

2 Q. Please explain your general impressions of the
3 Certificate Conditions proposed in the
4 Application for this Project.

5 A. I find that the Application Certificate
6 Conditions proposed for Baron Winds have many
7 issues that are similar to those litigated and
8 ultimately decided by the Siting Board in Case
9 14-F-0490 Cassadaga Wind LLC. For this reason,
10 I may not reiterate many of those issues but
11 will compare how the Certificate Conditions
12 proposed by the Applicant for Baron Winds LLC
13 compare with the Certificate Conditions imposed
14 by the Siting Board for Cassadaga Wind LLC. To
15 illustrate the similarities and to expedite
16 review, I have provided a redlined tracked
17 comparison between the approved Certificate
18 Conditions for Cassadaga Wind and those proposed
19 by Baron Winds, which is included in my
20 testimony as Exhibit MMC-11.

21 Q. Please explain the results of sound impacts
22 included in the most recent Application

- 1 Supplement dated February 1st, 2019.
- 2 A. The Application has proposed a short-term design
3 goal of 45 dBA Leq for all non-participating
4 residences and cabins. According to the
5 supplemental information, the new design
6 complies with that limit for nonparticipating
7 residences and cabins. However, I note that to
8 comply with that goal, two turbines needed to be
9 turned-off from the computer noise modeling and
10 Noise Reduction Operations (NRO's) on several
11 turbines have been needed to be incorporated
12 into the model as well. As I will explain in my
13 testimony, my recommendation is not to use NRO's
14 during the siting process or design phase but
15 leave them as contingency options in case post-
16 construction mitigation is needed.
- 17 Q. Please explain what a Noise Reduction Operation
18 (NRO) is.
- 19 A. As explained in the Preconstruction Noise
20 Impacts Assessment presented with the original
21 Application (pp. 142-143), NROs are changes
22 introduced to the operation of the wind turbines

1 to reduce noise generation. This is usually
2 accomplished by adjusting turbine blade pitch,
3 slowing the rotor speed of the turbines, which
4 reduces aerodynamic noise produced by the
5 blades.

6 Q. How many turbines needed NRO's or being turned-
7 off from computer model so that the Project
8 complies with a maximum short-term noise level
9 of 45-dBA-Leq-1h.

10 A. According to the information included in the
11 most recent supplement, three turbines were
12 turned-off from the computer noise model (T1,
13 T72, and T74) and NRO's were applied on twenty
14 eight turbines: five turbines were modeled with
15 5 dBA NRO's, one turbine with an NRO of 4.5 dBA,
16 three turbines with NRO's of 4 dBA, six turbines
17 with NRO's of 3 dBA, six turbines with NRO's of
18 2 dBA and seven turbines with NRO's of 1 dBA .

19 Q. Has the Application Supplement stated whether
20 NRO's are available and has the Supplement
21 included Sound Power information from the
22 manufacturers?

- 1 A. The Application Supplement states: "In the case
2 of Gamesa G114, the sound spectrum used was
3 obtained from an IEC 61400-11 test of the
4 turbine, for the wind speed with the maximum
5 sound power emissions. This spectrum was then
6 scaled to the published apparent sound power for
7 this turbine." What this means is that the
8 sound power level information at different
9 frequencies of the spectra was only available
10 for the wind speed that generates the maximum
11 sound power levels but not for lower speeds. As
12 I will explain later in my testimony, this may
13 have implications in the calculation of long-
14 term noise impacts at sensitive receptors.
- 15 Q. What are the short-term impacts from the
16 Facility without NRO's applied on the turbines?
- 17 A. Nineteen non-participating residences are
18 forecasted to exceed a noise level of 45 dBA-
19 Leq-1-h. The maximum noise impact is modeled to
20 be as high as 49 dBA. In addition, two cabins
21 are forecasted with short-term noise levels
22 greater than 45-dBA-Leq-1-h, one of them with

1 levels as high as 55-dBA-Leq-1-h.

2 Q. Those are the results from the proposed Project
3 only. What would the results be in combination
4 with the existing operational Cohocton Wind
5 Facility?

6 A. Without turbines T1, T72 and T74 and with NRO's
7 applied to the turbines, there are eight non-
8 participating receptors and one non-
9 participating cabin with short-term levels
10 exceeding 45-dBA-Leq-1-hour sound levels. If
11 turbines T1, T72 and T74 are not eliminated and
12 if NRO's are not used for computer noise
13 modeling, the number of residences exceeding a
14 noise level of 45 dBA-leq-1-hour goes from 19 to
15 36, with sound levels as high as 50-dBA (there
16 is one receptor forecasted as high as 58 dBA but
17 it seems to be caused by sound emissions from
18 the Cohocton facility). In addition, the number
19 of cabins exceeding 45-dBA-Leq-1-h goes from two
20 to three.

21 Q. What are the noise levels from the Cohocton
22 facility exclusively?

- 1 A. According to the information provided in the
2 Supplement, four receptors already exceed a
3 noise level of 45-dBA-Leq-1-h because of sound
4 emissions generated by the Cohocton facility.
- 5 Q. What is your recommendation for evaluating
6 cumulative noise impacts? Should a wind
7 generating facility be evaluated exclusively on
8 its noise impacts or in combination with the
9 noise impacts from any other existing wind
10 generating facilities in the vicinity?
- 11 A. In my opinion, for facilities proposed on
12 locations that are proximal to other existing or
13 proposed facilities, only a cumulative
14 assessment reveals the severity of the impacts
15 that may occur. Although the noise impacts from
16 the proposed facility are important, the
17 cumulative impacts are in those cases, more
18 important. The issue under discussion is not
19 new. In my review of relevant references, I
20 found that this question was properly addressed
21 by the Noise Working Group in the implementation
22 of the regulations for wind farms in the United

CASE 15-F-0122

MORENO-CABALLERO

1 Kingdom. In the final report of the reference
2 entitled "The Assessment and Rating of Noise
3 from Wind Farms," dated September 1996, the
4 Noise Working Group discussed its findings in
5 section 11 of the executive summary, noise
6 limits, page vi. The report represents the
7 consensus of the group of experts that had "a
8 breadth and depth of experience in assessing and
9 controlling the environmental noise impact of
10 noise from wind farms." Point 16 concludes: "The
11 Noise Working Group is of the opinion that
12 absolute noise limits and margins above
13 background should relate to the cumulative
14 effect of all wind turbines in the area
15 contributing to the noise received at the
16 properties in question. It is clearly
17 unreasonable to suggest that, because a wind
18 farm has been constructed in the vicinity in the
19 past which resulted in increased noise levels at
20 some properties, the residents of those
21 properties are now able to tolerate higher noise
22 levels still. The existing wind farm should not

1 be considered as part of the prevailing
2 background noise."

3 Q. How is this conclusion applicable to this
4 Project?

5 A. Both the World Health Organization guidelines
6 (1999, 2009 and 2018) and the NYS Siting Board
7 in Case 14-F-0490 have recommended and adopted
8 "absolute" thresholds. From an impacted
9 receptor perspective, it is more important how
10 much wind turbine noise is perceived at that
11 receptor in total, than knowing who is
12 responsible for one portion of the noise or the
13 other. The same applies to perceptible airborne
14 vibrations and prominent tones: it is more
15 important to know whether they will occur or
16 exceed a limit than to know how much is caused
17 by one facility or the other. In my opinion, if
18 noise levels from an existing facility are
19 already equal to or exceed any identified
20 threshold, there is no more room for additional
21 noise. If, on the other hand, noise levels from
22 an existing facility are lower than any

1 identified threshold, the new proposed
2 facility(ies) should be designed so that the
3 cumulative noise levels are lower than or at
4 most equal to that identified threshold. This
5 requires that any project(s) proposed in close
6 proximity to other existing or proposed projects
7 locate its turbines at some distance from other
8 existing or proposed turbines in the project
9 area. For Baron Winds, the two projects
10 overlap, with Baron Wind's turbines surrounding
11 existing turbines from the Cohocton Generating
12 Facility.

13 Q. Do you think that a short-term goal of 45 dBA-
14 Leq-1-h is sufficiently protective of any noise
15 impacts.

16 A. No, I do not. The Applicant selected a 45-dBA-
17 Leq-1-h based on the outdoor recommendation from
18 WHO-1999 for the nighttime, however, there is no
19 discussion of another recommendation from WHO-
20 1999, which is not to exceed an indoor noise
21 level of 30-dBA-Leq-8-hour indoor during the
22 nighttime.

1 Q. Is it possible that the Facility as designed
2 could comply with an indoor noise level of 30
3 dBA-Leq-8-h during the nighttime?

4 A. Not in the summer. If people open the windows
5 during the nighttime, indoor noise levels could
6 be greater than 30 dBA. For Cassadaga Wind, the
7 discussion was based on the assumption that the
8 outdoor-to-indoor noise reduction provided by a
9 building envelope was 15-dBA. However, I have
10 found evidence that the outdoor-to-indoor noise
11 reduction may not be as high as 15-dBA,
12 warranting lower outdoor noise levels so that
13 the 30-dBA-Leq-8-hour indoor recommendation is
14 met.

15 Q. What is that evidence?

16 A. The new guideline from WHO, which I refer to as
17 WHO-2018, in section 2.2.2., page 9, states:
18 "The differences between indoor and outdoor
19 levels are usually estimated at around 10 dB for
20 open, 15 dB for tilted or half-open and about 25
21 dB for closed windows. When considering more
22 accurate estimation of indoor levels, using a

1 range of different predictors, the relevant
2 scientific literature can be consulted (Locher,
3 et al., 2018).” (Locher B, Piquerez A,
4 Habermacher M, Ragettli M, Rösli M, Brink M et
5 al. (2018). Differences between outdoor and
6 indoor sound levels for open, tilted, and closed
7 windows. Int J Environ Res Public Health. 15(1):
8 149).

9 Q. Has this been corroborated by other authors?

10 A. Yes. In the article entitled “Wind Turbine Noise
11 and Sleep: Pilot Studies on the Influence of
12 Noise Characteristics” by Julia Ageborg Morsing,
13 Michael G. Smith, Mikael Ögren, Pontus Thorsson,
14 Eja Pedersen, Jens Forssén and Kerstin Persson
15 Waye, I found that the difference between the
16 LAeq,8h outdoor and indoor for windows with a
17 gap was between 10.5 dBA and 10.9 dB (See table
18 1 of the article). In that case, indoor levels
19 were measured at the pillow position. In
20 another study in the same reference (Study B),
21 the outdoor-to-indoor noise reductions were
22 about 12.2 dB for windows with a gap. In another

1 article entitled "Wind Farm Noise: Paper ICA
2 2016-440. Physiological effects of wind turbine
3 noise on sleep," by Michael G. Smith, Mikael
4 Ögren, Pontus Thorsson, Eja Pedersen and Kerstin
5 Persson Waye, published in Buenos Aires on
6 September 2016, I found information that allowed
7 me to conclude that for that study the outdoor-
8 to-indoor noise reduction provided by windows
9 slightly open was 12 dBA (See Table 1). I find
10 that an assumption between 10 to 12 dBA is
11 reasonable.

12 Q. What are the implications of this?

13 A. That outdoor noise levels should be between 40
14 and 42 dBA leq-8-h, but not greater than 42 dBA,
15 so that the recommendation of 30 dBA-8-hour
16 indoor during the nighttime from WHO-1999 is
17 met.

18 Q. Is the outdoor noise limit of 45 dBA-Leq-8-h
19 that WHO recommended in 1999 still Applicable?

20 A. No. WHO withdrew this recommendation in October
21 of 2018.

22 Q. Is the indoor noise limit of 30 dBA-Leq-8-h that

- 1 WHO recommended in 1999 still Applicable?
- 2 A. Yes. This recommendation was retained by WHO in
- 3 the most recent guideline (WHO-2018).
- 4 Q. If noise levels should not be more than 42 dBA-
- 5 Leq-8-hour during the nighttime to comply with
- 6 the 30 d-BA indoor recommendation, how many
- 7 receptors for the proposed Facility exceed an
- 8 outdoor noise level of 42 dBA?
- 9 A. If noise reduction operations are applied in the
- 10 model and turbines T1, T72 and T74 are turned
- 11 off, 30 receptors are expected to exceed 42-dBA
- 12 Leq-1-h or 8-h. If noise emissions from the
- 13 Cohocton facility are added, 55 receptors may
- 14 exceed 42-dBA-Leq-1-h. If noise reduction
- 15 operations are not used in the model, turbines
- 16 T1, T72 and T74 are not eliminated and Cohocton
- 17 impacts are accounted for, 90 receptors are
- 18 expected to exceed 42 dBA-Leq-1-h.
- 19 Q. How are the long-term noise impacts evaluated?
- 20 A. The long-term noise impacts are evaluated with
- 21 the use of the Lnight noise descriptor. The
- 22 Lnight is an energy-based average of all the

CASE 15-F-0122

MORENO-CABALLERO

1 noise levels during the nighttime period in a
2 year.

3 Q. Is there any recommended limit?

4 A. Yes. In 2009, WHO recommended not to exceed 40
5 dBA Lnight - a recommendation that the Siting
6 Board adopted for Case 14-F-0490 by imposing a
7 certificate condition to be demonstrated with
8 post-construction sound measurements.

9 Q. What are the estimated long-term impacts from
10 the proposed Facility?

11 A. With noise corrections applied to the results,
12 the Application concludes that no receptor will
13 be exposed to noise levels greater than 40 dBA
14 Lnight.

15 Q. Do you agree with that conclusion?

16 A. No, I do not. I believe that the real impacts
17 may be greater.

18 Q. Why?

19 A. Because noise corrections were applied to the
20 calculations so that the estimates with the
21 CONCAWE corrections do not exceed the results
22 with the ISO-9613-2 with no meteorological

1 corrections and because random numbers have been
2 introduced in the calculations.

3 Q. Do you have any concerns with long-term sound
4 levels as proposed by the Applicant?

5 A. In Cassadaga Wind, the Siting Board imposed
6 Certificate Condition 80(b), which includes a
7 sound limit of 40 dBA L(night-outside), annual
8 equivalent continuous average nighttime sound
9 level from the facility outside any existing
10 permanent or seasonal non-participating
11 residence, and a limit of 50 dBA L(night-
12 outside), annual equivalent continuous average
13 nighttime sound level from the facility outside
14 any existing participating residence. That
15 clause is not included in the Certificate
16 Conditions proposed by the Applicant for Baron
17 Winds or the protocol for post-construction
18 noise evaluations.

19 Q. Do you agree with excluding testing of the
20 Lnight-outside regulatory limit from the scope
21 of the compliance testing protocol?

22 A. No, I do not. The 40 dBA L(night-outside)

1 requirement for non-participating receptors,
2 which is based on the recommendations of WHO-
3 2009, is potentially more protective than the 45
4 dBA-Leq (8-hour) WHO-1999 recommendation and,
5 therefore, should be evaluated at the most
6 critical locations after the Project is built.
7 Alternatively, the Project should be designed
8 for a lower short-term limit as previously
9 stated.

10 Q. Is the WHO-2009 still applicable?

11 A. Yes. As stated in the most recent guideline
12 (WHO-2018, p. 28) "the current guidelines
13 complement the NNG [WHO Night Noise Guidelines]
14 from 2009."

15 Q. Does the Application include computer noise
16 modeling and calculations showing that the
17 design complies with the 40 dBA-Lnight
18 recommendation of WHO-2009 for non-participating
19 receptors?

20 A. Yes. The Application claims that the maximum
21 impact will be 40-dBA at non-participating
22 receptors. Also, it claims that a maximum level

1 of 50-dBA Lnight will not be exceeded at
2 participating receptors.

3 Q. Do you have any issues regarding how the Lnight
4 levels were calculated and if so, could you
5 please describe what those issues are?

6 A. Yes. The calculations of the Lnight in the
7 Application included corrections on an hourly
8 basis so that the results with the ISO 9613-
9 2/CONCAWE method never exceed the Leq-1-hour
10 calculated with the ISO 9613-2 at the particular
11 wind speed that occurs during each hour.

12 Q. Please explain.

13 A. The Application adopted two methods for
14 prediction of future operational noise levels
15 from the Project called the ISO-9613-2 and the
16 CONCAWE. The ISO-9613-2 method uses the ISO
17 9613-2 propagation standard with no
18 meteorological corrections to estimate the
19 short-term sound levels as I explained
20 previously in my testimony and the CONCAWE
21 method uses the ISO 9613-2 propagation standard
22 in conjunction with the CONCAWE meteorological

1 correction. As stipulated, both use the ISO-
2 9613-2 propagation standard but without the ISO
3 meteorological correction (Cmet). Instead, the
4 CONCAWE approach adds a meteorological
5 correction that is used in the original CONCAWE
6 propagation standard to the hourly calculation
7 of ISO-9613-2 components for estimates of long-
8 term sound impacts.

9 Q. Are the ISO-9613-2 input values and assumptions
10 the same for both methods.

11 A. No, they are not. The formulas are similar but
12 the input values and assumptions used in the
13 studies are different. The ISO 9613-2, for
14 estimates of maximum short-term noise levels, is
15 calculated with a ground factor G 0.5 but uses a
16 ground factor of G 1 when used in conjunction
17 with the CONCAWE meteorological correction for
18 long-term estimates. In simple terms, a G
19 factor of 1 represents a better ground effect
20 that results in lower noise levels. Initially,
21 the CONCAWE meteorological correction is
22 calculated, which can be either positive or

1 negative. In other words, it can be added or
2 subtracted to the ISO 9613-2 calculation
3 components in an hourly basis. Further
4 calculations based on 8,760 hours in a year are
5 conducted to arrive to an estimate of the long-
6 term energy-based average sound level L_{night} at
7 a particular receptor. The CONCAWE
8 meteorological corrections can be either
9 positive or negative because there are
10 atmospheric conditions that are favorable and
11 others that are unfavorable for propagation of
12 noise. In other words, it may increase or
13 decrease the sound levels at a particular
14 receptor.

15 Q. What is the issue with the estimates of long-
16 term sound levels?

17 A. The problem is that in the Application, for
18 every hour that the sum of the ISO-9613-2 with
19 $G=1$, and the CONCAWE meteorological correction
20 exceeds the sound levels estimated with the ISO-
21 9613-2 standard with $G=0.5$, and maximum sound
22 power levels, a correction is applied to match

1 the ISO-9613-2 results. In other words, this is
2 done so that the level never exceeds the ISO-
3 9613-2 short-term estimates.

4 Q. Is this approach reasonable?

5 A. In my opinion it is not. I have not found any
6 peer reviewed publication or standard that calls
7 for this. The correction also seems to be based
8 on the Application's assumption that predictions
9 of the 1-hour-Leq sound levels with the ISO
10 9613-2 and no meteorological correction (Cmet)
11 correspond to the maximum sound levels that can
12 actually be measured but, as I will explain, the
13 MA-Study contains evidence showing that this is
14 not the case. For one out of six 1-hour-Leq
15 samples (and one of the two highest) the
16 measurements exceeded the predictions by three
17 decibels. Therefore, regardless of the
18 assumptions and input values used in the CONCAWE
19 calculations, corrections should not be applied
20 to reduce the predictions with the CONCAWE to
21 match the ISO-9612-2 G=0.5 calculations because,
22 as the evidence supports, the actual measured

1 sound levels can be higher than the estimates
2 achieved by using computer noise modeling.

3 Q. What is the evidence contained in the MA Study?

4 A. In my review of studies concerning accuracy of
5 the ISO-9613-2 model I found one where the use
6 of the ISO-9613-2 sound propagation model with
7 similar assumptions and input values to the ones
8 that were used in the Application, resulted in
9 about a 3-dBA underprediction of the Leq-1-hour
10 noise descriptor for one out of six 1-hour
11 samples and one out of the two highest sound
12 pressure levels that were modeled and measured.

13 Q. What is the study you refer to and which is the
14 section that shows the underprediction?

15 A. The study is entitled "Massachusetts Study on
16 Wind Turbine Acoustics" (Exhibit MMC-5) which
17 was prepared for the Massachusetts Clean Energy
18 Center and Department of Environmental
19 Protection. The findings relevant to this case
20 are shown on Figure 26, page 68, and is included
21 as Exhibit MMC-6. The figure has three graphs
22 and the one at the bottom shows a correlation

CASE 15-F-0122

MORENO-CABALLERO

1 between sound pressure levels estimated at a
2 receptor located 330 meters (1,083 feet)
3 downwind from the turbines as obtained with the
4 ISO-9613-2 sound propagation model and a ground
5 factor of G 0.5 plus a 2 BA correction added to
6 the results. The figure correlates the
7 estimates to the sound pressure levels that were
8 measured after monitoring the 1-hour Leq-dBA
9 noise descriptor for six hours at that receptor.
10 This can easily be observed in Exhibit MMC-6
11 where I have included my notes on top of the
12 relevant graph. As it can be seen from the
13 graph (Exhibit MMC-6) in one out of the six
14 hours, the sound pressure levels using computer
15 noise modeling were 3 dBA lower than as measured
16 after monitoring (43 dBA as opposed to 46 dBA).
17 The 3-dBA underestimate occurred for one of the
18 two highest sound pressure levels. This also
19 shows that although the addition of 2 dBA to the
20 ISO 9613-2 results improves the accuracy of the
21 estimates, it is not sufficient for one out of
22 two samples at the maximum sound power levels.

1 In this case a correction of 5-dBA and not 2-dBA
2 is needed to estimate the actual maximum 1-hour
3 sound levels.

4 Q. You mentioned earlier in your testimony that the
5 Massachusetts Study (MA-Study) used the same or
6 similar input values to the ones used for Baron
7 Winds. What are the differences and how are
8 those differences relevant to this case?

9 A. There are two differences. The first is that
10 the receptor in the MA-Study was evaluated at
11 330 meters (1,083 feet) from the turbine but the
12 setbacks for Baron Winds are 1,000 feet for
13 participating receptors and 1,500 feet for non-
14 participating receptors. Despite the
15 differences, the findings are still applicable
16 to this case. In fact, I would expect that the
17 discrepancies would grow for receptors at
18 distances greater than 330 meters (1,083 feet)
19 and not decrease. The second difference is that
20 the MA-Study evaluated sound receptors at 1
21 meter above the ground while the Application
22 evaluated receptors at 4 meters above the

1 ground. I estimate that the predicted sound
2 levels at 4 meters may be higher (about 1.5 dBA
3 for the closest receptors) but still
4 insufficient to compensate entirely a 3 dBA
5 underprediction. In addition, the MA-Study did
6 not evaluate receptor at 4 meters which may be
7 appropriate for two-story houses and therefore
8 it is unknown whether the 3-dBA underprediction
9 also occurs at 4 meters.

10 Q. Can such exceedance be mitigated after the
11 Project becomes operational?

12 A. Yes, a 3 dBA underprediction can be mitigated by
13 applying NRO's on the closest turbine(s).

14 Q. If it can be mitigated by applying NRO's what is
15 the concern?

16 A. The concern is that the redesign already uses
17 noise reductions equivalent to 5 dBA on five
18 turbines, 4.5 dBA on one and 4 dBA on three and
19 for those turbines the room to increase the
20 noise reductions further is limited and that
21 will reduce power production as well. For those
22 wind turbines, the only mitigation option would

CASE 15-F-0122

MORENO-CABALLERO

1 be a shutdown for the periods when the sound
2 limits are exceeded. In addition, the Applicant
3 has not proposed a Certificate Condition to
4 measure the Lnight descriptor after construction
5 and its evaluation is not found in the
6 postconstruction protocol either.

7 Q. Is there any other assumption or correction you
8 disagree with?

9 A. Yes, the application of random numbers to the
10 estimates of hourly sound levels at a particular
11 receptor. I disagree with the generation and
12 introduction of random numbers to the
13 calculations for different reasons: first, they
14 are in my opinion unnecessary; second, they
15 introduce distortions to the results; third,
16 they make the calculations un-replicable; and
17 fourth, results may be different depending on
18 the specific random numbers that are generated.
19 In addition, I have not found any standard or
20 guidelines written by other authors that
21 recommend the generation of random numbers to be
22 introduced in the calculations of computer noise

1 sound levels at receptors.

2 Q. Any other concerns?

3 A. Yes, if the intent of the introduction of random
4 numbers is to replicate transient changes in
5 sound levels that may occur by changes in
6 propagation conditions due to temperature or
7 weather changes, this may not be in line with
8 the requirements of Exhibit 19(d), 16 NYCRR
9 §1001.19(d), that requires an applicant to
10 ignore any attenuation of sound that result on
11 transient changes of weather and temperature.

12 Q. If no corrections are applied to match the
13 results obtained with the CONCAWE to the ISO-
14 9613-2 and if random numbers are not generated
15 what would be the sound results of the Lnight
16 noise descriptor.

17 A. From the information included in the Supplement,
18 including corrections and NRO's and turbine
19 elimination, seven sound receptors will be
20 impacted in the cumulative analysis: five with
21 an Lnight of 41 dBA, one at 46 dBA and another
22 at 51 dBA. No information is included for the

1 Lnight without corrections and NRO's applied in
2 a cumulative basis.

3 Q. You mentioned earlier in your testimony that you
4 disagree with applying corrections to the
5 CONCAWE approach to match the ISO-9613-2 results
6 and the introduction of random numbers. What is
7 your opinion about the calculation with CONCAWE
8 meteorological corrections presented in the
9 Application?

