

## EXHIBIT G



November 14, 2019

Mark Wengierski  
Project Manager  
Sweetland Wind Farm, LLC  
4865 Sterling Drive, Suite 200  
Boulder, Colorado 80301

Re: Sweetland Wind Project Wetland Delineation Report

Dear Mr. Wengierski:

Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) was retained by Sweetland Wind Farm, LLC (Client) to provide wetland delineation services for the proposed Sweetland Wind Project (Project) in Hand County, South Dakota (Figure A-1, Appendix A). The following sections provide information on the proposed Project and summarize the completed wetland delineation.

### INTRODUCTION

The Client plans to construct an approximately new 200-megawatt wind farm and associated overhead transmission line and substation in Hand County, South Dakota. The proposed Project would include construction of up to 71 wind turbines, permanent access roads, operations and maintenance facility, up to 3 meteorological towers, electrical power underground collection lines and communication system, a maximum 7-mile 230-kV overhead transmission line, substation, switchyard, and temporary construction areas, such as crane paths, pull sites, laydown yard, and a batch plant. The Project is located approximately 10 miles southeast of Miller, South Dakota.

The Project has the potential to impact wetlands or other water bodies that may be under the jurisdiction of the U.S. Army Corps of Engineers (USACE) as designated by Section 404 of the Clean Water Act. Burns & McDonnell conducted a wetland delineation for the Project to evaluate the presence of wetlands and other water bodies, including streams, drainages, and ponds. The delineation was conducted based on setback buffers applied to the proposed Project layout (Survey Area). Specifically, a 250-foot buffer (500-foot diameter) was applied to each turbine center-point, a 200-foot buffer was applied to each facility footprint, a 100-foot buffer (200-feet wide) was applied to the gen-tie transmission line, a 25-foot buffer (50-feet wide) was applied to the access roads, a 18-foot buffer (36-feet wide) was applied to the crane paths, and a 15-foot buffer (30-feet wide) was applied to the underground collection lines. The Survey Area included in the wetland delineation totaled approximately 862 acres.

### METHODS

The following discussions summarize the methods used for the review of existing data and the wetland delineation.

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### **Existing Data Review**

Burns & McDonnell reviewed available background information for the proposed Project prior to conducting a site visit. This available background information included the 1981 U.S. Geological Survey (USGS) 7.5-minute topographic maps (Vayland Northwest, Vayland, Vayland Southeast, and Wessington Southwest, ND quadrangles), U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps, U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) 2018 Soil Survey Geographic (SSURGO) digital data for Hand County, South Dakota, and 2015 National Agriculture Imagery Program (NAIP) aerial photography. Maps generated from this data are included as Figures A-2 and A-3 in Appendix A. Local climate data for this region was also reviewed to evaluate precipitation conditions.

Wetland presence based only on NWI maps cannot be assumed to be an accurate assessment of potentially occurring jurisdictional wetlands. Wetland identification criteria differ between the USFWS and the USACE. As a result, wetlands shown on an NWI map may not be under the jurisdiction of the USACE, and all USACE-jurisdictional wetlands are not always included on NWI maps. Therefore, a field visit was conducted to identify any wetlands or other water bodies that may be present.

### **Wetland Delineation Field Survey**

A field wetland delineation was completed in June and October 2018, with an additional field delineation in September 2019. These wetland delineations were done in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region – Version 2.0 (Regional Supplement). Sample plots were established at multiple locations, and Wetland Determination Data Forms from the Regional Supplement were completed to characterize the Survey Area (Appendix B). Vegetation, soil conditions, and hydrologic indicators were recorded at each of these sample plots. Locations of sample plots and other identified features were recorded using a sub-meter accurate global positioning system (GPS) unit. Natural color photographs depicting wetlands, streams, and sample plots were taken onsite and are included in Appendix C. Additional photographs were taken during the delineation effort to document onsite conditions where sample plots were not analyzed. Several of these photograph locations that depict representative features, such as open upland pasturelands, swales, and croplands, are indicated on Figure A-4. Additional photographs not depicted on Figure A-4 or provided in Appendix C can be provided upon request.

Based on lack of access and restrictive weather conditions, approximately 15% of the Survey Area was delineated via offsite wetland determination methods, using the background information previously listed. Specifically, wetlands were identified using NWI maps and hydric soil data in conjunction with topography and aerial imagery review to identify locations that



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exhibited wetland signatures such as wetland vegetation or saturated soils. Streams for these areas were identified using NHD data in conjunction with topography and aerial imagery review. It is recommended that the entire Survey Area be field verified as feasible prior to submitting this report for regulatory review and the start of construction.

## **RESULTS**

The following sections describe the results of the existing data review and the completed wetland delineation.

### **Existing Data Review**

The 2015 NAIP aerial photography indicates that the Survey Area consists largely of rangeland, pastureland, and cropland (Figure A-2.1 through Figure A-2.25).

The 2018 USDA NRCS SSURGO digital data indicate that portions of 25 soil map units are located in the Survey Area. (Figure A-2). Of the 25 soil map units, one map unit is rated hydric, one map unit is rated predominantly hydric, and one map unit is rated partially hydric on local and national hydric soil lists.

The existing USGS topographic maps were reviewed to familiarize Burns & McDonnell wetland personnel with the topography and potential locations of wetlands and other water bodies (Figure A-3). The USGS topographic maps depicts the Survey Area as having large areas of rolling hills and gently sloping to flat topography. Wind turbines for the proposed Project are generally sited on hilltops and ridges, and access roads and underground collection systems connect strings of turbines. Two named streams, Silver Creek and East Pearl Creek, are located within the Survey Area.

The NWI data indicate 69 palustrine emergent (PEM) wetlands and 10 palustrine aquatic bed (PAB) wetlands are located within the Survey Area (Figures A-3).

### **Wetland Delineation Field Survey**

As previously stated, wetland scientists with Burns & McDonnell conducted wetland delineations of the Survey Area in June and October 2018 and September 2019. The second person of each team, a GPS specialist with Burns & McDonnell, recorded the location and extent of features identified within the Survey Area. The land cover and delineated wetlands from the field survey efforts are discussed in detail below.

### **Vegetation**

The Survey Area was largely composed of rangeland and cropland. Typical vegetation in the upland portions of the Survey Area included Kentucky bluegrass (*Poa pratensis*), smooth brome (*Bromus inermis*), and field brome (*Bromus arvensis*).

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### Soils

Typical upland soils ranged from black (10YR 2/1) to very dark grayish brown (10YR 3/2) and ranged in texture from clay loam to silt loam. Redoximorphic features were typically present in wetland soils, but they were less common in upland soils.

### Hydrology

Hydrology in the Survey Area has been highly altered to support agricultural practices within croplands. Upland swales are common throughout cropland to aid in draining surface water. Subsurface tiling may be present in many of the croplands, but indicators of such (flagging, inlets, vents, etc.) were not widely observed. Streams have been channelized throughout much of the Survey Area to facilitate farming and ranching practices. The primary source of hydrology for wetlands was precipitation and areas of shallow groundwater. Indicators of hydrology within the wetlands included surface water, high water table, saturation, algal mat or crust, hydrogen sulfide odor, oxidized rhizospheres on living roots, surface soil cracks, drainage patterns, saturation visible on aerial imagery, a concave geomorphic position, and a positive FAC neutral test. Precipitation for the months prior to the field delineations was determined using the Wetland Climate Tables (WETS) analysis. Average precipitation for the Project was obtained from the Miller, SD WETS weather station and used for the WETS analysis. Precipitation levels are provided in Table 1.

**Table 1: Precipitation for Three Months Prior to Field Wetland Delineation**

| Timeframe      | Actual Precipitation (inches) | Longterm Average Precipitation (inches) | Actual Relative to Average |
|----------------|-------------------------------|---|----------------------------|
| June 2018      | 6.76                          | 3.16                                    | Wetter than normal         |
| October 2018   | 2.46                          | 1.70                                    | Wetter than normal         |
| September 2019 | 4.58                          | 1.79                                    | Wetter than normal         |

Source: Miller, SD Wetland Climate Tables (WETS)

### Delineation Areas

During the wetland delineation efforts, 26 wetlands and 24 streams were identified within the Survey Area. The wetlands and streams are generally described below, and their locations are shown on Figure A-4 in Appendix A. Table 2 provides the types and size of each wetland, and Table 3 provides the type and length of each stream delineated. Sample plots were located in the wetlands and adjacent uplands. Data forms and photographs for these sample plots are included in Appendix B and Appendix C, respectively.

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## Wetlands

A total of 26 wetlands, comprised of one wetland type: PEM and encompassing a total of 4.5 acres, were identified (Photograph Log, Appendix C). Dominant vegetation in the PEM wetlands included reed canary grass (*Phalaris arundinacea*), fox-tail barley (*Hordeum jubatum*), common spike-rush (*Eleocharis palustris*), flat-stem spike-rush (*E. compressa*), blunt spike-rush (*E. obtusa*), sedge (*Carex sp.*), common fox sedge (*C. vulpinoidea*), river club-rush (*Schoenoplectus fluviatilis*), rough cocklebur (*Xanthium strumarium*), rush (*Juncus sp.*), American water-plantain (*Alisma subcordatum*), northern water-plantain (*A. triviale*), curly dock (*Rumex crispus*), spotted lady's-thumb (*Persicaria maculosa*), broadleaf cattail (*Typha latifolia*), field meadow-foxtail (*Alopecurus pratensis*), large barnyard grass (*Echinochloa crus-galli*), late goldenrod (*Solidago gigantea*), and freshwater cord grass (*Spartina pectinata*). Wetland hydrology was indicated by surface water, high water table, saturation, algal mat or crust, hydrogen sulfide odor, oxidized rhizospheres on living roots, surface soil cracks, drainage patterns, saturation visible on aerial imagery, a concave geomorphic position, and a positive FAC neutral test. Soils ranged from gray (10YR 6/1) to black (10YR 2/1) in color and clay loam, silty clay loam, or silt loam in texture, with redoximorphic concentrations. Hydric soil was mainly indicated by hydrogen sulfide, 1cm muck, loamy mucky mineral, depleted matrix, redox dark surface, and depleted dark surface.

**Table 2: Delineated Wetlands within the Survey Area**

| Wetland Number <sup>a, b</sup> | Wetland Type <sup>c</sup> | Acreage in Survey Area | Figure A-4 Page Number |
|--------------------------------|---------------------------|------------------------|------------------------|
| W-005                          | PEM                       | 0.34                   | A-4.21                 |
| W-501                          | PEM                       | 0.09                   | A-4.2                  |
| W-507                          | PEM                       | 0.10                   | A-4.4                  |
| W-508                          | PEM                       | 0.16                   | A-4.4                  |
| W-510                          | PEM                       | 0.03                   | A-4.4                  |
| W-518                          | PEM                       | 0.04                   | A-4.9                  |
| W-520                          | PEM                       | 0.03                   | A-4.14                 |
| W-524                          | PEM                       | 0.12                   | A-4.11                 |
| W-526                          | PEM                       | 1.87                   | A-4.11                 |
| W-537                          | PEM                       | 0.10                   | A-4.11                 |
| W-548                          | PEM                       | 0.05                   | A-4.7                  |
| W-550                          | PEM                       | 0.01                   | A-4.7                  |
| W-554                          | PEM                       | 0.15                   | A-4.18                 |

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| Wetland Number <sup>a, b</sup> | Wetland Type <sup>c</sup> | Acreage in Survey Area | Figure A-4 Page Number |
|--------------------------------|---------------------------|------------------------|------------------------|
| W-558                          | PEM                       | 0.02                   | A-4.13                 |
| W-566                          | PEM                       | 0.45                   | A-4.20                 |
| W-579                          | PEM                       | 0.01                   | A-4.23                 |
| W-580                          | PEM                       | 0.05                   | A-4.19                 |
| W-584                          | PEM                       | 0.03                   | A-4.19                 |
| W-591d                         | PEM                       | 0.22                   | A-4.10                 |
| W-611d                         | PEM                       | 0.06                   | A-4.21                 |
| W-614d                         | PEM                       | 0.02                   | A-4.17                 |
| W-630d                         | PEM                       | 0.05                   | A-4.8                  |
| W-710                          | PEM                       | 0.04                   | A-4.10                 |
| W-712                          | PEM                       | 0.39                   | A-4.11                 |
| W-713                          | PEM                       | 0.04                   | A-4.11                 |
| W-901                          | PEM                       | 0.05                   | A-4.23                 |
|                                | <b>Total:</b>             | <b>4.52</b>            |                        |

(a) W = wetland

(b) The letter “d” following a wetland number indicates this wetland was identified using offsite wetland determination methods.

(c) Symbols for wetland type: PEM = palustrine emergent

### Streams

A total of 24 streams, consisting of two stream types (intermittent and ephemeral) and equaling 5,118 linear feet, were identified (Photographs, Appendix C). The different stream types are summarized below.

A total of three intermittent streams, extending for a total of 864 linear feet, were identified. Intermittent streams were characterized by the presence of a limited volume of flow at the time of the site visit. This is a likely indicator that the stream is partially fed by groundwater, but it may not flow during dry periods. Intermittent streams ranged from approximately 1.5 to 5 feet wide and approximately 0.5 to 1.0-foot deep from the ordinary high-water mark (OHWM). These streams primarily flowed through agricultural fields and pasture where common riparian vegetation included species such as smooth brome, field brome, fox-tail barley, and rough cocklebur.

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A total of 21 ephemeral streams, extending for a total of 4,254 feet, were identified. Ephemeral streams were characterized by a defined bed and bank, but they had limited or no flow during the site visit, indicating that these streams largely carry water only during and after precipitation events. Ephemeral streams ranged from approximately 1.5 to 8 feet wide and from 0.5 foot to 3.5 feet deep from the OHWM. These streams flowed through agricultural fields and pasture where common riparian vegetation included species such as smooth brome, red-root (*Amaranthus retroflexus*), yellow bristle grass (*Setaria pumila*), tall false rye grass (*Schedonorus arundinaceus*), clammy ground cherry (*Physalis heterophylla*), rough cocklebur, agricultural soybean (*Glycine max*).

