

## LAND USE COMMITTEE MINUTES

**DATE OF MEETING:** January 10, 2022 at 5:01 p.m. County Building

**MEMBERS PRESENT:** Terry Ferguson – Chair, Aaron Kammeyer, Melonie Tilley, and Jay Wickenhauser. Also, present, Dee Rentmeister, County Administrator.

**MEMBERS ABSENT:** Claro Carter

### SUMMARY OF DISCUSSION:

- No one was wanting to speak to the committee.
- Motion by Kammeyer, 2<sup>nd</sup> by Tilley to approve the October 2021 minutes. Voice vote, motion carried.
- Motion by Tilley, 2<sup>nd</sup> by Wickenhauser to approve the claims. Voice vote, motion carried.
- Mr. Jim Griffin was present to answer any questions that the committee may concerning the sound study consultant agreement. Previously Tech Environmental was recommended by members of this committee. The agreement is indicating that the county board agrees that Alta Farms will utilize Tech Environmental to serve as the sound consultant. Motion by Wickenhauser, 2<sup>nd</sup> by Kammeyer to recommend to the full board to approve the Sound Study Consultant Agreement utilizing Tech Environmental Inc. (attached to minutes). Voice vote, motion carried.
- Rentmeister informed the committee that 10 building permits were issued the last two months. Gave committee brief information concerning the Cases coming before the board for action this month; cancellation of a special use request in 2012, rezoning request and text amendment to the Solar Ordinance.
- Ferguson informed the committee that several board members had asked exactly what the Comprehensive Plan was and how it was used. He indicated that the Plan is a land use planning tool and is used to assist with text amendments and land uses. Kammeyer stated that it not only a land use too to a plan to assist with economic development – not just zoning. Kevin Myers, Chairman of the RPC, stated that the Plan does go beyond zoning and assists with economic development.
- Ferguson stated that the Zoning Code had not be reviewed for quite some time and that it needed to be reviewed for amendments. Ferguson asked that the RPC begin review of the Zoning Code/Ordinance once they completed review of the Wind Energy Ordinance.
- Kammeyer commented on the posted zoning hours. He indicated that he had received calls about the posted hours. Rentmeister explained why she determined that set hours were needed but also indicated that along with the posted hours people could make appointments on the other days. Rentmeister asked if there had been complaints – committee members indicated no. Rentmeister indicated that no one had been told that they had to make an appointment or come back on the posted days if they called or came in outside of the dedicated hours. Kammeyer indicated that he had not been informed of the posted hours. Ferguson indicated that he was

aware of the posted hours prior to going into effect and that he informed the full board at the December meeting.

- Kammeyer stated that in the “real world” no one gets paid extra money for performing additional job duties. Rentmeister indicated that the board approved compensating her for doing the zoning job. She also stated that this was not just doing extra job duties but doing an extra job. Rentmeister indicated that the position could be filled by someone else if the board choose too. Ferguson stated that historically in the county when someone performed extra duties they were compensated. Ferguson also stated that in the past he had received a lot of phone calls with problems that the public was having with past zoning officers and that he has not received any calls concerning problems/complaints with Rentmeister performing the zoning job.
- Mr. Myers encouraged input from the County Board members on possible revisions to the zoning use chart/zoning ordinance.
- Motion by Tilley, 2<sup>nd</sup> by Kammeyer to adjourn at 5:41 p.m. Voice vote, motion carried.

**COMMITTEE ACTION:**

Approve October 2021 minutes.

Approve claims.

Recommend to the full board to approve the Sound Study Consultant Agreement utilizing Tech Environmental Inc.

**RECOMMENDATIONS TO THE FULL BOARD:**

Recommend to the full board to approve the Sound Study Consultant Agreement utilizing Tech Environmental Inc.