10 A. The raw data without any corrections, showed for
11 the original design, 1-h-Leq sound levels 1 to 2
12 dBA above the ones predicted with the ISO-9613-
13 2. I believe the unadjusted data results are
14 closer to the maximum 1-hour Leq levels. The
15 review of calculations of long-term estimates is
16 complicated. [REDACTED]

17 [REDACTED] [REDACTED]

18 [REDACTED] [REDACTED]

19 I consider it is important to analyze whether
20 the differences make sense and also analyze what
21 the short-term sound limit should be so that the
22 Lnight could be met. One of the most practical

1 approaches is to make an estimate of the L_{night}
2 based on the difference between the maximum 1-
3 hour sound power level generated by a turbine in
4 a year and the yearly energy-based average of
5 all sound power levels generated by the same
6 wind turbine in a year based on the statistics
7 of wind direction for a site and the turbine
8 selected for a project. Basically, this
9 acknowledges that the main factor for the
10 generation of noise is the wind magnitude at the
11 hub height and ignores other variables that may
12 affect the sound levels at a receptor such as
13 wind direction and cloud coverage during the
14 nighttime.

15 Q. Is this a valid assumption?

16 A. Yes. NARUC-2011 reports that wind turbine noise
17 is not directional. This means that the sound
18 levels are similar regardless of whether the
19 receptor is located upwind, downwind, and cross
20 wind conditions.

21 Q. What specifically does NARUC-2011 say?

22 A. "The assumption of an omni-directional wind

CASE 15-F-0122

MORENO-CABALLERO

1 means that the sound power level of the turbine,
2 which is measured in the IEC 61400-11 procedure
3 downwind of the unit, is modeled as radiating
4 with equal strength in all directions; i.e. the
5 sound level in every direction is the downwind
6 sound level. Although this may seem to depict an
7 unrealistic situation and over-predict upwind
8 sound levels, the fact of the matter is that
9 this approach generally results in predictions
10 that are consistent with measurements
11 irrespective of where the receptor point is
12 located. Although somewhat counterintuitive, the
13 reason for this is that wind turbine noise under
14 most normal circumstances is not particularly
15 directional and generally radiates uniformly in
16 all directions. As an example, the plot below
17 shows the sound levels measured in three
18 directions 1000 ft. from a typical unit in a
19 rural project in [s]outhern Minnesota. Although
20 there are periods when the levels differ,
21 implying some directionality, the majority of
22 the time all three sound levels are generally

1 about same irrespective of the wind direction.
2 Moreover, the sound level at the downwind
3 position is almost never elevated relative to
4 other directions as one might expect."

5 Q. Please explain what this means.

6 A. A receptor is downwind if the wind is blowing
7 and reaches the turbine before reaching the
8 receptor, in other words, the wind blows from
9 the turbine to the receptor. Upwind is the
10 opposite, the wind reaches the receptor first
11 and the turbine after, in other words, the wind
12 blows from the receptor to the turbine.
13 Crosswind is when the receptor is not located
14 downwind or upwind from the noise sources, in
15 other words, the wind blows in a way that can
16 reach the turbine or the receptor at the same
17 time or one of the two first, but not the other.
18 In the original CONCAWE method, receptors
19 located downwind from the noise sources are
20 supposed to have greater sound levels than the
21 receptors located on the other side of the
22 turbine (upwind). Receptors upwind are supposed

1 to have lower noise levels and receptors located
2 crosswind are supposed to have sound levels
3 between those calculated for receptors located
4 downwind and upwind from the turbines. But, as
5 described in NARUC-2011 and other publications,
6 for receptors very close to the turbines this
7 does not seem to happen.

8 Q. Are you criticizing the CONCAWE method that was
9 stipulated?

10 A. No, I am objecting to the way that it was
11 applied, by adjusting sound levels so that they
12 do not exceed the ISO-9613 method, which will
13 have the effect of reducing, not increasing, the
14 results. A better practice would have been not
15 introducing any adjustment, or if adjustments
16 were introduced to decrease the maximum levels,
17 they should also have been introduced to
18 increase lower sound levels.

19 Q. Why do you think this does not happen?

20 A. As described by the NARUC-2011 guidelines, one
21 of the reasons may be because wind turbine noise
22 is not quite "directional" at all frequency

1 bands. For instance, low frequency noise
2 propagates in all directions, not in a single
3 direction. The other reason could be that the
4 CONCAWE Standard was developed based on three
5 Petrochemical plants where receptors are located
6 either downwind, upwind or crosswind from the
7 plants. For wind turbine noise, especially if a
8 receptor is surrounded by several turbines, a
9 receptor could be simultaneously located
10 downwind from some turbine(s) and upwind or
11 crosswind from other turbine(s).

12 Q. Do other references indicate that the difference
13 between downwind, upwind and cross wind
14 conditions may be minimal for the most impacted
15 receptors, closest to the turbines?

16 A. Yes. The MA-Study, Figure 20, shows sound levels
17 for a receptor located at 330 meters (1,083
18 feet) from the turbines and the results are
19 basically the same: many data points present
20 both underpredictions and overpredictions and,
21 for that reason, they locate on both sides of
22 the diagonal that represents a perfect match.

1 Although upwind data shows more deviation with
2 respect to the center line than the crosswind
3 and downwind condition, they all occur on both
4 sides of the diagonal line. I should note that
5 the addition of 2-dB was needed for all wind
6 directions and not for downwind conditions
7 exclusively, to improve the accuracy between
8 predictions and actual noise measurements.

9 Q. Do any other references address this issue?

10 A. Yes. The Institute of Acoustics in the
11 publication entitled: "A Good Practice Guide to
12 the Application of ETSU-R-97 for the Assessment
13 and Rating of Wind Turbine Noise," dated MAY
14 2013, section 4.4.2. on page 22, states: "Based
15 on evidence from the Joule projectⁱⁱⁱ [ⁱⁱⁱ Wind
16 Turbine Noise, Dick Bowdler and Geoff Leventhall
17 (Eds). Multi-Science Publishing Co Ltd (2011)]
18 in conjunction with advice in BS 8233 and ISO
19 9613-2, current practice suggests that for a
20 range of headings from directly downwind (0°) up
21 to 10 degrees from crosswind (80°), there may be
22 little to no reduction in noise levels..." Figure

1 6 on the same page also shows that for receptors
2 located within 5.25 times the tip height of the
3 turbine (2,584 feet in this case based on the
4 turbines proposed for this Project) the sound
5 levels downwind and upwind are basically the
6 same and for the cross wind condition there may
7 be a difference of 2 dB in a narrow angle of
8 only 20 degrees out of 180.

9 Q. What are the results and the implications?

10 A. This shows that what may be most important is
11 the wind magnitude only, not the wind direction.
12 Other factors such as solar radiations do not
13 play any role for calculation of the nighttime
14 sound levels and may play only a minor role
15 during the daytime. Cloud coverage may also
16 play a minor role when the turbines are
17 producing low noise emissions and may not modify
18 the results at wind speeds greater than the cut-
19 in speed. Several meteorological categories are
20 only relevant when the turbines are not rotating
21 and for that reason they do not play any role in
22 the calculations.

1 A. Based on the statistics of wind speed for the
2 Project, excluding all irrelevant factors and
3 meteorological conditions that may play a minor
4 role, and for the two turbines selected for this
5 Project, I find the following: [REDACTED]
6 [REDACTED] [REDACTED]
7 [REDACTED] [REDACTED] [REDACTED]
8 [REDACTED] [REDACTED] [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 [REDACTED]
13 [REDACTED] [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED]e
17 [REDACTED] [REDACTED] [REDACTED]
18 [REDACTED] [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED] [REDACTED]
22 [REDACTED]

1 Q. What are the results for the GAMESA turbine?

2 A. [REDACTED]

3 [REDACTED]

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 Q. Since the Project as recently supplemented
20 includes both turbines in the layout, what would
21 the conclusions be in this case?

22 A. My recommendation is that the regulatory limits

1 should be based on the most protective results
2 for the two turbines that were analyzed so that
3 the WHO guidelines of 2009 are met with any of
4 the two turbine models.

5 Q. How do your results compare with your recent
6 testimony for Eight Point Wind?

7 A. Although the wind speed statistics and the
8 turbine models used for the Project are
9 different in that case, the conclusions are
10 similar. For that project I recommended a
11 maximum short-term noise level of 42 dBA-Leq-8-
12 hour.

13 Q. If for some reason an Lnight of 40 dBA is
14 exceeded at a particular receptor, is it
15 possible to provide mitigation?

16 A. Yes, but as I explained before, there are
17 twenty-eight turbines where NRO's were applied:
18 five turbines where an NRO of 5 dBA was used,
19 one where an NRO of 4.5 dBA was used, and six
20 where a 3 dBA NRO were used to demonstrate
21 conformance with relevant criteria through
22 computer noise modeling. Without those NRO's in

1 the model and if turbines T1, T72 and T74 are
2 not eliminated, the results will show that more
3 receptors will exceed the Lnight.

4 Q. Are there any other concerns?

5 A. Yes, the NRO's are more effective if they are
6 needed to reduce exceedances to a short-term
7 noise limit rather than a long-term limit. In
8 fact, when a short-term limit is exceeded, the
9 NRO will only need to be applied during the
10 periods of times when the short-term sound
11 levels are exceeded, most likely at the highest
12 sound power levels of generation. But for long-
13 term sound limits this works differently.

14 Q. Please explain.

15 A. Noise Reduction Operations are more effective at
16 high wind speeds, but they could be zero at
17 medium and low wind speeds. Therefore, the noise
18 reduction achieved at the receptor is lower than
19 the noise reduction applied on the turbines. For
20 instance, if a 2-dBA noise reduction is needed
21 at a receptor a higher NRO would need to be
22 applied on the closest turbines (e.g., 3 dBA).

CASE 15-F-0122

MORENO-CABALLERO

1 If the NRO is applied only to one turbine and
2 not to other closer turbines the NRO may need to
3 be even higher.

4 Q. Why is that significant?

5 A. This is another cause of concern specially
6 because although the long-term limits that were
7 imposed by the Siting Board in the Cassadaga
8 Wind case are included in the Certificate
9 Conditions proposed by the Applicant for Baron
10 Winds, evaluation of the Lnight descriptor is
11 not included in the protocol for post-
12 construction evaluations. What this also means
13 is that if the long-term sound levels are only
14 modeled by computer, there will be no
15 measurements to demonstrate whether the Facility
16 exceeds the long-term recommendation of 40 dBA
17 Lnight from WHO-2009.

18 A. Is there any other alternative?

19 Q. Yes. One alternative is to require the Applicant
20 to measure the Lnight as the Siting Board did
21 for Case 14-F-0490 and also measure the Lnight
22 as I have proposed in the DPS-Protocol.

1 Alternatively, the long-term limits may be
2 eliminated from Certificate Conditions and post-
3 construction compliance measurements provided a
4 lower short-term limit is adopted and NRO's are
5 not used in computer noise modeling. Since NROs
6 are only effective at high wind speeds and may
7 not be applied to all relevant turbines, this
8 short-term regulatory limit should be
9 conservatively estimated.

10 Q. Do you have a recommendation about what that
11 limit should be?

12 A. Yes, the limit should be 42-dBA-Leq-8-h or
13 lower.

14 A. Do you have any other concerns about the long-
15 term impacts from the proposed Facility other
16 than those mentioned for the nighttime long-term
17 Lnight noise descriptor?

18 A. Yes. The World Health Organization released new
19 guidelines in October of 2018, after the
20 Application was filed, with specific
21 recommendations to address wind turbine noise
22 and with potential implications that I consider

1 important to be considered by the Siting Board.

2 Q. What are the most important findings from your

3 review of WHO-2018 as related to this Project?

4 A. As mentioned before, one of the most important

5 findings is that WHO-2018 withdrew the outdoor

6 short-term recommendation of not exceeding 45

7 dBA-Leq-8-hour during the nighttime that it had

8 recommended in 1999. WHO-1999 was the basis for

9 recommending the Siting Board to apply this

10 short-term limit to the Cassadaga Wind project

11 in Case 14-F-0490. In addition, WHO-2018 (p. 9)

12 recommends a lower outdoor-to-indoor noise

13 reduction provided by the residential buildings

14 than the one that was assumed in 1999 for

15 transportation noise sources, as well as

16 maintaining the indoor noise levels as

17 recommended in 1999. Furthermore, the new

18 recommendation from WHO-2018 is protective not

19 only of the nighttime period but of the daytime

20 and evening time periods as well and more

21 importantly it may require a lower short-term

22 and long-term nighttime noise limit than as

1 recommended in 1999 and 2009, which was also the
2 basis for recommending the Siting Board adopt a
3 short-term and long-term limit for Cassadaga
4 Wind. After analyzing the recommendations of
5 WHO-1999, WHO-2009, and the WHO-2018
6 independently, I conclude that the short-term 45
7 dBA-Leq-8-h outdoor limit is not the most
8 protective among all three guidelines and that a
9 lower limit, on the order of 42-dBA, should be
10 adopted so that all three WHO guidelines and
11 recommendations are met and that the potential
12 adverse effects from the Facility are minimized.

13 Q. You mentioned at the beginning of your testimony
14 that you were introducing the new WHO-2018
15 guidelines as an exhibit in your testimony for
16 this case. Please explain why this is
17 important.

18 A. Yes, the new guidelines propose the Lden noise
19 descriptor which considers the daytime, evening
20 time, and nighttime noise levels.

21 Q. Do those guidelines specifically address the
22 potential health impacts from wind turbine

1 noise?

2 A. Yes. The guidelines include consideration of
3 Wind Turbine Noise.

4 Q. What are the findings?

5 A. The WHO-2018 guidelines found that adverse
6 health effects (such as annoyance) are
7 associated with a level equivalent to 45 dBA
8 Lden. Therefore, the recommendation is that
9 sound levels from wind turbines should be lower
10 than 45-dBA Lden in a year.

11 Q. What is the Lden?

12 A. The Lden is another noise descriptor equivalent
13 to a yearly energy-based average with no
14 penalties applied to the daytime period, a 5-dBA
15 penalty applied to the evening period, and a 10-
16 dBA penalty applied to the nighttime period.

17 Q. How are the daytime, evening time and nighttime
18 periods defined?

19 A. The definitions for all these periods of time in
20 a day may be different for Europe, the United
21 States, and other countries. For example, the
22 "nighttime period" in Europe spans from 11 p.m.

1 up to 7 a.m. the following morning, or from
2 10:00 p.m. to 6:00 am the following day (8-
3 hour), while in United States "nighttime period"
4 spans from 10 p.m. up to 7 a.m. (9-hour). In
5 addition, the "daytime period" in Europe spans
6 from 7 a.m. up to 7 p.m. or from 6:00 a.m. to
7 6:00 p.m. (12-hour) (WHO-2018, p. 9) while in
8 United States "daytime" spans from 7 a.m. to 6
9 p.m. (11-hour). The "evening time" in Europe
10 goes from 7 p.m. to 11:00 p.m. or from 6:00 p.m.
11 to 10:00 p.m. (4-hour) while in the United
12 States "evening time" spans from 6 p.m. up to
13 10:00 pm. Despite the differences in timing
14 definitions, the Lden noise levels for both may
15 result in numbers that are quite similar with
16 differences in the order of a few decimal
17 points.

18 Q. If a sound source is constant during the day
19 time, evening time, and nighttime (as defined in
20 the United States), how many decibels should
21 that noise source be in order not to exceed the
22 45-dBA Lden recommendation?

1 A. That sound source should have a constant average
2 sound pressure level lower than 38.2 dBA Leq
3 during the daytime (Lday), evening time (Leve),
4 and nighttime (Lnight) in a year so that after
5 all the penalties are applied it does not equal
6 or exceed the 45 dBA Lden WHO-2018
7 recommendation. In other words, the daytime,
8 evening time, and nighttime average sound
9 exposure in a year should be about 6.8 dBA lower
10 than 45-dBA Lden WHO-2018 or equivalently 38.2
11 dBA.

12 Q. Are there any other corrections to be applied?

13 A. Possibly. For instance, it is technically
14 feasible to include the periods of time when the
15 noise sources are not generating noise in the
16 calculation of the Lden in a year. The effect
17 of not including any noise from the noise
18 sources (wind turbines in this case) during
19 these periods depends on the percentage of the
20 year the turbines are not producing noise, but
21 they may result in an extra allowance that could
22 be approximately 0.9 dBA for a noise source that

1 is not generating sound for approximately 10% of
2 the time in a year. That being said, the sound
3 should be lower than 39.1 dBA for the yearly
4 average of the Ldaytime, Levening, and the
5 Lnight ($38.2+0.9=39.1$). These levels, when
6 combined with the percentage of time that noise
7 source is not generating noise and after the 5
8 and 10-dBA penalties are applied to the evening
9 time and the nighttime (respectively), will
10 result in a Lden of 45 dBA.

11 Q. How does a noise level of 39.1 dBA Leq in a year
12 equate to a maximum short-term threshold such as
13 the Leq-11-hour (daytime), 4-hour (evening
14 time), 9-hour (nighttime).

15 A. As explained before, the difference between the
16 long-term Lnight descriptor and the maximum
17 short-term noise descriptor (such Leq-1-h or 8-
18 h) depends on the statistical distribution of
19 wind speed magnitudes at the site and the
20 turbine model selected for the Project.
21 Assuming that the difference is 2 dBA, a 39.1
22 dBA average in a year during the daytime would

1 approximately equate to a short-term level of
2 41.1 dBA Leq during the daytime. For a noise
3 source that is constant in time the average for
4 the daytime and evening time periods should be
5 the same. Therefore, in my opinion, the
6 regulatory short-term limit for the daytime and
7 evening time should be about 41 dBA so that the
8 45-dBA Lden recommendation is met.

9 Q. These are estimates for a noise source that is
10 constant in time. Are they applicable to wind
11 turbine noise that is not constant in time?

12 A. Yes, they are. The Netherlands has regulations
13 that use the Lden and the Lnight noise
14 descriptors. The limits have been set at 47-dBA
15 Lden and 41-dBA Lnight since 2011, a difference
16 of 6 dBA between the two noise descriptors (See,
17 Wind Farm Noise Measurements Assessment and
18 Control Colin H. Hansen, Con J. Doolan and
19 Kristy L. Hansen. p.41. Wiley. 2017). For Baron
20 Winds, the difference between the sound power
21 level that generates the Lnight and the Lden in
22 a year is 6.6 dBA for both turbines proposed for

CASE 15-F-0122

MORENO-CABALLERO

1 the Project, similar to the 6 dBA assumed in the
2 Netherlands.

3 Q. What are the implications in this case?

4 A. [REDACTED]
5 [REDACTED]er
6 [REDACTED]
7 [REDACTED] [REDACTED] [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED] [REDACTED]
11 [REDACTED]
12 [REDACTED]
13 [REDACTED] [REDACTED]
14 [REDACTED] [REDACTED]
15 [REDACTED]
16 [REDACTED] [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED] [REDACTED]
21 [REDACTED]
22 [REDACTED]

CASE 15-F-0122

MORENO-CABALLERO

1 [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED] [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 Q. If the new WHO-2018 recommendation is exceeded
13 can that be mitigated and, if so, how?
14 A. Yes, the exceedance could be mitigated by
15 applying NRO's to the closest turbines or
16 eliminating some from the design. If NRO's are
17 applied, they need to be greater than the noise
18 reduction needed at the receptor but, as
19 explained before, for the turbines where the
20 maximum NRO of 5 dBA was already used in
21 computer noise models to demonstrate
22 conformance, there may be low or no additional

1 room for increasing the NRO's.

2 Q. How many receptors may exceed a short-term sound
3 limit of 42 dBA-Leq-1-h with and without the
4 application of NRO's in a non-cumulative basis?

5 A. With NRO's applied to the model there are about
6 30 non-participating receptors and 3 non-
7 participating cabins with short-term levels
8 exceeding a 42-dBA-Leq-1-hour sound levels.
9 Without NRO's there are about 77 non-
10 participating receptors and 5 non-participating
11 cabins exceeding that threshold.

12 Q. How many receptors may exceed a cumulative
13 short-term sound limit of 42 dBA-Leq-1-h with
14 and without the application of NRO's?

15 A. With NRO's applied to the model there are about
16 55 non-participating receptors and 4 non-
17 participating cabins with cumulative short-term
18 levels exceeding a 42-dBA-Leq-1-hour sound
19 level. Without NRO's, there are about 90 non-
20 participating receptors and 5 non-participating
21 cabins exceeding that threshold.

22 Q. Do you have any recommendations for

1 Participating receptors?

2 A. Yes. For Cassadaga Wind, Case 14-F-0490, the
3 Siting Board imposed Certificate Condition
4 70(d)(ii) limiting the long-term noise levels to
5 50-dBA-Lnight as a compliance filing requirement
6 and on the assumption of a 5 dBA difference
7 between long-term and short-term descriptors
8 imposed a Certificate condition requiring post
9 construction noise measurement to demonstrate
10 that the sound levels do not exceed 55 dBA-Leq-
11 8-hour. On the basis that the difference
12 between those descriptors may be 2 dBA and not 5
13 dBA, I advise that the short-term limits at
14 participating residences and any portion of land
15 on non-participating property be limited to 52
16 dBA-Leq-8-h.

17 Q. How many participating receptors exceed a sound
18 limit of 55 and 52-dba-leq-8-hour?

19 A. With the current design, no participating
20 receptor and no non-participating property line
21 are forecasted to exceed 55-dBA Leq-1-h with or
22 without NROs in a cumulative or non-cumulative

CASE 15-F-0122

MORENO-CABALLERO

1 basis. One participating receptor is expected
2 to exceed 52-dba if no noise reductions are
3 applied in a cumulative and non-cumulative
4 basis. This seems to be caused by Baron Winds,
5 not the Cohocton facility. Only one boundary
6 line is reported to exceed 52 dBA in a
7 cumulative analysis if NROs are not applied.

8 Q. What are the results of impacts from low
9 frequency sound?

10 A. The Application identified 65 dB as a goal for
11 low frequency sounds at the full octave bands of
12 16, 31.5 and 63 Hertz. Only one receptor, a non-
13 participating cabin, is reported to be exposed
14 to 66 dB at 16 Hz. However, that does not mean
15 that the potential low-frequency impacts have
16 been minimized to the maximum extent
17 practicable.

18 Q. Please explain.

19 A. The Application Supplemental PNIA states: "Since
20 Gamesa does not published [sic] 1/1 or 1/3
21 octave band noise reduced operation (NRO) data
22 for this turbine, the maximum sound power was

1 shifted down to correspond to the desired amount
2 of sound level reduction when NROs were
3 required." What this means is that this
4 information may not be available and for that
5 reason it was estimated by reducing all sound
6 power levels at all frequency bands by the same
7 number of decibels. In other words, if an
8 overall NRO of 5 dBA was needed, all sound power
9 levels at all frequency bands of the spectra
10 were assumed to be 5 dB lower.

11 Q. Is this correct?

12 A. No. An NRO may be effective to reduce overall
13 broadband noise levels but not low frequency
14 sound levels. This may result in underestimates
15 of the low frequency noise impacts at sensitive
16 receptors. I have seen that on manufacturer's
17 data for some turbines and found that this also
18 was discussed by another author. In fact, Frits
19 van der Berg in his article "Wind turbine noise:
20 an overview of acoustical performance and
21 effects on residents," states: "As is shown in
22 Figure 6 for one particular turbine, this

CASE 15-F-0122

MORENO-CABALLERO

1 effectively reduces broad band A-weighted
2 levels, but does not have much influence on the
3 low frequency (≤ 125 Hz) octave bands"
4 (Australian Acoustical Society. Proceeding of
5 Acoustics 2013. 17-20 November, Victor Harbor,
6 Australia). From Figure 6 it can be seen that
7 the difference in noise levels at the 63 Hz full
8 octave bands are basically the same, in other
9 words, the noise reduction at the 63 Hz band
10 from NRO from 1 dBA to 6 dBA is practically
11 nothing. For the 16 Hz, which is typically the
12 most problematic, the noise reduction can be
13 practically zero.

14 Q. What are the implications?

15 A. There are 71 non-participating receptors where
16 low-frequency noise levels are forecasted with
17 sound levels equal to or greater than 61 dB in
18 the non-cumulative assessment and 95 receptors
19 exceeding 61 dB at 16 Hz in a cumulative
20 assessment. Some of those receptors are located
21 close to the GAMESA turbines and for those
22 receptors the low frequency impacts may be

CASE 15-F-0122

MORENO-CABALLERO

1 underestimated, which means that they may exceed
2 a 65 dB threshold at 16 Hz. The Supplement
3 already uses up to 5 dBA NRO's for some Gamesa
4 turbines where the sound levels for low
5 frequency bands were reduced by 5 dBA although
6 the proper reduction may be zero.

7 Q. How can this problem be solved?

8 A. The same Certificate Conditions on low frequency
9 sounds imposed by the Siting Board in Cassadaga
10 Wind, Case 14-F-0490, should be adopted for this
11 Project consisting of modeling with the final
12 turbines proposed for the Project and measuring
13 low-frequency sounds after the Project is built.
14 The computer noise modeling should be updated to
15 reflect the actual sound information from the
16 manufacturer during compliance filings. Should
17 computer noise modeling show exceedances,
18 mitigation of low frequency sound levels should
19 be explored during the design phase. This may
20 consist of replacement of turbine models as
21 needed or turbine elimination.

22 Q. Can a turbine replacement solve the problem?

CASE 15-F-0122

MORENO-CABALLERO

1 A. Yes. I have seen manufacturers' information that
2 showed that a model option with serrated edges
3 was capable of providing noise reduction at low
4 frequency bands.

5 Q. Please explain what is the first issue that you
6 find in the Certificate Conditions proposed by
7 the Applicant for Baron Winds?

8 A. For Cassadaga Wind, the Siting Board imposed
9 Certificated Condition 80, with a short-term
10 sound limit of 45 (dBA) Leq (8-hour) at any
11 permanent or seasonal non-participant residence
12 and 55 dBA Leq (8-hour) nighttime for any
13 participant residence existing as of the
14 issuance date of the Certificate. In contrast,
15 in Certificate Condition 76, proposed by the
16 Applicant for Baron Winds, the limits apply to
17 the nighttime period exclusively, not for any
18 other time of the day as imposed for Cassadaga.