**Table 3: Delineated Streams within the Survey Area**

| <b>Stream Number<sup>a</sup></b> | <b>Flow Classification</b> | <b>Length of Stream in Survey Area (feet)</b> | <b>Figure A-4 Page Number</b> |
|----------------------------------|----------------------------|---|-------------------------------|
| S-003                            | Intermittent               | 34  | A-4.21                        |
| S-004                            | Intermittent               | 455   | A-4.21                        |
| S-502                            | Ephemeral                  | 317   | A-4.5                         |
| S-504                            | Ephemeral                  | 543   | A-4.4                         |
| S-508                            | Ephemeral                  | 36  | A-4.15                        |
| S-510                            | Ephemeral                  | 272   | A-4.11                        |
| S-513                            | Ephemeral                  | 77  | A-4.6                         |
| S-514                            | Ephemeral                  | 227   | A-4.17                        |
| S-516                            | Ephemeral                  | 361   | A-4.7                         |
| S-517                            | Ephemeral                  | 8   | A-4.7                         |
| S-518                            | Ephemeral                  | 221   | A-4.6                         |
| S-519                            | Ephemeral                  | 76  | A-4.3                         |
| S-521                            | Ephemeral                  | 211   | A-4.13                        |
| S-522                            | Ephemeral                  | 234   | A-4.13                        |
| S-523                            | Intermittent               | 375   | A-4.13                        |
| S-526                            | Ephemeral                  | 520   | A-4.20                        |
| S-701                            | Ephemeral                  | 83  | A-4.1                         |
| S-702                            | Ephemeral                  | 314   | A-4.11                        |
| S-703                            | Ephemeral                  | 36  | A-4.8                         |



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| <b>Stream<br/>Number<sup>a</sup></b> | <b>Flow<br/>Classification</b> | <b>Length of Stream in<br/>Survey Area (feet)</b> | <b>Figure A-4 Page Number</b> |
|--------------------------------------|--------------------------------|---|-------------------------------|
| S-704                                | Ephemeral                      | 488   | A-4.12                        |
| S-705                                | Ephemeral                      | 42  | A-4.12                        |
| S-707                                | Ephemeral                      | 33  | A-4.8                         |
| S-708                                | Ephemeral                      | 32  | A-4.4                         |
| S-901                                | Ephemeral                      | 123   | A-4.23                        |
|                                      | <b>Total</b>                   | <b>5,118</b>                                      |                               |

(a) S = stream



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**SUMMARY**

Burns & McDonnell conducted a wetland delineation of the Survey Area to identify wetlands and other water bodies. A total of 26 wetlands and 24 stream channels were identified. The wetlands and streams identified for this report are subject to federal regulation under the jurisdiction of USACE. Accordingly, Burns & McDonnell recommend this report be submitted to USACE for final jurisdictional review and concurrence. Following the identification of the final Project components, Burns & McDonnell recommends the Client obtain the necessary permits or regulatory authorization prior to initiating land disturbing Project activities.

Sincerely,



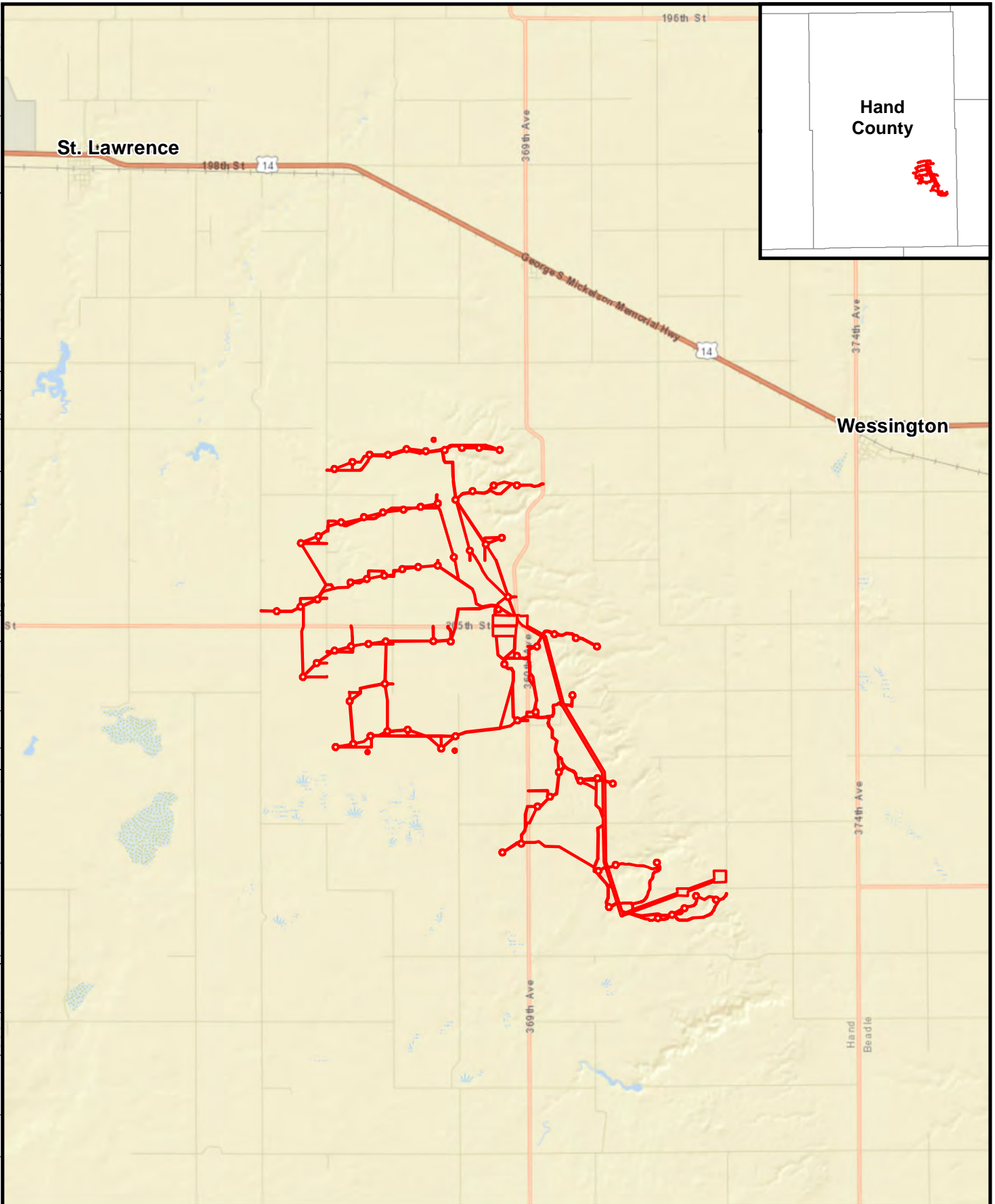
Tyler Beemer, PWS  
Senior Environmental Scientist

**Attachments:**

- Appendix A - Figures
- Appendix B - Routine Wetland Determination Data Forms, Great Plains Region
- Appendix C - Photograph Log

cc: Paul Callahan, Burns & McDonnell  
Carrie Barton, Burns & McDonnell

## **APPENDIX A -FIGURES**



### Legend


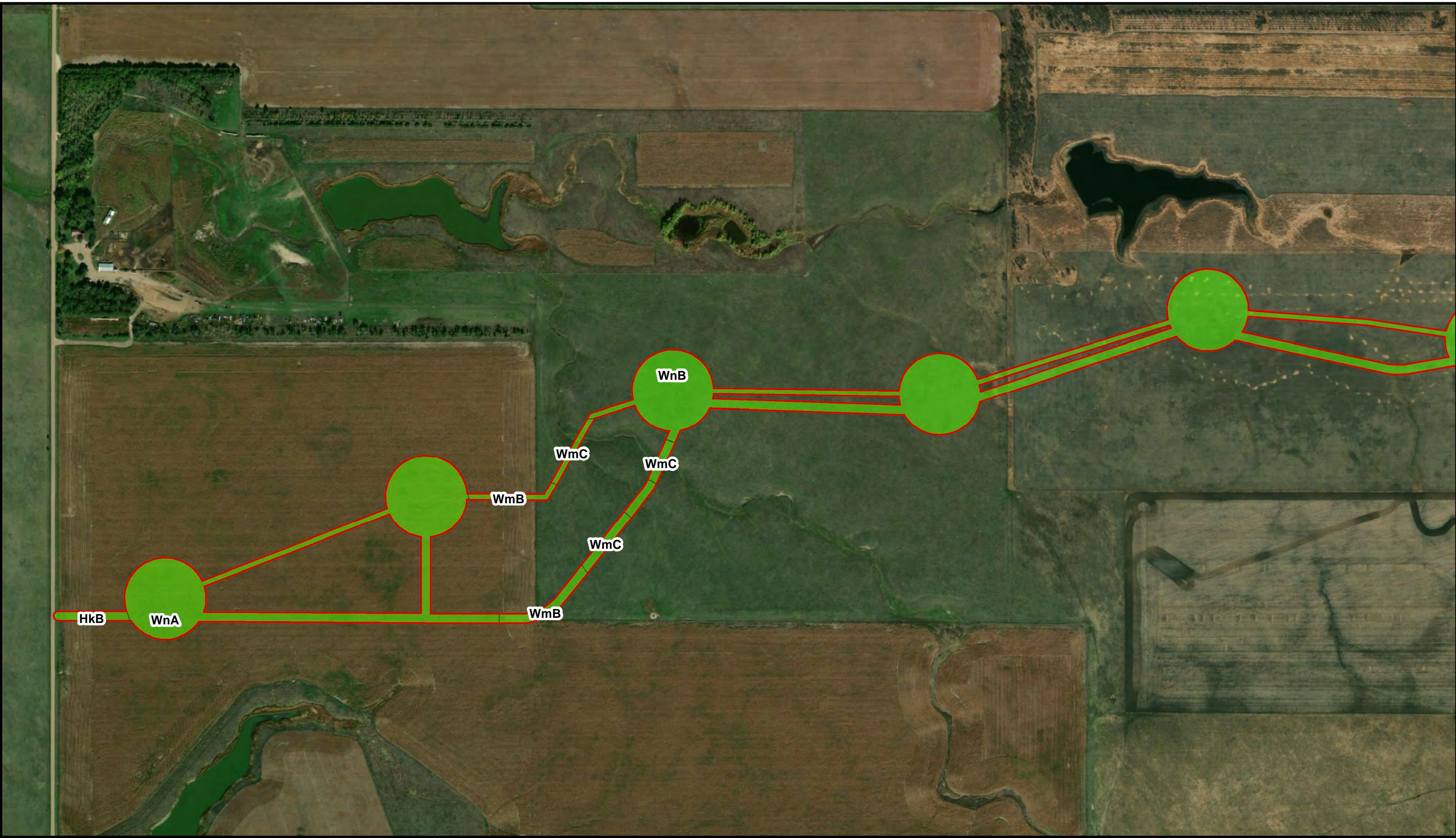
 Survey Area



Figure A-1  
Location and Overview Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**  
 Survey Area

| SSURGO Soil Map Unit & Hydric Rating*   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

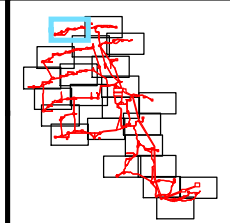
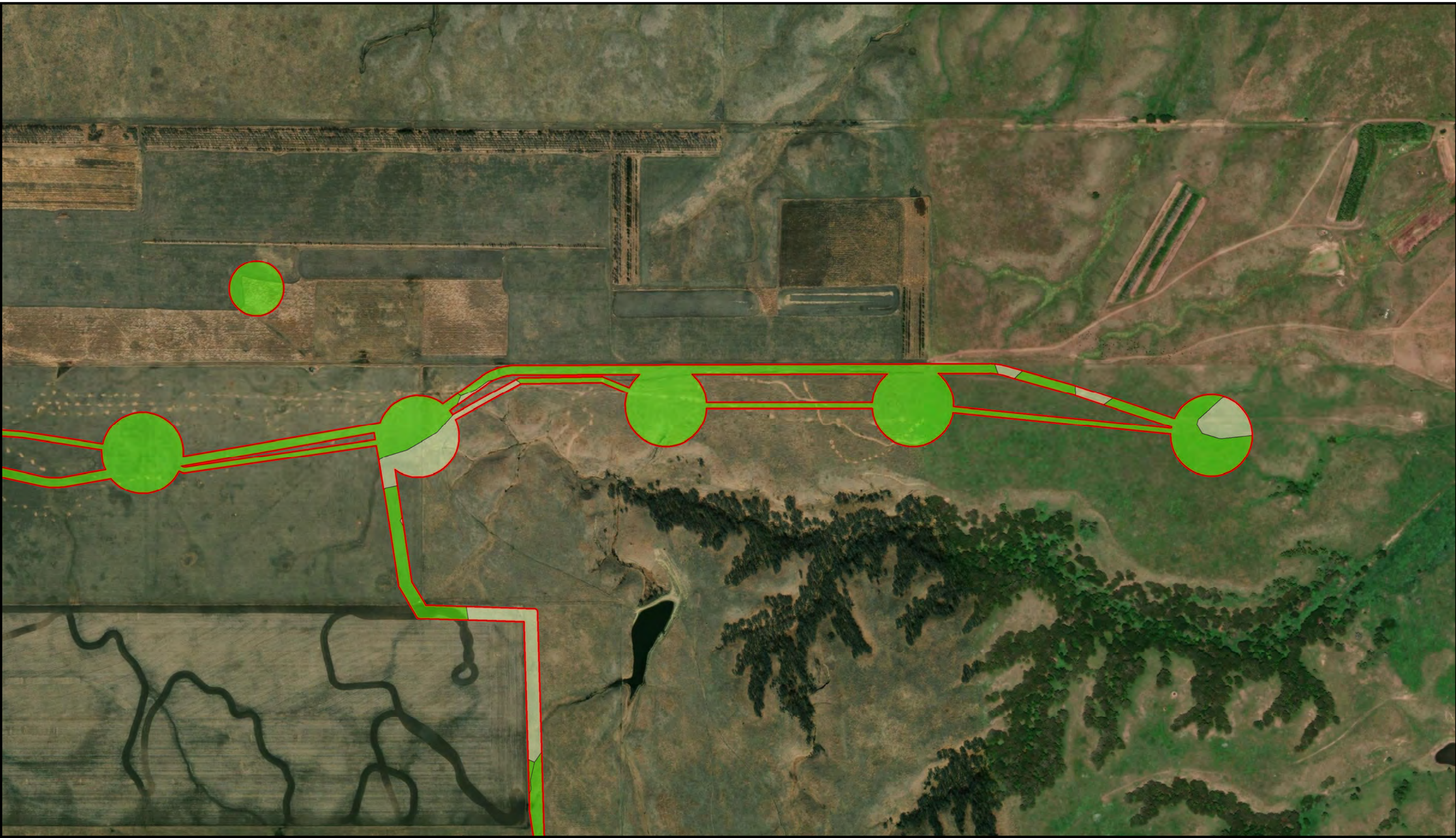