**DATE OF NEXT MEETING:** February 14, 2022 at 5:00 p.m.

**AGENDA FOR THE  
LAND USE COMMITTEE  
Revised**

Date and Time of Meeting: January 10, 2022 at 5:00 p.m. County Building

1. Call Meeting to Order
2. Roll Call
3. Persons Wishing to Address the Committee/ Public Comment (If requesting action, also list below in section 4)
  - A.
  - B.
4. Items for Discussion and Possible Action
  - A. Approve October 2021 minutes
  - B. Claims
  - C. Sound Study Consultant
  - D.
  - E.
  - F.
5. Items for Discussion Only (No Action Requested)
  - A. Monthly Report
  - B. Comprehensive Plan
  - C. Review/revisions to the zoning code
  - D. Zoning hours
  - E. Zoning work and additional pay
6. Executive Session:
  - A.

Posted: January 6, 2022 at 3:10 p.m.

By: Dee Dee Rentmeister

Revised: January 6, 2021 at 3:30 p.m.

By: Dee Dee Rentmeister

## SOUND STUDY CONSULTANT AGREEMENT

This Sound Study Consultant Agreement (“Agreement”) effective \_\_\_\_\_, 2022 is made by and between Alta Farms Wind Project II, LLC, an Illinois limited liability company (“Alta Farms”), and DeWitt County, Illinois (the “County”) a governmental entity in the State of Illinois, each sometimes referred to herein as a “Party” and collectively as the “Parties.”

### RECITALS

WHEREAS, the County approved the Special Use Permit (“SUP”) requested by Alta Farms in Case No. S-250-2019 on July 14, 2020 for a Wind Energy Conversion System (“WECS”) and Wind Energy System Facility (“WESF”) in the County (“Project”).

WHEREAS, Project construction began in the Spring of 2021 and anticipated to last approximately twelve (12) months.

WHEREAS, a condition of the Alta Farms SUP provides in part that “Alta Farms shall submit a post construction noise profile study conducted by an expert sound consultant mutually agreed upon with the County verifying the WECS meets the noise requirements of Chapter 153 of the DeWitt County Code of Ordinances.” (“Condition”) (*emphasis added*).

WHEREAS, County has proposed Tech Environmental, Inc. be utilized as the expert sound consultant and Alta Farms has agreed to work to retain Tech Environmental, Inc. to conduct the post construction noise profile study pursuant to the Condition and as provided herein.

WHEREAS, Alta Farms and the County set forth herein their mutual agreement on the sound consultant to perform the sound study as required by the Condition;

NOW, THEREFORE, in consideration of the above Recitals, which are incorporated herein by reference, and in consideration of the mutual covenants and agreements set forth below, the Parties agree as follows:

### AGREEMENT

**Sound Consultant.** The Parties agree that Tech Environmental, Inc. will serve as the expert sound consultant retained by Alta Farms to perform the sound study in compliance with the Condition and applicable regulations.

**IN WITNESS WHEREOF**, this Agreement has been duly executed by the Parties hereto, effective as of the date first written above.

Agreed to this \_\_\_\_ day of \_\_\_\_\_, 2022 by:

DeWitt County

By: \_\_\_\_\_

Name: Terry Ferguson

Its: County Board Chairman

Alta Farms Wind Project II, LLC

By: \_\_\_\_\_

Name: \_\_\_\_\_

Its: \_\_\_\_\_



# TECH ENVIRONMENTAL

FOCUSED KNOWLEDGE. REAL SOLUTIONS.

January 7, 2021

Mr. Aaron Paque  
Zoning Administrator  
DeWitt County Building  
201 W. Washington Street  
Clinton, IL 61727

Re: *Draft Scope of Work for Alta Farms II Wind Project - Attended Sound Testing*

Dear Aaron:

Here is a draft of the proposed Scope of Work for sound testing of Alta Farms II that assumes the Attended Monitoring approach. We look forward to review comments from you, the County Board and Enel Energy.

## **Background**

The Alta Farms II Project consists of up to 57 wind turbines<sup>1</sup> in DeWitt County. The Epsilon sound modeling report<sup>2</sup> (Epsilon report), submitted with the Building Permit Application, identifies the requested 57 turbine locations. Of the proposed wind turbines, 43 are Siemens Gamesa SG 145-4.5 units, which have a rotor diameter of 145 meters and a hub height of 107.5 meters, 3 are Siemens Gamesa SG 145-4.2 units, which have a rotor diameter of 145 meters and a hub height of 107.5 meters, and 11 are SG SWT 108-2.3 units, which have a rotor diameter of 108 meters and a hub height of 80 meters. A collector substation is also included in the Project with one 220 megavolt-ampere (MVA) transformer. Commercial Operation will commence in late 2021, or early 2022.