19 Q. Do you agree with that change?

20 A. No, I do not. As discussed in Case 14-F-0490, I
21 advise that the limits should be applied to the
22 daytime and nighttime for several reasons.

1 First, a Certificate Condition for the nighttime
2 exclusively has no precedent under Article 10,
3 Article X, and Article VII Orders. Second, a
4 Certificate Condition exclusive for the
5 nighttime would leave, without any basis, the
6 application of tonal and Amplitude Modulation
7 penalties for the daytime, which are, in
8 addition to the noise levels, contributing
9 factors for annoyance. Third, having no
10 restrictions on noise for the daytime may
11 potentially result in situations where NRO's may
12 be applied to comply with nighttime limits
13 exclusively, but not during the daytime period
14 as well. Fourth, although the recommendation
15 was based on a night limit for the nighttime
16 provided by WHO-1999 (Exhibit MMC-1), the most
17 recent recommendations from WHO (WHO-2018,
18 Exhibits MMC-3 and MMC-4) uses a noise
19 descriptor that includes consideration of all
20 time periods in a day, not the nighttime only.

21 Q. Has the Siting Board made a determination on
22 this issue?

CASE 15-F-0122

MORENO-CABALLERO

- 1 A. Yes, in Case 14-F-0490 the Siting Board imposed
2 the 45 (dBA) Leq (8-hour) sound limit regardless
3 of the time of day or night which means that the
4 limit shall not be exceeded during any eight
5 consecutive hours during the day.
- 6 Q. Are there any other issues with short-term goals
7 as related to proposed Certificate Condition 76?
- 8 A. Yes. The Applicant for Cassadaga Wind initially
9 presented two different goals, one for full-year
10 or permanent residences and another for seasonal
11 residences that was three decibels greater.
12 Staff's position in that case was that the
13 limits should be the same regardless of
14 occupancy, which was imposed as Certificate
15 Condition 80 specifying that the limit applies
16 to both seasonal and permanent residences. Such
17 language is excluded from the text of the
18 proposed Certificate Condition 68 for this case
19 and should be incorporated as is currently
20 included in the recommended DPS Certificate
21 Condition 72 (a).
- 22 Q. What is the next issue that you find with the

CASE 15-F-0122

MORENO-CABALLERO

1 certificate conditions proposed by the
2 Applicant?

3 A. As explained earlier in my testimony, although
4 the Siting Board imposed in the Cassadaga Wind
5 Case 14-F-0490 Certificate Condition 80(b) with
6 a long-term limit of 40 dBA Lnight at any non-
7 participating residence and 50 dBA Lnight at any
8 non-participating residence, those limits are
9 excluded from the Certificate Conditions
10 proposed by the Applicant for Baron Winds. In
11 addition, evaluation of the Lnight descriptor is
12 not included in the protocol for post-
13 construction evaluations. What this means is
14 that there will be no measurements to
15 demonstrate whether the Facility exceeds the
16 long-term recommendation of 40 dBA Lnight from
17 WHO-2009 and the limit of 50 dBA Lnight for
18 participating receptors, which was based on the
19 identified threshold for zero risk of
20 cardiovascular disease identified by WHO-2009.
21 The condition has been included in Staff
22 Certificate condition 72 (b).

CASE 15-F-0122

MORENO-CABALLERO

- 1 Q. Are there any issues related to low frequency
2 sounds from the wind turbines in the Certificate
3 Conditions proposed by the Applicant?
- 4 A. Yes. In Case 14-F-0490 the Siting Board adopted
5 Certificate Condition 80(c), which requires the
6 facility to "[c]omply with a maximum noise limit
7 of 65 dB Leq at the full octave frequency bands
8 of 16, 31.5, and 63 Hertz outside of any non-
9 participant residence existing as of the
10 issuance date of this Certificate in accordance
11 with Annex D of ANSI standard S12.9-2005/Part 4
12 (Sounds with strong low-frequency content)."
13 That condition is not proposed by the Applicant
14 for Baron Winds.
- 15 Q. What does Annex D of ANSI Standard S12.9 say?
- 16 A. Section D.2 of Annex D in ANSI S12.9-2005 Part
17 4, entitled "Sounds with strong low-frequency
18 content," states "[g]enerally, annoyance is
19 minimal when octave-band sound pressure levels
20 are less than 65 dB at 16, 31.5 and 63-Hz mid-
21 band frequencies."
- 22 Q. What is your recommendation for this case?

CASE 15-F-0122

MORENO-CABALLERO

- 1 A. A Certificate Condition for low frequency noise
2 is protective of annoyance to low frequency
3 sounds and perceptible vibrations and for that
4 reason should be adopted for Baron Winds as it
5 was for Cassadaga Wind. This is reflected in
6 DPS-Staff proposed Certificate Condition 72(d)
- 7 Q. Are there any issues related to Certificate
8 Conditions proposed by the Applicant as related
9 to complaints from the wind turbines?
- 10 A. Yes. In Case 14-F-0490, the Siting Board
11 adopted Certificate Condition 81, which has
12 different requirements for the facility related
13 to the way that noise and vibration complaints
14 should be handled. These provisions are not
15 found in the Certificate Conditions proposed by
16 the Applicant for Baron Winds. These provisions
17 are included in DPS Staff's proposed Certificate
18 Condition 73 for this Project.
- 19 Q. What is the importance of this Certificate
20 Condition?
- 21 A. All these conditions are very important,
22 particularly Certificate Conditions designated

CASE 15-F-0122

MORENO-CABALLERO

1 as 81(c) and 81(d) in the Cassadaga Wind
2 Project, because they relate to the way
3 complaints from Amplitude Modulation are
4 handled. Amplitude Modulated sounds from wind
5 turbines and how they increase annoyance to
6 sounds from Wind Turbines was thoroughly
7 discussed in the Cassadaga case. In that Case,
8 the Siting Board adopted the recommendation from
9 DPS Staff and imposed a Certificate Condition
10 for AM with a 5 dBA AM penalty. Given the
11 importance of having requirements for the
12 Facility to handle complaints, Staff is
13 proposing for Baron Winds the provisions adopted
14 by the Siting Board for Cassadaga Wind to handle
15 complaints, including those related to Amplitude
16 Modulated sounds along with some modifications
17 that I will discuss later in my testimony.

18 Q. Please explain the concept of amplitude
19 modulation and the Application's analysis and
20 conclusions related to amplitude modulation.

21 A. In simple terms, amplitude modulation is a
22 repetitive sound that occurs with a frequency of

1 about one second or less. This is commonly
2 described as a repetitive "swish" or "thump"
3 associated with turbine operation. "Recent
4 evidence suggests that at times this 'swish' can
5 become more of a pronounced 'thump,' leading to
6 complaints from wind farm neighbors." "(UK-2016,
7 p. 1)."

8 Q. Are there any differences between Certificate
9 Conditions proposed by Staff and the Applicant
10 as related to complaints from Amplitude
11 Modulation (AM) from the Project?

12 A. Yes. Given the discrepancies that could occur
13 between computer noise modeling and actual post-
14 construction noise measurements, I recommend
15 that complaints related to Amplitude Modulation
16 be investigated if measured or modeled sound
17 levels at the location(s) being evaluated exceed
18 40 dBA L1hr, rather than based on modeled levels
19 exceeding 40 dBA L1hr exclusively, as ordered
20 for Cassadaga Wind (Certificate Condition 81
21 (d)). That change is reflected in Staff's
22 Certificate Condition 73 (d). In addition, I

1 recommend edits on the clause related to
2 Amplitude Modulation as ordered for Cassadaga.
3 The edits are consistent with the discussion on
4 page 60 of the Cassadaga Wind Order that states
5 "[t]he RD also adopted a restriction on the
6 Facility's production of amplitude modulated
7 sounds, such as complaints of swishing or
8 thumping type sounds. Should such amplitude
9 modulated sounds be found to exceed a noise
10 level of 45 dBA for more than 5 percent of the
11 evaluation period, the Certificate Holder would
12 be required to implement minimization measures."

13 Q. Are there any issues related to the Applicant's
14 proposed certificate condition on Amplitude
15 Modulation?

16 A. Yes. I consider that the time frame of
17 evaluation of Amplitude Modulation should be
18 clearly specified. I am proposing a timeframe of
19 evaluation of 8-hours which I consider to be
20 appropriate. The text "amplitude modulation
21 depth is 5 dB or lower for a minimum of 90% any
22 hour" is confusing. First, I think that the 90%

1 was set as the complement of the 10% indicated
2 in the same clause. Therefore, the 90% should be
3 95%. Second, the text should refer to the
4 penalty for Amplitude Modulation which is set at
5 the beginning of the same clause. For that
6 reason, I am proposing edits so that the
7 Application of the AM penalty makes sense and is
8 consistent with the intent expressed in the
9 discussion of the order and the first portion of
10 this clause.

11 Q. Is there any other way to address potential
12 issues with amplitude modulation sound?

13 A. Yes, by reducing the sound limits to which the
14 AM penalty is applied. The UK-2016 document
15 recommended amplitude modulation penalties
16 between 3 and 5 dBA. The 3 dBA penalty is
17 applied if an AM depth of 3 dBA occurs while a 5
18 dBA penalty is applied if an AM depth greater
19 than 5 dBA occurs. If the short-term goals and
20 limits are reduced to 42 dBA or lower an
21 amplitude modulation penalty may not be needed.

22 Q. Are there any advantages when doing this?

CASE 15-F-0122

MORENO-CABALLERO

- 1 A. Yes. There is no need to measure amplitude
2 modulation. Therefore, Certificate Condition 73
3 (d) could be eliminated as proposed in my
4 alternative to Certificate Conditions in
5 Exhibit__(MMC-10). As I previously stated, the
6 short-term limit should be equal to or lower
7 than 42 dBA to meet the WHO recommendations of
8 1999, 2009, and 2018 and, at that level, the AM
9 penalty may no longer be necessary.
- 10 Q. Do you have any recommendations about how
11 complaints should be reported?
- 12 A. Yes. My recommendations are reflected in
13 Certificate Condition 73(c), Exhibit__SSP-2. For
14 this case I recommend that complaints be
15 reported monthly during the first three years of
16 operation and quarterly after that rather than
17 monthly during the first full year of commercial
18 operations as adopted for Cassadaga. If no
19 noise or vibration complaints are received. I
20 also recommend requiring the Certificate Holder
21 to submit a letter to the Secretary indicating
22 that no complaints were received during the

1 reporting period rather than excepting the
2 Applicant of any filings if no noise or
3 vibration complaints are received.

4 Q. Do you have any recommendations for Compliance
5 testing?

6 A. Yes, I do. In Case 14-F-0490, the Siting Board
7 adopted Certificate Condition 72 requiring the
8 Applicant to perform two compliance tests: one
9 during "leaf-on" conditions; and another one
10 with "leaf-off" conditions. Those provisions
11 are not proposed by the Applicant for Baron
12 Winds. DPS Staff is proposing similar language
13 in its recommended Certificate Condition 70.
14 One of the changes Staff is requesting, as
15 related to Certificate Condition 71 adopted for
16 Cassadaga, refers to the Compliance Protocol.
17 For Cassadaga Wind DPS Staff did not propose a
18 compliance protocol. Absent of any alternatives
19 the Recommended Decision (RD) and the Siting
20 Board's Order adopted the protocol presented by
21 the Applicant. The Applicant here has proposed
22 addressing complaints and testing the Facility

CASE 15-F-0122

MORENO-CABALLERO

1 with a protocol that was initially filed with
2 the Application and that was recently modified
3 in response to interrogatory request "Oehlbeck-
4 IR-1". I have objections to the most recent
5 protocol which are presented in Exhibit MMC-13
6 with side comments on the most relevant issues.
7 This does not address the parts of a compliance
8 protocol that should have been but that in my
9 opinion are missed.

10 Q. What are the most important issues with the
11 Protocol presented in the Application?

12 A. The most important issue is that the protocol
13 presented with the Supplement only proposes
14 testing of the short-term noise descriptor for
15 the nighttime at non-participating receptors.
16 Testing of the long-term noise descriptor
17 Lnight, as imposed by the Siting Board in Case
18 14-F-0490, is excluded as well as testing during
19 the daytime and testing at participating
20 residences. In addition, testing of the low
21 frequency noise levels, as ordered by the Siting
22 Board in Case 14-F-0490, is also excluded from

CASE 15-F-0122

MORENO-CABALLERO

1 the protocol. In addition, there are no
2 provisions for measurement of Amplitude
3 Modulation and perceptible vibrations.

4 Q. Are there any other issues with the compliance
5 protocol?

6 A. Yes. Section 2.6.4 Data Analysis states: "For
7 any one-hour period during which Turbine-plus-
8 background sound levels exceed 45 dBA Leq,
9 Background will be subtracted to determine the
10 sound level attributable to the Project
11 (Turbine-only level). The Background level is
12 the adjusted Background Leq with a factor added
13 for uncertainty according to ANSI S12.9 Part 3
14 Clause 7.3.". The introduction of the word
15 "added" is not appropriate. ANSI Standard
16 requires the addition of the uncertainty for the
17 party that needs to demonstrate a violation (DPS
18 in this case) and the subtraction of the
19 uncertainty for the party that needs to
20 demonstrate "compliance," in this case, the
21 Certificate Holders. The way this provision is
22 drafted, demonstration of compliance by the

1 Certificate Holder will be potentially easier
2 and demonstration of violation by any other
3 party including DPS harder. In addition, the
4 uncertainty factors specified by ANSI S 12.9
5 Part 3 are greater if the time between the
6 measurement of operational sound and background
7 sounds is greater. The intent is to encourage
8 both parties to measure background levels very
9 close to the time when operational sound levels
10 are measured so that background conditions are
11 similar. The way this provision is written it
12 can make demonstration of compliance by the
13 Certificate Holders easier if measurements are
14 delayed or taken later rather of sooner, which
15 makes absolutely no sense. On the other hand,
16 this clause will force other parties including
17 DPS Staff to take readings very close to the
18 measurement of operational noise levels but not
19 the Certificate Holders.

20 Q. How do you recommend this be corrected?

21 A. The provision should include the addition of
22 uncertainties for the party that needs to

CASE 15-F-0122

MORENO-CABALLERO

1 demonstrate a violation (e.g., DPS Staff) and
2 the subtraction of uncertainties for the party
3 that needs to demonstrate conformance, in this
4 case the Certificate Holder. From the analysis
5 of certificate conditions on noise imposed by
6 the Siting Board in Case 14-F-0490, it is clear
7 that demonstration of compliance corresponds to
8 the Certificate Holder's (See Case 14-F-0490,
9 Certificate Conditions 71, 72(a), 72(b), 72(e),
10 81(c) and 81(d). Alternatively, this provision
11 should be eliminated from the Protocol so that
12 the results as determined by the Certificate
13 Holder and DPS Staff are the same, provided any
14 background measurements are taken no later than
15 one hour before or after any shutdown. The
16 latter approach is proposed in the Staff's
17 Protocol.

18 Q. Do you have any other issues with the proposed
19 protocol?

20 A. Yes. Section 2.5 Data Collection states: "The
21 sound monitoring period will last at least two
22 weeks or until at least 20 clean shutdowns have

1 occurred, whichever is later. A clean shutdown
2 is one where the maximum 10-minute hub height
3 wind speed of the closest turbine exceeds 4 m/s
4 ...". First, this provision refers to maximum
5 sound levels since the protocol presented in the
6 Application only proposes measurement of short-
7 term impacts. For that purpose, a wind speed of
8 4 m/s is irrelevant. It only means that the
9 turbines will be rotating at minimal noise
10 production. Noise levels should be measured at
11 the worst operational noise conditions which
12 usually correspond to wind speeds greater than 4
13 meters per second (Wind turbines typically reach
14 the maximum sound power levels at wind speeds
15 greater than 7 meters per second). This
16 provision may result in 40 operational 1-hour
17 sound levels that do not correspond to the worst
18 noise conditions and, therefore, are not
19 appropriate for determination of the maximum
20 noise impacts.

21 Q. Do you have any other issues with the proposed
22 protocol?

CASE 15-F-0122

MORENO-CABALLERO

- 1 A. Yes. Section 2.6.6.a states: "Tonal periods will
2 be further screened to determine if the tonal
3 sound is audible using Table 7 of ISO 387-7
4 (2005)". DPS-Staff has not been able to find the
5 referred standard. The way that this issue was
6 addressed in the protocol imposed by the NYS
7 Public Service Commission in Case 10-T-0350 was
8 by using the hearing thresholds for a 95%
9 confidence level as specified by Kurakata-2005.
10 In other words, sound levels exceeding these
11 thresholds will be only audible for 5 percent of
12 the people and inaudible for 95 percent of the
13 people. This potentially restricts the
14 application of a tonal penalty as adopted by the
15 Siting Board for Case 14-F-0490. For that case,
16 the Board adopted a 5-dB tonal penalty
17 regardless of the time period of evaluation.
- 18 Q. Do you have any other issues and what is your
19 opinion on the protocol presented with the
20 Supplement on the Application?
- 21 A. There are more issues and they are indicated in
22 Exhibit MMC-13. In general, I do not recommend

CASE 15-F-0122

MORENO-CABALLERO

1 the adoption of the Protocol as presented in the
2 Application as it will not properly evaluate
3 whether the Facility as designed and as built
4 will in fact avoid, offset, or minimize, the
5 adverse environmental noise or vibration impacts
6 upon the local community for the duration of the
7 certificate.

8 Q. Do you have any issues with the Complaint
9 Resolution Protocol?

10 A. Yes. Those issues are explained with side
11 comments on the Complaint Resolution Protocol
12 recently submitted Exhibit__ (MMC-13).

13 Q. Are you recommending a Protocol for
14 postconstruction noise evaluations?

15 A. Yes. I am proposing a different Protocol for
16 demonstration of operational compliance
17 developed for this Project. I am attaching a
18 copy of the compliance protocol presented with
19 the Application with my comments on some
20 portions of the text.

21 Q. Please explain what is the next change that you
22 recommend.

- 1 A. Certificate Condition 71 presented in the
2 Application states: "The Certificate Holder
3 shall perform sound monitoring and compliance
4 protocols pursuant to the Baron Winds Sound
5 Monitoring and Compliance Protocol submitted
6 with the Application." I disagree with this
7 condition. First, the Applicant and DPS Staff
8 should not follow the protocol presented by the
9 Applicant as this protocol is insufficient and
10 contains many issues as discussed here and in
11 Exhibit__ (MMC-13). Second, I recommend that if
12 the Siting Board decides to grant a Certificate
13 to Baron Winds any post-construction monitoring
14 should be conducted by following the Sound
15 Testing Compliance protocol presented by DPS and
16 attached to this testimony as Exhibit__ (MMC-7).
- 17 Q. Do you have any recommendations for Compliance
18 Filings?
- 19 A. Yes, I do. In case 14-F-0490 the Siting Board
20 adopted Certificate Conditions 70(a) and 70(b),
21 which require the Applicant to file final
22 construction drawings indicating changes in

1 turbine locations or substation components, if
2 any, and present GIS files, dimensions, proposed
3 grading and elevations for turbines, and any
4 mitigation measures adopted for the Substation
5 Collector. These provisions are not presented
6 by the Applicant for Baron Winds but are
7 presented by DPS Staff in proposed Certificate
8 Conditions.

9 Q. Are there any differences between the
10 Certificate Conditions Staff is recommending for
11 noise and vibrations and the Certificate
12 Conditions proposed by the Applicant as related
13 to Compliance Filings?

14 A. Yes. In Certificate Condition 68(c)(i) I am
15 including edits to fix typos related to the
16 standards used to report sound power levels from
17 the turbines. In Certificate Condition
18 68(c)(ii) I am including edits to reflect that
19 sound power levels should not exceed the final
20 overall and full-octave band levels presented in
21 the Application or any subsequent supplement.
22 In Certificate Condition 68(d) I am recommending

1 that NROs not be used in the design, to
2 demonstrate conformance with any limit imposed
3 by the Siting Board as a compliance filing
4 requirement. Also, in Certificate Condition
5 68(d)(i) and 72(b), I am recommending requiring
6 the Applicant to evaluate the new
7 recommendations from WHO-2018 consisting of
8 noise levels lower than 45 dBA Lden. As an
9 alternative to this, I am recommending lower
10 short-term regulatory limits as shown in my
11 alternate proposed Certificate Condition 72(a) in
12 Exhibit__ (MMC-10).

13 Q. Are there any issues related to sound limits at
14 the boundary lines?

15 A. Yes. Certificate Condition 68(d)(iii) has been
16 included to reflect the discussions in the
17 Cassadaga's order which was not reflected in the
18 final approved Certificate Conditions. In that
19 case the Order states, on pages 71 and 73:
20 "[a]rea of property to be measured ... The
21 Examiners explained that although the Applicant
22 also agreed to adopt a long-term design goal of

CASE 15-F-0122

MORENO-CABALLERO

1 50 dBA Leq-1-year for the nighttime period at
2 all participant receptors' property lines, it
3 applied that measure only to the portion of a
4 real property plot that is within 150 feet of an
5 existing roadway. The RD recommended that we
6 impose the design goal as a regulatory limit
7 across the entire property to preserve the
8 enjoyment of the entire property.... We agree with
9 Concerned Citizens and DPS Staff. Cassadaga
10 Wind's 150-foot from a public roadway limit is
11 arbitrary. Notwithstanding the lack of
12 specificity in the experience that Cassadaga
13 Wind relies on to support its position, we do
14 not agree that such experience is relevant for
15 the local community at issue in this case.
16 Accordingly, we adopt the RD's recommendation."
17 That recommendation is reflected in my proposed
18 Certificate Condition 68(d)(iii). In addition,
19 although the recommended decision refers to a 50
20 dBA (Lnight-outside) limit, I consider it more
21 practical to express this requirement by using a
22 short-term limit for this compliance filing at

1 boundary lines. That is because it is practical
2 to generate sound contour drawings with the ISO
3 model for boundary lines with the sound turbines
4 at maximum power levels but not feasible to
5 generate yearly noise contours with the CONCAWE
6 meteorological correction. As explained in my
7 discussions above, the difference between the
8 Long-term L_{night} and the short-term descriptor
9 Leq may not be 5 dBA but rather as low as 2 dBA.
10 For that reason, I recommend a short-term limit
11 of 52 dBA Leq-8-hour for boundary lines as a
12 compliance filing in my alternate Certificate
13 Conditions included in Exhibit__ (MMC-10),
14 Certificate Condition 68(d)(iii).

15 Q. Do you have any other recommendations?

16 A. Yes. In the event that the final turbine model
17 selected for the Project has manufacturer's data
18 showing higher sound levels in the overall
19 broadband (dBA) noise level and also at any key
20 low frequencies (16, 31.5 or 65 Hz), the re-
21 evaluation of predictions and conformance with
22 relevant guidelines, criteria, and goals should

1 also include the new data at the low frequency
2 range in order to understand the anticipated
3 impacts of the different turbine model(s).

4 Q. What is your conclusion about the analysis of
5 short-term impacts and Certificate Conditions?

6 A. Short-term regulatory limits should be lower
7 than those set for Cassadaga Wind and may need
8 to be as low as 42-dBA-8-h-nighttime to comply
9 with the indoor recommendations of WHO-1999, the
10 Lnight recommendations of 2009, and the Lden
11 recommendation of 2018. The levels should apply
12 to all non-participating receptors regardless of
13 occupancy. In addition, short-term limits
14 should be set for the daytime, as well. These
15 recommendations are reflected in Certificate
16 Conditions 72(a) and (b) and in my alternate set
17 of Certificate Conditions (Certificate Condition
18 72(a)).

19 Q. What are your recommendations for participating
20 receptors.

21 A. I also recommend reducing the regulatory limit
22 for non-participating receptors, from 55 dBA as

1 ordered for Cassadaga Wind to 52 dBA-Leq-8-h on
2 the basis that the difference between the short-
3 term limits and the long-term limits may be as
4 low as 2 dBA and not 5 dBA as assumed for
5 Cassadaga. This recommendation is based on an
6 identified threshold of 50 Lnight in WHO-2009
7 for zero risk of cardiovascular disease.
8 Participating receptors should be aware that
9 indoor noise levels with the windows open, or
10 partially open, may be higher than as
11 recommended by WHO-1999 and may need to close
12 their windows to reduce the potential for
13 annoyance or sleep disruptions. Currently, the
14 Application shows that the maximum Leq-1-h sound
15 levels at participating receptors are predicted
16 to be below the 52 dBA Leq-8-h regulatory limit
17 that I am recommending.

18 Q. Do you have any recommendations for mitigation
19 of noise and vibration after the Project is
20 built?

21 A. Yes. In case 14-F-0490 the Siting Board adopted
22 Certificate Condition 73, which contained a

1 series of steps and provisions for mitigation in
2 case a compliance or violation test shows that
3 the Facility exceeds any Certificate Conditions.
4 Those conditions require presenting operational
5 and physical minimization measures to the Board
6 or the Commission, providing mitigation measures
7 within reasonable time frames, retesting the
8 mitigation measures implemented for compliance,
9 as well as a restriction that prohibits the
10 Facility to operate without the mitigation
11 measures that are approved by the Siting Board
12 or the Public Service Commission. These
13 provisions are not included in the Certificate
14 Conditions proposed by the Applicant for Baron
15 Winds. Given their importance, those provisions
16 as adopted for Cassadaga Wind, are reflected in
17 DPS Staff's proposed Certificate Condition 71.

18 Q. Are there any differences between the
19 Certificate Conditions Staff is recommending for
20 noise and vibrations and the Certificate
21 Conditions proposed by the Applicant as related
22 to Postconstruction Compliance Evaluations?