Figure A-2.1  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota








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**Legend**  
 Survey Area

**SSURGO Soil Map Unit & Hydric Rating\***

|   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

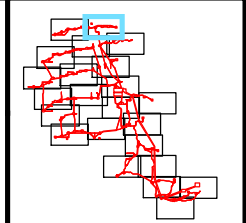
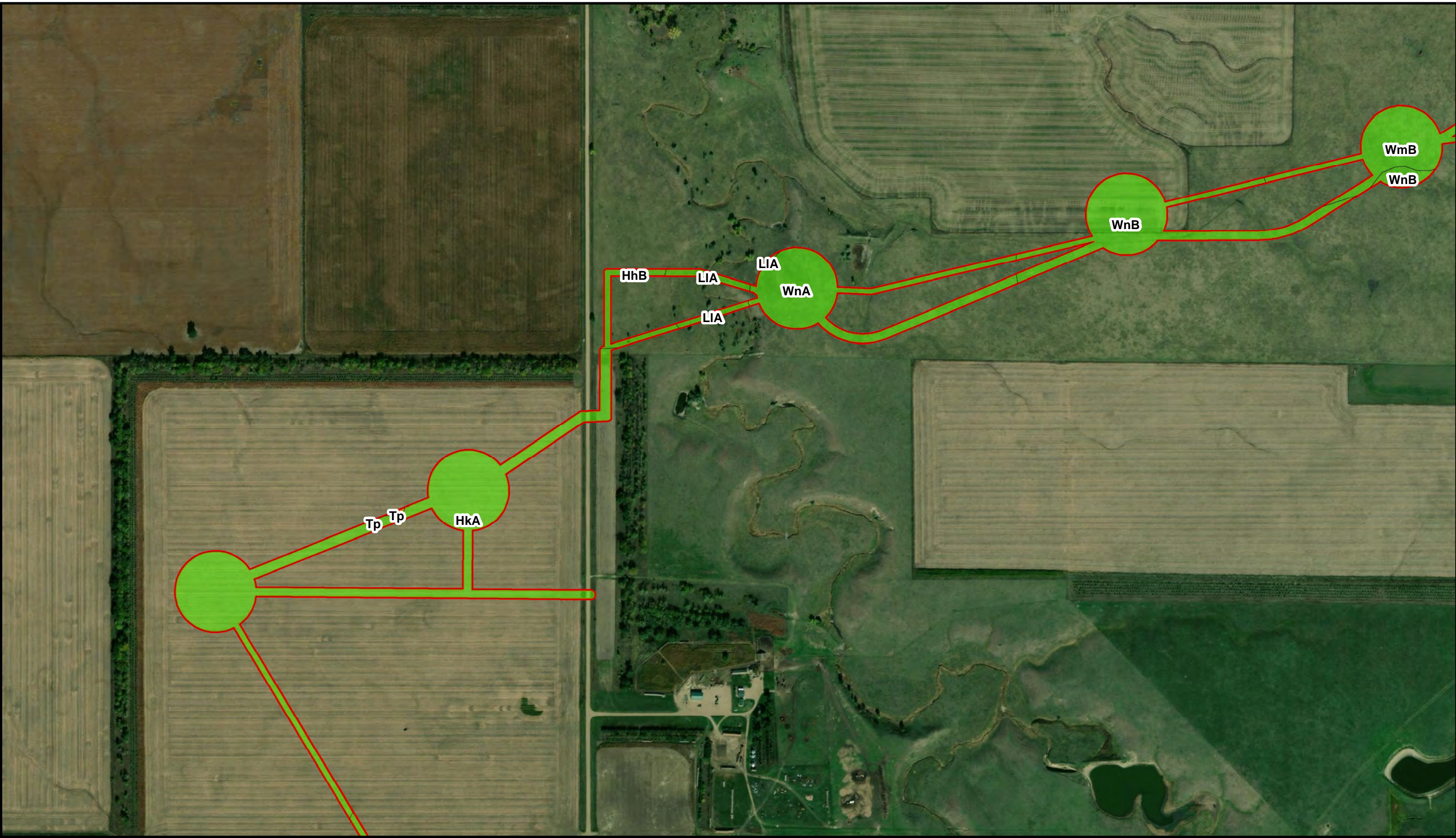







Figure A-2.2  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**  
 Survey Area

| SSURGO Soil Map Unit & Hydric Rating*   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

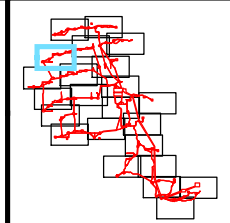


Figure A-2.3  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**  
 Survey Area

| SSURGO Soil Map Unit & Hydric Rating*   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

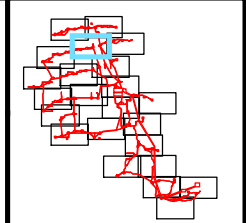
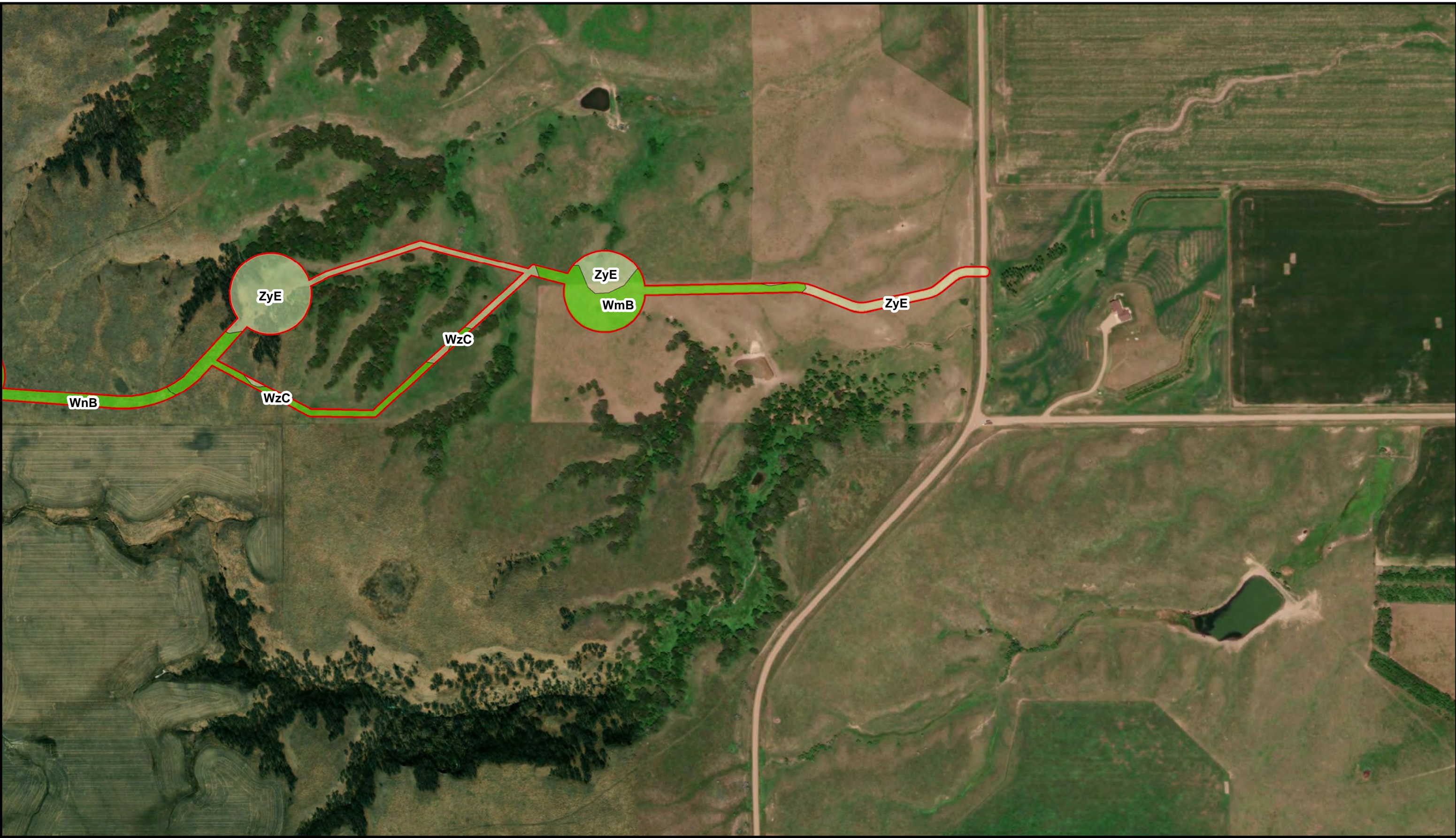


Figure A-2.4  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**  
 Survey Area

| SSURGO Soil Map Unit & Hydric Rating*   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

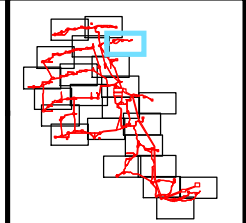
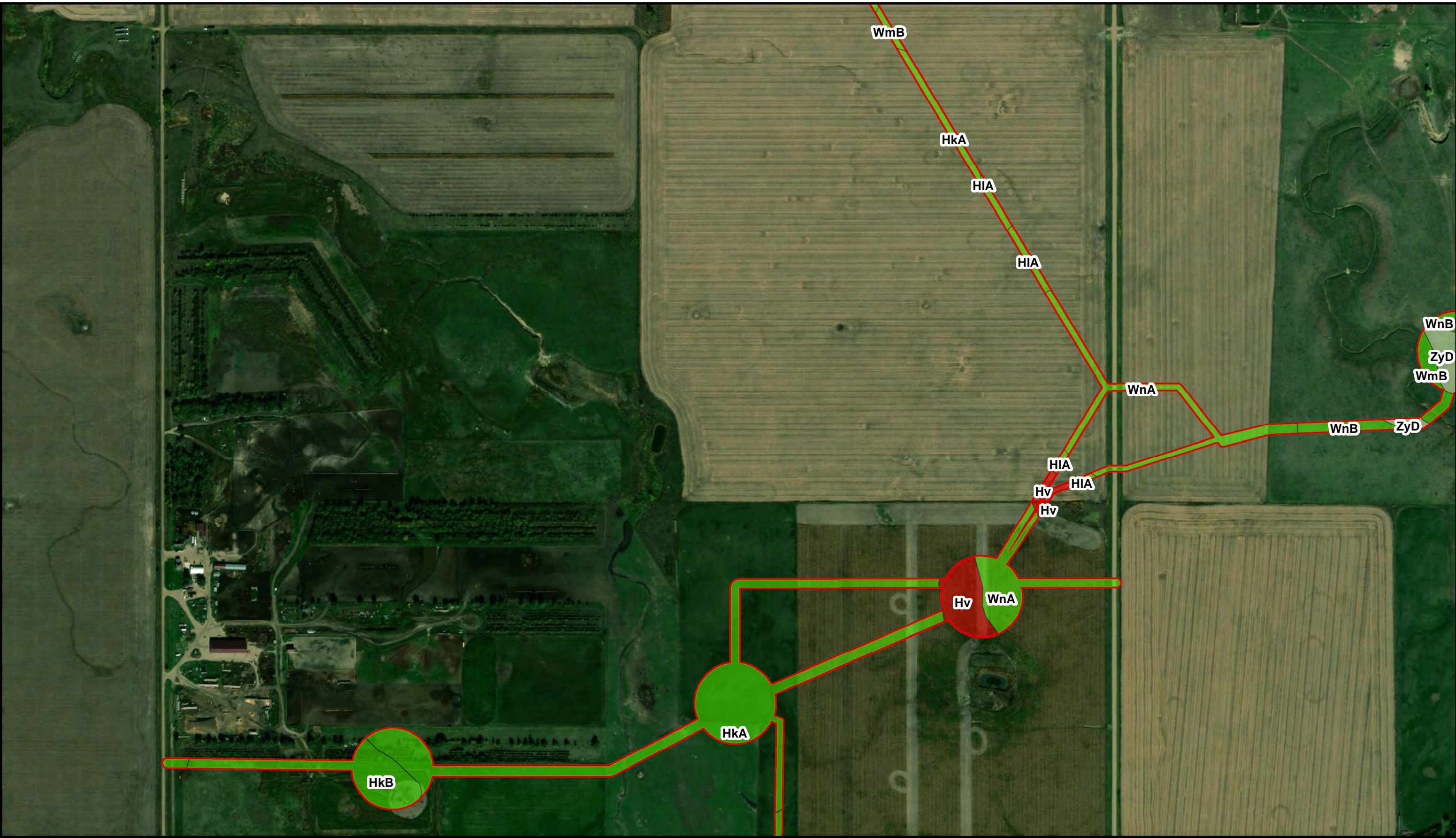


Figure A-2.5  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota








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**Legend**  
 Survey Area

**SSURGO Soil Map Unit & Hydric Rating\***

- |   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

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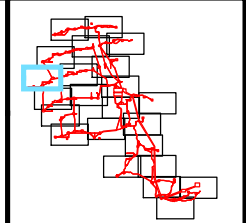


Figure A-2.6  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**  
 Survey Area

| SSURGO Soil Map Unit & Hydric Rating*   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

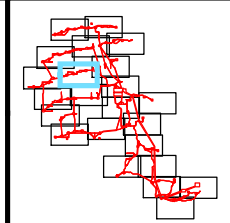
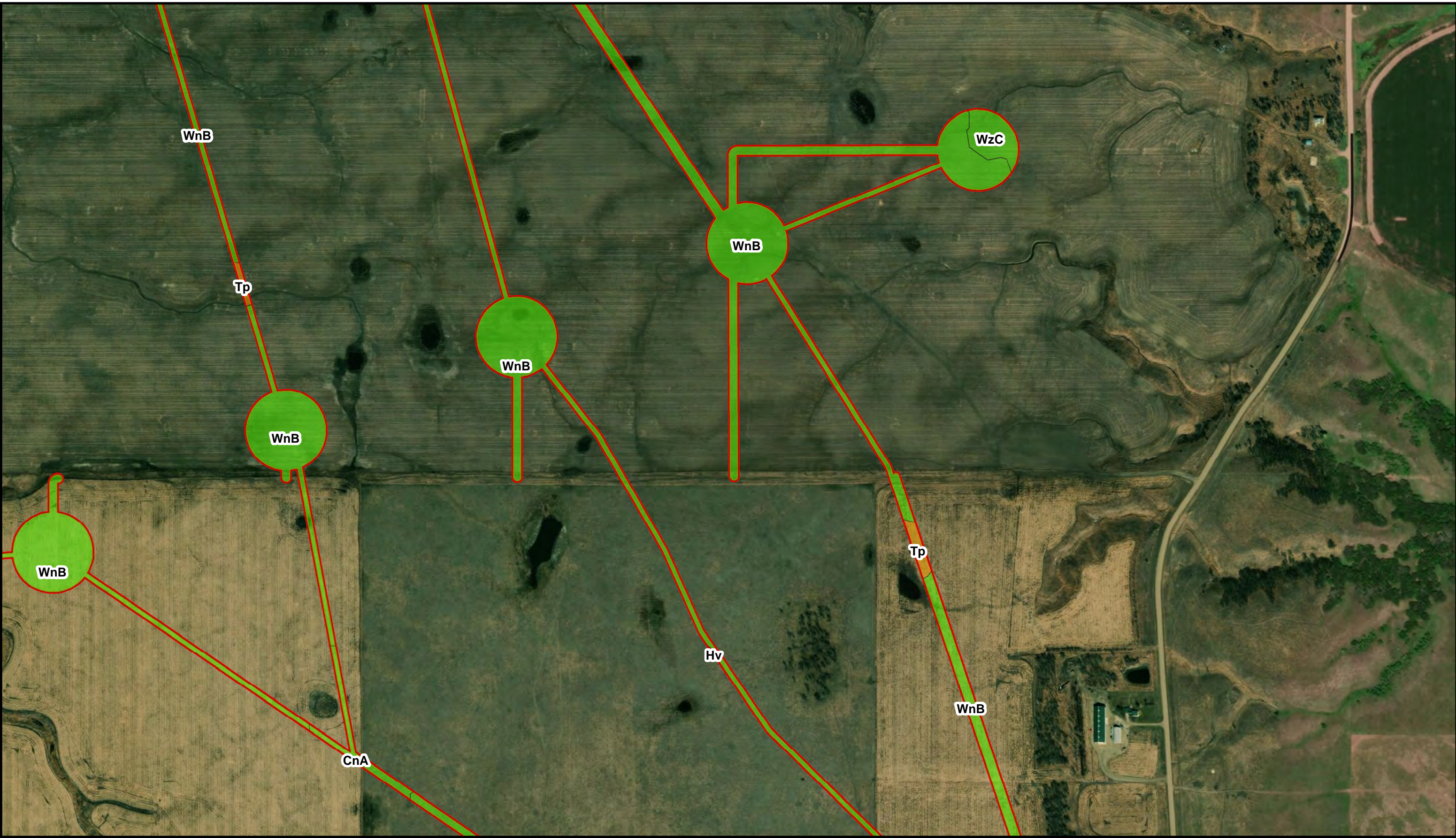


Figure A-2.7  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**  
 Survey Area

| SSURGO Soil Map Unit & Hydric Rating*   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

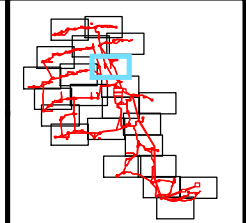


Figure A-2.8  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**  
 Survey Area

| SSURGO Soil Map Unit & Hydric Rating*   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