## **Location of Work**

The Project Area is within Barnett and Clintonia Townships, DeWitt County, Illinois. The sound monitoring work will be performed outdoors on the property of Project Participants where the expected turbine sound levels approximate those at nearby Non-Participating residences and property lines.

## **Purpose and Applicable Regulations**

The objectives of the sound testing are to *comply* with the requirements of the Alta Farms Special Use Permit (SUP), *provide* the County Board and Zoning administrator with quarterly information on wind turbine sound levels, and to *confirm* whether the Project complies with the sound limit requirements of Chapter 153 of the DeWitt County Code of Ordinances.

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<sup>1</sup> The Project is requesting approval of building permits for 57 turbine locations, although the Project will ultimately include 50 turbines, in order to provide alternate locations that may be utilized in the event of unexpected site conditions discovered during construction.

<sup>2</sup> Epsilon Associates, Inc., "Sound Level Assessment Report, Alta Farms Wind Project II," October 29, 2020.

The DeWitt County Board approved the Alta Farms SUP on July 14, 2020. Condition 23 of the SUP reads as follows:

*Within 12 months following Notice of Commercial Sale, Alta Farms shall submit a post construction noise profile study conducted by an expert sound consultant mutually agreed upon with the County verifying the WECS meets the noise requirements of Chapter 153 of the DeWitt County Code of Ordinances. Post construction sound measurements shall:*

- a. Be based on good engineering practices and industry recognized international standards for measurements of WECS noise emissions.*
- b. Include measurements taken at not less than 6 locations chosen by the expert sound consultant on Participating property spread throughout the area to verify compliance. The locations chosen shall be selected to indicate probable noise levels at non-participating occupied residences. The duration of monitoring will be for 1 calendar year to allow for changing seasons and ground cover conditions. Any ground-truthed noise study that indicates any violation of the limits set by the IPCB shall be immediately mitigate.*

Chapter 153, Section 27 of the DeWitt County Code of Ordinances states:

*Noise. The noise design limit for each wind energy system shall not exceed 50 dBA<sup>3</sup> measured as the average dBA at the location of the nearest non-participating residence from the relevant wind energy conversion system. The dBA level, however, may be exceeded during short-term events such as utility outages and or severe windstorms. The WESF shall comply with State Pollution Control Board regulations at all times.*

The Illinois Pollution Control Board (IPCB) regulations, Section 900.101, Definitions, defines the *Time-averaged sound level* as the equivalent-continuous sound level ( $L_{eq}$ ). Section 900.103.a.1.B requires the measurement averaging time to be at least 10 minutes. Section 901.102, Sound Emitted to Class-A Land, sets octave band sound limits at the property line of a non-participating residential property. Section 910.106, Protocols for Determination of Sound Levels, provides IPCB procedures for Attended Monitoring.

#### **Approach to Determining Valid 10-Minute $L_{eq}$ Measurements**

In accordance with the above IPCB requirements, the sound testing program will measure 10-minute  $L_{eq}$  sound levels at six test locations, in every quarter for one year after the Notice of Commercial Sale from Alta Farms to the County. In each quarter, Tech Environmental (Tech) will send acoustic engineers to the Project Area for a 1 to 2 week period, with the objective of monitoring during periods when high winds at hub height produce maximum acoustic power from the wind turbines. All sound measurements will be attended by an acoustic engineer and will be performed in accordance with American National Standard ANSI S12.18<sup>4</sup> and IPCB regulations.

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<sup>3</sup> A-weighted decibels.

<sup>4</sup> Acoustical Society of America, American National Standard ANSI 12.18-1994 (Reaffirmed 2009), "Procedures for Outdoor Measurement of Sound Pressure Level," Method #1: General method for routine measurements.