- 1 A. Yes. In Certificate Condition 69, and as
2 explained above, I am recommending adopting the
3 Sound Testing Compliance Protocol presented by
4 DPS in Exhibit__ (MMC-7) and not the Protocol
5 presented by the Applicant. Since the protocol
6 presented by Staff already contains all the
7 elements included in Cassadaga's Certificate
8 Conditions 71(a), (b), and (c), I advise those
9 provisions are not needed. For the same reasons,
10 I am recommending the elimination of Applicant's
11 Certificate Conditions 70(a), (b), (c), and (d).
- 12 Q. Are there any differences between the
13 Certificate Conditions Staff is recommending and
14 the Certificate Conditions proposed by the
15 Applicant as related to regulatory noise limits
16 to the Facility?
- 17 A. Based on my discussions in my testimony, I am
18 recommending in Certificate Condition 72(b) that
19 the Facility also be required to demonstrate
20 compliance with the new WHO guidelines of 45-dBA
21 Lden for any existing permanent or seasonal non-
22 participating residence by post-construction

CASE 15-F-0122

MORENO-CABALLERO

1 noise testing after the Facility is built.
2 Alternatively, if the Siting Board decides not
3 impose a Certificate Condition of 45 dBA Lden,
4 40 dBA L(night), or both, I recommend reducing
5 the short-term regulatory noise limit from 45
6 dBA Leq (8-hour) to 42 dBA Leq (8-hour) for any
7 existing participating receptors and from 55
8 (dBA) Leq (8-hour) to 52 (dBA) Leq (8-hour) for
9 any existing non-participating receptors. This
10 option is reflected in my alternate conditions
11 included in Exhibit MMC-10 (Certificate
12 Condition 72(a)). In addition, I am
13 recommending that the noise descriptor for the
14 65-dB Leq low-frequency noise limit included in
15 Certificate Condition 60(d) be clarified as 65
16 dB Leq-1-hour. This is consistent with the
17 requirements for compliance filings for
18 Cassadaga (Case 14-F-0490, Certificate Condition
19 70(d)(iii) and also with the noise descriptor
20 specified in Certificate Condition 69(b)(3)
21 proposed by the Applicant. I am also
22 recommending clarifying that section D.2.(1) is

1 the relevant section of ANSI S12.9-200/Part 4
2 for the 65 dB-1-h limit for low frequency sounds
3 proposed in Staff's Certificate Conditions.
4 Also, in Staff's Certificate Condition 71, I am
5 clarifying that "compliance" tests will refer to
6 tests performed by the Applicant and "violation"
7 tests will refer to those performed by DPS
8 Staff. This to be consistent with the content
9 and intent of ANSI Standard S12.9 Part 3.
10 Finally, in Staff's Certificate Condition 74, I
11 am clarifying that the Certificate Holder should
12 keep both a schedule and a log of Noise Reduced
13 Operations.
14 Q. Are the number and models of turbines presented
15 in the Application the same currently considered
16 for the project?
17 A. No. According to the information contained in
18 the most recent supplement the number of
19 turbines was reduced from 76 to 69. In addition,
20 according to the sound data filed in the
21 Application, the turbines as originally proposed
22 were Vestas 117 3.3/3.45 MW and Vestas 136-3.45

1 MW. In the latest supplement, the turbines
2 considered for the project are Nordex N117 3600
3 and GAMESA G114 2625.

4 Q. Had you identified the turbines that should have
5 been eliminated from the original design?

6 A. Yes, turbines where the maximum NRO's of 7.5 dBA
7 were applied were in my opinion the best
8 candidates for elimination.

9 Q. To the best of your knowledge, as a result of
10 the proposed modifications, were any of the
11 turbines where the maximum NRO's of 7.5 dBA were
12 applied proposed to be eliminated from design?

13 A. Turbines T1 and T74 were turned off in the
14 computer model and in my opinion, they need to
15 be eliminated from design. None of the other
16 turbines with NRO's of 7.5 dBA were eliminated.
17 Still, in my opinion, some of them should be
18 eliminated.

19 Q. Are there any concerns?

20 A. Yes, the elimination of turbines where the
21 maximum NRO's were applied and where the sound
22 levels at impacted receptors are the highest is

1 preferred. In addition, the use of NRO's for
2 computer noise modeling shows that the proposed
3 layout does not conform with relevant thresholds
4 and criteria unless NRO's are incorporated in
5 the design. For those turbines additional NRO's
6 required to comply with Certificate Conditions
7 may be limited or unfeasible. In addition,
8 NRO's also reduce the production of energy.

9 Q. Have you identified the turbines that would be
10 recommended to be either eliminated or
11 relocated?

12 A. Yes. Based on the modeling results under ISO
13 9613-2 and the geographical information system
14 (GIS) information provided by the Applicant,
15 Staff has generated drawings identifying non-
16 participant noise sensitive receptors within the
17 Project area differentiated by colors. The
18 sound levels can be seen in the legends of these
19 drawings Exhibit__ (MMC-9). Turbines that are
20 identified as candidates for elimination are:
21 T1, T72 and T74 which needed to be turned off in
22 computer noise modeling. T7 and/or T-18; T24,

1 T46, T47 and T-93; and T52 and/or T60.

2 Q. What is your recommendation?

3 A. My recommendation is that Noise Reduction
4 Operations should not be used for computer noise
5 modeling to demonstrate conformance with
6 relevant criteria and that minimization measures
7 should be provided during design for the most
8 impacted receptors.

9 Q. Are there any mitigation measures that could be
10 implemented if a non-conformance operational
11 situation is found?

12 A. Yes. NRO's are the most practical mitigation
13 measure that could be implemented after the
14 Project is built provided they are sufficient to
15 mitigate any actual exceedances.

16 Q. What are your final recommendations about the
17 proposed Facility.

18 A. The design should keep the noise reduction
19 operations (NROs) as a contingency option to
20 mitigate any discrepancies between predicted and
21 actual sound levels. Should sound levels at the
22 non-participating or participating receptors

1 exceed relevant criteria or any Certificate
2 Conditions imposed by the Siting Board after
3 construction, then NRO's should be applied as
4 necessary on relevant turbines to bring noise
5 levels back into compliance.

6 Q. Does the proposed Facility avoid or minimize
7 environmental impacts to the maximum possible
8 extent?

9 A. No. I believe that the potential adverse
10 environmental noise impacts from operation of
11 the Facility have not been avoided or minimized
12 to the maximum extent practicable. I also
13 believe that additional minimization measures
14 such as elimination or relocation of turbines
15 needs to be explored.

16 Q. What is your recommendation to the Siting Board
17 regarding granting a Certificate to the
18 Applicant in light of the environmental noise
19 impacts?

20 A. My recommendation as related to adverse
21 environmental noise and vibration effects is
22 that the Project should be approved subject to

CASE 15-F-0122

MORENO-CABALLERO

1 the Certificate Conditions, the post-
2 construction protocol, the regulatory limits
3 that I am recommending for this project, and a
4 redesign to include elimination of turbines
5 without the use of NRO's so that the adverse
6 environmental noise effects of the operation of
7 the Facility are minimized or avoided to the
8 maximum extent practicable. In my opinion the
9 alternative presented in the Application
10 Supplement does not avoid, offset or minimize
11 the impacts caused by the Facility upon the
12 local community for the duration that the
13 Certificate is issued to the maximum extent
14 practicable using verifiable measures. The
15 Applicant should present updated computer noise
16 modeling results considering the elimination of
17 turbines that I am recommending and demonstrate
18 that the adverse operational noise impacts have
19 been minimized or avoided to the maximum extent
20 practicable. The final computer model should
21 determine whether additional turbines need to be
22 relocated or eliminated in order to comply with

1 relevant thresholds and criteria as recommended
2 in this testimony. In addition, the Applicant's
3 proposed Certificate Conditions and
4 Postconstruction Compliance Protocol are not
5 sufficient to demonstrate that the Facility will
6 in fact avoid, offset or minimize the impacts
7 upon the most sensitive receptors to the maximum
8 extent practicable using verifiable measures.
9 Further, I recommend adoption of DPS Staff
10 proposed Certificate Conditions on noise and
11 protocol for demonstration of compliance after
12 construction, if the Project is finally
13 approved. The Applicant should present updated
14 computer noise modeling results as a compliance
15 filing to reflect any change introduced to the
16 design such as different turbine model(s) or
17 turbine locations, any changes on the list of
18 receptors including any changes on participation
19 status, to demonstrate that the adverse
20 operational noise impacts have been minimized or
21 avoided to the maximum extent practicable before
22 a final design can be approved and construction

CASE 15-F-0122

MORENO-CABALLERO

1 can begin.

2 Q. Does this conclude your testimony at this time?

3 A. Yes.

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15-F-0122 - Baron Winds - 3-21-19

PAGES 579-686 HAVE BEEN LEFT INTENTIONALLY
THEY CAN BE FOUND IN THE CONFIDENTIAL TRANSCRIPT
FOR 3/21/2019

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Okay. And the witness is available.

3 CROSS EXAMINATION

4 BY MS. KLAMI:

5 Q. Good afternoon, Mr. Moreno.

6 A. (Moreno-Caballero) Good

7 afternoon.

8 THE REPORTER: Can you move the mic a
9 little bit closer?

10 MS. KLAMI: Sure.

11 THE REPORTER: Thank you.

12 MS. KLAMI: Is that better?

13 THE REPORTER: That's perfect.

14 MS. KLAMI: Okay.

15 BY MS. KLAMI: (Cont'g.)

16 Q. I'm going to hold these up.

17 These are highly technical questions, so I actually
18 need my script today.

19 Are you Board Certified by the
20 Institute for Noise Control Engineering?

21 A. (Moreno-Caballero) I am not.

22 Q. Was Cassadega the first windfarm,
23 you reviewed?

24 A. The first application, that I
25 reviewed. Yes.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Have you ever modeled a wind farm
3 before?

4 A. No, I have not.

5 Q. Does turbine sound vary
6 throughout the year, at receptor locations?

7 A. Yes.

8 Q. Does turbine sound vary,
9 depending on weather conditions, at turbine
10 locations?

11 A. Yes.

12 Q. Does turbine sound fluctuate, due
13 to the wind speed?

14 A. Yes.

15 Q. Does turbine sound fluctuate,
16 over the course of a year?

17 A. Yes.

18 Q. Are there times, where turbines
19 won't be running at all and therefore not producing
20 any sound?

21 A. I wouldn't say any sound, but
22 it's very, very minimal.

23 Q. You testified that you believe
24 that R.S.G.'s modeling, under predicts the sound
25 impacts?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. Could you repeat --

3 Q. Sure.

4 A. -- your question, please?

5 Q. You -- you testified that
6 R.S.G.'s modeling, under predicts the sound impacts
7 for this facilities, is that correct? You believe
8 that to be correct?

9 A. Could you please indicate the
10 page where I said that?

11 Q. Sure.

12 The term under-predict shows up on
13 pages 36, 39 and 47. And on page 6, you were talking
14 about the similar assumptions and input values, to
15 the ones that were used in the application, resulted
16 in about a 3 D.B.A. under-prediction of the L.E.Q. 1
17 hour noise descriptor, for out of 6, 1 hour samples
18 and 1 out of 2 highest-sound pressure levels, that
19 were modeled.

20 A. Yes.

21 That's -- that's a citation to the
22 Massachusetts study and the figure that I'm
23 indicating in my testimony.

24 Q. Are you aware, that R.S.G. has
25 run modeling for other wind projects?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. Yes. I know.

3 Q. Has R.S.G. monitored wind product
4 -- wind projects?

5 A. Yes.

6 I -- I -- yes.

7 MS. BEHNKE: Objection.

8 that's beyond his -- his -- unless you
9 can answer.

10 A. (Cont'g.) (Moreno-Caballero)

11 Well, I mean, it's included in Mr. Koliski's
12 (phonetic spelling) resume and that's what his
13 company does. So, yes.

14 BY MS. KLAMI: (Cont'g.)

15 Q. The Applicant has proposed a
16 short-term limit of 45 D.B.A., 8 hours, is that
17 correct?

18 A. It's D.B.A./L.E.Q. --

19 Q. 8 --

20 A. -- 8 --

21 Q. -- hours?

22 A. -- hours.

23 Q. Thank you for that clarification.

24 And clarify me every time I forget to
25 add those descriptors, please.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. That's fine.

3 Q. This is consistent with the
4 short-term limits imposed by the Siting Board in
5 Cassadega, is that correct?

6 A. This the same number. It's the
7 same descriptor.

8 The only difference is in the original
9 proposed certificate conditions, it was proposed for
10 the nighttime, exclusively, while the 45
11 D.B.A./L.E.Q. 8 hour, that was imposed by the Siting
12 Board, relates to anytime of the day. I don't know
13 whether that was fixed in the most-recent certificate
14 conditions presented with the rebuttal testimony.

15 Q. When the Applicant modeled the 45
16 D.B.A./L.E.Q. 8 hour, did they apply any uncertainty
17 factors?

18 A. Yes.

19 What I understand from the
20 application, is that they apply it to the -- the
21 correction and I -- and that recently say that that's
22 for a 95 percent confidence interval.

23 Q. And so, that would mean, if they
24 modeled the project and they got a 45, they then
25 would present it as a 43?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. No. I don't think so.

3 Could you repeat your question?

4 Q. Sure.

5 So, when you add a 2 D.B. uncertainty
6 factor --

7 A. Yes.

8 Q. -- when you're adding that
9 uncertainty factor, you're correcting, in the -- in -
10 - to increase the sound. So, you're not correcting
11 to make it appear lower, you're correct -- you're
12 correcting to -- to show that the sound is higher,
13 correct?

14 A. Well, I wouldn't state it that
15 way.

16 The thing that this was done, is based
17 on the assumptions and the input values to the
18 computer model, the model produces the results -- a
19 result and that result is adjusted and the adjustment
20 is 2 D.B. --

21 Q. Uh-huh.

22 A. -- to correct the results.

23 Q. And does that adjustment go up or
24 down?

25 A. That goes -- that results in a

1 15-F-0122 Baron Winds LLC 3/21/2019

2 higher number.

3 Q. Thank you.

4 When the Applicant modeled the 45
5 D.B.A., what receiver height did they use?

6 A. They used 4 meters above the
7 ground -- excuse me. 4 -- yeah. For the 45 --

8 Q. For the 45 short-term.

9 A. -- which is the short-term, but
10 my understanding is to generate sound contours, the
11 height is reduced to 1.5 meters.

12 Q. Would you agree that using a 4
13 meter height, versus a 1.5 meter height, would add
14 about a 1.5 D.B.A., to the sound model?

15 A. To the closest receptors, yes.
16 That's what I said in my testimony, too.

17 Q. You are recommending that the
18 Siting Board adopt a 42 D.B.A./L.E.Q. 8 hour limit,
19 correct?

20 A. When? For which project?

21 Q. For this project?

22 A. For this project?

23 Q. Yes.

24 A. That's one alternative that I'm
25 presenting, for consideration.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. And if I understand correctly,
3 you base this on, I think 3 different arguments that
4 I'll -- I'll get to, 1 at a time. Okay.

5 So, the first one, is you based this
6 on a 30 D.B.A. interior sound level, plus windows
7 partly opened, corrected to 12 D.B.A., is that
8 correct?

9 A. Where in my testimony --

10 MS. BEHNKE: Can you --?

11 A. (Cont'g.) (Moreno-Caballero) I
12 don't recall if I --

13 MS. BEHNKE: Yeah.

14 A. (Cont'g.) (Moreno-Caballero) --
15 said --

16 MS. BEHNKE: Can you let him --

17 A. (Cont'g.) (Moreno-Caballero) --
18 partially --

19 MS. BEHNKE: -- review his --

20 A. (Cont'g.) (Moreno-Caballero) --
21 opened.

22 MS. BEHNKE: -- testimony?

23 (Off the record discussion)

24 BY MS. KLAMI: (Cont'g.)

25 Q. So, maybe I can rephrase it for

1 15-F-0122 Baron Winds LLC 3/21/2019

2 you, so that we don't get hung up on the -- on the
3 word partially open for right now.

4 You're -- you're recommending a 42,
5 based on a indoor to outdoor attenuation of 12
6 D.B.A.?

7 A. Correct.

8 MS. KLAMI: What is this on.

9 UNIDENTIFIED SPEAKER: 25.

10 A. (Cont'g.) (Moreno-Caballero) And
11 sorry. Can I clarify that?

12 In my testimony, I talk about outdoor
13 to indoor reductions, between 10 and 12 D.B.A., to be
14 more precise.

15 BY MS. KLAMI: (Cont'g.)

16 Q. Thank you.

17 So, you attached to your testimony --
18 and it was M.M.C. Exhibit 4, the 2018 WHO guidelines?

19 A. (Moreno-Caballero) Correct.

20 Q. Can I have you turn to page 9 of
21 the guidelines and then -- and page 29 of your
22 exhibits?

23 A. I'm there.

24 Q. That's -- I apologize, that's not
25 the -- the correct page I wanted you to turn to.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Give me one second.

3 That is the right page. I was just
4 looking at the wrong paragraph.

5 So, go down to -- 1, 2, 3 -- the 4th
6 paragraph, the last sentence that begins, the
7 differences between. Do you see that sentence?

8 A. Yes.

9 Q. Can you read that sentence for
10 us?

11 A. The difference between indoor and
12 outdoor levels, are usually estimated at around 10
13 D.B. for open, 15 D.B. for tilt, or half-open and
14 about 25 D.B., for closed windows.

15 Q. Thank you.

16 The second reason you recommend a 42
17 D.B.A./L.E.Q. 9 hour limit, is based off a amplitude-
18 modulation penalty of 3 D.B., is that correct?

19 A. No.

20 Q. Okay. Could you explain it?

21 A. Yes.

22 Basically, I'm utilizing 3 different
23 W.H.O. guidelines. The one that W.H.O. released in
24 1999. The one that was released in 2009 and more
25 recently, the one that was released in 2018.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 By doing independent analysis of those
3 3 guidelines, I conclude that the short-term noise
4 limit that would comply with all 3 recommendations of
5 all those 3 guidelines, should be 42 D.B.A. or lower.
6 And then because for Cassadega, the amp -- the -- the
7 penalty for amplitude modulation was applied to a 45
8 D.B.A. limit, I'm saying in my testimony that if the
9 42 D.B.A. limit is adopted, then the amplitude-
10 modulation penalty might not be needed.

11 Q. For the 3 D.B. amplitude
12 modulation penalty, do you know of any jurisdiction
13 in the world that uses this penalty, for amplitude
14 modulation depths -- depths?

15 A. I -- I know that there are
16 several jurisdictions worldwide, that include
17 amplitude-modulation penalties. Whether they are
18 exactly 3 D.B.A., that's something that I don't
19 recall at this time.

20 But I -- I -- my recollection is that
21 penalties in the order of about 5 D.B.A. are applied
22 in -- in -- in regulations, of other jurisdictions.

23 Q. And is that for larger amplitude-
24 modulation depths?

25 A. I don't recall the specifics of

1 15-F-0122 Baron Winds LLC 3/21/2019

2 how amplitude modulation is defined for those
3 specific regulations, at this time.

4 Q. Do you know what jurisdictions
5 those --?

6 A. I don't recall at this time.

7 I do believe that there was a document
8 that was done in Canada, which basically deals with
9 outdoor-noise transmission, or outdoor-noise
10 propagation, for offshore windfarms and I think that
11 that information -- it might be included in the
12 appendix --

13 Q. But that's not --

14 A. -- of that one.

15 Q. -- it -- I -- that was just a
16 study. That wasn't -- Canada doesn't require a 3
17 D.B. amplitude-modulation penalty --

18 A. No.

19 Q. -- as a --

20 A. It's a --

21 Q. -- comparable --.

22 A. -- compilation of regulations, I
23 would say for -- from different countries and maybe
24 some provinces -- provinces in Canada. That's --
25 that's what I recall, at this time, that I -- that's

1 15-F-0122 Baron Winds LLC 3/21/2019

2 where I became aware that amplitude-modulation
3 penalties have been applied in other places.

4 Q. Are you assuming in your
5 testimony, that the average variation between the
6 long-term and the short-term 1 hour, is 2 D.B.?

7 A. Honestly, I don't understand the
8 question.

9 Q. And it may very well be a bad
10 question. So, let me see if I can rephrase it for
11 you.

12 On a 40 D.B. annual average, plus the
13 mean deviation between the maximum 1 hour and the
14 annual average of wind turbine sound at the receptor,
15 of 2 dB?

16 A. I think that I'm explaining that
17 in my testimony, when I talk about the exercise and
18 how the noise descriptor, which is an average in a
19 year, relates to the maximum sound power level of a
20 turbine, based on the statistics of wind --

21 Q. Uh-huh.

22 A. -- for this project and based on
23 the turbines selected, for -- or proposed for this
24 project.

25 Let me see if I can find that.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Well, let's -- it -- I -- I --
3 you've answered my question and I'm going to ask --

4 A. Because I --

5 Q. -- you --

6 A. -- think --.

7 Q. -- I'm going to ask you more
8 about it in a moment.

9 A. Okay.

10 Q. So, we can -- we can get to it
11 again.

12 Are you aware of any study that
13 measured an average 2 D.B. variation in the field,
14 over the range of wind speed and wind -- wind
15 directions, that occur over a year?

16 A. The question is not clear for me.

17 Q. Are -- are you aware of any
18 studies that measure an average 2 decibel variation
19 in the field, over the range of wind speed and wind
20 directions, that occur over a year? So, are you
21 aware of any studies that found that the average --
22 average deviation was 2 D.B.? Variation. I'm sorry.

23 A. The question is a little
24 confusing for -- for me, but I think that I kind of
25 have an understanding of what you are trying to ask.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 This is the exercise that is usually
3 done and what I did for this project, is basically --
4 there is a series of about -- let's say for a year,
5 8,760 hours --

6 Q. But you said --.

7 A. -- of wind speed.

8 Q. I'm sorry to interrupt you.

9 You said you did it for this project.
10 I'm talking about someone that measured a deviation
11 variation, not modeled.

12 A. I -- I don't have the information
13 with me, to respond to your question, at this time.

14 Q. Okay. Can you the annual
15 variation be greater than 2 D.B.?

16 A. The annual?

17 Q. The -- sure.

18 The annual variation in noise, can it
19 be greater than 2 D.B.?

20 A. It's -- I'm -- I'm sorry.

21 The -- the -- the -- the question is
22 not formulated, in a -- in a way that I can respond
23 to that question. I apologize.

24 MR. MUSCATO: Wait.

25 Can you just give us one second, your

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Honor --

3 A.L.J. COSTELLO: Sure.

4 MR. MUSCATO: -- to see if we can
5 rephrase this, to see if we can get an answer out of
6 the witness?

7 A.L.J. COSTELLO: Certainly.

8 MR. MUSCATO: Thank you.

9 A.L.J. COSTELLO: We'll go off the
10 record.

11 (Off the record discussion)

12 A.L.J. COSTELLO: Okay. Back on the
13 record.

14 BY MS. KLAMI: (Cont'g.)

15 Q. Can the difference between the
16 annual average and the 1 hour maximum, be greater
17 than 2 D.B.?

18 A. It could be greater, equal, or
19 lower, depending on the wind potential for a site and
20 the turbine selected for the project.

21 Q. Thank you.

22 Did you base your 2 D.B. assumption
23 for this site on the declared sound power level of
24 the turbines, running at that level, all of the time?

25 A. At which level?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. At the declared sound-power
3 level.

4 A. What I used was the different
5 sound-power levels, at each wind speed.

6 (Off the record discussion)

7 BY MS. KLAMI: (Cont'g.)

8 Q. Is that the declared or the
9 apparent?

10 A. I think that I used the numbers
11 that were estimated with the I.E.C. Standard 61400
12 part 11.

13 (Off the record discussion)

14 BY MS. KLAMI: (Cont'g.)

15 Q. Are you basing your
16 recommendation for the 42 D.B.A., to minimize
17 annoyance?

18 A. I would say that I'm recommending
19 the 42 D.B.A., to comply with the recommendations of
20 W.H.O. 9 -- W.H.O. 1999, 2009 and 2018.

21 Q. And they recommend levels -- let
22 me -- I want to be clear about this.

23 They recommend levels, which may or
24 may not be the same level that you're recommending,
25 based off of their recommendation to minimize

1 15-F-0122 Baron Winds LLC 3/21/2019

2 annoyance, correct?

3 A. I don't think that is totally
4 correct.

5 The recommendation -- let me look
6 through my exhibits.

7 The first recommendation, which is
8 included in the W.H.O. 1999 document, is coming from
9 table 4.1, it's page number 67 of 161, in my Exhibit
10 M.M.C. dash 1.

11 The recommendation is 30 D.B.A./L.E.Q.
12 The -- the time base, is the -- the sleeping time and
13 the critical health effect identified, is sleep
14 disturbance, not annoyance, for W.H.O. 1999.

15 Q. Okay. So, let's -- okay. So,
16 let's talk about that for a second.

17 So, the 2009 was sleep disturbance,
18 right?

19 A. The 2009 --.

20 Q. Or that was the 1999 one? I -- I
21 was -- I --.

22 A. Exhibit 1, that I just explained
23 --

24 Q. What's --?

25 A. -- is the 1999.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Okay. So, what's 2009?

3 A. The 2009, their recommendation is
4 included my Exhibit M.M.C. 2. You can see it in
5 executive -- executive summary 17, in Roman numbers.

6 The recommendation is 40 D.B.A. at
7 night, outside. That's based on what W.H.O. identify
8 as the lowest-observed adverse effect level, in --
9 for nighttime noise and this is -- it says on page 18
10 in Roman numbers, the L.O.A. -- A.E.L., which is the
11 lowest-observed adverse-effect level of night noise,
12 40 D.B.A. at night, outside, can be considered a
13 health-based limit value of the night noise guideline
14 necessary to protect the public, including the most-
15 vulnerable groups, such as children, the chronically
16 ill and the elderly from the adverse health effects
17 of night noise.