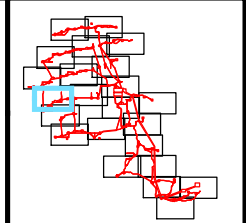
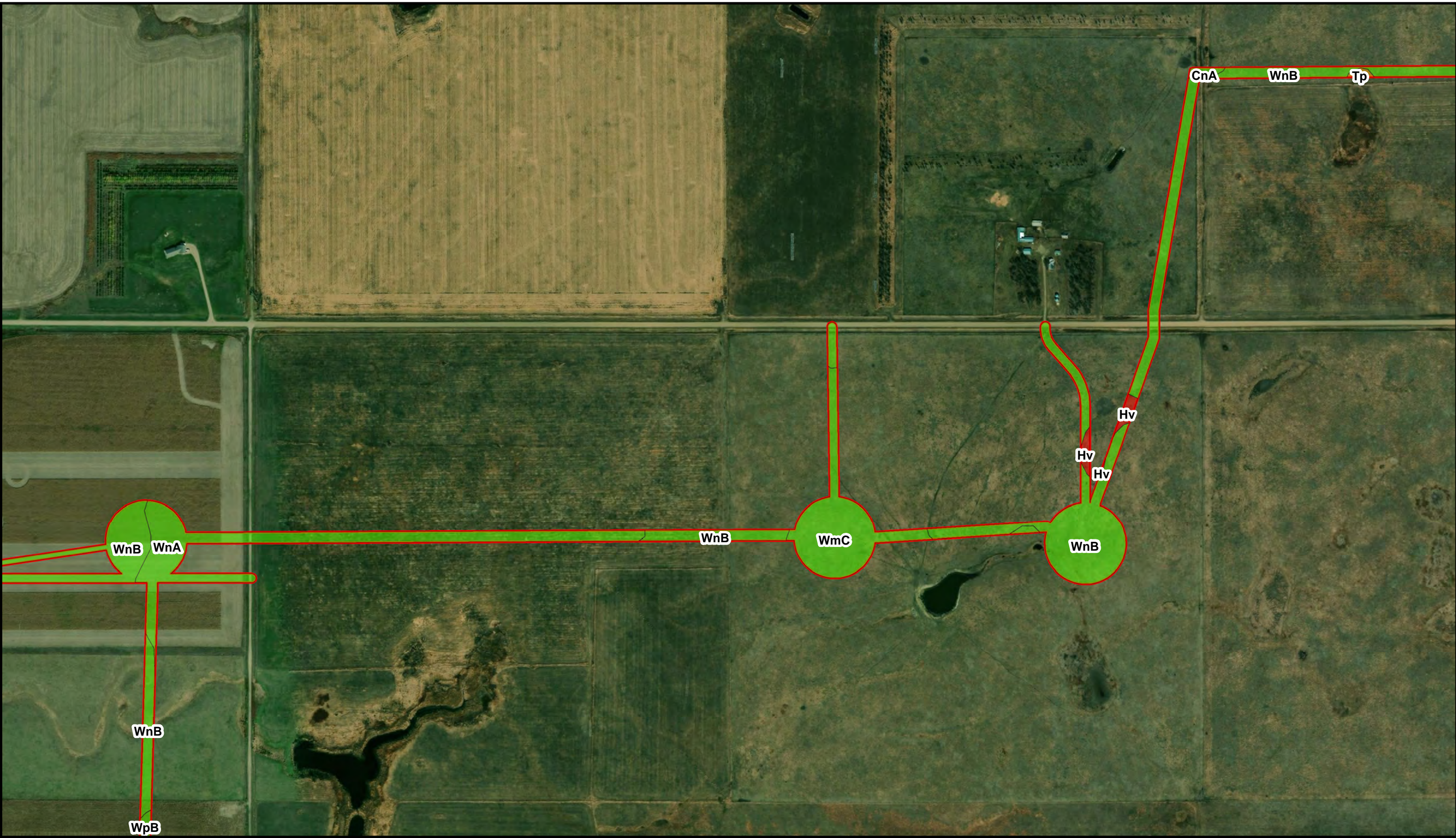


Figure A-2.9  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**  
 Survey Area

| SSURGO Soil Map Unit & Hydric Rating*   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

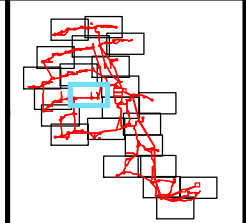
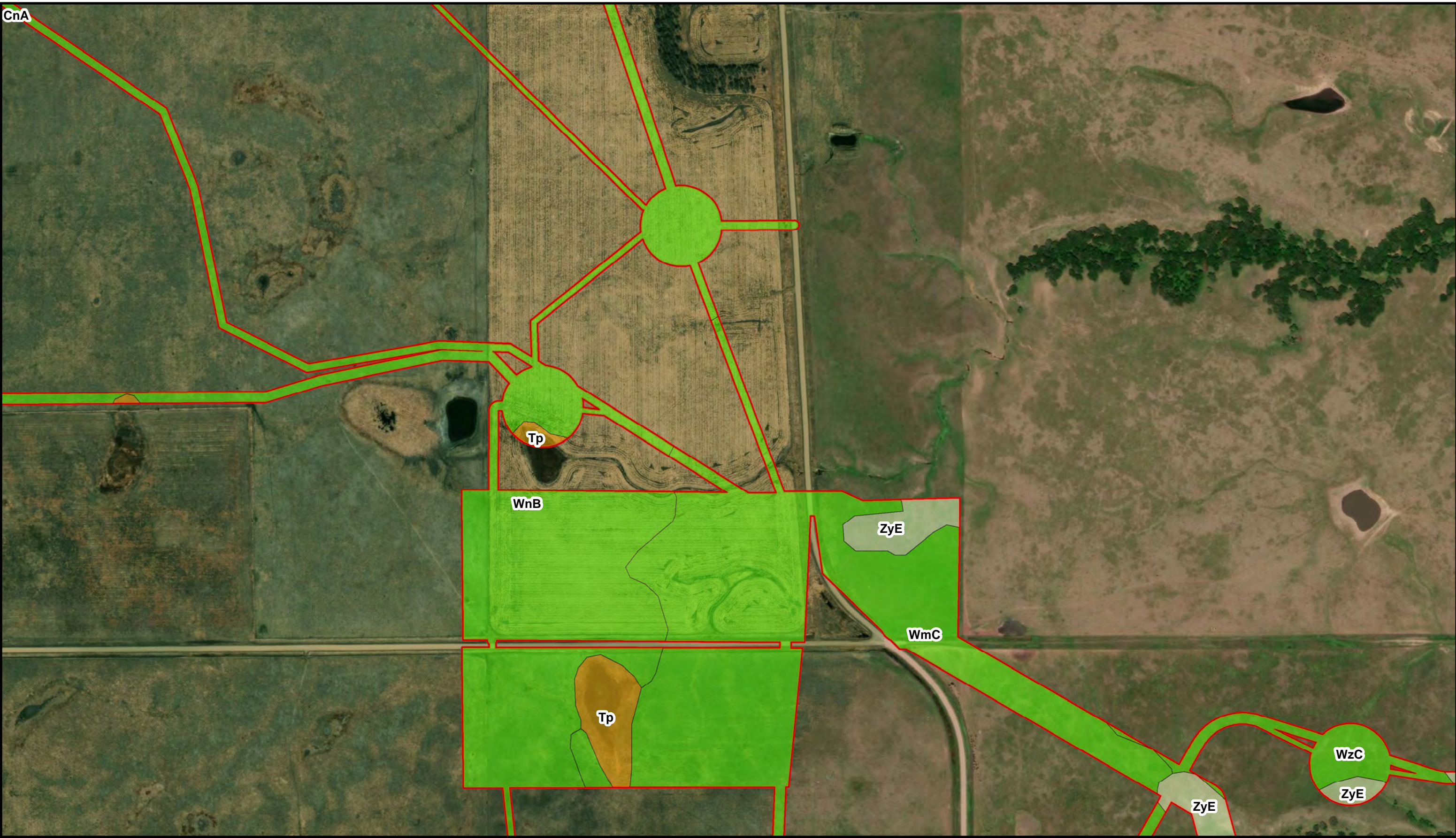


Figure A-2.10  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**  
 Survey Area

| SSURGO Soil Map Unit & Hydric Rating*   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

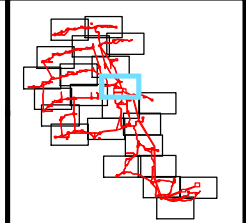
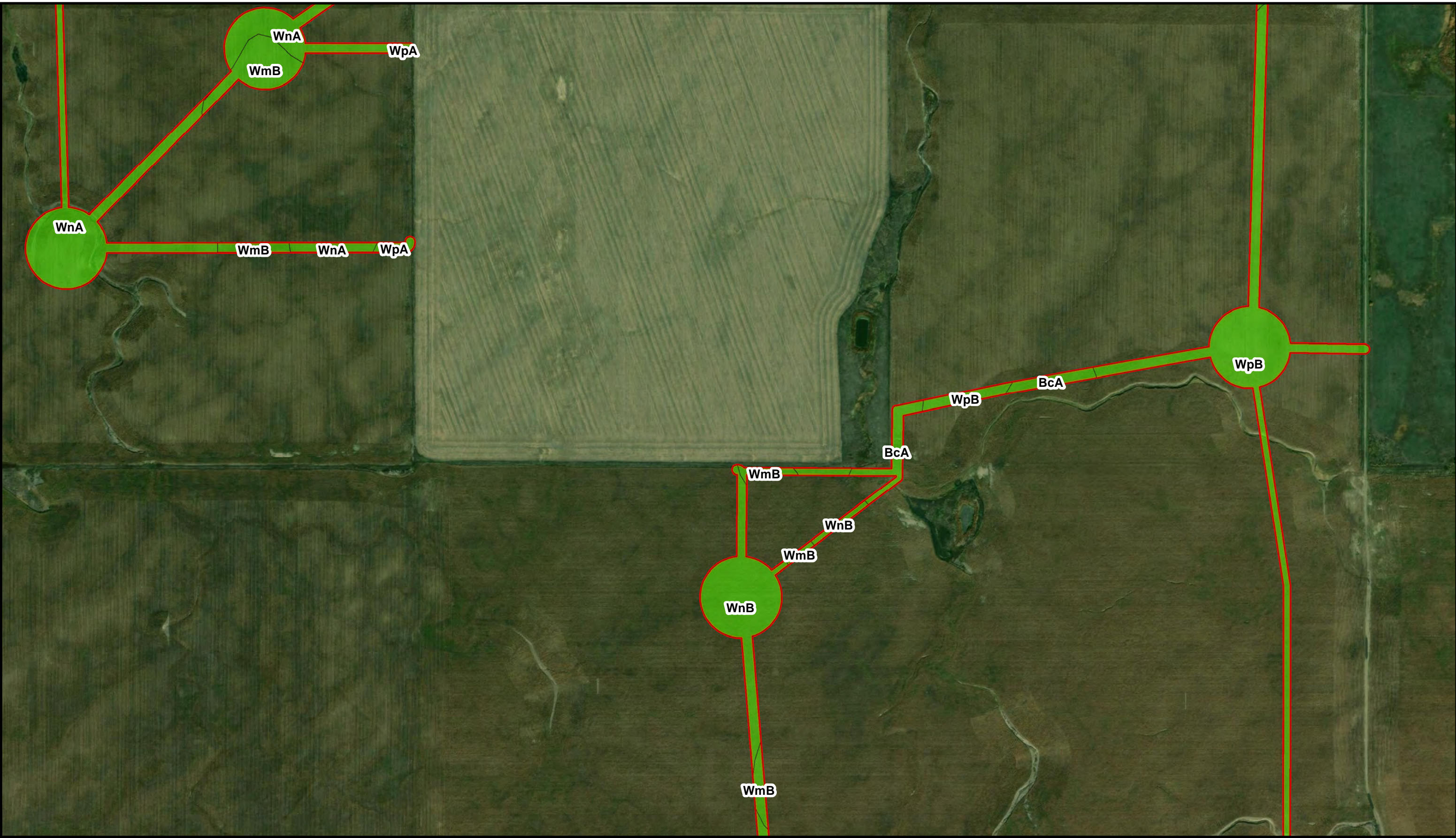


Figure A-2.11  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota








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**Legend**  
 Survey Area

**SSURGO Soil Map Unit & Hydric Rating\***

- |   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

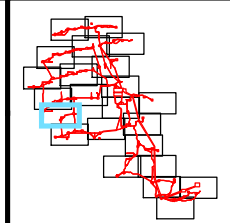
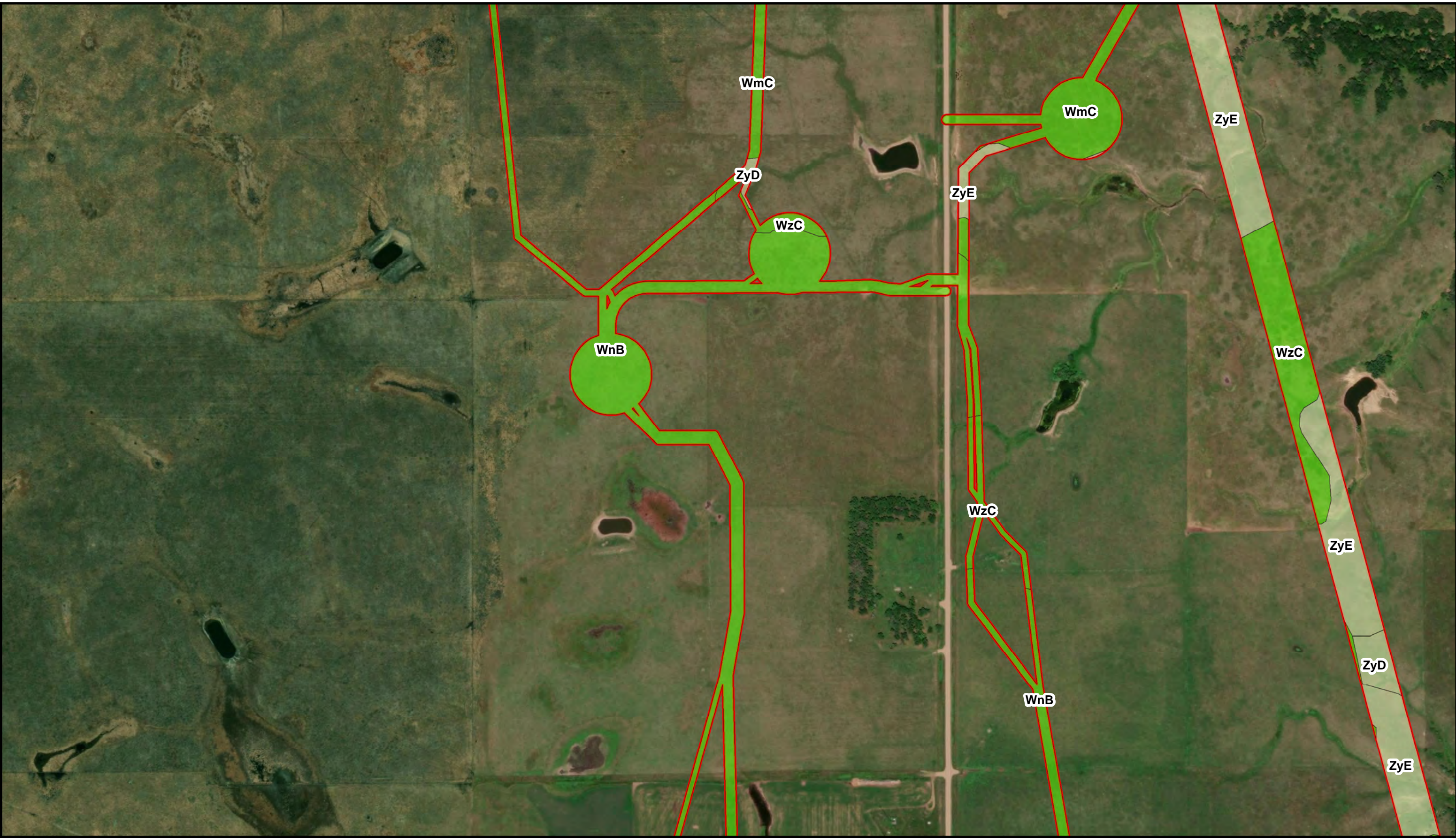


