

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA**

**IN THE MATTER OF THE APPLICATION OF
CROWNED RIDGE WIND II, LLC FOR A FACILITIES PERMIT TO
CONSTRUCT A 300.6-MEGAWATT WIND FACILITY**

Docket No. EL19-027

**SUPPLEMENTAL TESTIMONY AND EXHIBITS
OF SARAH SAPPINGTON**

September 20, 2019

INTRODUCTION AND QUALIFICATIONS

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Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Sarah Sappington. I am employed by SWCA Environmental Consultants and am based in the Bismarck, North Dakota office at 116 North 4th Street, Suite 200, Bismarck, North Dakota, 58501.

Q. WHAT IS YOUR JOB AND WHAT ARE YOUR JOB RESPONSIBILITIES?

A. I am the Director of the Bismarck SWCA Office. My team is responsible for environmental permitting and regulatory compliance for many industries and states in the Midwest, including for renewable energy projects in the state of South Dakota.

Q. ARE YOU THE SAME SARAH SAPPINGTON WHO SUBMITTED DIRECT TESTIMONY IN THIS PROCEEDING ON JULY 9, 2019?

A. Yes.

Q. HAS THIS TESTIMONY BEEN PREPARED BY YOU OR UNDER YOUR DIRECT SUPERVISION?

A. Yes.

1 **PURPOSE OF TESTIMONY**

2 **Q. PLEASE DESCRIBE THE PURPOSE OF YOUR TESTIMONY.**

3 A. The purpose of my testimony is to address the comments made at the August 26,
4 2019 Public Input Meeting on environmental issues, and to provide an update to
5 agency coordination and correspondence.

6 **ENVIRONMENTAL**

7 **Q. AT THE AUGUST 26, 2019 PUBLIC INPUT MEETING COMMENTS**
8 **WERE MADE SUGGESTING THAT MAY BE AN ENVIRONMENTAL**
9 **IMPACT RESULTING FROM LEAVING FOUR FEET OF THE WIND**
10 **TURBINE FOUNDATION IN THE GROUND AFTER**
11 **DECOMMISSIONING. IS THERE AN IMPACT TO THE**
12 **ENVIRONMENT DUE TO CRW II'S PLANS TO LEAVE FOUR FEET OF**
13 **FOUNDATION IN THE GROUND AFTER DECOMMISSIONING OF**
14 **THE PROJECT?**

15 A. No. As noted in the Decommissioning Plan, Appendix N of the application,
16 CRW II will remove 132 wind turbine generators and other associated Project
17 facilities, and restore the Project Area to pre-construction conditions to the extent
18 feasible for agricultural purposes. As noted in Section 3.2 of the
19 Decommissioning plan, when the wind turbines and substation components are
20 removed from their foundations, the concrete and steel within the deeper wind
21 turbine foundations will be broken-up and removed to a depth of four (4) feet
22 below grade unless a lesser depth is otherwise agreed to by the landowner. Fully

1 removing the wind turbine foundations would require major
2 excavation/disturbance at each tower site, and additional truck haul-away traffic.
3 The foundation sections below 4 feet that are proposed to remain are composed of
4 non-leaching elements, concrete, and steel, and are not a hazard to the
5 environment. Four feet of topsoil and subsoils will be placed on top of the
6 remaining foundation, which will create similar to pre-construction soil profiles,
7 facilitate water percolation in the subsurface, and support agriculture in the areas
8 of previous turbine foundations. Ground water recharge will not be appreciably
9 different from pre-construction conditions, because the soil layer placed over the
10 remaining foundation will allow for downward percolation of water until it
11 encounters the foundation, at which point the water will flow laterally over the
12 foundation edges and continue its downward flow to recharge the shallow ground
13 water. Hence, there are no environmental issues with leaving four feet of
14 foundation after decommissioning.

15 **Q. AT THE AUGUST 26, 2019 PUBLIC INPUT MEETING COMMENTS**
16 **WERE MADE SUGGESTING THAT THERE IS AN IMPACT TO WATER**
17 **ACQUIRERS IF OIL IS LEAKED OR SPILLED FROM THE WIND**
18 **TURBINE. WHAT IS THE ASSOCIATION BETWEEN WATER**
19 **AQUIFERS AND THE PROJECT'S WIND TURBINES?**

20 A. As Witness Thompson explains in his supplemental testimony it is extremely rare
21 that oil will leak or spill from a wind turbine. Witness Thompson further indicated
22 that in the unlikely event of an oil leak or spill, CRW II will implement mitigation
23 measures to contain and cleanup the leaked or spilled oil so that it does not impact

1 water aquifers. Containment is provided by the wind turbine nacelle and tower
2 base for releases from oil-containing equipment (e.g., gearbox, hub, and
3 dampening system), while equipment, materials, and procedures described in the
4 Spill Prevention Control and Countermeasure (SPCC) Plan that will be developed
5 for the facility ensure that any released oil is quickly cleaned up.

6 Geologic deposits where the depth to aquifer materials is greater than 100
7 feet underlie the vast majority of turbine locations in the array. Of all the wind
8 turbines in the array, 5 are underlain by glacial outwash deposits, 9 are underlain
9 by sand and gravel deposits that are less than 50 feet below ground surface, and 3
10 underlain by alluvium. Lithologic logs of water wells maintained by the South
11 Dakota Department of Environment and Natural Resources in the Project Area
12 were reviewed to assess the nature of the aquifer materials and characteristics of
13 the overlying geologic deposits. The information contained in the logs indicates
14 that the depth to water producing zones ranges from 6 feet to 526 feet below
15 ground surface (fbgs). In most wells, the logs record the presence of a protective
16 confining layer of yellow clay and blue clay that extends from the shallow
17 subsurface to the top of the water bearing zones. For wells less than 50 feet in
18 depth, this protective clay layer extends on average from approximately 2 to 15
19 fbgs; and is deeper for wells greater than 50 feet deep. The relationship between
20 the depth of the water producing zones and the static water levels indicates that
21 the aquifers are under confined conditions with the clay zone protecting the
22 aquifers. Under these confined conditions, the groundwater flow direction will
23 tend to be upward so in the unlikely event any oil contaminants were to enter

1 from the surface, the distribution of those contaminants would be minimal and
2 aquifers would be protected by the geologic conditions already in place.

3 **AGENCY COORDINATION**

4 **Q. PLEASE PROVIDE AN UPDATE ON AGENCY COORDINATION AND**
5 **CORRESPONDENCE.**

6 A. The table provided in Exhibit SS-S-1 is a summary of significant communication
7 with federal, state, local agencies, and Tribes in chronological order and is found
8 in Appendix B of the application. Correspondence that is new is shown in bold
9 font in Exhibit SS-S-1, and is provided as Exhibit SS-S-2.

10 **Q. DOES THIS CONCLUDE YOUR SUPPLEMENTAL TESTIMONY?**

11 A. Yes.