A valid 10-minute measurement must meet these conditions:

- 1) Average ground-level (measured at 2 meters) wind speed was 5 m/s or less, and
- 2) No precipitation occurred, and
- 3) The nearest wind turbine to the test location produced maximum acoustic power, namely the 10-minute hub-height wind speed was at least 9 m/s, or power production was at least 3,376 kW (for the 4.5 MW turbines), or power production was at least 3,150 kW (for the 4.2 MW turbines).<sup>5</sup>

Valid 10-minute  $L_{eq}$  measurements will be compared to the 50-dBA broadband limit in the County Ordinance. Valid whole and one-third octave band  $L_{eq}$  measurements will be compared to the IPCB octave-band sound limits in Section 901.102 for sound emitted to Class-A Land (occupied residences) from Class-C Land (agricultural), and will be analyzed to determine if there are Prominent Discrete Tones, as defined by IPCB regulations.

The challenge faced by the acoustic engineer is that an outdoor sound level measurement in the Project Area includes three components that cannot easily be separated: 1) the constant, though time-varying, sound from the wind turbines; 2) intermittent short-term noise from passing motor vehicles, aircraft flying overhead, farm equipment, dogs barking, flocks of birds, people talking, and wind gusts; and 3) the long-term background noise from other, more-distant sources such as a busy highway, continuously operating industrial equipment, and steady wind noise around trees and structures on a windy day. Only component #1 is regulated by the County and IPCB sound limits.

The data procedure in IPCB Section 910.106 is designed to isolate the steady sound from the wind turbines. It requires that the raw measurements be collected in short data blocks, say 15-second segments, with the understanding that some of these will be contaminated by short-term noise (for example, a truck driving by) and others will be clean of short-term noise contamination. A valid 10-minute  $L_{eq}$  sound level is formed by mathematically averaging the clean blocks, and discarding the contaminated blocks. IPCB regulations require that at least 25% of the data blocks within the 10-minute period be clean for the average sound level to be considered valid. To establish the long-term background level at a test location, one or more 10-minute measurements will be made with all nearby turbines turned off.<sup>6</sup> The Turbine-OFF measurements will then be used to correct for long-term background sound, using the procedure in IPCB regulations.

As a practical matter, two adjacent locations will be tested at a time. Since the engineers will need to continuously attend the test locations for possibly 6 to 8 hours, a third engineer will be available to rotate between the two locations to allow for bathroom, food and rest breaks. This approach also allows just a portion of the wind farm to be shut-down for the Turbine-OFF periods. As soon as sufficient data are collected at one pair of test locations, the engineers will move on to the next pair.

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<sup>5</sup> Siemens Gamesa, SG 4.5-145 Noise Emission Analysis, Publication GD381009-en, June 17, 2019.

<sup>6</sup> Nearby is defined as all turbines within 8,000 feet of a test location. This approach will ensure that any more-distant turbine sound is 30 dBA or less, namely 20 decibels below the County sound limit of 50 dBA, and therefore insignificant.



**Scope of Services**

**Task 1 – Select and Confirm Sound Monitoring Locations, Write Test Plan**

Tech shall propose eight sound monitoring locations in the Project Area. The six-plus-two-alternate test locations shall include Non-Participating residences with the highest predicted sound levels in the Epsilon report (sound levels of 44 to 46 dBA), and these test sites will be selected in both Townships.

The sound measurements will be performed on the property of Project Participants where the expected turbine sound levels approximate those at nearby Non-Participating residences and property lines. Enel Energy will assist Tech in securing permission from Project Participants for taking sound measurements on their land. The two alternate test sites are included to allow for a substitution if one of the proposed test locations is found to be unsuitable during the field visit, or if there is a problem in securing the permission of a Project Participant.

For each test site, there will be two possible places for the engineers to setup equipment and measure sound:

- 1) A few feet outside the Non-Participating property line that is closest to a wind turbine, or
- 2) On an adjacent, or nearby, Participating residential parcel (offering vehicle parking) with the same predicted sound level.