Figure A-2.12  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**  
 Survey Area

| SSURGO Soil Map Unit & Hydric Rating*   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

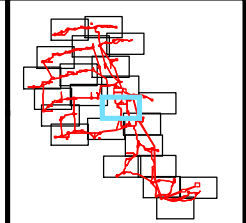
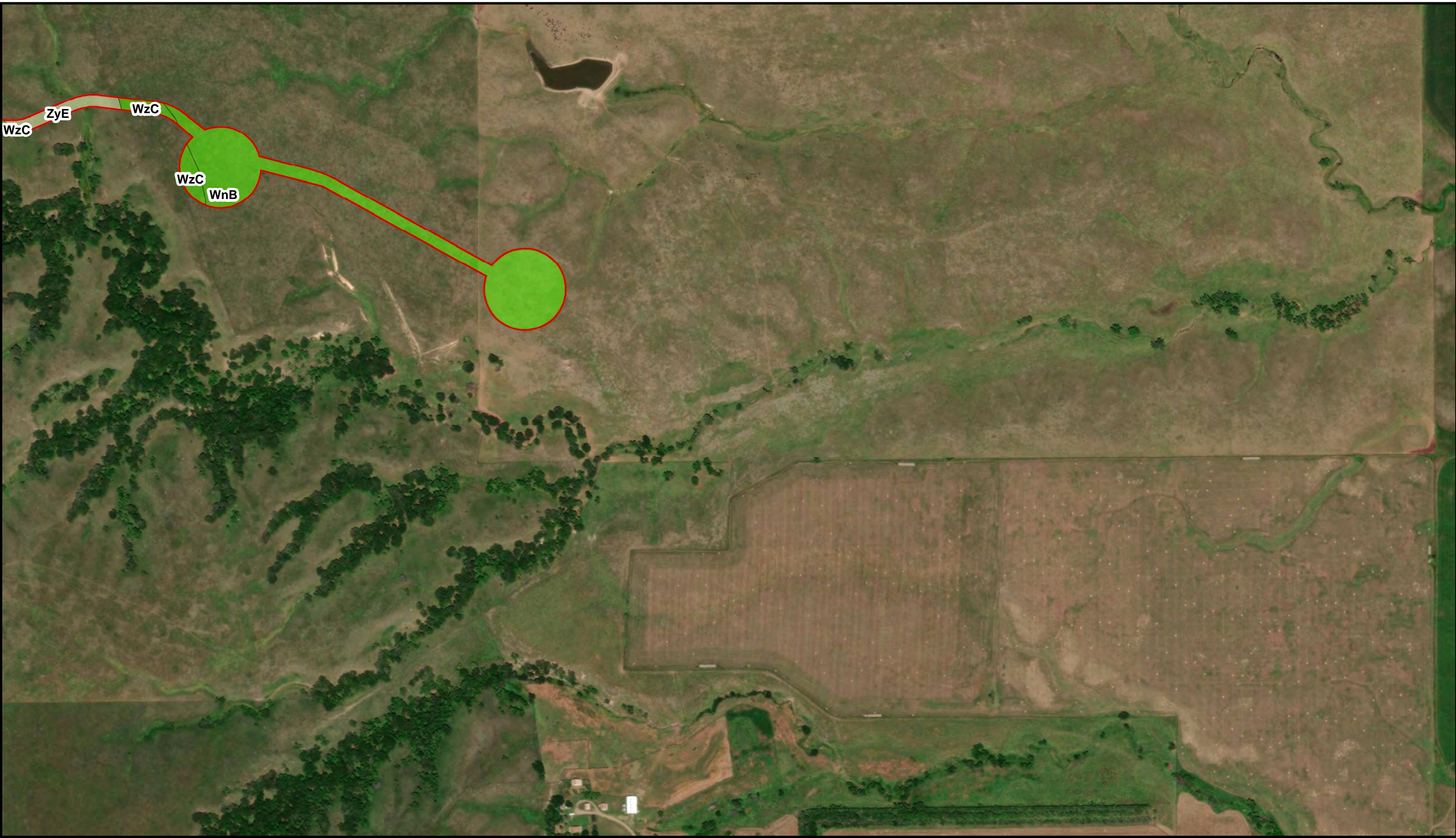


Figure A-2.13  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**  
 Survey Area

| SSURGO Soil Map Unit & Hydric Rating*   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

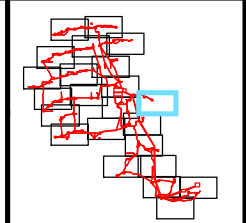
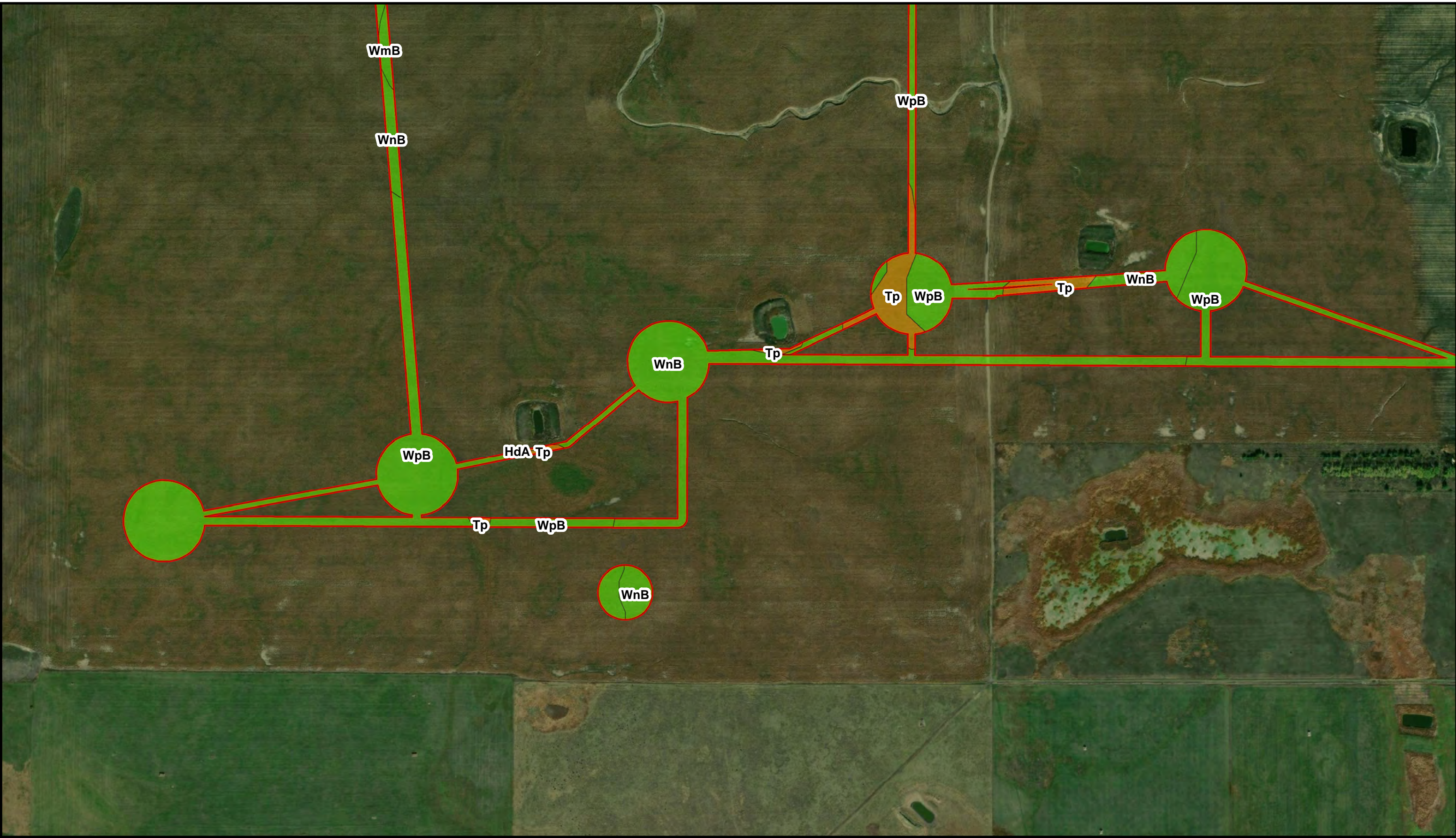


Figure A-2.14  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**  
 Survey Area

| SSURGO Soil Map Unit & Hydric Rating*   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

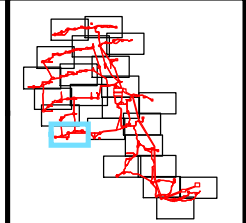







Figure A-2.15  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**  
 Survey Area

| SSURGO Soil Map Unit & Hydric Rating*   |  |  |  |
|---|--|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |  |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

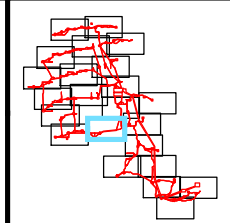


Figure A-2.16  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota








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**Legend**  
 Survey Area

**SSURGO Soil Map Unit & Hydric Rating\***

- |   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

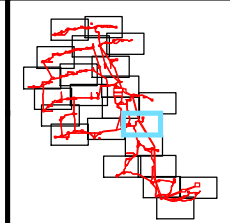
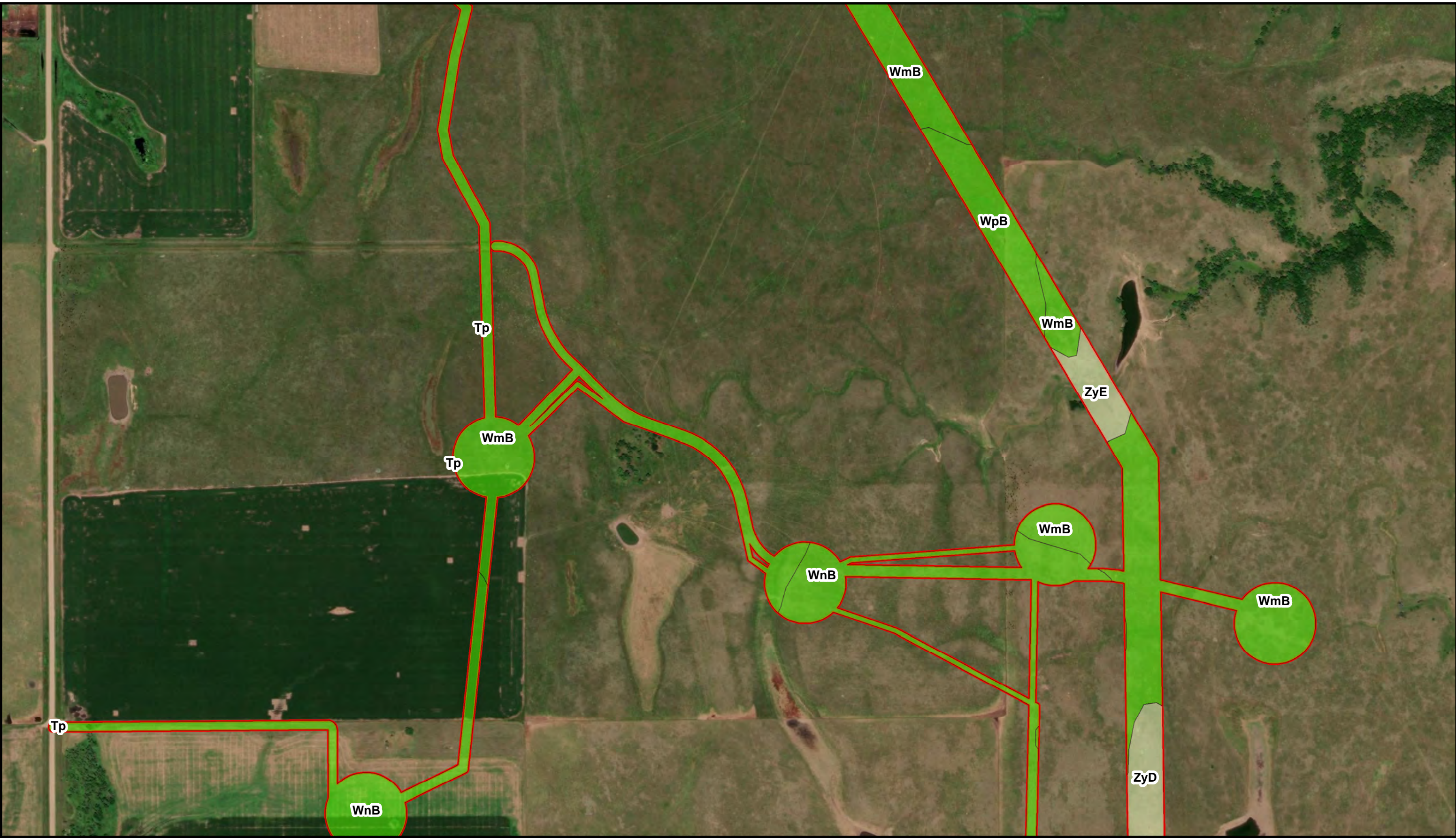


Figure A-2.17  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**  
 Survey Area

| SSURGO Soil Map Unit & Hydric Rating*   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