18 Q. And what is that adverse health
19 effect?

20 MS. BEHNKE: Objection.

21 He's not an expert in health --.

22 A. (Moreno-Caballero) It's included
23 here.

24 MS. KLAMI: He's based his
25 recommendation of 42, based off these two documents,

1 15-F-0122 Baron Winds LLC 3/21/2019

2 so I expect he knows what they say.

3 A. (Cont'g.) (Moreno-Caballero) I -
4 - I -- I would say it's here somewhere what the basis
5 was.

6 BY MS. KLAMI: (Cont'g.)

7 Q. The word annoyance probably --

8 A. (Moreno-Caballero) I don't --

9 Q. -- appears in the --.

10 A. -- I -- I don't want to --

11 MS. BEHNKE: Objection.

12 A. (Cont'g.) (Moreno-Caballero) --
13 speculate at this time.

14 The in -- the response to your
15 question is here. I'm sorry.

16 BY MS. KLAMI: (Cont'g.)

17 Q. That's fine.

18 Do you recall how many -- oh. Have
19 you reviewed the revised modeling, submitted with Mr.
20 Kol -- Koliski's testimony?

21 A. (Moreno-Caballero) I took a look
22 at the results.

23 Q. Okay.

24 (Off the record discussion)

25 BY MS. KLAMI: (Cont'g.)

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. So, I have in my hands the March
3 12th, 2019 sound-propagation modeling report,
4 prepared by R.S.G., which is Exhibit 7 to Ken
5 Koliski's testimony. It is 291 pages.

6 MS. BEHNKE: Excuse me.

7 This is marked confidential.

8 MS. KLAMI: Yeah.

9 We're not going to talk about --.

10 MS. BEHNKE: Okay.

11 MS. KLAMI: The only thing that's
12 confidential in this document, are sound-power levels
13 and those are technical specifications, provided by
14 the manufacturers, that are confidential.

15 BY MS. KLAMI: (Cont'g.)

16 Q. I'm not going to ask you what
17 those numbers are.

18 A. (Moreno-Caballero) Okay.

19 Q. We're just going to talk in
20 generalities, but if -- if a response to one of my
21 questions requires you to -- to talk about those
22 numbers, let us know and we'll ask those who have not
23 signed a confidential agreement, to leave the room.

24 A. Okay.

25 Q. Okay?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. I'm going to have you turn to
3 page 18 and on that page, there's a table labeled,
4 projected number, highly annoyed and the table shows
5 788 receptors, but I will report to you that the
6 larger set of receptors in the back, is about -- is
7 1607 receptors total, but this chart only shows those
8 receptors that are above 30 D.B.A.

9 Can you tell by looking at this chart,
10 how many receptors are between 42 and 45?

11 A. Including the 42, or excluding
12 the --?

13 Q. Excluding the 42.

14 Between 42 and 45.

15 A. I count 22.

16 Q. And I'm sorry to make you do
17 math, but out of 1607 receptors, if 22 are between 42
18 and 45, what percentage of the receptors --?

19 A. 1600 -- where are you taking that
20 number?

21 Q. So, there's -- there's 1607
22 receptors, which are all of these receptors back
23 here, in -- in the table, that has all of the -- the
24 sound levels.

25 I'm -- I'm purporting to tell you

1 15-F-0122 Baron Winds LLC 3/21/2019

2 that, as -- as a fact, so that we don't have to count
3 all of these today, but I don't know, Is that --?

4 MS. BEHNKE: Is there a total anywhere
5 in the chart --

6 MS. KLAMI: Yeah.

7 MS. BEHNKE: -- that we can just --?

8 MS. KLAMI: Is there a total anywhere
9 that we may have somewhere? Yeah. Where?

10 Just show me, so I can point to it.

11 (Off the record discussion)

12 A.L.J. COSTELLO: We'll go off the
13 record.

14 (Off the record discussion)

15 BY MS. KLAMI: (Cont'g.)

16 Q. So, on page 40, I apologize,
17 there are 1509 receptors total and those are non-
18 participating. So, we're not counting participating.
19 Okay. So, my number before included some of those
20 participating, so I apologize.

21 So, out of the 1,509 receptors that
22 are not participating at this project, you've counted
23 22 of them as being between 42 and 45.

24 What percentage of the non-
25 participating receptors, are at that range?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. (Moreno-Caballero) Well, let me
3 explain something.

4 I mean, that's --.

5 Q. That's a simple -- it's a simple
6 math --

7 A. Yes.

8 Q. -- question.

9 A. It is a simple --

10 Q. It's a simple -- I just want you
11 to answer --

12 A. -- it's --

13 Q. -- my question right now.

14 A. -- it's -- it's a simple question
15 that can be calculated, which is calculated in a
16 percentage.

17 What I don't think, is that the
18 question is relevant.

19 MR. MUSCATO: Well, that's not --
20 that's for redirect --

21 A.L.J. COSTELLO: Okay.

22 MR. MUSCATO: -- right?

23 A. (Cont'g.) (Moreno-Caballero) And
24 I explain why.

25 MS. KLAMI: No. No.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 MR. MUSCATO: No.

3 MS. KLAMI: No. No.

4 A.L.J. COSTELLO: Can I just -- can I
5 just ask you, do you need him to do the calculation?

6 MS. KLAMI: No. I can do it --

7 MR. MUSCATO: No.

8 MS. KLAMI: -- for him.

9 So it's --.

10 A.L.J. COSTELLO: All right.

11 BY MS. KLAMI: (Cont'g.)

12 Q. If I told you it was less than 2
13 percent, at 1.4 percent --?

14 A. (Moreno-Caballero) That's
15 relative to the number of receptors that were
16 included into the model.

17 If I include twice a -- the receptors,
18 the percentage is going to be lower. If I include
19 less receptors, the -- the percentage is going to be
20 higher.

21 So, I think what is -- might be more
22 relevant, is to say how many of the receptors exposed
23 to more than 35 decibels, or more than 40 decibels,
24 are -- are exposed to levels exceeding between -- 42
25 and between 43, 45. But again, I mean, it's -- it's

1 15-F-0122 Baron Winds LLC 3/21/2019

2 -- it -- what -- what matters, in -- in my opinion,
3 is the absolute number of receptors that -- exposing
4 a particular -- or that are going to be exposed to a
5 particular level because dividing that number of
6 receptors between all the receptors that were
7 considered, or that -- that were entered into the
8 model, give me a number that might not -- might --
9 might be relevant, for the reasons that I explained.

10 For the same project one consultant
11 may include more receptors, if the radius --

12 Q. Sure.

13 A. -- is greater.

14 Q. Sure. Sure.

15 A. So --

16 Q. -- so, in -- in this project,
17 have -- have you found anything to indicate that they
18 haven't included receptors that are necessary to be
19 included?

20 A. No.

21 According to what was stipulated in --

22 Q. Right.

23 A. -- this project, it -- it was 1
24 mile within any turbine.

25 What I'm saying -- if we had set that

1 15-F-0122 Baron Winds LLC 3/21/2019

2 as 2 miles, or a 1/2 mile, the percentage is going to
3 be different. You --.

4 Q. Sure.

5 A. That's what I'm --

6 Q. But it -- it --

7 A. -- trying to say.

8 Q. -- but there -- there wouldn't be
9 more people exposed to higher levels of sound further
10 away, Miguel.

11 A. With the same project -- with the
12 same project, same model, same turbines, everything
13 is the same, the percentage is going to depend only
14 on the radius of evaluation around the turbines.

15 You will get a different percentage if
16 that rate is shorter. You're going to get a lower
17 percentage if that rate is -- is larger. So, I -- I
18 don't -- honestly, I --.

19 Q. Okay. Okay. Are there existing
20 locations, based off of the sound monitoring that
21 R.S.G. has done?

22 They have -- they have monitored
23 sounds at the project location and I've given you the
24 -- the sound at those locations.

25 A. Yes.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 As part of the pre-construction
3 evaluation of sound levels --

4 Q. That's right.

5 A. -- several locations were test
6 and the results were reported in the application.

7 Q. And do you recall if there were
8 levels, that were already above 42 D.B.A.?

9 A. 42 D.B.A.

10 Q. But there were sound levels, at
11 some of those locations, that were already above 42
12 D.B.A.?

13 A. I don't know if you're refer to
14 the L.E.Q. noise descriptor, or to the L-90 noise
15 descriptor.

16 Q. The overall long-term L.E.Q.

17 A. I don't think that the L.E.Q. is
18 the best descriptor, to describe the existing
19 conditions. I'm going to explain.

20 The L.E.Q. --

21 Q. Well, let me --

22 A. -- is very --

23 Q. -- let me --.

24 A. -- sensitive.

25 Q. I -- I -- I understand, but can

1 15-F-0122 Baron Winds LLC 3/21/2019

2 you answer my question?

3 Were there --

4 A. I --

5 Q. -- locations -- how about this?

6 We'll just have you read it.

7 (Off the record discussion)

8 BY MS. KLAMI: (Cont'g.)

9 Q. So, it is on page 118 of the
10 P.N.I.A. and that was -- is that the new one --

11 MR. MUSCATO: That's the --

12 BY MS. KLAMI: (Cont'g.)

13 Q. -- that we just had him -- okay.

14 MR. MUSCATO: -- original.

15 BY MS. KLAMI: (Cont'g.)

16 Q. So, this is the old one. So,
17 this would've been in -- included --

18 A. (Moreno-Caballero) This is --

19 Q. -- on the application --

20 A. -- original application?

21 Q. -- in the original --

22 A. I don't --

23 Q. -- application.

24 A. -- have the original application

25 --

15-F-0122 Baron Winds LLC 3/21/2019

1 15-F-0122 Baron Winds LLC 3/21/2019

2 next one?

3 A. 47, 24 L-90.

4 Q. Okay. Keep going.

5 A. 35, 9 -- L.E.Q., 19 L-90. 39

6 L.E.Q., 22 L-90. 35 L.E.Q., 20 L-90. 39 L.E.Q., 22

7 L-90. 32 L.E.Q., 18 L-90.

8 Q. Thank you.

9 (Off the record discussion)

10 BY MS. KLAMI: (Cont'g.)

11 Q. Mr. Moreno, when you subtract the
12 background sound from the turbine measurement sound,
13 do you use the L-90, or the L.E.Q.?

14 A. (Moreno-Caballero) For the
15 purposes of the --?

16 Q. Sound monitoring.

17 A. For the purposes of --.

18 Q. That's fine.

19 A. Are you talking about any
20 standard, specifically?

21 MR. MUSCATO: The protocols that have
22 been discussed in this case. Yeah.

23 BY MS. KLAMI: (Cont'g.)

24 Q. The protocols that have been
25 discussed in this case.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. (Moreno-Caballero) I -- I know
3 that the protocol, both -- some discussions of the
4 protocol, are around to the N.C. Standard S12.9 Part
5 3 and there are different procedures. Some for -- to
6 -- for noise certification, cannot be turned off --
7 off. Others, they can be turned off.

8 There is 1 section in particular, that
9 allows the measurements of above-ground sounds, with
10 the L.E.Q. and therefore, the subtraction of -- of
11 the noise versus background sounds -- sorry. The
12 subtraction of the background sounds from the noise
13 versus background readings, is done both by using the
14 L.E.Q. noise descriptor, if that answers your
15 question.

16 Q. Are you talking about the noise
17 protocol, that you've recommended for this
18 proceeding?

19 A. No.

20 I'm talking about the N.C.S. Standard,
21 but there are other methods there.

22 MS. BEHNKE: Can you clarify which
23 protocol you're referring to, specifically? Because
24 you're --.

25 MS. KLAMI: Well, we're talking about

1 15-F-0122 Baron Winds LLC 3/21/2019

2 the proto -- I was asking him questions, if that's
3 what he would do, the protocol that he's proposing
4 here.

5 A. (Cont'g.) (Moreno-Caballero)

6 You're talking about the protocol that I'm proposing?

7 MR. MUSCATO: Yes.

8 BY MS. KLAMI: (Cont'g.)

9 Q. Yes.

10 A. (Moreno-Caballero) Okay.

11 MS. BEHNKE: That's different than --.

12 A. (Cont'g.) (Moreno-Caballero) And
13 which section are you referring to?

14 (Off the record discussion)

15 MS. KLAMI: Can you give us a minute?

16 A.L.J. COSTELLO: Sure.

17 Go off the record.

18 (Off the record discussion)

19 BY MS. KLAMI: (Cont'g.)

20 Q. So Mr. Moreno, I'm going to show
21 you -- I believe it's marked as your Exhibit 7, page
22 9 of 19.

23 A. (Moreno-Caballero) Okay.

24 Q. And under the short-term noise
25 level at residential facilities, your protocol says,

1 15-F-0122 Baron Winds LLC 3/21/2019

2 the single broadband L.E.Q. 10 minute background
3 sound level, will be logarithmically subtracted from
4 the single broadband L.E.Q. 10 minute operational
5 sound level, for each measurement position, in order
6 to determine the wind-generating facility
7 contribution to the total A-weighted sound levels.

8 Is that correct?

9 A. Yes.

10 (Off the record discussion)

11 BY MS. KLAMI: (Cont'g.)

12 Q. Would you agree, that annoyance
13 by an individual to wind-turbine noise, is highly
14 subjective?

15 A. (Moreno-Caballero) What we know
16 is that there are some -- or -- or my opinion, is
17 that there are some objective factors and yes, there
18 are some that could be subjective.

19 Q. There have been studies that have
20 studied the relationship between noise, turbine sound
21 and annoyance, correct?

22 A. That is correct.

23 Q. Have those studies found that
24 annoyance to wind-turbine noise, is correlated, or
25 related to prior support, or opposition of the

1 15-F-0122 Baron Winds LLC 3/21/2019

2 project?

3 A. I -- could you be more specific
4 and provide a citation of what --

5 MR. MUSCATO: Just if he knows.

6 A. (Cont'g.) (Moreno-Caballero) --
7 study you're referring to?

8 MR. MUSCATO: Just if he knows.

9 BY MS. KLAMI: (Cont'g.)

10 Q. Yeah.

11 Just if you know. I mean, there --
12 there are multiple studies. You've testified, you
13 know there are studies, so just to the best of your
14 knowledge.

15 Are there studies that have shown that
16 annoyance to wind-turbine noise, is also found to be
17 related to whether or not someone supported the
18 project, prior to its operation?

19 A. (Moreno-Caballero) I think that I
20 have a vague recollection of reading that, as a
21 modifying factor. Whether that's the most important
22 1, I don't recall --

23 Q. Yeah.

24 A. -- at this --

25 Q. Yeah.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. -- time --

3 Q. Okay.

4 A. -- but --.

5 Q. I didn't say it was the most
6 important, but it's --

7 A. Okay.

8 Q. -- a factor.

9 What about if the person is receiving
10 a direct financial benefit from the project? Are
11 they more, or less likely to be annoyed by the wind-
12 turbine sound?

13 A. That's what the few studies have
14 found.

15 I think I recall at least 1 study that
16 found, that even at greater noise levels, the levels
17 of annoyance are lower and the explanation has been
18 because the people were receiving monetary
19 compensation.

20 Q. The most recent WHO -- the WHO --
21 WHO 2018, concludes that there is no evidence of
22 sleep disturbance, due to wind-turbine noise, is that
23 correct?

24 A. Where in the W.H.O. 2018, are you
25 taking that from?

1	15-F-0122	Baron Winds LLC	3/21/2019
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2 Q. Just to the -- to the best of
3 your recollection.

4 I can find it for you. I apologize.

5 I have a --.

6 (Off the record discussion)

7 BY MS. KLAMI: (Cont'g.)

8 Q. To the best of your recollection,
9 does -- does the WHO 2018 find any evidence of sleep
10 disturbance, due to wind-turbine noise?

11 MS. BEHNKE: If you know.

12 A.L.J. BELSITO: If you don't recall -
13 -

14 A. (Moreno-Caballero) Well, I don't
15 know if that's exactly the way that it's described.
16 I don't want to put words --

17 BY MS. KLAMI: (Cont'g.)

18	<u>Q.</u>	Sure.
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19 A. (Moreno-Caballero) -- or reword -
20 -

21 Q. What --

22 A. -- what the --

23 Q. -- what do you recall --

24 A. -- WHO said.

25 Q. -- what do you recall about sleep

1 15-F-0122 Baron Winds LLC 3/21/2019

2 disturbance?

3 A. All right. I might -- I might
4 need to go to that specific portion and reread what
5 it says there, so that I can just use exactly the
6 same conclusion that they arrived to.

7 Q. So, if you turn to Exhibit 4, I
8 believe you have it open, page 106.

9 UNIDENTIFIED SPEAKER: 86

10 MR. MUSCATO: Page 86.

11 BY MS. KLAMI: (Cont'g.)

12 Q. Oh. Sorry.

13 186.

14 MR. MUSCATO: No. 80 -- just 86.

15 MS. KLAMI: Oh. Oh. It's 106 of 181
16 of his, but it's 86 of the WHO document.

17 I apologize.

18 MR. MUSCATO: Yeah. All right.

19 A. (Moreno-Caballero) Eighty-six?

20 BY MS. KLAMI: (Cont'g.)

21 Q. Yes.

22 MR. MUSCATO: Of the WHO document.

23 BY MS. KLAMI: (Cont'g.)

24 Q. It'll be table 42.

25 A. (Moreno-Caballero) Yes.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Does that help refresh your
3 recollection?

4 A. Which portion of this page are
5 you referring to?

6 Q. So, if you look at nighttime
7 exposure, table 42 --

8 A. Okay.

9 Q. -- what does it say?

10 A. Health effects -- is this under
11 the wind-turbine noise section?

12 (Off the record discussion)

13 BY MS. KLAMI: (Cont'g.)

14 Q. Are you potentially on the wrong
15 page?

16 MR. MUSCATO: Table 42.

17 BY MS. KLAMI: (Cont'g.)

18 Q. Is it table 42?

19 A. (Moreno-Caballero) What that
20 table says about nighttime exposure is, health
21 effects, noise statistically significant evidence was
22 available for sleep disturbance, related to exposure
23 from wind turbine-noise at night.

24 Q. Thank you.

25 A. You're welcome.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 (Off the record discussion)

3 BY MS. KLAMI: (Cont'g.)

4 Q. The Applicant modeled of a 40
5 D.B.A. L-90, for the long-term average of this
6 proceeding, correct? Modeled a 40 D.B.A. L-90?

7 A. (Moreno-Caballero) It -- it was a
8 combination of -- of a computer-noise modeling and
9 calculations.

10 Q. So, it a design, though, they
11 modeled to 40 D.B.A. --

12 A. It --

13 Q. -- on the --?

14 A. -- it was a combination of
15 computer-noise modeling and I would say calculations
16 -- and additional calculations.

17 Q. Okay. In your testimony, you
18 state that the annual average is likely to be
19 somewhere between .8 and .2 D.B., below the maximum 1
20 hour L.E.Q.

21 Is that correct?

22 A. May I know in which page of my
23 testimony, I'm saying that?

24 (Off the record discussion)

25 BY MS. KLAMI: (Cont'g.)

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. So, starting on page 50.

3 A. (Moreno-Caballero) Which --?

4 Q. So, you -- you performed an
5 analysis on the Nordex and the Gamesa.

6 A. Before you continue, this page
7 contains confidential information.

8 Q. Oh. Okay.

9 (Off the record discussion)

10 MS. KLAMI: Do we want to have some
11 folks step out, so he can answer how he calculated
12 these?

13 A.L.J. COSTELLO: Your answer's going
14 to require you to use confidential -- re -- refer to
15 confidential information?

16 THE WITNESS: (Moreno-Caballero) It --
17 it may require.

18 A.L.J. COSTELLO: Okay.

19 THE WITNESS: (Moreno-Caballero) Yes.

20 A.L.J. COSTELLO: Okay. Unfortunately
21 folks, we have to ask you to step out.

22 We'll go off the record.

23 (Off the record discussion)

24

25

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15-F-0122 Baron Winds LLC 3/21/2019

PAGES 728-737 HAVE BEEN LEFT INTENTIONALLY THE
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FOUND SEPARATELY FOR 3/21/2019

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A.L.J. COSTELLO: And we're back on
3 the public record.

4 BY MS. KLAMI: (Cont'g.)

5 Q. Mr. Moreno, I've handed -- or my
6 colleague's handed you a paper. The top of it says,
7 Fifth International Conference on Wind-Turbine Noise,
8 Accuracy of Noise Prediction for Windfarms, by
9 Jonathan Cooper and Tom Evans.

10 Are you familiar with this paper?

11 A. (Moreno-Caballero) Probably.

12 I'm not quite sure at this time, but
13 I've read several articles from those authors.

14 Q. Okay. I'm going to have you turn
15 to --.

16 A.L.J. COSTELLO: Can we mark this as
17 --

18 MS. KLAMI: Sure.

19 MR. MUSCATO: Yes.

20 MS. KLAMI: Yes. Sorry.

21 A.L.J. COSTELLO: -- Exhibit --
22 Exhibit 287, for identification?

23 (Off the record discussion)

24 BY MS. KLAMI: (Cont'g.)

25 Q. So, on page 5, there's figure 1,

1 15-F-0122 Baron Winds LLC 3/21/2019
2 titled, Example of Measurement -- Measured Noise
3 Levels Versus Wind Speed With Turbine Controlled Wind
4 Speed Range, Site D3.

5 Do you see that?

6 A. (Moreno-Caballero) Figure --
7 figure 1?

8 Q. Yes.

9 A. Yes.

10 Q. And there's a shaded area, called
11 the turbine-controlled area and my understanding, is
12 this shows the -- the time, when the turbine cut in,
13 to when the wind speeds were so high, that measuring
14 sound was not possible.

15 And so, those dots on this chart, are
16 the D.B.A. level, at the corresponding wind speeds,
17 is that correct?

18 A. In -- in this particular example,
19 what this is showing -- this is what happens.

20 When the turbines are rotating slowly,
21 the noise cannot be heard clearly and sometimes,
22 other noises, which are called background noise, are
23 very close to the noise that the turbines are
24 producing, or may mask the noise that the turbines
25 are produce. So, it's not too easy to listen to the

1 15-F-0122 Baron Winds LLC 3/21/2019

2 sound of the turbines.

3 Also -- that also happens downwind.
4 The wind speed is extremely high, there might be
5 other background's sounds -- sounds that might make
6 difficult to perceive the sound from the turbines.

7 So, the region in-between, where the
8 sounds from the turbines are more perceptible, is
9 what is called the turbine-controlled range.

10 Q. Thank you for that explanation.

11 On -- when you're looking at this
12 chart, can you tell what the range of sound levels
13 that was measured -- that occurs, between that
14 turbine-controlled area?

15 A. The lowest samples that I see,
16 here, in that shaded area, are the samples between 4
17 and 5 meters per seconds and the sounds are as low as
18 22 decibels.

19 Q. And --

20 A. That's the lowest.

21 Q. -- and what's the highest that
22 you see?

23 A. The same speed, or of the whole
24 range?

25 Q. The whole range.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. The --

3 Q. The whole range --

4 A. -- whole --

5 Q. -- in the --

6 A. -- range --

7 Q. -- turbine controlled area.

8 A. -- the last data that is reported

9 --

10 Q. Uh-huh.

11 A. -- here, happens at 12 meters per
12 second and its 50 D.B.A.

13 Q. How do you explain the variation
14 between 22 and 50 D.B.A.?

15 MS. BEHNKE: Objection.

16 He hasn't had time to review the --

17 MR. MUSCATO: He --

18 MS. BEHNKE: -- study.

19 MR. MUSCATO: -- she can ask him.

20 MS. KLAMI: I mean, this -- this could
21 happen at any wind project. You could have --

22 A. (Moreno-Caballero) It's -- it's -
23 -

24 MS. KLAMI: -- variation of that
25 range.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. (Cont'g.) (Moreno-Caballero) --
3 very difficult for me to know exactly what the
4 copying wind speed is --

5 BY MS. KLAMI: (Cont'g.)

6 Q. Sure.

7 A. (Moreno-Caballero) -- here. It
8 might be difficult for me to explain what's going on,
9 between 4 and 5 meters per second.

10 But in general, I -- I would say that
11 the sound levels are increased with wind speed. If
12 the wind speed, at the top height, start growing the
13 turbines will start rotating faster and that will
14 create louder sounds at the receptors.

15 Now, there is also a point, when the
16 sound levels at the receptor are maximum and the
17 sound-power levels from the turbine and -- are
18 maximum. From that point, the -- the -- the levels
19 are pretty-much constant. The wind speed could be
20 growing, but the sound levels are going to be
21 basically the same.

22 Q. Is it just wind speed, that
23 factors into that sound variation?

24 A. The -- in -- in -- in my
25 opinion, wind speed is 1 of the most important

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2 factors and that can -- can be easily see in any
3 sound test from manufacturers.

4 Q. Is that the only factor?

5 A. But there are other factors,
6 especially -- for receptors that are far from the
7 turbines, those are more susceptible to variations
8 caused by an -- atmospheric conditions.

9 If we get closer to the turbines,
10 those levels are not going to fluctuate, as if we get
11 farther and farther away. There could be
12 fluctuations.

13 And basically, I -- I would say the
14 next factor would be wind direction. There is
15 downwind direction, there is a upwind direction and
16 crosswind direction. I -- I -- I'm -- I explained
17 that in my testimony.

18 So, typically when receptor are very
19 far -- or are far from the turbines, the -- the
20 upwind sound levels are lower, than the -- the -- the
21 level -- the downwind sound levels, or for receptors
22 downwind from the turbines.

23 Q. Thank you.

24 A. But it's -- it's -- again, it's
25 depend -- depends on the distance to the turbine, but

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2 also depends in -- on how many turbines are around
3 the receptor. The -- there -- there might be cases
4 where a receptor is surrounded by several turbines.