Worker safety often requires Choice #2 if access to, and parking near, a Non-Participating parcel could present a hazard, especially at night.

Tech will write a draft Test Plan that contains the following components:

- 1) A discussion of monitoring objectives and SUP requirements.
- 2) Maps and descriptions of the proposed test locations, including the two possible places for equipment setup for each test location.
- 3) Test methodology and the approach to be used in screening out short-term noise contamination and adjusting for long-term background sound levels.
- 4) Target meteorological conditions for testing and use of data from the Alta Farms SCADA system.
- 5) Measurement equipment to be deployed.
- 6) Data analysis procedures and report format.

The draft Test Plan will be reviewed by the County and Enel Energy. Tech will finalize the Test Plan in response to review comments.

Next, the Tech Project Manager (Peter Guldborg) and an Acoustic Engineer shall meet in the Project Area with County staff, Enel Energy, and other interested parties that the County may invite, to: (1) visit and confirm all test locations, and the actual places where equipment will be setup; (2) meet with and confirm arrangements with the property owners on whose land vehicles and test equipment will be temporarily located. The test locations will comply with the requirements of IPCB Section 910.105 and ANSI Standard S12.18. A flagged stake will be placed at each confirmed and approved location for accurate installation of equipment. Photographs will be made at each monitoring location and GPS coordinates will be established.

### **Task 2 – Sound Monitoring**

Once Alta Farms II begins commercial operations, Tech will perform four quarters of sound monitoring. For each quarter, Tech shall track weather forecasts to identify a 1 to 2 week period with generally dry conditions, above-freezing daytime temperatures (in the winter) and forecast hub-height wind speeds near, and above, the turbine design speed of 9 m/s at which maximum sound power first occurs. The decision to deploy to the field shall be made in conjunction with the County. Tech will also confirm with Enel Energy that all turbines near each test location are operational and not planned to be taken out for maintenance during the test period.

For each quarter, Tech shall deploy three acoustic engineers and two complete sets of equipment to DeWitt County for a 1 to 2 week period to take measurements at the six test locations, either in the day or night. Testing will be done at two locations at a time. Nighttime periods generally have less short-term noise contamination and lower background sound levels, and will be preferred so long as worker safety is assured. The goal shall be to collect a sufficient number of 15-second intervals at each test location to allow the formation of at least two valid 10-minute  $L_{eq}$  levels for each quarter, at each test location, as required by IPCB Section 910.106. Tech engineers will coordinate with Enel Energy operations staff to schedule multiple 10-minute Turbine-OFF periods during the testing to allow direct measurement of long-term background levels, and to coordinate the receipt of hub-height kW production and wind speed data from nearby turbines.

Type 1 (precision grade) real-time sound analyzers (Larson Davis Model 831 or equivalent) shall be setup to record sound pressure levels at the test locations. All equipment shall have been laboratory-calibrated to NIST standards within the previous 12 months and shall be field calibrated with an ANSI Type 1 calibrator, both before and after the measurements. Microphones shall be tripod mounted approximately 1.5 m above the ground and 7-inch ACO-Pacific wind screens shall be used to help screen out contaminating wind noise. Surface wind speeds at a height of 2 meters shall be measured continuously.

The sound analyzers shall log 15-second  $L_{eq}$  in A-weighted decibels (dBA), including whole and one-third octave bands. The sound analyzers shall be time-synchronized to the clock of the Alta Farms SCADA system. During the testing, the acoustic engineer attending each sound analyzer shall listen for any loud short-term noise that would bias the measurements, such as a motor vehicle passing by, aircraft flying overhead, dogs barking, farm machinery, or noise from wind gusts, and the engineer shall record his observations on a data logging tablet.

**Task 3 – Data Analysis and Reporting**

Tech acoustic engineers shall obtain the hub-height kW production and wind speed data from Enel Energy. For each test location, the 15-second  $L_{eq}$  data shall be reviewed along with the logging tablet sound contamination records, and segments with noise contamination shall be excluded. A series of valid 10-minute  $L_{eq}$  levels for each test location shall be formed by averaging the valid 15-second data blocks and correcting for long-term background sound, in accordance with IPCB data analysis procedures. The resulting corrected, valid 10-minute  $L_{eq}$  turbine-only sound levels shall be compared to the broadband and octave band sound limits to establish compliance.