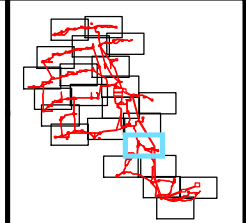


Figure A-2.18  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota








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**Legend**  
 Survey Area

**SSURGO Soil Map Unit & Hydric Rating\***

- |   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

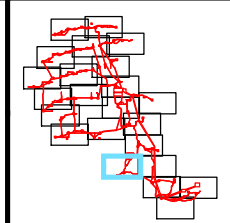
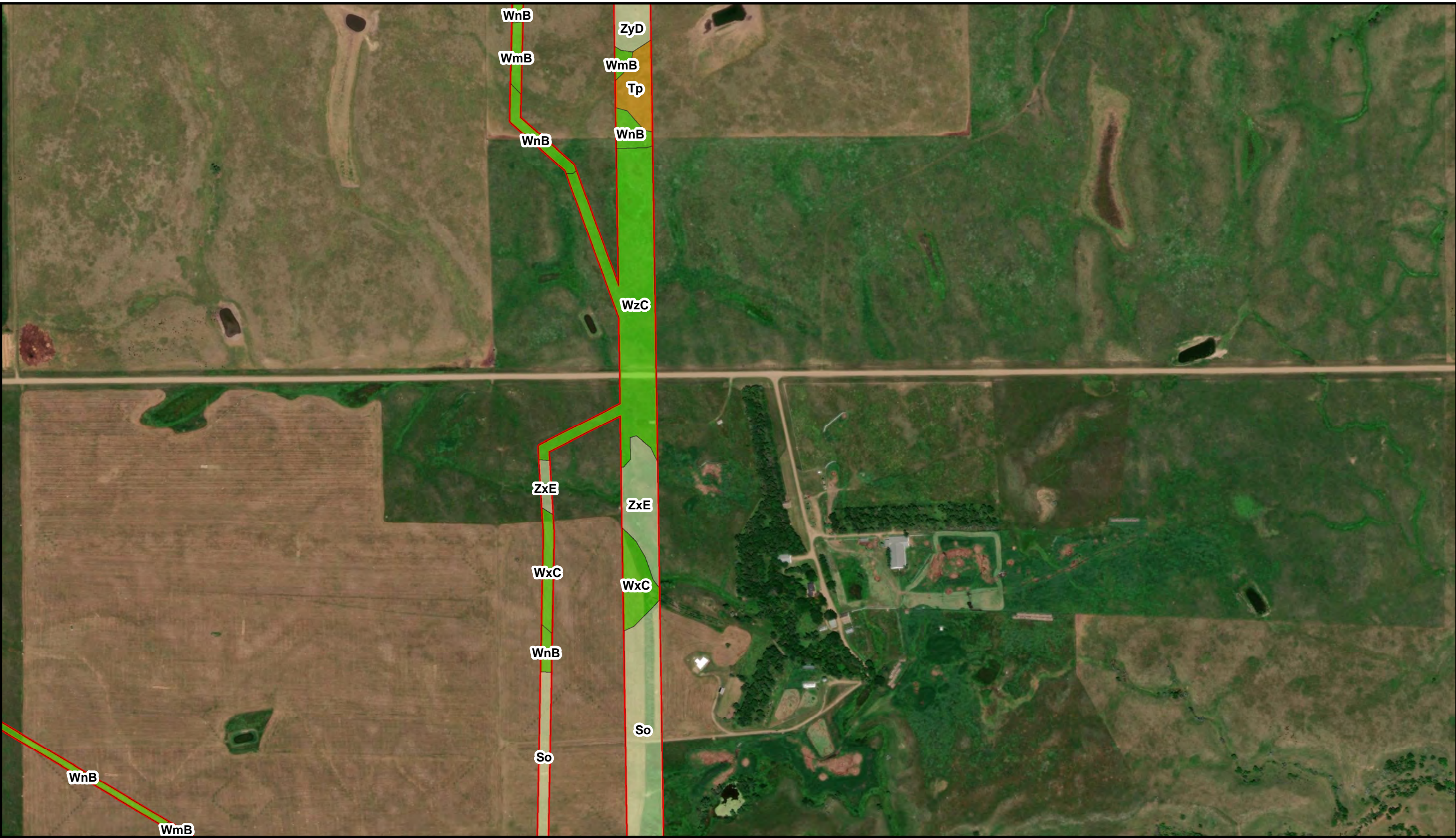


Figure A-2.19  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota








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**Legend**  
 Survey Area

**SSURGO Soil Map Unit & Hydric Rating\***

- |   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

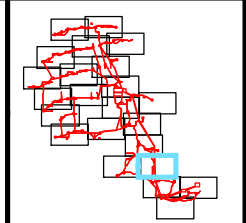
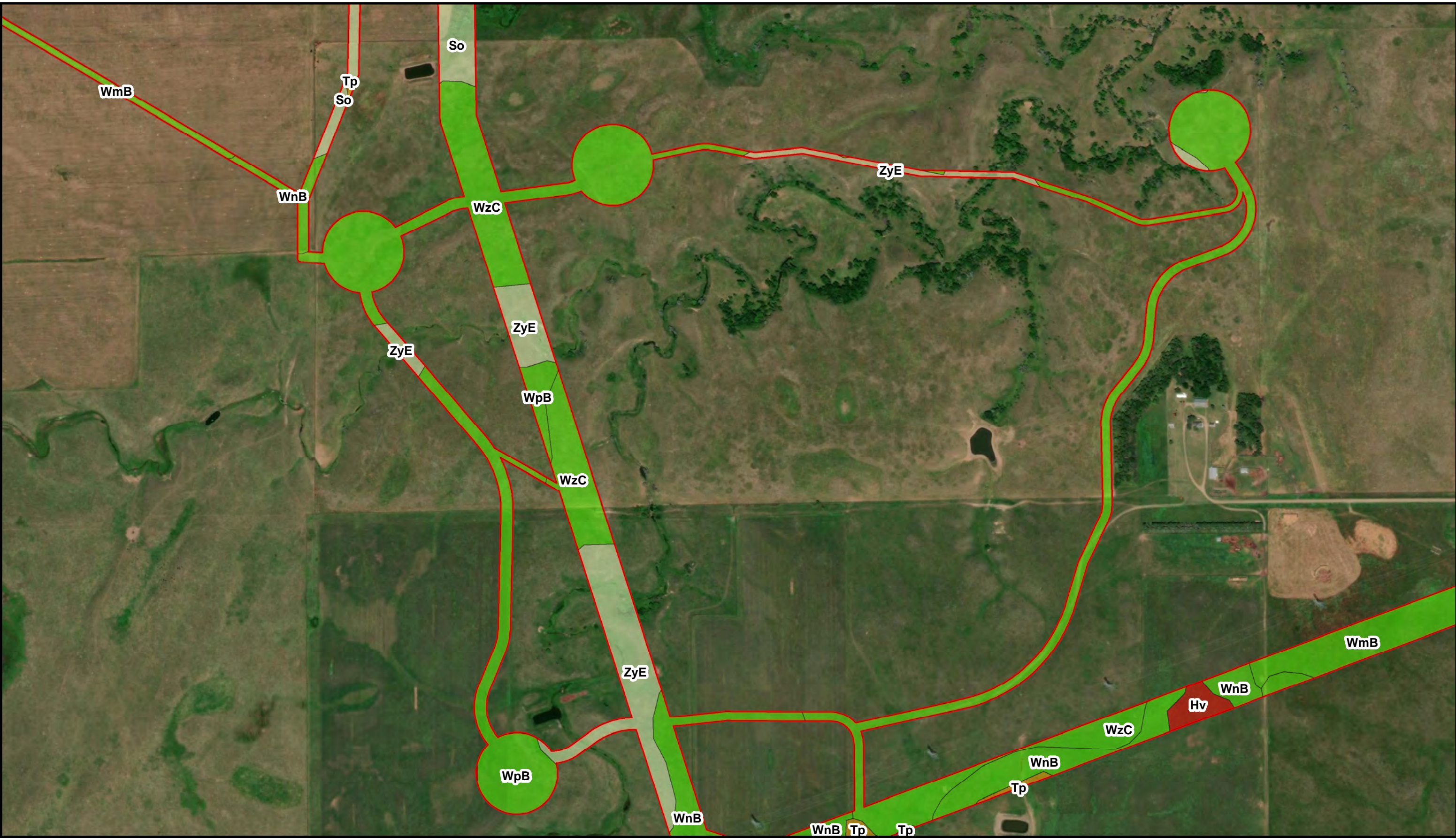


Figure A-2.20  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota








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**Legend**  
 Survey Area

**SSURGO Soil Map Unit & Hydric Rating\***

- |   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

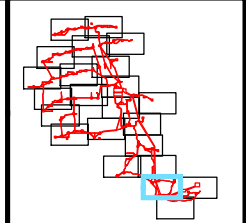
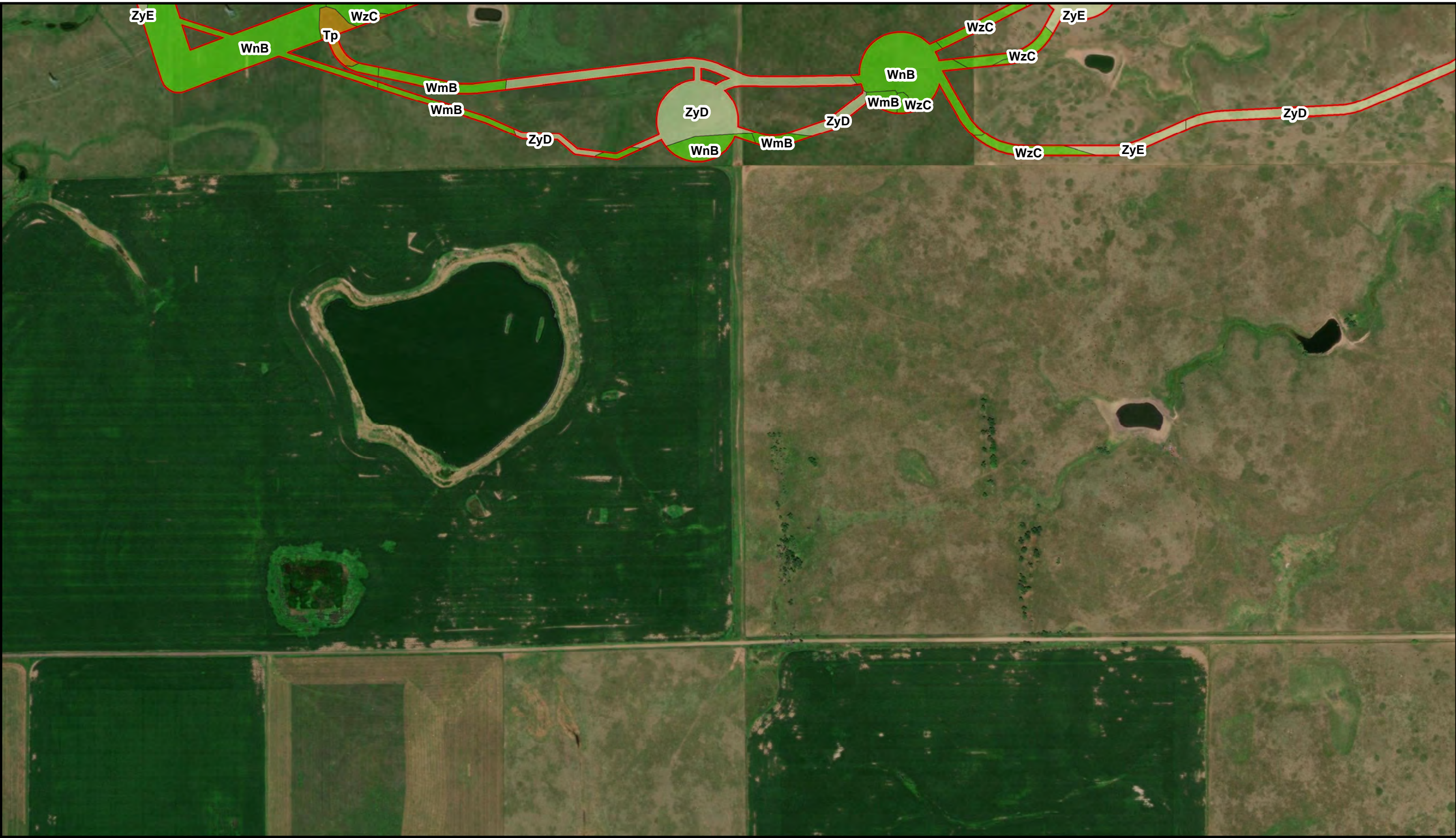


Figure A-2.21  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota








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**Legend**  
 Survey Area

**SSURGO Soil Map Unit & Hydric Rating\***

- |   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

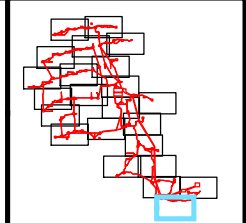
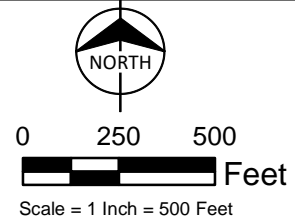
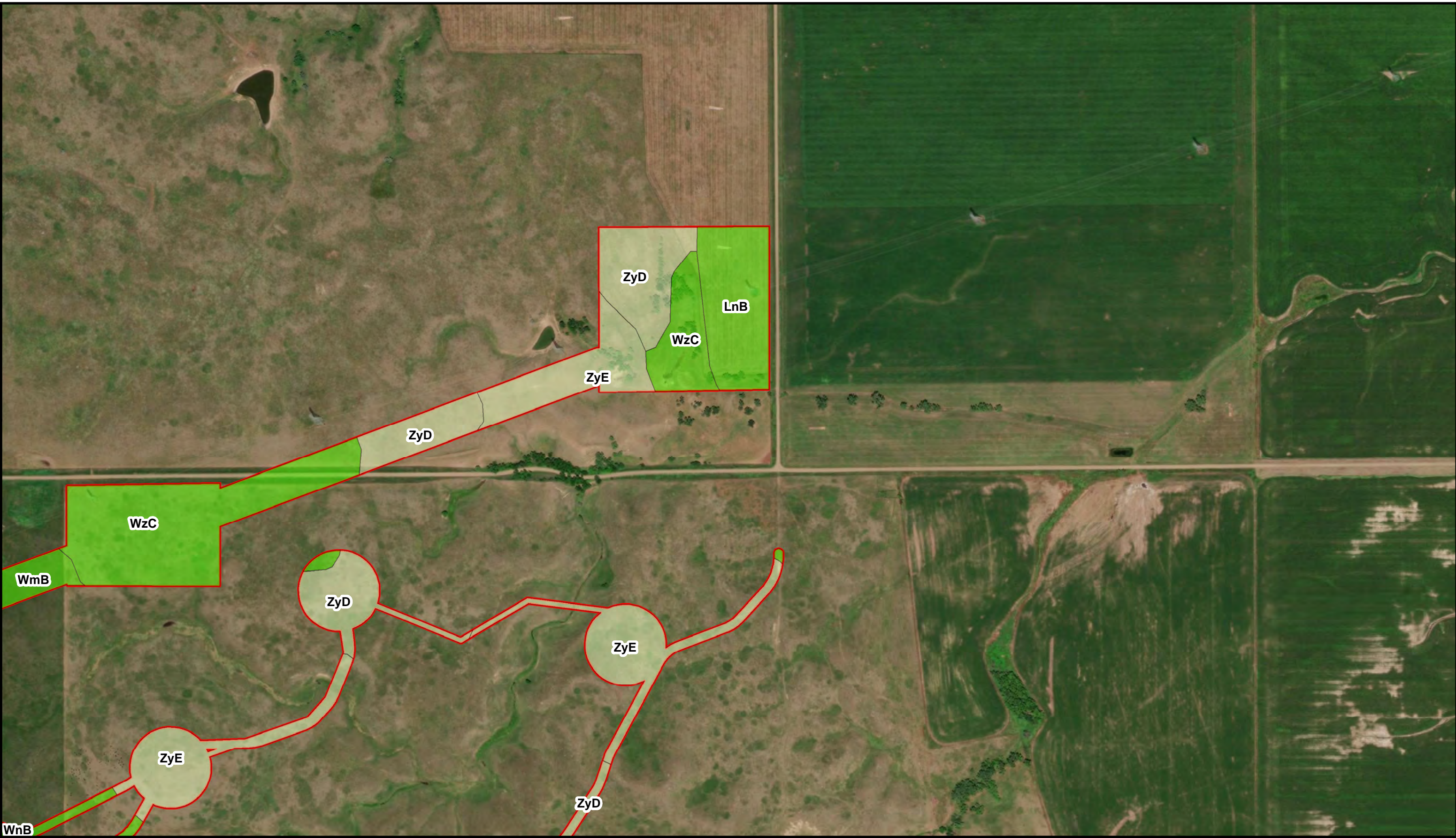