5 The wind direction at the site has
6 only 1 direction, but the receptor could be located,
7 as related to the locations of the turbine -- upwind
8 conditions, downwind conditions and crosswind
9 conditions, simultaneously.

10 Q. That wouldn't be true for every
11 single receptor, correct?

12 A. That is correct. That is
13 correct.

14 Q. Would it appear that the variance
15 is somewhat randomly distributed about the mean, by
16 wind speed?

17 MR. MUSCATO: In the figure. In the
18 figure.

19 BY MS. KLAMI: (Cont'g.)

20 Q. In the figure. Yes.

21 You -- in the figure. Sorry.

22 A. (Moreno-Caballero) In -- in this
23 one, I don't know if the number of decibels at both
24 the mean level, are going to be the same below the --
25 the mean level.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 But sometimes what is done, is a -- a
3 -- a regression of points, kind of -- some trying to
4 find a curve that is kind of in the middle of those
5 fluctuations. That's called a regression of sound
6 levels and with respect to that regression, there are
7 -- sound levels that are above and there are levels
8 that are below that regression.

9 (Off the record discussion)

10 BY MS. KLAMI: (Cont'g.)

11 Q. So, looking again at the figure
12 on page 5, there's the -- right at what looks like 12
13 meters per second, can you see what the -- it's
14 difficult because there's a lot of points, but what
15 the maximum and minimum wind speed are, at that cut-
16 in?

17 A. (Moreno-Caballero) Do you mean --

18 Q. I mean --.

19 A. -- wind speed, or sound level?

20 Q. Sound. I'm sorry. Sound levels.

21 You're correct.

22 A. Most of the -- the measurements
23 here, located between 40 and 46.

24 There are a few points that are out of
25 that typical range. For instance, I see a single

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2 point, as low as 38 decibels and I see a couple of
3 points at 50 decibels, but much of the -- the points,
4 at 12 meters per second, as I said, they're located
5 between 40 and 46.

6 Q. So, is the mean more than 2 D.B.,
7 below the maximum?

8 A. Honestly, it's very difficult to
9 see what all the values of all these points are, so
10 that I can make a calculation of the mean and
11 determine whether what you're saying is true, or not.

12 Q. Thank you.

13 Do you know of any jurisdiction in the
14 world that uses a regulatory standard for wind
15 turbines, that is an annual average?

16 A. Yes.

17 Q. Where?

18 A. Norway uses a 45 D.B.A. L.D.E.N.
19 noise limit.

20 Q. A 45?

21 A. 45 D.B.A. --

22 Q. Is it --?

23 A. -- L.D.N. That's basically the
24 same descriptor and -- and value, that the W.H.O.
25 recommended recently in -- in October last year.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. And how --

3 A. That's 1.

4 Q. -- and --

5 A. Norway.

6 Q. -- and how do they enforce that
7 standard?

8 A. I don't have more details with
9 me, about the Norway.

10 Q. Yeah.

11 Is it -- is it -- is it monitoring, do
12 you know?

13 A. I don't have more information
14 about that.

15 Q. Okay.

16 A. The other country that uses the
17 L.D.E.N., is the Netherlands. They have 2 limits.

18 1 is forty-seven L.D.E.N. That's
19 about 2 decibels above the --

20 Q. Uh-huh.

21 A. -- 45 D.B.A.

22 Q. And how --

23 A. -- L.D.E.N.

24 Q. -- do -- and how do they enforce
25 that?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. They -- my understanding, is that
3 they -- it's a combination -- it's a combination of
4 measurements.

5 After a project is built, they took
6 readings very close to the turbines. They don't
7 measure at the receptors, they measure close to the
8 turbines.

9 At a distance, my recollection is the
10 top height plus the radius of the blade, or the
11 rotor, is -- it -- they measure -- that's for me,
12 kind of a manufacturer's test. It's very close,
13 where fluctuations are lower and then they put that
14 into a computer model.

15 My understanding is Netherland has
16 developed its own propagation standard, that's
17 similar to the ISO 9613 dash 2, but I think that
18 there's 1 component, at least, that is slightly
19 different and I think that that component is the
20 ground -- the attenuation provided by the ground.
21 And -- and so, with that information -- the -- the --
22 the 1 information from the turbines and the model,
23 the sound levels are calculated at the receptors,
24 after construction.

25 Q. Thank you.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. And I need to finish with your
3 question.

4 Q. Uh-huh.

5 A. In the United States, my
6 understanding -- and I'm referring all these
7 responses to the book, Wind Farm Noise Measurement
8 Assessment and Control, that was written by Colin
9 Hansen, Con Doolan and Kristy Hansen. It was -- I
10 would say it's a recent publication. It was
11 published in February 2017 and I'm going to refer to
12 a compilation also of -- of regulations in the United
13 States, if --.

14 Q. Now, these are -- these are
15 annual averages that you're saying?

16 A. Yes.

17 Q. Okay.

18 A. The L.D.E.N. and also the L.D.N.,
19 those are annual descriptors.

20 So, the -- in California, there are 4
21 locations. 1 is called Contra Costa. It uses the
22 L.D.N.

23 I just need to explain that there's
24 just a small difference between the L.D.N. and the
25 L.D.E.N., that was recommended by --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Yeah.

3 A. -- W.H.O.

4 Q. Yeah.

5 So, I just want to -- I want to
6 clarify, do you know if those projects -- if those
7 jurisdictions have operating wind projects at them?

8 A. These are standards for wind-
9 turbine projects.

10 Q. But do they have operating wind
11 projects, at those locations? Do you know?

12 A. I cannot answer your question.

13 What I'm saying is they have
14 regulations in place for wind turbine projects.

15 Q. Okay. And do you know what --
16 for any of those that are on that chart, how they
17 monitor those long-term averages?

18 A. No.

19 I don't have the details.

20 Q. Okay.

21 A. You asked me about other places
22 worldwide, where the long-term noise descriptor is
23 used and -- and I'm responding to your question.

24 Q. Sure.

25 A. There is also California, Kern

1 15-F-0122 Baron Winds LLC 3/21/2019
2 (phonetic spelling), uses the L.D.N. It's actually
3 50 decibels, the limit.

4 Other -- Monterey, California,
5 according to this table, uses sound levels, or -- or
6 limits for residential between 45 and 55 L.D.E.N.
7 And there is also -- let me see if there is another
8 location. I think at least those 3 locations.

9 And as you can -- and if you heard, I
10 said L.D.N. and L.D.E.N. The difference is just an
11 E. L.D.N. means Level, Day and Night. L.D.E.N.
12 means Level, Day, Evening and Night. So, the only
13 difference is that the L.D.E.N. has a specific
14 timeframe, for the evening. In the L.D.N, the
15 evening is included in the daytime.

16 But the results are pretty much
17 popular and I would add that the L.D.N. is a
18 descriptor that has been for many, many, many years,
19 is used for transportation noise, aircraft noise,
20 traffic noise and became very popular in my opinion,
21 after the Environmental Protection Agency had to
22 report to the Senate of the United States, the levels
23 that -- were it safe for the protection of the public
24 and that was at the end of the 70s.

25 Q. Sure.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. But the -- the -- the -- the
3 track of the L.D.N. goes -- goes -- goes back to
4 those years. So, I will say the descriptor has been
5 there for about 50 years or maybe --

6 Q. And in --

7 A. -- more.

8 Q. -- in the WHO 2018 document,
9 where they recommended the L.D.E.N., do they also
10 note that an L.D.E.N., or an L-night, for an annual
11 average may not -- may not be the best descriptor for
12 wind-turbine sound?

13 A. There's special language about
14 that. It's included in Mr. Koliski's rebuttal. It's
15 also included in the W.H.O.

16 I -- I -- I don't think that I need to
17 rephrase the language. It's -- it's there and it's
18 available for -- for -- it's -- it's already in the
19 record.

20 Q. Okay. And are you aware of any
21 standards, for measuring the annual average sound
22 level from a wind turbine?

23 MS. BEHNKE: Asked and answered,
24 wasn't it.

25 A. (Moreno-Caballero) May I know

1 15-F-0122 Baron Winds LLC 3/21/2019

2 what you mean with standard?

3 BY MS. KLAMI: (Cont'g.)

4 Q. So, we talked about the Ansi
5 (phonetic spelling) but we talked about how that was
6 not specific to wind-turbine noise.

7 Are you aware of any standards, that
8 are specific to wind-turbine noise, about how to
9 measure for an annual average?

10 A. (Moreno-Caballero) My
11 recollection is that the new W.H.O. guideline refers
12 to 1 ISO standard and I don't recall the specific
13 number of that standard, but that standard -- it
14 might be the ISO 1999 Part 2. I -- I might be
15 correct, or wrong. That's where the L.D.E.N. is
16 defined and so, the definition for the L.D.N., yes,
17 it's an annual average.

18 Also, WHO 2009 refers to the European
19 directive for definition of the L-night, both the
20 definition of the L-night and the definition of the
21 L.D.N. are included in the European directive and
22 both are annual standards. So, your question is --
23 yes, there are standards that define how the L.D.N. -
24 -

25 Q. Well, that -- I --.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. -- 1 year should be calculated.

3 Q. No.

4 My -- my question was, is there a
5 wind-turbine specific annual average standard. And -
6 - and so --?

7 A. Well, the L.D.N. is the same
8 descriptor for anything. There is no difference of -
9 - there is no L.D.N. for transportation noise, for
10 aircraft noise, or for railroads --

11 Q. Uh-huh.

12 A. -- or for wind turbines. What
13 might be different is only the limit.

14 So, the new guideline has different
15 limits for all those types of noises, but the L.D.N.
16 is just a single-noise descriptor.

17 Q. Sure.

18 And if someone were to file a
19 complaint, that they believed the Applicant was in
20 violation of the annual average L.D.N. and L-night,
21 whatever it may be, an L.D.N., L.D.E.N., L-night,
22 annual average -- if there was a complaint, how long
23 do you think it would take to conduct a measurement
24 campaign, to see if the annual average noise standard
25 is exceeded?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. I'm proposing a method in the
3 protocol presented by D.P.S.

4 What I need to explain, is -- I -- I
5 know the Applicant is proposing collecting, or having
6 at least 4 clean shutdowns, with -- that will allow
7 them to have 8 hours. 8 samples, 1 hour each, to
8 compute the 8 hour -- or calculate the 8 hour limit.
9 So, it happens that -- so that's the scope. It's
10 just testing 8 hours, right?

11 So, it happens that a year has 365
12 years (sic) and because the 8 hours are continue --
13 are 24 different possibilities to measure that. On
14 top of that, you need to multiply that for 365 days
15 in a -- in -- in a year and by the number of years
16 that the project is going to be in operation.

17 That will give you a huge amount of
18 intervals, but that's not test -- you didn't test the
19 facility for a year, you don't test a facility for 30
20 years. In fact, the Applicant is proposing to test
21 only 8 hours.

22 The same way you don't need to test a
23 year, to calculate the L.D.N., the basis is the
24 statistics. That's why your statistics is fixed. Q.
25 Uh-huh.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. You -- you have to take samples
3 that are representative, so that you can with some
4 confidence level, to arrive to a number that
5 approaches the -- the -- the L.D.N. for a year.

6 Q. Yeah.

7 But the -- the 8 hours proposed by the
8 Applicant, is for the 8 hour L.E.Q., not for the
9 long-term average?

10 A. That's -- that's what I'm saying.

11 The -- the -- what is propose, he's
12 testing only 8 hours. It's not testing 8 hours
13 today, 8 hours tomorrow, next week, or a month. I
14 think one sample of 8 hours is -- is -- is not
15 representative. It's just only 1. You -- you need
16 to collect more, so that you have more data and you
17 can calculate what the confidence level of your
18 result is.

19 But -- but my point is -- let's say
20 that -- a year has 365 nights, 8 hours each. You
21 didn't test 365 nights. You -- you just test a few
22 nights, so that it can give you a number, that is
23 representative.

24 So, what I understand from -- from
25 your question, is it seems that there is an under --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 misunderstanding that a -- the L.D.N. needs to be
3 tested for a year. No. We're proposing shorter
4 timeframes, 2 tests. 1 during the leaf-off and
5 another one, would be on the lean (sic)-on -- on
6 seasons and the -- how many samples are specified in
7 that protocol.

8 Q. And -- and is that the same --
9 so, is your protocol the same, for if there's a
10 complaint about the exceedances, as it is just for
11 the Applicant to show compliance?

12 A. In -- in -- in -- in my opinion,
13 it's very clear.

14 This refers to the N.C.S. standard
15 S12.9, Part 3 and the section is -- I'm talking about
16 this standard, by the way, is the most-recent in
17 2013, Section 73.2 has 2 options. The first option
18 is if 1 purpose in making measurements is to
19 demonstrate compliance, then the tolerance shall be
20 subtracted from the measured background levels, for
21 the use in clause.

22 My reading of this are -- the -- all
23 the certificate conditions for Cassadega, the Siting
24 Board ordered the Applicant to demonstrate
25 compliance. So, if compliance needs to be

15-F-0122 Baron Winds LLC 3/21/2019

demonstrated, it needs to be demonstrated by the Applicant.

The next section, which is B says, if 1 purpose is making measurements to demonstrate a violation, then the tolerance shall be added to the measured background levels, for their use in clause 6.9.

My opinion is D.P.S. are the party that has to demonstrate a violation. So, these standard specify, basically, who has to demonstrate a violation, who has to demonstrate compliance.

The problem with the protocol, is that it's not used this way. Instead of using the word subtracted, it says added and that changes the -- the applicability of this standard because --

Q. Uh-huh.

A. -- basically potentially will make easier the Applicant to demonstrate compliance, but it will make this more difficult for the Department of Public Service, to demonstrate a violation, unfortunately.

Q. So, I'm glad you brought this up. You didn't answer my question, but you brought up another point and I was explained to it this way and

1 15-F-0122 Baron Winds LLC 3/21/2019

2 so, I -- I'm going to my best and hopefully you will
3 play along with me.

4 A. Okay.

5 Q. If I'm driving down the road and
6 it is a 35 mile per hour roadway and a police officer
7 pulls me over and says, I clocked you on my radar gun
8 going 36 --

9 A. Miles per hour.

10 Q. -- miles per hour on a 35, but
11 his radar gun has a negative 2 D.B. uncertainty fact
12 -- 2 miles per hour uncertainty factor.

13 So, I go to Court and the Court says
14 he hasn't proven that you're speeding because his
15 radar gun could be off by 2. So, even though he says
16 you were going 36, in reality you could've been going
17 34. So, you have not -- you are not in violation.
18 However, in the reverse, I could have been going 34
19 and gotten a ticket because I wasn't in compliance
20 with 35.

21 That's how it was explained to me and
22 it made sense in my head. So, when you're saying
23 these Ansi Standards, you're saying you want to apply
24 a compliance standard, you're seeking if the
25 Applicant were to come up and say I have a 43 D.B.A.,

1 15-F-0122 Baron Winds LLC 3/21/2019

2 we're applying -- I'm sorry, I'll -- I'll change
3 that. A 41 D.B.A. and we're applying your 42 D.B.A.,
4 you would say we are not in compliance, but we
5 wouldn't be in violation.

6 So, what are we?

7 A. Okay. Let me explain 2 things.

8 First of all, I'm not familiar on how
9 traffic violations are demonstrated, or the accuracy
10 of the instrumentation. I'm not sure if that it is
11 similar to the way that it's used for wind-turbine
12 noise. So, I have no opinion about that.

13 The other thing, it seems to be like a
14 misunderstanding in the question. Seems to be that
15 the uncertainty is applied to the sound level that is
16 measured.

17 It is not. It's only applied to what
18 is called the background sounds. Just let me explain
19 briefly.

20 You measure the project with -- while
21 the turbines -- while the turbine's working. You're
22 measuring with a sound-level meter. The problem with
23 that is that the sound-level meter is not just
24 receiving the sound that is coming from the turbines.
25 It's also receiving other sounds that are in the

1 15-F-0122 Baron Winds LLC 3/21/2019

2 background. It could be leaves that are rustling, or
3 maybe other wind sounds, etcetera.

4 So, the next step is going to be
5 shutting down the facility, so that we can measure
6 only other backgrounds, not turbines and by
7 subtracting both readings, the noise that is coming
8 exclusively from the turbines, is calculated. So,
9 this uncertainty of -- of tolerance, it's -- it's
10 actually called tolerance, is -- is applied to
11 correct the background readings. In other words,
12 other sounds, other than the wind turbine.

13 Q. Okay. And so, what does that do
14 to the reading of the wind-turbines sound?

15 A. It's somehow a little difficult
16 to explain.

17 Q. Does it make it higher?

18 A. I may --

19 Q. Does it make it higher?

20 A. -- give a try of --

21 Q. Does it --

22 A. -- how this --.

23 Q. -- make it higher?

24 MS. BEHNKE: He's still answering the
25 question.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. (Moreno-Caballero) It's -- it's -
3 - it's -- let me see if I try to explain this.

4 Suppose that I measure everything,
5 turbine noise and environmental sounds and I get this
6 level and then I shut down the facility and I measure
7 the background. All right. If I add the -- what is
8 called the tolerance to my background sounds, these
9 levels would go up and because it's higher, when I
10 subtract this level from the turbines, the
11 difference, which is only the turbine sounds, is
12 going to be lower.

13 So, the way that the protocol is
14 drafted by the Applicant, is doing that. The
15 uncertainty is added and for that reason, the results
16 -- this -- of the sounds of the turbines, are going
17 to be lower and the opposite applies to us because if
18 we are going to do -- do -- do -- do the same thing,
19 it's going to be the same. The -- the -- the -- the
20 turbine sounds are going to be lower. It's going to
21 be more difficult for the Department to demonstrate a
22 violation.

23 So basically, the tolerance is not
24 added to the sounds of --

25 Q. Okay.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. -- the turbines. It's only --

3 Q. But it --

4 A. -- to the --

5 Q. -- sound --

6 A. -- background.

7 Q. -- so, it sounds like there's a 4

8 D.B. range, right?

9 A. 4 D.B. range?

10 MR. MUSCATO: Yeah.

11 BY MS. KLAMI: (Cont'g.)

12 Q. Yeah.

13 There's --

14 MR. MUSCATO: 2 D.B.A. below and --.

15 BY MS. KLAMI: (Cont'g.)

16 Q. -- a 2 D.B.A. below and a 2

17 D.B.A. above --

18 MR. MUSCATO: Depending on who's doing
19 that.

20 BY MS. KLAMI: (Cont'g.)

21 Q. -- depending on if you're doing -

22 -

23 A. (Moreno-Caballero) No.

24 Q. -- compliance, or violation?

25 A. No.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 There is a scale of -- of tolerances.

3 It start with --.

4 Q. But there could -- so --.

5 A. -- 1 dB and there are more.

6 Unfortunately, I don't have the whole standard with
7 me.

8 Q. But -- so, there would be
9 different -- there -- there -- if you're applying --
10 if D.P.S. is applying violation, an Applicant is
11 applying compliance, there is a potential we will
12 have two different numbers --

13 Q. That is --

14 Q. -- am I correct?

15 A. -- correct, but that's because of
16 the way that the N.C.S. standard --

17 Q. Sure.

18 A. -- is --

19 Q. Okay.

20 A. -- drafted and for that reason,
21 I'm giving an opportune -- a -- an alternative.

22 1 of the alternatives that is
23 presented, is just to eliminate the tolerance, so
24 that the Applicant and D.P.S., of any other party
25 could arrive to the same results.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 (Off the record discussion)

3 BY MS. KLAMI: (Cont'g.)

4 Q. Okay. So, if you eliminate the
5 tolerance though, does that make it easier to find a
6 violation?

7 A. I would say potentially.

8 Q. Prior to Cassadega, did you ever
9 design a post-construction monitoring plan, for a
10 wind farm?

11 A. No.

12 A construction protocol? No.

13 Q. When you were designing --

14 A. Can I --

15 Q. -- the post-construction
16 monitoring protocol, that you recommended --

17 A. -- can I --

18 Q. -- in this case --

19 A. -- answer you -- I -- I -- I --
20 you --

21 Q. -- when you were designing --?

22 A. -- didn't give me the opportunity
23 to answer --

24 A.L.J. COSTELLO: Yeah.

25 Let --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. (Cont'g.) (Moreno-Caballero) --
3 my quest --

4 A.L.J. COSTELLO: -- let him finish.

5 A. (Cont'g.) (Moreno-Caballero) --
6 your question.

7 MS. BEHNKE: Let him finish the
8 question.

9 A. (Cont'g.) (Moreno-Caballero) You
10 didn't give me the opportunity to answer the
11 question.

12 BY MS. KLAMI: (Cont'g.)

13 Q. Well, you did. You said no, but
14 --.

15 A. Did I?

16 A.L.J. COSTELLO: Do you want to --

17 A. (Cont'g.) (Moreno-Caballero) I'm
18 sorry.

19 A.L.J. COSTELLO: -- explain it for --
20 okay.

21 Let him explain it and then --.

22 MS. KLAMI: Fine.

23 A.L.J. COSTELLO: Go ahead, Mr.
24 Moreno. Mr. Moreno, you can explain it.

25 A. (Cont'g.) (Moreno-Caballero)

1 15-F-0122 Baron Winds LLC 3/21/2019

2 This -- this is my opinion. This is my opinion.
3 It's my -- my interpretation of the intent of the
4 N.C.S. standard.

5 I think that the way that the N.C.S.
6 standard is drafted, is to make more difficult to
7 both parties, to demonstrate either compliance, or
8 violation, so that if one of the parties -- it -- it
9 -- let's say if the Applicant demonstrates
10 compliance, there's no doubt that the project is in
11 compliance and the same thing applies to the party
12 that has demonstrated violation. The way this is
13 drafted, makes more difficult to demonstrate a
14 violation, so if a violation is found, then there
15 might be no doubt that there is a violation.

16 Unfortunately that's the way that the
17 standard is drafted. It makes difficult -- the right
18 application is to make difficult this, for both
19 parties. It's not to make easier for one party and
20 more difficult to the other party.

21 BY MS. KLAMI: (Cont'g.)

22 Q. Why is it more difficult to find
23 a violation?

24 A. (Moreno-Caballero) It's more
25 difficult to find a violation -- violation for what?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 I don't understand your question.

3 Q. Why would it be -- the Ansi
4 standard, by design, to make it more difficult to
5 find a violation?

6 A. I already explained.

7 Here, what Part B says is that the
8 tolerance should be added. In other words, if --
9 let's suppose that D.P.S. is going to perform a
10 violation test. I measure all the noise including
11 turbine and other background sounds. The -- the
12 facility shuts it down.

13 I get this level, which is only --
14 it's a lower level because it's only background.
15 Then this clause, says that I need to add a
16 tolerance. Then my background is going to be higher
17 and then the subtraction is going to show that the
18 turbine sounds are lower, which is more likely to be
19 in compliance and less likely that I can -- or that
20 the Department can demonstrate a violation.

21 That how this works.

22 Q. Your protocol that you've
23 recommended in this case, how many wind turbine
24 shutdowns do you propose is needed, to measure the
25 LDEN -- L.D.E.N.?

15-F-0122 Baron Winds LLC 3/21/2019

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. How many --?

3 A. -- how many times the turbines
4 should be shut down?

5 Q. What's the difference?

6 MR. MUSCATO: Periods.

7 BY MS. KLAMI: (Cont'g.)

8 Q. How many periods of time?

9 A. (Moreno-Caballero) Okay. In page
10 8 of 19 in my Exhibit, M.M.C. 7, that's Section 8 V 1
11 and 2 in Roman numbers, or I and II, says -- the
12 first one says that for short-time noise descriptors
13 suggests the L 8 hour and -- the L.E.Q. 8 hour, the
14 L.E.Q. 1 hour for 16 hertz, 31 hertz and 63 --

15 Q. Yeah.

16 I was talking about the LDEN.

17 A. -- they should be a minimum 48
18 hours.

19 Q. Okay. So, what's the LDEN? What
20 --?

21 A. The L.D.E.N. says for the minimum
22 of 96 hours.

23 Q. Ninety-six hours, with at least
24 48 at the maximum sound-power level?

25 A. The -- for the long term, it's

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2 not only for the maximum sound-power levels. It's
3 different ranges of wind speed from -- including wind
4 speed, up to the maximum wind speeds, in several
5 steps.

6 Q. Okay. And is that for both
7 seasons? 96 hours for both seasons, leaf-off, leaf-
8 on?

9 A. Per season.

10 Q. And do those shutdowns require a
11 person to be present, 1 hour before, during and 1
12 after -- 1 hour after the shutdown?

13 A. Not necessarily.

14 It could be done with attended, or
15 unattended measurements.

16 MS. KLAMI: Off the record.

17 MR. MUSCATO: Yeah.

18 A.L.J. COSTELLO: Okay.

19 (Off the record discussion)

20 BY MS. KLAMI: (Cont'g.)

21 Q. Under your protocol, have you
22 requested that sounds be in 10 minute increments?

23 A. (Moreno-Caballero) I think that
24 you are probably referring to take samples of 10
25 minute duration.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Yes.

3 A. I would like to see the specific
4 section, how --

5 Q. Okay.

6 A. -- that -- did -- did you -- have
7 you identified the section, where --

8 MS. KLAMI: Do you have the specific -
9 -

10 A. (Cont'g.) (Moreno-Caballero) --
11 that is --

12 MS. KLAMI: -- section about --

13 A. (Cont'g.) (Moreno-Caballero) --
14 explained?

15 MS. KLAMI: -- those 10 minute
16 increments?

17 A. (Cont'g.) (Moreno-Caballero)
18 It's -- are you talking about section eight that
19 talks about completing ten minute collections?