Two weeks after each quarterly monitoring period, Tech will provide a status report to the County that summarizes the sound data. At the end of the one-year monitoring program, Tech will provide the Zoning Administrator a draft report that summarizes the methodology, the sound and meteorological data results and conclusions. Following receipt of comments from the Zoning Administrator and the County Board, Tech will finalize the report.

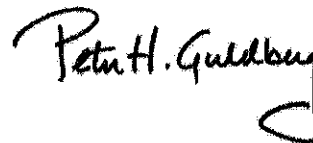
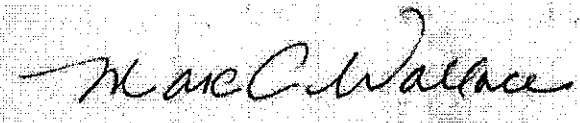
If requested by the County Board, either the Tech Project Manager (Peter Guldberg) or Assistant Project Manager (Marc Wallace) will present the findings of this work and answer questions in a meeting or public hearing before the Board.

Thank you for the opportunity to present this draft Scope of Work, for your review and comment.

Sincerely yours,

TECH ENVIRONMENTAL, INC.

TECH ENVIRONMENTAL, INC.



Marc C. Wallace, QEP, INCE  
Vice President  
4621/Draft SOW Jan 7 2020

Peter H. Guldberg, INCE, CCM  
Senior Consultant



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## **Peter H. Guldberg, INCE, CCM Senior Consultant**

### **Education**

B.S. Mathematics  
MIT, 1973

M.S. Atmospheric Science  
University of Michigan, 1974

### **Certification**

Certified Consulting  
Meteorologist (AMS #393)

Institute of Noise Control  
Engineering, Full Member

### **Affiliations**

Acoustical Society of  
America

Air and Waste Management  
Association

Mr. Guldberg has 47 years of experience as a noise consultant, providing permitting assistance, strategic planning, sound monitoring, modeling and impact assessment to industry and government on projects in the energy, manufacturing, solid waste disposal, real estate and transportation sectors. Mr. Guldberg has given expert testimony in court and at hundreds of public hearings and before State Environmental Boards and Legislative Committees in Connecticut, Illinois, Indiana, Maine, Massachusetts, New Hampshire, New York, Texas, and Vermont.

## **Project Experience – Renewable Energy**

**Noise Studies for Wind Energy Projects.** Mr. Guldberg has performed community sound level monitoring and acoustic modeling studies for a wide range of wind projects, ranging in size from 1 to 420 MW generating capacity. He has provided acoustic modeling, compliance sound testing, shadow flicker analysis, and expert testimony on over 95 wind energy projects in 16 States: Michigan, Indiana, Iowa, Ohio, Minnesota, South Dakota, Oklahoma, Texas, Virginia, Maryland, Delaware, Pennsylvania, New York, Maine, Rhode Island, and Massachusetts.

**Noise and Underwater Sound Studies for the Cape Wind Project.** For the 420 MW wind farm project in Nantucket Sound, Mr. Guldberg performed comprehensive baseline sound level monitoring studies (in air and underwater), acoustic modeling studies of sound and vibration (in air and underwater), and provided a detailed impact assessment for the coastal communities of Cape Cod and Martha's Vineyard as well as the project's effects on marine mammals. Expert testimony was provided in hearings before the Massachusetts Energy Facilities Siting Board and text was written for the federal DEIS and FEIS.

**Peer Review Work for Maine DEP.** Mr. Guldberg has provided independent peer review services to Maine DEP for 15 utility wind energy projects in the State of Maine. This work included review and critique of both applicant materials and public comments, expert testimony at public hearings, and sound compliance testing.