Figure A-2.22  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**  
 Survey Area

| SSURGO Soil Map Unit & Hydric Rating*   |  |  |
|---|--|--|
|  Non-Hydric (0)                  |  Partially Hydric (33-65)     |  Hydric (100) |
|  Predominantly Non-Hydric (1-32) |  Predominantly Hydric (66-99) |  |

\* See attached table at the end of this Figure A-2 for index of soil map unit names

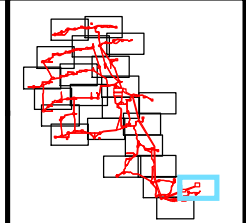


Figure A-2.23  
Hydric Soils & Aerial Imagery  
Sweetland Wind Farm Project  
Hand County, South Dakota



## Hydric Rating by Map Unit

| Map unit symbol | Map unit name  | Rating | Acres in AOI | Percent of AOI |
|-----------------|--|--------|--------------|----------------|
| BcA             | Prosper-Stickney loams, nearly level                           | 5      | 1.7          | 0.2%           |
| CaA             | Dudley silt loam, nearly level                                 | 5      | 1.7          | 0.2%           |
| CnA             | Cavo-Glenham loams, nearly level                               | 6      | 4.8          | 0.6%           |
| HdA             | Durrstein-Bon complex, nearly level                            | 62     | 0.0          | 0.0%           |
| HhB             | Houdek loam, 2 to 6 percent slopes                             | 4      | 0.9          | 0.1%           |
| HkA             | Houdek-Prosper loams, 0 to 2 percent slopes                    | 3      | 25.5         | 3.0%           |
| HkB             | Houdek-Prosper loams, 1 to 6 percent slopes                    | 3      | 3.7          | 0.4%           |
| HIA             | Houdek-Dudley complex, 0 to 2 percent slopes                   | 5      | 0.6          | 0.1%           |
| Hv              | Hoven silt loam, 0 to 1 percent slopes                         | 100    | 4.7          | 0.5%           |
| LIA             | Bon loam, channeled, 0 to 2 percent slopes, frequently flooded | 9      | 0.7          | 0.1%           |
| LnB             | Lane loam, gently sloping                                      | 1      | 7.5          | 0.9%           |
| So              | Oahe-Delmont loams, 2 to 6 percent slopes                      | 0      | 9.4          | 1.1%           |
| Tp              | Tetonka silt loam, 0 to 1 percent slopes                       | 95     | 12.9         | 1.5%           |
| W               | Water  | 0      | 0.3          | 0.0%           |
| WmB             | Glenham loam, undulating                                       | 1      | 108.5        | 12.6%          |
| WmC             | Glenham loam, rolling  | 1      | 63.2         | 7.3%           |
| WnA             | Glenham-Prosper loams, 0 to 2 percent slopes                   | 6      | 49.2         | 5.7%           |
| WnB             | Glenham-Propser loams, 1 to 6 percent slopes                   | 6      | 322.0        | 37.4%          |
| WpA             | Glenham-Cavo loams, nearly level                               | 10     | 9.2          | 1.1%           |
| WpB             | Glenham-Cavo loams, undulating                                 | 10     | 48.6         | 5.6%           |

| Map unit symbol                    | Map unit name                  | Rating | Acres in AOI | Percent of AOI |
|------------------------------------|--------------------------------|--------|--------------|----------------|
| WxC                                | Glenham-Java loams,<br>rolling | 1      | 2.5          | 0.3%           |
| WzC                                | Glenham-Java loams,<br>rolling | 1      | 84.9         | 9.9%           |
| ZxE                                | Betts-Java loams, steep        | 0      | 3.0          | 0.4%           |
| ZyD                                | Java-Glenham loams,<br>hilly   | 0      | 31.6         | 3.7%           |
| ZyE                                | Betts-Java loams, steep        | 0      | 64.6         | 7.5%           |
| <b>Totals for Area of Interest</b> |                                |        | <b>861.6</b> | <b>100.0%</b>  |



## Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

### References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

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Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

## **Rating Options**

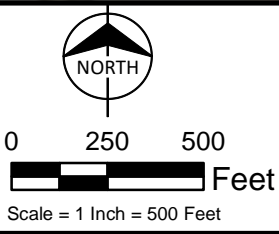
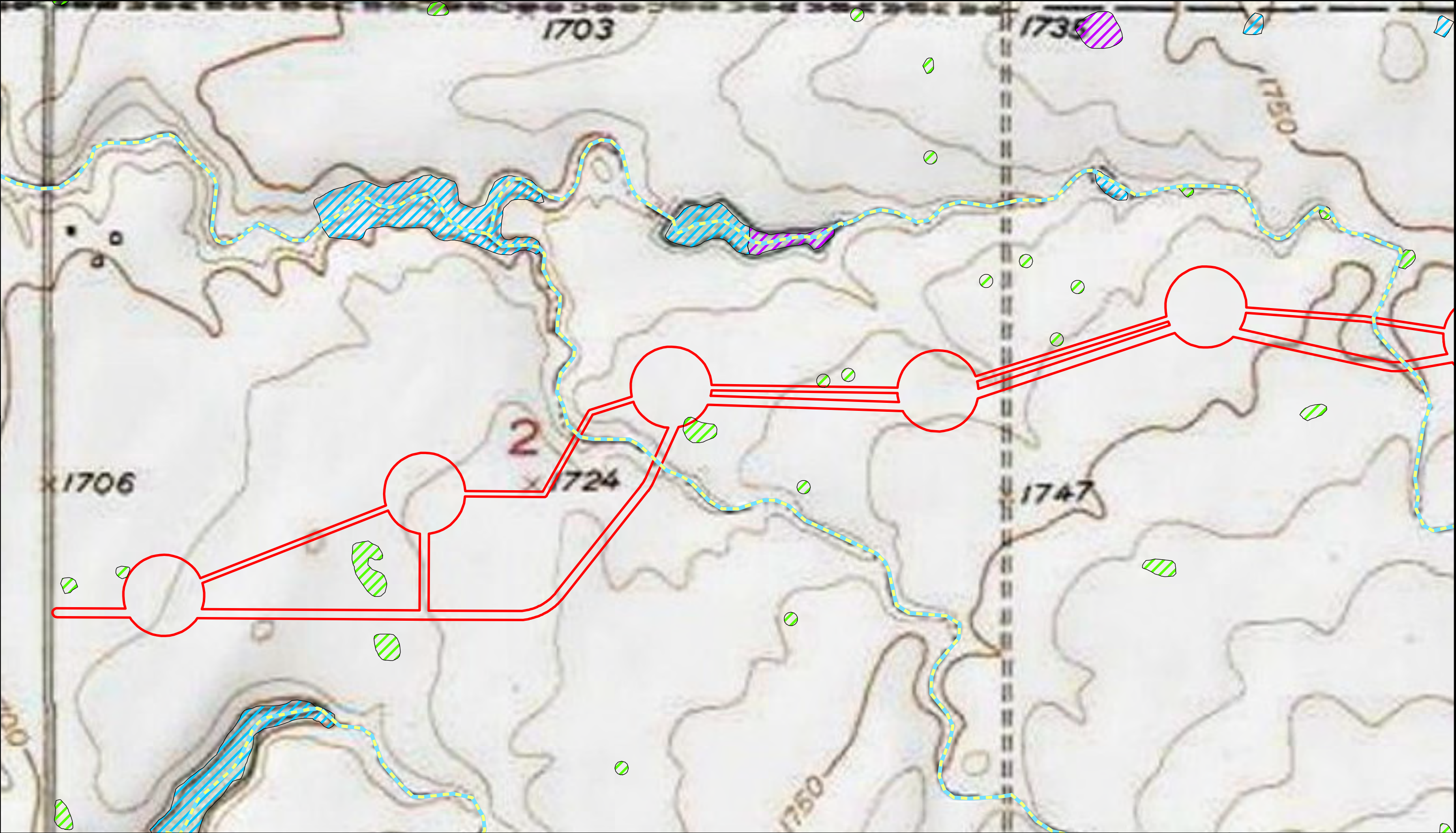
*Aggregation Method:* Percent Present

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Lower



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**Legend**

- Survey Area
- NHD Stream/River

- USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

- Emergent Wetland (PEM)
- Forested/Shrub-scrub (PFO/PSS)
- Pond (PUB)
- Lake

\* Data Is Digitized From USFWS Paper Easement Documents Provided By Sweetland Wind Farm, LLC

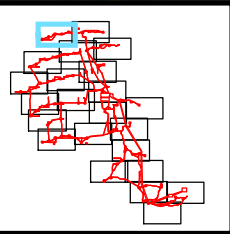
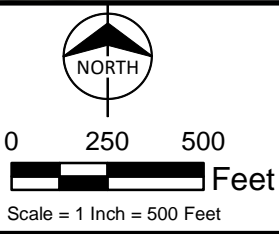
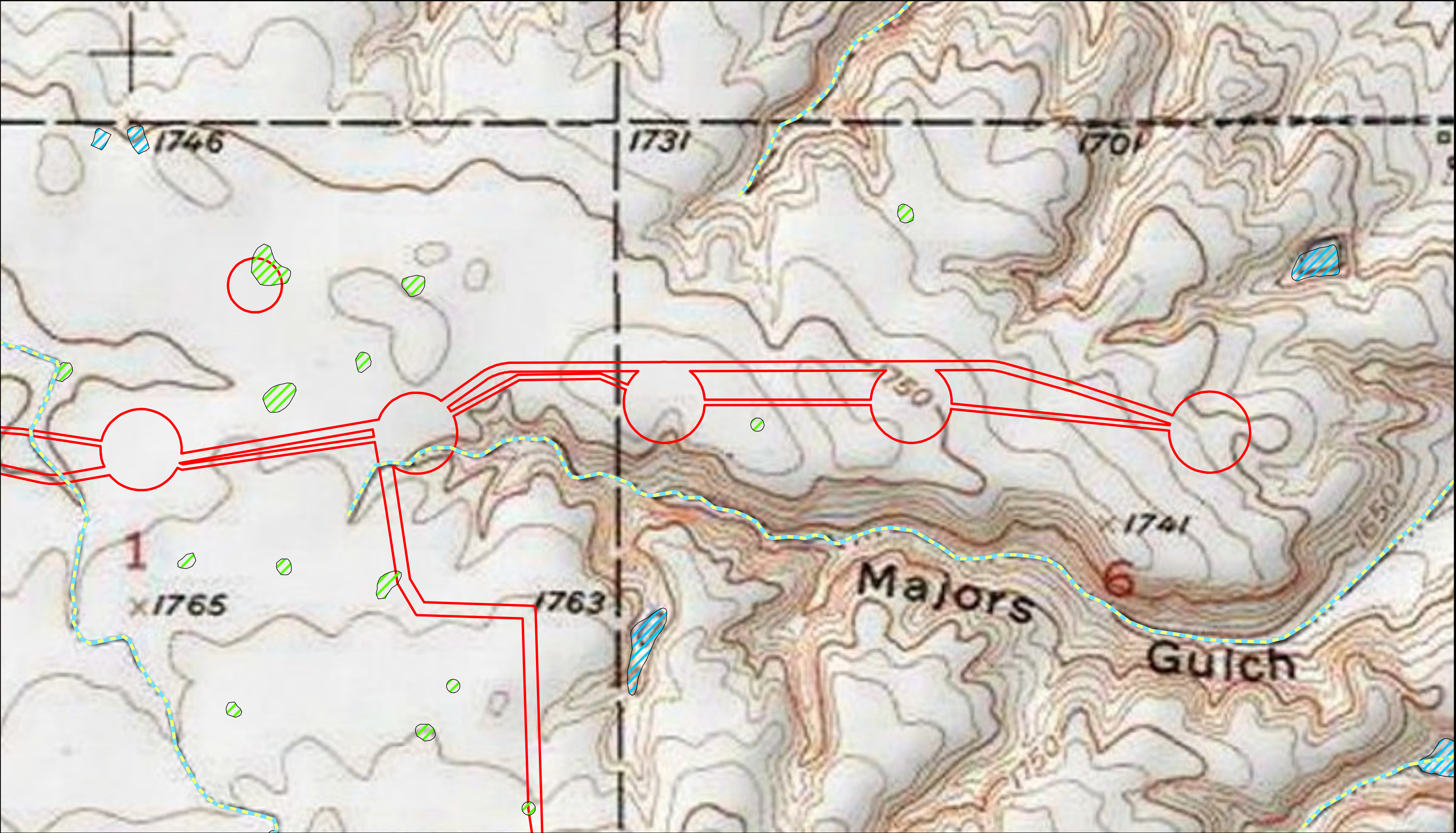


Figure A-3.1  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- NHD Stream/River

- USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

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- Lake

\* Data Is Digitized From USFWS Paper Easement Documents Provided By Sweetland Wind Farm, LLC

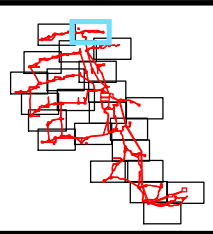
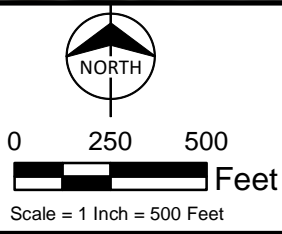
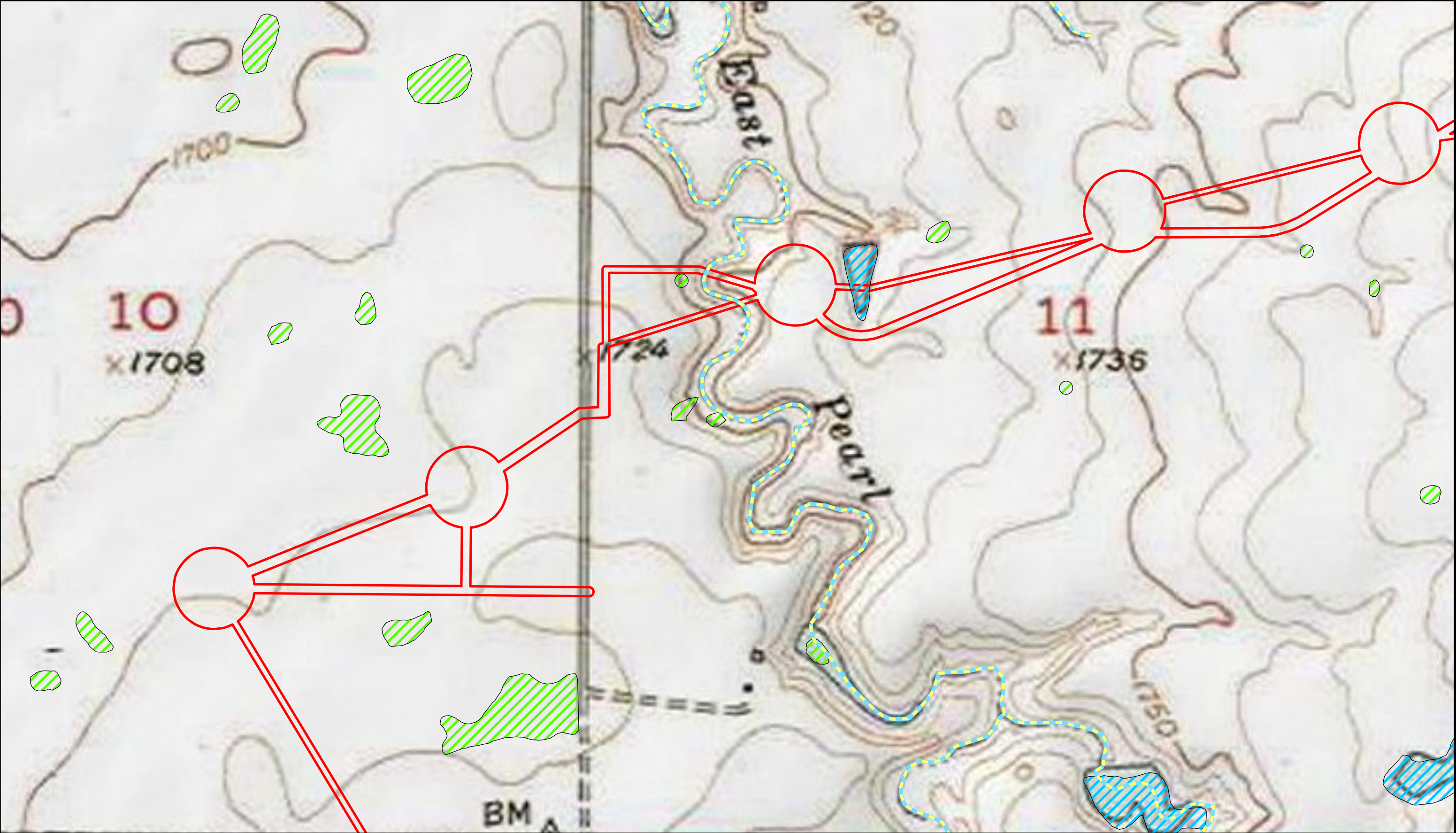