20 MR. MUSCATO: Yeah.

21 BY MS. KLAMI: (Cont'g.)

22 Q. Yes.

23 A. (Moreno-Caballero) Yeah.

24 I'm -- I'm saying that the samples
25 should -- should be 10 minute duration, after you

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2 complete 1 hour, for testing when the turbines are
3 working and only 2 samples of 10 minute long for when
4 the turbines are not working. That's what I'm
5 recommending.

6 Q. Okay. So, then that equals 600,
7 10 minute increments, at a minimum with your
8 shutdowns, is that correct?

9 A. 600 --?

10 Q. 10 minute increments, at a
11 minimum.

12 A. You mean in -- in -- intervals?

13 Q. Yes.

14 Increments, intervals. Yes. You're -
15 - you're --

16 A. And --

17 Q. -- ten minute in --.

18 A. -- and that's multiplying 6 hours
19 by 96 hours?

20 (Off the record discussion)

21 BY MS. KLAMI: (Cont'g.)

22 Q. 6 per hour times 96.

23 A. (Moreno-Caballero) Do you say how
24 many -- how many you said?

25 Q. So, it would be -- there's --

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2 there's 6, 10 minute increments per hour and you have
3 recommended 96 hours, which would equal 600, 10
4 minute increments, is that correct?

5 A. I'm --

6 Q. So, you might be --

7 A. -- I'm reading --

8 Q. -- able to --

9 A. -- a total --

10 Q. -- we might --

11 A. -- I'm -- I'm get -- I'm getting

12 a --

13 Q. -- we might able --

14 A. -- different number.

15 Q. -- to take a --.

16 A. I -- I --

17 Q. What's your number?

18 A. I think it's 1 -- 476.

19 Q. 176?

20 A. I can check with --

21 MR. MUSCATO: How about 5 --.

22 A(Cont'g.) (Moreno-Caballero) -- my
23 calculator.

24 UNIDENTIFIED SPEAKER: 576.

25 BY MS. KLAMI: (Cont'g.)

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Five hundred and seventy-six.

3 Okay.

4 A. Okay.

5 MR. MUSCATO: That's per season, isn't
6 it?

7 MS. KLAMI: What?

8 MR. MUSCATO: That's per season?

9 BY MS. KLAMI: (Cont'g.)

10 Q. Then that's per season, 576, 10
11 minute increments, per season?

12 A. (Moreno-Caballero) Intervals.

13 Q. Yes.

14 And you've also requested that those
15 10 minute increments not have extraneous events, or
16 sounds, is that correct?

17 A. Again, intervals.

18 Q. Intervals.

19 I'm sorry. I'll change that on my
20 notes.

21 A. Let me go to that section.

22 MR. MUSCATO: Section E.

23 BY MS. KLAMI: (Cont'g.)

24 Q. Section E, is where I've been
25 told that it's located --.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. (Moreno-Caballero) I think so.

3 It's section 8(e), in page 8 of 19.

4 Q. So, you've requested that the 10
5 minute intervals not have extraneous events, correct?

6 A. Yeah.

7 Basically, there are ways to exclude
8 transient sounds and -- and there are multiple ways
9 to do that and this --

10 Q. Go ahead.

11 A. -- is one of the -- this is the 1
12 that I'm recommending.

13 There are 2 different ways to test a
14 facility. 1 is what is called with an observer
15 present and the other 1 is called without the
16 observer present.

17 In the first 1, with an observer
18 present, what is done is when the operator hears a
19 sound that is not related to the facility, let's say
20 an airplane is coming or something, he will pause the
21 instrument and some instruments even have delete-back
22 capabilities. In -- in other words, it -- it -- it
23 could delete the 10 seconds before, if -- if there
24 was enough time, he -- he still can press and delete
25 the last 10 seconds. That's 1 way. He will restart

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2 the sound-level meter, after the plane passes, or the
3 car, or after the transient sound ceases.

4 Q. So --?

5 A. The other way --

6 Q. Yeah.

7 A. -- is with no observer press --
8 present, which is unattended measurements. That's
9 basically done with processing of the information
10 that is collected.

11 (Off the record discussion)

12 BY MS. KLAMI: (Cont'g.)

13 Q. So -- so -- you're -- you're --
14 we're trying to verify if your protocol says one or
15 the other is acceptable, or both.

16 (Off the record discussion)

17 BY MS. KLAMI: (Cont'g.)

18 Q. I -- I'll strike that question
19 because it -- it -- there -- there is -- you do say,
20 or by post-processing of the data --

21 A. (Moreno-Caballero) Uh-huh.

22 Q. -- and we're -- the question is
23 how do you do that, by post -- post-processing of the
24 data?

25 A. That's a very-interesting

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2 question.

3 There are several ways. Some
4 manufacturers have processing software, so the
5 information -- the -- the information is -- the
6 information is taken, during the testing. The
7 operator takes the instrument to the office, download
8 -- download all the information into the computers
9 and the post-processing software will take that
10 information. So, the operator will have to give a
11 criteria and indicate to the computer, what should be
12 excluded, or not.

13 That's kind of problematic for several
14 reasons because it's kind of subjective. If 2 people
15 are processing the same information, it could arrive
16 to 2 different results and the other thing, is that
17 not all the parties may have post-processing
18 software.

19 For instance, D.P.S. -- also --
20 although it -- it -- it has good instrumentation,
21 doesn't have a post-processing software. So, it --
22 it -- it -- I -- I find that very difficult, let's
23 say for D.P.S. For some localities, I would doubt
24 that they also have like, software for post-
25 processing capabilities and that's why my

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2 recommendation is better to try to avoid post-
3 processing exclusions -- exclusions, as much as
4 possible.

5 Q. So, you would have someone
6 present, then, for all 576 periods times 2 --

7 MR. MUSCATO: Times 6.

8 A. (Moreno-Caballero) Not --

9 BY MS. KLAMI: (Cont'g.)

10 Q. -- times 6 sites --

11 A. (Moreno-Caballero) -- not --

12 Q. -- because there are 6 --

13 A. -- not --

14 Q. -- monitoring sites.

15 A. -- not necessarily.

16 I -- I already said that 1 of the
17 options is collect and -- automatically and post-
18 processing the information. So that's 1 of the
19 options and I just explained what -- what some of the
20 problems might be, but it remains being an option.

21 Q. In the post-processing, does a
22 person have to listen to it, as well? So, they'd
23 have to basically listen to all of those minutes?

24 A. It -- it -- it could need. Not
25 always, but it could need.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 I mean, you know what's part of the
3 problem, is the N.C.S. standard -- this is coming
4 from N.C.S. standard. N.C.S. standard has a
5 definition of what if -- I think they call bad
6 samples and good samples, but there is no objective
7 definition of what a good sample is and a bad sample
8 is. So, that leave that open to interpretation and
9 afford a small manipulation of the data.

10 Q. Do you know of any jurisdiction
11 that requires the collection of a 192 hours of data,
12 around 96 wind turbine shut downs, to determine
13 whether or not -- and I'm going to use compliance
14 here and I'm not sure if that's the correct word, or
15 violation -- well heck, it could be either
16 compliance, or violation. Do you know of anybody in
17 the world, that is requiring that level of
18 collection?

19 A. My understanding is that there is
20 a project here in New York State, that has required
21 much more than that.

22 Q. Which 1?

23 A. Hardscrabble.

24 (Off the record discussion)

25 BY MS. KLAMI: (Cont'g.)

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Was it because of a violation?

3 A. I don't know.

4 MR. MUSCATO: Your Honor, can we take
5 a 5 minute break?

6 MS. KLAMI: I -- I may only have 1
7 more question in --

8 MR. MUSCATO: Oh.

9 MS. KLAMI: -- this line of
10 questioning and --

11 MR. MUSCATO: Oh. I'm sorry.

12 MS. KLAMI: -- then maybe --

13 A.L.J. COSTELLO: Oh. Then --

14 MR. MUSCATO: I thought you were --

15 MS. KLAMI: -- maybe it --

16 MR. MUSCATO: -- done with your line
17 of --

18 MS. KLAMI: -- would be a --

19 MR. MUSCATO: -- questions.

20 MS. KLAMI: -- good --.

21 MR. MUSCATO: I -- I thought you said
22 you were done.

23 A.L.J. COSTELLO: -- a good time to
24 break.

25 MR. MUSCATO: I'm sorry.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A.L.J. COSTELLO: Okay.

3 MR. MUSCATO: We'll let her finish.

4 I'm sorry.

5 BY MS. KLAMI: (Cont'g.)

6 Q. To measure the long-term sound
7 levels, your protocol requires binning (phonetic
8 spelling), only by wind direction and wind speed, is
9 that correct?

10 A. That is correct.

11 Q. You don't have bins to take into
12 account, day or night, or atmospheric stability, is
13 that correct?

14 A. No.

15 I don't think so.

16 Q. Okay.

17 A. Let me -- let me check the
18 graphs.

19 In the protocol that I'm proposing --
20 before I forget, I know that your question has 2
21 parts. The first one, is if it requires day time --

22 Q. Yes.

23 A. -- evening time and night time.

24 And what was the second part of your
25 question?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Atmospheric stability.

3 A. Atmosphere -- atmosphere
4 stability.

5 Can you ask your consultant, which
6 stability is he referring to?

7 (Off the record discussion)

8 BY MS. KLAMI: (Cont'g.)

9 Q. Do you take into account
10 stability -- any stability, in your binning?

11 A. Again, is he referring to G F
12 stability?

13 Q. Any. Any.

14 A. All right. I'm going to respond
15 to the first part of your question.

16 Q. Okay.

17 A. And the protocol that D.P.S.
18 staff proposing is MM 7, page 19 of 19, table 4.

19 You can see that's for the L.D.E.N. at
20 site, from post-construction monitoring. This is
21 just a -- an example and it lists -- it -- it -- it
22 lists 3 lines. One is L-day, L-eve and L-night. So,
23 yes. In addition to the wind speed and directions,
24 the data will be classified on those 3 different
25 bins. 1 for the daytime, another 1 for the evening

1 15-F-0122 Baron Winds LLC 3/21/2019

2 time and the last 1 for the nighttime.

3 (Off the record discussion)

4 BY MS. KLAMI: (Cont'g.)

5 Q. Oh. Well, okay. Then the -- the
6 second question was the atmospheric stability.

7 A. What I have here is tables of the
8 standard. This was what was stipulated for this
9 project.

10 Q. Does -- does the binning in your
11 protocol --?

12 A. My response is going to be based
13 on the -- the standard that was stipulated for this
14 project, which you may want to ask your consultant if
15 he is referring to these graphs.

16 Q. Well, I don't -- I don't think I
17 asked anything about the stipulations.

18 A. I --

19 This may be a good time for a break.

20 A. -- I -- I need to respond to your
21 question, but basically this is the thing.

22 If it's for nighttime, for
23 measurements of -- of -- of -- of -- of sound levels,
24 you mean the nighttime, like 8 -- 8 hour, during the
25 nighttime of the L-night in a year --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 Q. Yes.

3 A. -- for the --

4 Q. But -- but --

5 A. -- nighttime?

6 Q. -- Miguel my question -- I'm
7 sorry. Mr. Moreno.

8 MS. BEHNKE: You shouldn't interrupt
9 him.

10 BY MS. KLAMI: (Cont'g.)

11 Q. My question is your protocol,
12 which we didn't have any stipulations about how we
13 were going to do post-construction monitoring
14 protocol for an L.D.E.N. because that wasn't even
15 something we were considering, so, I -- so I know
16 that that -- that isn't something we stipulated to.

17 In your protocol for the L.D.E.N.
18 requires binning, you don't have any bins that take
19 into atmospheric stability, is that correct?

20 A. No.

21 Because it's not needed according to
22 the standard.

23 Q. Sure.

24 A. Not needed.

25 MS. KLAMI: We can take a break.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 I have probably about 15 more
3 questions for him.

4 A.L.J. COSTELLO: Okay. We'll take a
5 short break.

6 We'll go off the record.

7 (Off the record discussion)

8 A.L.J. COSTELLO: We're ready to go
9 back --

10 MS. KLAMI: They --

11 A.L.J. COSTELLO: -- on the --

12 MS. KLAMI: -- they have --

13 A.L.J. COSTELLO: -- record.

14 MS. KLAMI: -- my questions here for a
15 second.

16 (Off the record discussion)

17 BY MS. KLAMI: (Cont'g.)

18 Q. And this is -- Mr. Moreno, this
19 is just to the best of your knowledge, but have you
20 had anyone quote, or have you determined how much it
21 would cost, to do the post-construction monitoring
22 that you're proposing?

23 A. (Moreno-Caballero) No.

24 Q. I'm going to attempt to stay on
25 the topic of your post-construction monitoring plan

1 15-F-0122 Baron Winds LLC 3/21/2019

2 because I see that you have it in front of you.

3 A. Well, let me go back to it.

4 Q. Oh. Sorry. Sorry. You put it
5 away.

6 (Off the record discussion)

7 BY MS. KLAMI: (Cont'g.)

8 Q. Okay. Are you ready?

9 A. Yes.

10 Q. Thank you.

11 How are you proposing to measure
12 turbine-only sound levels, for monitoring locations,
13 where daytime background-sound levels, are above the
14 design goals, proposed by either the Applicant, or
15 you?

16 A.L.J. COSTELLO: What's the -- I'm
17 just -- I'm sorry.

18 Just for the record again --

19 MS. KLAMI: Sure.

20 A.L.J. COSTELLO: -- just say what the
21 exhibit is.

22 MS. KLAMI: This is his post-
23 construction monitoring plan.

24 MR. MUSCATO: MMC --.

25 MS. KLAMI: So MMC 7, I believe.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A.L.J. COSTELLO: 7? Okay.

3 MR. MUSCATO: Yes.

4 Its --

5 A.L.J. COSTELLO: Thank you.

6 MR. MUSCATO: -- Hearing Exhibit

7 Number 115.

8 A.L.J. COSTELLO: Thank you.

9 A. So, let me try to repeat your
10 question.

11 You quote -- your question --.

12 BY MS. KLAMI: (Cont'g.)

13 Q. I can repeat it --

14 A. Oh. Please.

15 Q. -- for you. That's okay.

16 A. Thank you.

17 Q. How are you proposing to measure
18 turbine-only sound levels, for monitoring locations,
19 where daytime background-sound levels, are
20 consistently above the design goals proposed by the
21 Applicant, for the regulatory limits you have
22 proposed?

23 A. Okay. There are a couple of
24 provisions in the protocol presented by D.P.S. Those
25 provisions are included in Exhibit MMC 7, section --

15-F-0122 Baron Winds LLC 3/21/2019

page 9 of 19, section 9 II, Roman numbers.

It says that the -- that the difference between the operational sound levels wind-generated facility noise, versus turning it on plus background sounds and the background-sounds levels after turning the wind facility -- generator facility noise source -- noise -- noise sources off, is less than 3 D.B.A. The calculated result will be reporter with an N.A. note will be added.

In -- in other words, this explaining certain -- in -- in simple terms, when the background sounds approach the sounds from the turbines, in combination with the -- the other backgrounds, within 3 D.B., or if any of the background sounds are above, then N.C.S. standard has a recommendation and basically, their recommendation is exclude the data. So, all those datas will be excluded.

Q. All right. Okay.

A. And the same provision is included -- be -- because this applies for short term. There is a similar provision for long term and I see that that's included -- and I cannot find it at -- at -- at this time, but --

Q. I --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. -- basically --

3 Q. -- I --.

4 A. -- every time that the background
5 sounds --

6 Q. Uh-huh.

7 A. -- like the case you explained,
8 during --

9 Q. Uh-huh.

10 A. -- the daytime --

11 Q. Yeah.

12 A. -- might be higher than the --

13 Q. Uh-huh.

14 A. -- turbine's noise, by
15 application of the provisions of N.C.S. standard that
16 data will be excluded from --

17 Q. How do --

18 A. -- consideration.

19 Q. -- you figure that out?

20 A. Well, I don't understand you --
21 the --

22 Q. Sure.

23 A. -- question.

24 Q. Because I asked you how do you --
25 how are you proposing to measure that sound, to

1 15-F-0122 Baron Winds LLC 3/21/2019

2 figure out when the difference between the
3 operational-sound levels and the background-sound
4 levels is less than 3 D.B.? How are you proposing
5 the Applicant do that?

6 A. Don't recall at this time, if
7 that's subtraction is going to be on an overall
8 D.B.A. broadband basis. I think that that's related
9 to your question, or if it's on a -- a -- a full-
10 octave band basis, which is more detailed. I read
11 that that's one of the objections of -- of --
12 included in the rebuttal from Mr. Koliski.

13 If -- if -- if that is exactly what is
14 proposed in the N.C.S. standard, S12.9 part 3, I
15 don't have any objections to adopt the same
16 provision.

17 Q. Thank you.

18 A. Sorry.

19 Now that I recall -- can I --?

20 MS. BEHNKE: Keep going.

21 A. (Cont'g.) (Moreno-Caballero)

22 I'll supplement my -- my -- my response.

23 I think that one of the reasons I
24 objected, some language in the protocol proposed by
25 the Applicant, is because talks about discarding old

1 15-F-0122 Baron Winds LLC 3/21/2019

2 data and I don't think that that's necessary,
3 especially if we are evaluating the low-frequency
4 sounds. I'm talking about the 1631.5 and 63 hertz
5 bands. If the -- the -- the -- the sounds from the
6 turbines are sufficiently high, as compared to other
7 background sounds and they are 3 D.B., or more, then
8 we do not need to -- to discard that data.

9 It might be that the data will be
10 discard, if it's within 3 D.B., at middle-frequency
11 range, or high-frequency range. But if that doesn't
12 happen at the low-frequency range, those samples
13 should remain valid.

14 (Off the record discussion)

15 BY MS. KLAMI: (Cont'g.)

16 Q. If measurement of daytime
17 operational-sound levels is not possible, due to the
18 background sound, how do you propose evaluating
19 compliance with the LDEN sound level -- level limit?

20 A. (Moreno-Caballero) First of all,
21 I -- I -- I'm not sure in all cases, it will be
22 impossible to collect samples, but let's talk about
23 just a critical case and this is going to be like, a
24 pretty extreme, rare case, but if -- if -- let's say
25 no sample passes, basically what the N.C.S. standard

1 15-F-0122 Baron Winds LLC 3/21/2019

2 says, is the reporter -- the -- the -- the result
3 will be reporter (sic) as N.A. So, no conclusion.

4 Q. Okay. In your reporting
5 requirements and I think this is in section 13AD, you
6 require tables and figures, showing an L-max, L-10,
7 L-90 and L-minute, both raw and corrected, is that
8 correct?

9 A. Correct.

10 Q. Are you proposing any regulatory
11 standards in this case, with -- which use any of
12 these metrics?

13 A. No.

14 Only the L.E.Q.

15 Q. Okay. How many commercially
16 available sound-level meters are you aware of, that
17 can simultaneously measure the L.E.Q., L.P., L-max,
18 L-10, L-90 and L-minute, in 1/3 octave bands, as is
19 requested in your protocol?

20 A. Well, several.

21 I think that D.P.S. instrumentation
22 can do that, but this has been -- this has -- have
23 been drafting -- I think that this is coming from a
24 similar protocol. I will have to check. I'm talking
25 about the protocol that was --.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 MS. KLAMI: We might have an
3 emergency. Hold on.

4 (Off the record discussion)

5 BY MS. KLAMI: (Cont'g.)

6 Q. Okay.

7 A. (Moreno-Caballero) Yeah.

8 The purpose of this is assisting -- is
9 assisting the post-processing. I -- I know that the
10 only descriptor that is proposed to be evaluated, is
11 the L.E.Q., for compliance purposes and the
12 certificate conditions. Most of them refer to the
13 L.E.Q., but the L.E.Q. is an -- an energy average.

14 When -- when you -- on top of that has
15 maximum levels, those peak values and minimal values,
16 then you can know what happen, if there was just a
17 transient sound that is contaminating that record.
18 This is just for assisting and understanding what
19 happened and assisting in -- in -- in -- in -- in
20 post-processing of the data.

21 But basically, no. I'm not proposing
22 other descriptors for evaluation of compliance and I
23 think that I -- there is one portion of your question
24 that I still not answer.

25 Could you please remind me what that

1 15-F-0122 Baron Winds LLC 3/21/2019

2 question was?

3 Q. Actually, no. I -- I don't --.

4 A. You forgot, too?

5 MR. MUSCATO: He answered the
6 question.

7 BY MS. KLAMI: (Cont'g.)

8 Q. My consultant is saying that --
9 that you've answered -- you did answer that question.

10 A. (Moreno-Caballero) Okay.

11 Q. Could the same thing be
12 accomplished, with 1 second L.E.Q.s?

13 A. Yeah.

14 But -- but this -- this is what
15 happens. I mean, depending on the instrumentation,
16 sound-level meters are getting very -- very
17 sophisticated.

18 For instance, the -- the
19 instrumentation that D.P.S. can handle is a huge
20 information. It can collect several noise
21 descriptors, at the same time, not just the overall
22 noise levels, that -- on a fractional basis --

23 Q. Yeah.

24 A. -- and it will be saved,
25 automatically with limitation of -- of memory that

1	15-F-0122	Baron Winds LLC	3/21/2019
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2 || can be easily processed.

3 So, basically they -- they have
4 processors. They have like, mini, small computers --

5 Q. Yeah.

6 A. -- and -- that -- that collect --
7 and -- and that's been more common. I mean, I have
8 not found objection for other cases.

9 1 is the compressor station number.

10 The -- the -- the Applicant --

11 Q. So, in --

12 A. -- I don't think the --

13 Q. -- but in the compressor -- in
14 the compressor stations, which we're not talking
15 about here --

16 A. Uh-huh.

17 Q. -- so I don't know how relevant
18 that is and you've -- you've answered my question.
19 So, I'm going to move on to some questions about
20 N.R.O. and N.R.O. is Noise Reduction Operations.

21 | A. Uh-huh.

22 Q. And was N.R.O. used in the
23 modeling for the Cassadaga application?

24 A. Yes, it was.

25 Q. Okay. Cassadega recently

1 15-F-0122 Baron Winds LLC 3/21/2019
2 submitted their final facility design modeling --
3 noise modeling.

4 Have you had a chance to review that?

5 A. It's under review, but yes. I --

6 Q. Okay.

7 A. -- had a chance to start with
8 that review.

9 Q. So, following final facility
10 design of the -- did Cassadega require any -- any
11 N.R.O., in their updated modeling?

12 A. My understanding is that as
13 opposed to the design that was originally presented -
14 -

15 Q. Yeah.

16 A. -- the final design doesn't
17 include any N.R.O. for any turbines.

18 Q. Did D.P.S recently agree to a
19 certificate condition, in the Eight Point proceeding
20 that allowed N.R.O. to be used in the final facility
21 design modeling?

22 MS. BEHNKE: Objection.

23 That's still under review and that has
24 not been before the Siting Board yet.

25 THE WITNESS: (Moreno-Caballero) Yeah.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 That's --

3 A.L.J. COSTELLO: That's --

4 THE WITNESS: (Moreno-Caballero) --
5 confidential information.

6 A.L.J. COSTELLO: -- that's sustained
7 and that's -- so, just see if you can --

8 MS. KLAMI: Sure.

9 A.L.J. COSTELLO: -- move forward.

10 BY MS. KLAMI: (Cont'g.)

11 Q. Did D.P.S. execute --

12 A. (Moreno-Caballero) Is that in --
13 from --?

14 Q. -- certificate conditions, in the
15 Eight Point proceeding?

16 A. My recollection is that D.P.S.
17 proposed certificate conditions and one of the
18 conditions, is that the final design that will be
19 filed as a compliance filing, shall not use N.R.O.s,
20 to demonstrate conformance.

21 Q. Did D.P.S. agree to certificate
22 conditions that allowed N.R.O., in final facility
23 design?

24 MS. BEHNKE: Same objection.

25 This is --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 THE WITNESS: (Moreno-Caballero)

3 Confidential.

4 MS. BEHNKE: -- not approved yet.

5 It's --.

6 MS. KLAMI: Well, I don't believe it's
7 confidential, but --.

8 MR. MUSCATO: Yeah.

9 It's not confidential.

10 A.L.J. COSTELLO: But it's -- what --
11 I -- sustained for the -- if there -- there's no
12 final --.

13 MS. BEHNKE: D -- D.P.S. staff on that
14 project doesn't speak for the whole Department, or
15 the Siting Board.

16 MS. KLAMI: I --.

17 A.L.J. BELSITO: Can you just clarify
18 --

19 MS. KLAMI: Sure.

20 A.L.J. BELSITO: -- what you mean by
21 D.P.S. agreed to, maybe?

22 MS. KLAMI: Sure.

23 BY MS. KLAMI: (Cont'g.)

24 Q. Mr. Moreno, are you the D.P.S.
25 staff person, who is reviewing the Eight Point

1 15-F-0122 Baron Winds LLC 3/21/2019

2 proceeding --

3 A. (Moreno-Caballero) Could you --?

4 Q. -- or are you are the D.P.S.
5 staff person, who is assigned to review the noise
6 impacts at the Eight Point proceeding?

7 A. Yes.

8 Q. Have you reviewed certificate
9 conditions proposed in that case, jointly by the
10 parties, on -- with respect to noise?