**Study of Acoustic and EMF Levels from Solar Photovoltaic Projects.** For the Massachusetts Clean Energy Center, Mr. Guldberg directed a measurement study of sound pressure and EMF levels at and near three utility-scale solar photo-voltaic (PV) arrays with a capacity range of 1.0 to 3.5 MW.

**Expansion of the Lake Road Generating Station.** Two noise-consulting assignments were done by Mr. Guldberg for BG Energy, the owner of the Lake Road Generating Station in Dayville, CT. Noise complaints from steam jet hoppers were investigated with sound compliance monitoring and acoustic modeling, and mitigation options were analyzed. A noise reduction strategy was implemented for the three existing units. A noise impact analysis was performed for the expansion of the Generating Station that included baseline monitoring and acoustic modeling with the Cadna-A model.

**Ramapo Energy Project.** The project is a 1,100 MW gas-fired combined cycle power plant proposed for Ramapo, New York. Mr. Guldberg performed all air quality modeling and impact assessment for the federal PSD permit, including extensive complex terrain modeling for a long list of interacting sources in New York and New Jersey, and acid deposition calculations for New York State. He prepared the pre-construction monitoring waiver request for EPA Region II and gave expert testimony given before NYS DPS/Public Service Commission in the Article X process.

## **Project Experience – Manufacturing / Solid Waste**

**Noise Studies for Food Warehouse and Trucking Terminal Facilities.** Mr. Guldberg has performed noise studies for 16 refrigerated food warehouse and trucking terminal facilities in Massachusetts, New York, Vermont, Connecticut, and New Hampshire. These studies supported permitting at the State and local level. Expert testimony was given in public hearings on most of these projects.

**Noise Study for the Rhode Island Genco Landfill Gas (LFG) Power Plant.** The project is a 42-MW combined-cycle LFG power plant in Johnston, RI at the RI State Landfill. Mr. Guldberg directed a noise study to demonstrate compliance with local noise regulations and with residential noise criteria for the RI Energy Facility Siting Board.

## **Project Experience – Construction Industry Services**

**Noise Permits for St. Lawrence Cement / Holcim US.** To support expansion of the cement unloading terminal in Providence, Mr. Guldberg obtained an air permit from RI DEM for a new ship unloader and process changes, including a noise impact study for a new cement terminal in the South Boston Marine Industrial Park.

**Noise Studies for Aggregate Industries – Northeast Region.** Mr. Guldberg has directed most of the consulting assignments for Aggregate Industries, providing noise permitting support and sound compliance testing for their quarries, rock crushing plants, asphalt and cement plants in Watertown, Waltham, Peabody, Weymouth, Ashland, Stoughton, Swampscott, Littleton and Chelmsford, MA.

**Permits for Two New Vermont Quarries.** Mr. Guldberg provided noise studies for the 1,300 tpd quarry proposed in Moretown, VT. Testimony was given for the Act 250 land use permit and in Vermont Environmental Court. He also provided noise consulting services to OMYA in analyzing the site for a new granite quarry.

## Recent Presentations

“Sound Effects of Wind Turbine Icing Events,” presented at the Acoustical Society of America Meeting, Wind Turbine Noise Panel, Cambridge, April 2018.

Guldborg, P. and Callahan, R., “The Importance of Screening Wind Gust Noise in Wind Turbine Compliance Testing,” presented at NOISE-CON 2016, Providence, 2016.

Guldborg, P., “Wind Turbine Siting Conflicts and Community Guidelines,” presented at the Nebraska Wind and Solar Conference, Omaha, 2015.

Guldborg, P., “Underwater Noise Monitoring to Predict Marine Life Impacts during Ocean Floor Rock Blasting,” presented at NOISE-CON 2013, Denver, 2013.

Guldborg, P., “Analysis of Background Low Frequency Sound at Four Wind Energy Sites,” presented at Inter-Noise 2012, New York, 2012.

McPhee, P., Guldborg, P., et al., “Development of a Pre-Construction Acoustic Methodology for Wind Energy Projects,” presented at Inter-Noise 2012, New York, 2012.

Guest speaker for “Environmental Law Practice: Skills, Methods and Controversies,” Harvard Law School Course, April 2008 – April 2011.