11 A. Let's see.

12 You're referring to a joint proposal.
13 I have not seen a joint proposal yet.

14 Q. A joint certificate conditions
15 document.

16 A. And -- and I was searching in
17 D.M.M. The information is not publicly available.

18 I really don't know where did you get
19 that --

20 Q. Okay.

21 A. -- information from.

22 Q. If it's public then --.

23 MR. MUSCATO: It's submitted on D.M.M.

24 Your -- your Honor, I guess we would
25 ask the question if there's something submitted on

1 15-F-0122 Baron Winds LLC 3/21/2019

2 D.M.M., I -- I'm assuming that it can be used in this
3 proceeding.

4 MS. BEHNKE: If it --.

5 A.L.J. COSTELLO: But if it's con --
6 if it -- if it is submitted, can --?

7 MR. MUSCATO: It's not confidential,
8 if it's on D.M.M.

9 A.L.J. COSTELLO: Well, it is -- it
10 can be, if -- if it's locked.

11 MR. MUSCATO: No.

12 A.L.J. COSTELLO: It's filed --.

13 MR. MUSCATO: No. I'm saying it's a
14 open, publicly-available document.

15 MS. BEHNKE: Okay.

16 A.L.J. COSTELLO: If it is a publicly-
17 available --

18 A.L.J. BELSITO: Then we can take --

19 A.L.J. COSTELLO: -- document --

20 A.L.J. BELSITO: -- notice of --

21 A.L.J. COSTELLO: -- then --.

22 A.L.J. BELSITO: -- it.

23 A.L.J. COSTELLO: Right.

24 MS. BEHNKE: Okay. Yeah.

25 MS. KLAMI: Okay.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 MR. MUSCATO: Okay. That's right.

3 That's all that we're asking.

4 MS. KLAMI: Okay.

5 A.L.J. COSTELLO: All right.

6 MR. MUSCATO: Thank you.

7 MS. BEHNKE: We weren't sure if it had
8 been publicly --

9 MR. MUSCATO: It's -- it's publicly on
10 the --.

11 MS. BEHNKE: -- made available yet.

12 THE WITNESS: (Moreno-Caballero) Do
13 you have it with you and may I see it?

14 MR. MUSCATO: No.

15 We -- we'll -- we'll address it in our
16 brief --

17 A.L.J. COSTELLO: Very good.

18 MR. MUSCATO: -- and you -- the --.

19 A.L.J. BELSITO: Great.

20 MR. MUSCATO: We'll address it in our
21 brief.

22 A.L.J. COSTELLO: Okay. Thank you.

23 Thanks.

24 BY MS. KLAMI: (Cont'g.)

25 Q. Are you aware that the 2 D.B.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 factor, added on top of the turbine-sound power by
3 the Applicant, for modeling, was also applied if the
4 turbine was in N.R.O.?

5 A. (Moreno-Caballero) For the
6 estimates of short-term noise levels, by using the
7 ISO 9613 dash 2 standard, yes. That's what I
8 understand.

9 Q. Okay. And I think I've asked you
10 this before, but have you reviewed the updated
11 modeling for this project, submitted by Mr. Koliski?

12 A. Yeah.

13 I've reviewed the -- I would say an
14 update to the impact-sound status that were filed.

15 Q. And you -- yeah. And -- and --.

16 A. I think that was 10 days ago --

17 Q. About.

18 A. -- or so.

19 Q. Yeah.

20 MS. BEHNKE: Yeah. Okay.

21 BY MS. KLAMI: (Cont'g.)

22 Q. So, it -- do --?

23 A. (Moreno-Caballero) So --.

24 Q. Is it your understanding, that
25 for purposes of -- and I have -- you have to -- I

1 15-F-0122 Baron Winds LLC 3/21/2019

2 have to apologize, but prior to the -- to the update
3 that was just submitted with Mr. Koliski's rebuttal
4 testimony, for purposes of predicting, or modeling
5 the sound proposed at this facility, the Applicant
6 was assuming a -- a worst case of using more Gamesa
7 turbines, than Nordex turbines.

8 And would you agree that the Nordex
9 turbines are quote, quieter than the Gamesa turbines,
10 for purposes of that analysis?

11 A. I just compare the overall sound-
12 power levels, at maximum wind speed, or -- or the
13 wind speed --

14 Q. Uh-huh.

15 A. -- that uses the maximum sound-
16 power level --

17 Q. Uh-huh.

18 A. -- for both turbines and that --
19 that shows that yes, the -- the Nordex sound levels,
20 are lower. I cannot specify how much lower they are.

21 Q. Thank you.

22 And so, a -- a -- in the updated
23 modeling, instead of assuming that there were almost
24 all Gamesas versus the Nordexes, what Mr. Koliski
25 did, was he took knowledge from the Applicant, that

1 15-F-0122 Baron Winds LLC 3/21/2019

2 said they're only going to be using the 1 Gamesas and
3 updated the noise modeling, based on a more-realistic
4 final facility design? Is that your understanding?

5 A. Yeah.

6 I think that you're proposing that
7 that laid out with those specific turbines --

8 Q. Yes.

9 A. -- as -- as the turbines that are
10 going to be used at those locations.

11 Q. Yes.

12 A. I think that that's going to be
13 kind of a final design.

14 Q. Yeah.

15 But -- yeah. I'm saying the updated
16 design --

17 A. Yeah.

18 Q. -- switched --

19 A. The design --.

20 Q. -- the models of turbines at
21 certain --

22 A. Yeah.

23 Q. -- locations --

24 A. Yeah.

25 Q. -- right?

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. I -- I read that.

3 Q. So -- so, they -- so, they had to
4 update the noise because as you just testified, the
5 Nordexes and the Gamesas have different sound-power
6 levels --

7 A. Right.

8 Q. -- correct?

9 A. Right. Right.

10 Q. Okay.

11 A. Yes.

12 I saw that.

13 Q. Okay. Are you aware of any
14 turbines modeled to be turned off in the updated
15 modeling, or curtailed at 0?

16 A. I've -- I've not gone in that
17 level of detail, so I don't know the answer, at this
18 time, but -- but it's -- it's -- it's very easy
19 because you probably presented the sound-power levels
20 in -- in -- say the full sound-power levels and the -
21 - the -- the -- the final sound-power levels, if
22 intervals were applied, or if the turbines will be
23 turned off. So, I think that the information might
24 be there.

25 Q. Okay. Do you agree that N.R.O.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 can be used as mitigation, once an -- a -- a project
3 is in operation?

4 A. I -- I do, especially for short-
5 term noise limits. That's where they are more
6 effective.

7 For long-term limits because the
8 N.R.O.s provide limited noise reductions, below a
9 specific wind speed, then the -- the -- the -- the --
10 the effect of an N.R.O. might be lower at the
11 receptors. And depending on the model, it may not
12 provide any mitigation for low-frequency noise.

13 But it -- I would say in general, the
14 N.R.O.s is probably 1 of the -- the first-hand
15 mitigation options to reduce the noise levels, after
16 the projects are built, if the limits exceed any
17 certificate condition imposed by the Board.

18 Q. Do you agree that wind turbines
19 are quieter, at lower wind speeds?

20 A. The -- first of all, I already
21 explained that once you reach --

22 Q. Yeah.

23 A. -- a -- a -- a wind speed, the --
24 the sound power levels remain constant.

25 Q. Uh-huh.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. So --

3 Q. Yeah.

4 A. -- in that range, if you decrease
5 the wind speed, the same --

6 Q. Sure.

7 A. -- power is going to be a -- it's
8 going to be the maximum.

9 Q. Sure.

10 A. But if you go -- let's say down
11 that point, yes.

12 Typically, the overall broadband A-
13 weighted sound levels are lower, at lower wind
14 speeds.

15 Q. Do you agree that N.R.O.s make
16 wind turbines quieter, at higher wind speeds?

17 A. The -- they are more effective --
18 if I understood your question --

19 Q. I think you did.

20 A. -- I -- I -- I think that you
21 probably are asking if the N.R.O.s are more effective
22 at higher wind speeds, than are lower wind -- wind
23 speeds.

24 Yes. That seems to be the trend.

25 They are more effective at higher wind speeds and --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 and they might provide no noise reduction, below some
3 -- some specific -- or minimal noise reduction, below
4 specific wind speeds.

5 Q. Does an L.E.Q. weight the higher-
6 sound levels, more that the lower-sound levels?

7 A. That is absolutely correct.

8 Q. Have you ever validated a turbine
9 manufacturer's specified sound power, for a turbine
10 N.R.O.?

11 A. I don't know what you mean with
12 evaluated.

13 Q. So, have you -- it -- you had
14 some testimony that manufacturers cannot control
15 turbines, for 1 D.B. N.R.O. intervals.

16 Have you ever validated a turbine
17 manufacturer's specified sound power for turbine
18 N.R.O.?

19 A. How -- would you mind to tell me
20 with page in --

21 Q. Sure.

22 A. -- my testimony, did I say that?

23 (Off the record discussion)

24 MS. KLAMI: We're going to strike
25 that last question and come back to it. It may be my

1 15-F-0122 Baron Winds LLC 3/21/2019

2 -- my inability to read Miguel's -- I -- Mr.

3 Moreno's, I would say.

4 BY MS. KLAMI: (Cont'g.)

5 Q. Would you agree that a 1 D.B.
6 increase in sound level, is likely imperceptible to
7 most people?

8 A. (Moreno-Caballero) It might be
9 imperceptible for most people, but I may also cause a
10 violation.

11 Q. Would you agree, that if 2
12 sources differ by more than 7 D.B., or more the
13 difference in sound level, will be less than 1.0
14 D.B.?

15 A. I don't have my table here.

16 Q. It is apparently an N.C. S12.9
17 part 3, which -- which -- which I have.

18 A. Which -- may I see the table you
19 are referring to?

20 (Off the record discussion)

21 BY MS. KLAMI: (Cont'g.)

22 Q. I believe we're just going to
23 confirm the answer to this question. I don't know if
24 we need to mark this in as an exhibit, but let's see.

25 A. (Moreno-Caballero) Is this going

1 15-F-0122 Baron Winds LLC 3/21/2019

2 to be an exhibit?

3 Q. I'm more using it just to refresh
4 your recollection, on my -- on my question. I know
5 these are often difficult.

6 So, I was looking at -- it's on page
7 15, table 1.

8 A. You said 7 D.B.?

9 Q. Yes.

10 A. How that corresponds to 1?

11 Q. Yes.

12 A. Yes.

13 That -- that is correct.

14 Q. Okay.

15 A. The alternative is the formula,
16 which is called the exact formula --

17 Q. Uh-huh.

18 A. -- is more exact and that's the
19 one that I'm recommending in my protocol. I'm
20 referring to question number 8 below, included in No
21 2, in the same page, rather than using that table.

22 Q. Do you know how many receptors
23 are predicted to exceed 45 D.B.A., in the updated
24 cumulative analysis provided by Mr. Koliski?

25 A. Is that reporter in the

1 15-F-0122 Baron Winds LLC 3/21/2019

2 application?

3 Q. That's in the rebuttal testimony
4 that he recently submitted.

5 A. Well, I mean, I have to refer --
6 if it's there -- I mean, if you can show me, I can
7 read.

8 Q. Sure.

9 (Off the record discussion)

10 BY MS. KLAMI: (Cont'g.)

11 Q. I'm going to show you the updated
12 sound modeling, from Mr. Koliski's report.

13 A. (Moreno-Caballero) Which page?

14 Q. So --.

15 MS. BEHNKE: He has the exhibits --

16 MS. KLAMI: Oh.

17 MS. BEHNKE: -- with him.

18 MS. KLAMI: He has --

19 MS. BEHNKE: So --.

20 MS. KLAMI: -- the exhibits. Okay.

21 MS. BEHNKE: Yeah.

22 BY MS. KLAMI: (Cont'g.)

23 Q. So, it's page 20, 3.5.

24 And how many receptors are
25 predicted to exceed 45 D.B.A., in the updated

1 15-F-0122 Baron Winds LLC 3/21/2019

2 cumulative analysis?

3 A. (Moreno-Caballero) 45 D.B.A., L -
4 - 8 hour in a cumulative analysis, 4.

5 Q. How many of those receptors were
6 already over 45, due to the Cohocton Winds Project?

7 A. The information of noise levels,
8 from Cohocton only, are not included in these tables
9 and for that reason, I might be very limited to
10 respond to your question.

11 MS. KLAMI: There's another -- there's
12 got to be another.

13 (Off the record discussion)

14 BY MS. KLAMI: (Cont'g.)

15 Q. I apologize.

16 So, this is actually in Ken Koliski's
17 testimony. Page 51 of the testimony.

18 A.L.J. COSTELLO: That's the rebuttal
19 testimony?

20 MS. KLAMI: Of his rebuttal testimony.

21 A.L.J. COSTELLO: Okay.

22 A. (Moreno-Caballero) I think you
23 referred to table 2?

24 BY MS. KLAMI: (Cont'g.)

25 Q. Table 2. That's correct.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. (Moreno-Caballero) My question
3 is, does that include the same receptors that is
4 included in the other tables -- the other table?

5 Q. It's a -- it's a different table.
6 So, we'll just refer to this table, table 2.

7 So, I'll have you count again.

8 A. Okay.

9 Q. So, the difference here, is that
10 these are the 1 hour L.E.Q.s and the table in the --
11 the updated sound modeling, is the L-8 --

12 A. Is the L --.

13 Q. -- and L-9 -- L -- L-8 and L-9,
14 is in the updated -- what -- what we're looking at
15 here, is the 1 hour L.E.Q.s in the testimony --

16 A. Okay.

17 Q. -- just for reference of
18 difference.

19 A. Okay.

20 Q. Can you tell by looking at this
21 table now, how many receptors are predicted to be
22 above 45 D.B.A., in the updated cumulative analysis?

23 A. From both Baron and Cohocton and
24 -- combined?

25 Q. Yes.

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. 5.

3 Q. Okay. And of those five
4 receptors, how many of those receptors were already
5 over 45, due to the Cohocton project?

6 A. According to the model conducted
7 by the Applicant, there are 5 receptors, already
8 exceeding the 45.

9 Q. Okay. Are you aware that the
10 Cohocton wind farm, is currently going through the
11 process to repower their turbines?

12 A. I have a vague recollection that
13 I heard something like that.

14 Q. Okay. Do you know if they will
15 be using a quieter turbine model?

16 A. I don't know.

17 Q. Have turbine models gotten
18 generally quieter, over the years?

19 A. It's very difficult to respond to
20 that. The reason -- there are some models that are
21 quieter. There are others that are louder.

22 It has consideration of the production
23 of energy. A general rule and trend, is that if
24 production of energy grows, then the sound-power
25 levels are right, but -- are higher, but that's not

1 15-F-0122 Baron Winds LLC 3/21/2019

2 always true. You might find a turbine that produces
3 more energy, that have lower sound-power levels.

4 I -- I -- I don't think that I can
5 have a conclusive response for that question.

6 Q. Okay. That's fair.

7 Where Baron Winds' contribution at a
8 receptor, is below that of the Cohocton Project, how
9 would you monitor what the Baron contribution is?

10 A. I would like -- could you --

11 Q. Sure.

12 A. -- please repeat your question?

13 Q. Where Baron Winds' contribution
14 at a receptor, is below that of Cohocton, so Baron
15 Winds' is contributing less than Cohocton, how would
16 you monitor what the Baron contribution is?

17 A. Monitoring a location that is
18 exposed to 2 different facilities, especially if they
19 don't be -- belong to the same certificate owner, or
20 company has several challenges. It's complicated.

21 Q. Would you agree that Baron Winds
22 cannot force the Cohocton Wind Project, to shut down
23 to measure the Baron Winds?

24 A. Basically, it's up to the other
25 operator of the adjacent facility, if they want to

1 15-F-0122 Baron Winds LLC 3/21/2019

2 cooperate, or not.

3 Q. You've asked -- in relation to
4 infrasound, you've asked for a standard at 16 hertz,
5 of 65 D.B.Z., is that correct?

6 A. It's not D.B.C. It's --.

7 Q. D.B.Z. Z, right?

8 A. Okay. Let's say D.B.

9 Q. Okay.

10 A. Okay.

11 Q. Is that --

12 A. Yes.

13 Q. -- is that correct?

14 A. Yes.

15 Q. Okay. Is 65 D.B. audible, at the
16 16 hertz octave band?

17 A. Most likely not.

18 Q. Yet you've recommended that the
19 Board apply a 65 D.B. standard, at the 16 hertz
20 range, is that correct?

21 A. That is correct.

22 Q. Is there a vibration-complaint
23 response, already included with the Applicant's
24 protocol?

25 A.L.J. BELSITO: Can you turn the --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 A. (Moreno-Caballero) Could you --

3 A.L.J. BELSITO: -- ringer on the
4 phone off, whoever that is?

5 (Off the record discussion)

6 A. (Moreno-Caballero) Could you
7 please repeat your question?

8 BY MS. KLAMI: (Cont'g.)

9 Q. Sure.

10 A. I -- I --

11 Q. Sure.

12 A. -- I think that you should
13 rephrase your question. There's something missing in
14 the question. That's my guess.

15 Q. Okay. Why don't we strike that
16 question?

17 Are there particular difficulties
18 measuring infrasound, such as the need for
19 specialized instruments, wind screens, heightened
20 contamination from wind?

21 A. Not for the 16 hertz band and --
22 and by the way, I think that the consultant, or -- or
23 -- or the Applicant already measured infrasound
24 levels at the site, which IN -- which includes the
25 existing conditions, to determine how the infrasound

1 15-F-0122 Baron Winds LLC 3/21/2019

2 levels are, before construction of the turbines. No
3 problems are reporter, in measuring those infrasound
4 levels.

5 Q. Do you know of any jurisdiction
6 in the U.S. that requires infrasound monitoring, for
7 wind turbines?

8 A. Honestly, there might be 100s of
9 jurisdictions, just my guess, that may have
10 regulations and I have not reviewed all of them, so
11 probably just a few. So --.

12 MS. KLAMI: I think that's it.

13 Can I take a moment?

14 A.L.J. COSTELLO: Sure.

15 Go off the record.

16 (Off the record discussion)

17 A.L.J. COSTELLO: Back on the record.

18 THE REPORTER: We're back on.

19 A.L.J. COSTELLO: Okay.

20 (Off the record discussion)

21 BY MS. KLAMI: (Cont'g.)

22 Q. Are you familiar with the Ansi
23 912.9 Part 7?

24 A. (Moreno-Caballero) I think you
25 are trying to say 12.9 --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 MR. MUSCATO: Yeah.

3 MS. KLAMI: Is that what I'm trying to
4 say?

5 A. (Cont'g.) (Moreno-Caballero) --
6 Part 7?

7 BY MS. KLAMI: (Cont'g.)

8 Q. That is what I'm trying to say.
9 Part 7.

10 A. (Moreno-Caballero) Yes, I am.

11 Q. And is that a separate standard,
12 for measuring infrasound?

13 A. The scope is measuring
14 infrasound.

15 MS. KLAMI: Do you have anything?
16 I think we're done.

17 A.L.J. COSTELLO: Okay. Ms. Behnke --

18 MS. BEHNKE: Oh. I'm sorry.

19 A.L.J. COSTELLO: -- do you have any -
20 - they -- they're done with the cross.

21 MS. BEHNKE: Oh. I missed that.

22 We will need a brief period.

23 A.L.J. COSTELLO: Be -- sure.

24 MS. BEHNKE: Given the hour, would it
25 make sense to do this in the morning, or --

1 15-F-0122 Baron Winds LLC 3/21/2019

2 MR. MUSCATO: We're happy to --

3 MS. BEHNKE: -- do we want to --

4 MR. MUSCATO: -- proceed.

5 MS. BEHNKE: -- continue?

6 MR. MUSCATO: It might be a long day
7 tomorrow, too.

8 A.L.J. COSTELLO: You -- I'm sorry. I
9 didn't hear the whole -- you -- you didn't --.

10 MS. BEHNKE: I said --

11 MR. MUSCATO: She asked about --

12 MS. BEHNKE: -- we will need --

13 MR. MUSCATO: -- adjourning for --

14 MS. BEHNKE: -- to --

15 MR. MUSCATO: -- redirect.

16 MS. BEHNKE: -- confer and given the
17 hour, I'm asking if it makes sense to resume in the
18 morning, or if you want to continue tonight.

19 A.L.J. COSTELLO: Do you --?

20 MR. MUSCATO: And --

21 A.L.J. BELSITO: I think we should --

22 MR. MUSCATO: -- and I was --

23 A.L.J. BELSITO: -- just keep --

24 MR. MUSCATO: -- just saying --

25 A.L.J. BELSITO: -- going with

1 15-F-0122 Baron Winds LLC 3/21/2019

2 redirect.

3 A.L.J. COSTELLO: Can we -- do you
4 know how much time you'll need, if we --?

5 MS. BEHNKE: I don't until we discuss
6 --.

7 MR. MUSCATO: Why don't --.

8 A.L.J. BELSITO: Why don't -- why
9 don't you take the time to --?

10 A.L.J. COSTELLO: Confer. Why don't
11 we go --?

12 A.L.J. BELSITO: Or -- yeah.

13 A.L.J. COSTELLO: Yeah.

14 We'll go off the record, take time to
15 confer --

16 MS. BEHNKE: Okay.

17 A.L.J. COSTELLO: -- just to see. So,
18 maybe we can finish up this witness and then start
19 with Mr. Koliski, in the morning.

20 MS. BEHNKE: Okay.

21 (Off the record discussion)

22 A.L.J. COSTELLO: Ms. Behnke, for
23 redirect?

24 MS. BEHNKE: Yes.

25 REDIRECT EXAMINATION

1 15-F-0122 Baron Winds LLC 3/21/2019

2 BY MS. BEHNKE:

3 Q. Mr. Moreno, this is actually just
4 in reference to the last question -- or 1 of the last
5 questions that was asked, referring to the 16 hertz
6 question.

7 A. (Moreno-Caballero) Okay.

8 Q. Can you provide us the reasons
9 that you recommended the 65 D.B.A. at 16 hertz, at
10 Cassadega and why you are also recommending that for
11 this case?

12 A. Yes.

13 There are 3 basic reasons. The
14 important of the sound levels, at the 16 hertz band,
15 is not whether or not they are going to be audible.
16 It's the potential for them to create -- induce
17 vibrations on building elements, primarily windows
18 that could start vibrating and producing rattles.
19 And so, there is -- there might be an indirect link
20 to annoyance in the sense that if rattles are
21 produced and if they are audible, then people might
22 be -- get annoyed by that, but mainly it's because of
23 the potential to induce vibrations.

24 This is stated in 2 N.C.S. standards.
25 The N.C.S. standard S12.9 Part four, annex D, which

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2 relates to sounds with a strong low-frequency noise
3 content, it states that annoyance is minimal, when
4 the sound levels at the 1613 -- 31.5 and 63 hertz, is
5 lower than 65. So, that -- that's 1 -- 1 of the
6 basis.

7 There is another standard, which is
8 just an interior standard, that has been used for
9 H.V.A.C. equipment. Heating, air conditioner and
10 ventilation equipment. I think that I'm referring to
11 standard -- probably 12.8.

12 It's -- it's more an interior standard
13 for interior-noise sources. That -- that was the
14 origin -- that -- that the levels match. Our -- the
15 recommendations are the same, 65 indoors, 65
16 outdoors.

17 And -- and more importantly, there is
18 a very study that was done by a researcher, or a --
19 I'd say his name Harvey Hubbard (phonetic spelling).
20 He produced this article, which is Noise Induced
21 House -- House Vibrations and Human Perception. I
22 understand that he developed several research and
23 publications for NASA and those levels are included,
24 in -- in feature number 9, on his article.

25 They are more clear in this graph that

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2 I found. It's a presentation about low-frequency
3 noise induced vibration of house -- housing
4 structures. It was presented by Bennett Bruce
5 (phonetic spelling), Professional Engineer, from
6 Bruce Acoustics Corporation (phonetic spelling). It
7 has more detailed information about what those sound
8 levels are.

9 And basically when you combine the 3
10 levels, at 16 hertz, 12.5 hertz and 20 hertz, defined
11 in is pretty much the same. 65 decibels, is the
12 outdoor-noise level, that could potentially produce -
13 - induce vibrations on -- on building elements,
14 especially windows, which are the most sensitive.

15 MS. BEHNKE: Thank you.

16 Your Honors, I have copies of both of
17 those references he just made. I'd like to have it
18 marked for -- as exhibits.

19 (Off the record discussion)

20 A.L.J. COSTELLO: So, for the record,
21 we'll -- we'll mark Noise Induced House Vibrations
22 and Human Perception, as Exhibit 288 and Low
23 Frequency Noise Induced Vibration of Housing
24 Structures, as Exhibit 289.

25 (Off the record discussion)

1 15-F-0122 Baron Winds LLC 3/21/2019

2 MS. BEHNKE: Thank you.

3 I have no further questions.

4 A.L.J. COSTELLO: No more questions.

5 MS. KLAMI: I think we're good.

6 A.L.J. COSTELLO: You're all done?

7 Mr. Moreno, your testimony is -- is
8 done. You're excused now.

9 Thank you very much.

10 THE WITNESS: (Moreno-Caballero) Thank
11 you very much, sir.

12 A.L.J. COSTELLO: Okay.

13 MS. BEHNKE: I just wanted to mark the
14 exhibit number.

15 A.L.J. COSTELLO: And --

16 MS. BEHNKE: I just wanted to mark the
17 exhibit number.

18 A.L.J. COSTELLO: -- we'll start
19 tomorrow at --

20 MS. BEHNKE: There it is.

21 A.L.J. COSTELLO: -- 9 a.m. --

22 MS. BEHNKE: Got it.

23 A.L.J. COSTELLO: -- with Mr. Koliski's
24 testimony.

25 Okay. Thank you.

1 15-F-0122 Baron Winds LLC 3/21/2019
2 We're off the record.
3 (The hearing adjourned.)
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1 15-F-0122 Baron Winds LLC 3/21/2019

2 STATE OF NEW YORK

3 I, ALEXANDER JONES, do hereby certify that the foregoing
4 was reported by me, in the cause, at the time and place,
5 as stated in the caption hereto, at Page 1 hereof; that
6 the foregoing typewritten transcription consisting of
7 pages 1 through 827, is a true record of all proceedings
8 had at the hearing.

9 IN WITNESS WHEREOF, I have hereunto
10 subscribed my name, this the 28th day of March 2019.

11

12

13 ALEXANDER JONES, Reporter

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