Figure A-3.2  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

-  Survey Area
-  NHD Stream/River

-  USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

-  Emergent Wetland (PEM)
-  Forested/Shrub-scrub (PFO/PSS)
-  Pond (PUB)
-  Lake

\* Data Is Digitized From USFWS Paper Easement Documents Provided By Sweetland Wind Farm, LLC

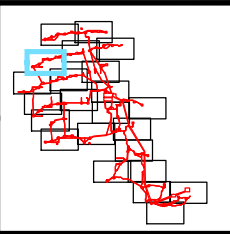
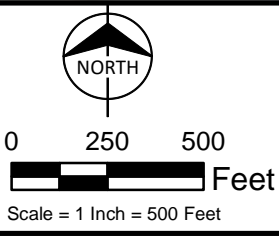
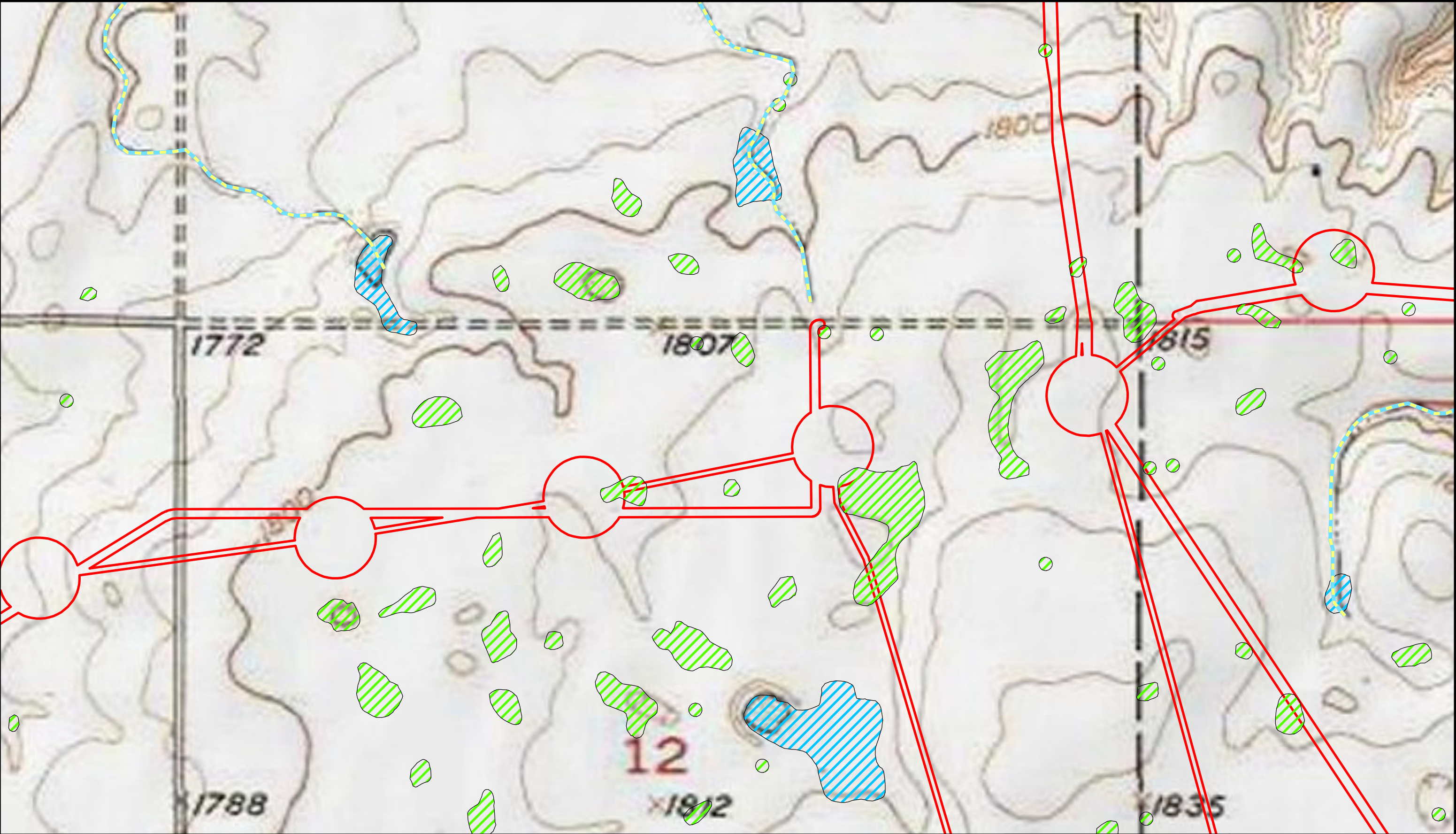


Figure A-3.3  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- NHD Stream/River

- USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

- Emergent Wetland (PEM)
- Forested/Shrub-scrub (PFO/PSS)
- Pond (PUB)
- Lake

\* Data Is Digitized From USFWS Paper Easement Documents Provided By Sweetland Wind Farm, LLC

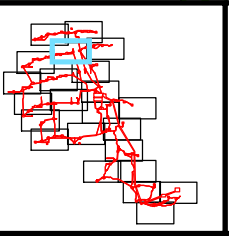


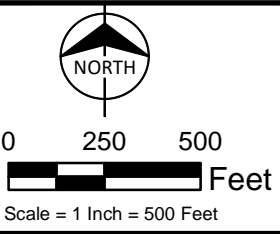
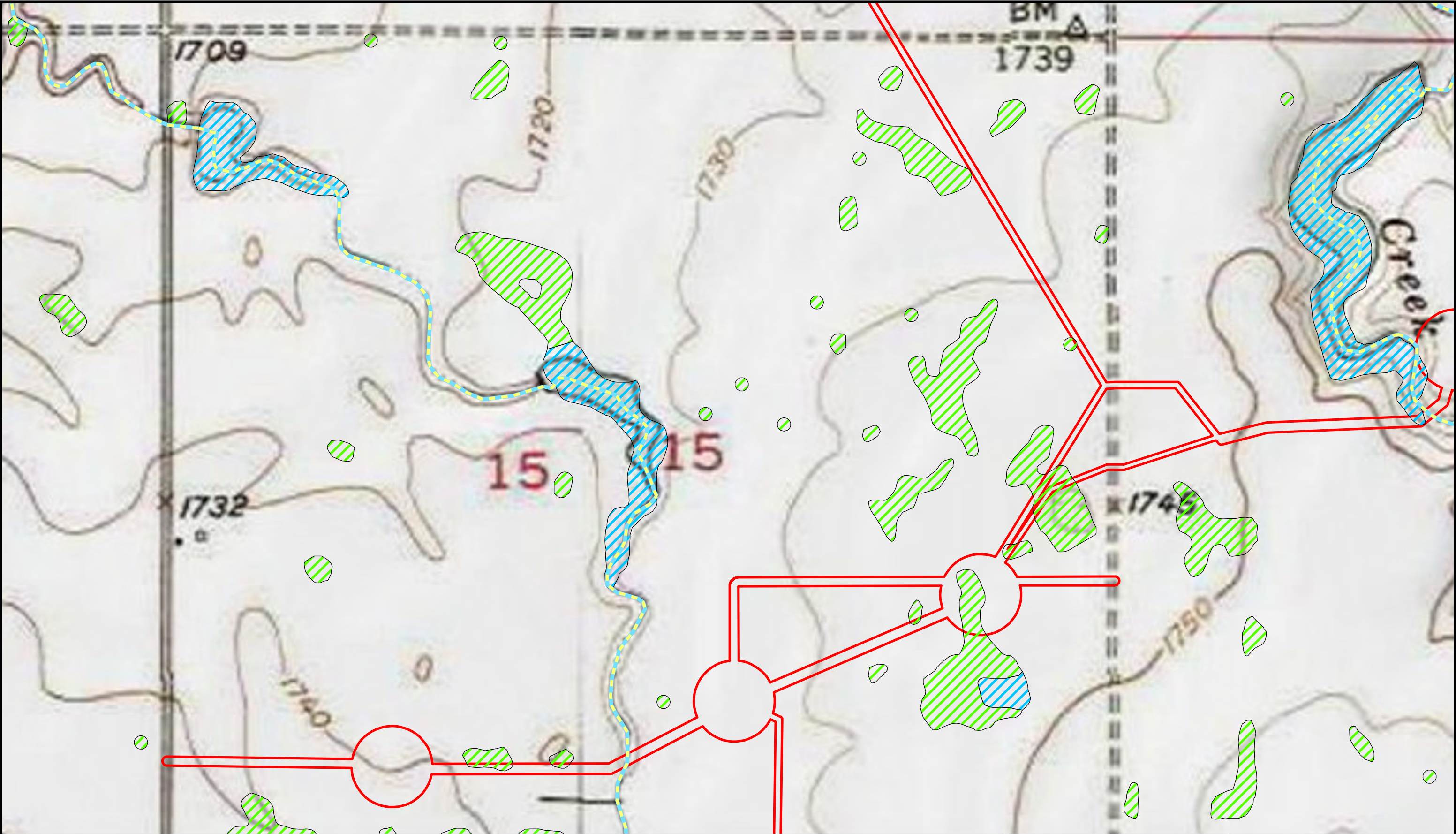
Figure A-3.4  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota









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


**Legend**

-  Survey Area
-  NHD Stream/River

-  USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

-  Emergent Wetland (PEM)
-  Pond (PUB)
-  Forested/Shrub-scrub (PFO/PSS)
-  Lake

\* Data Is Digitized From USFWS Paper Easement Documents Provided By Sweetland Wind Farm, LLC

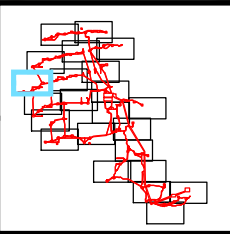
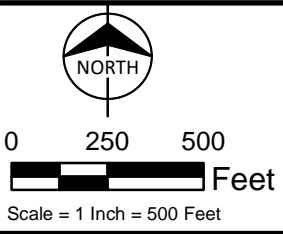
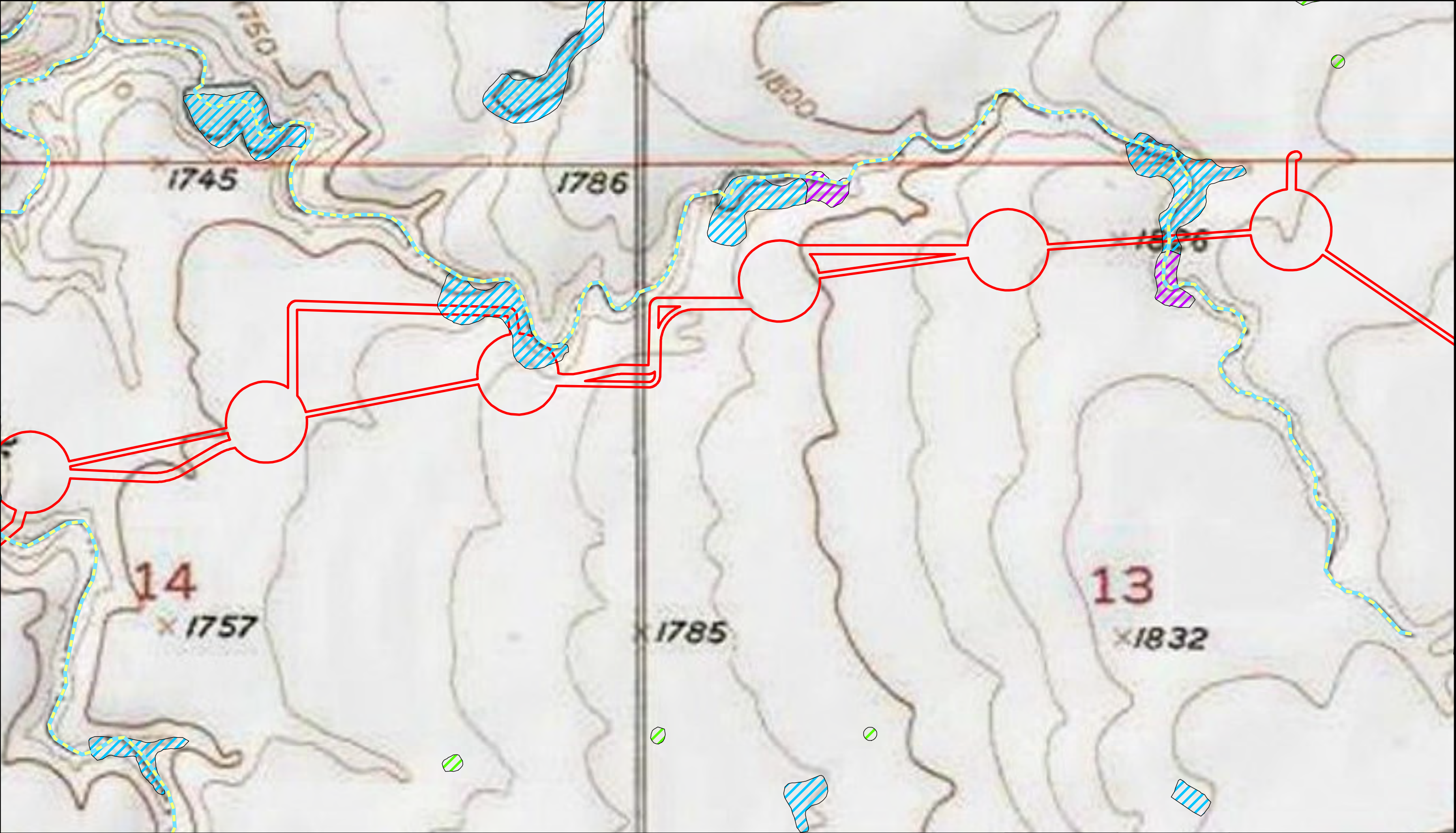




Figure A-3.6  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

-  Survey Area
-  NHD Stream/River

-  USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

-  Emergent Wetland (PEM)
-  Forested/Shrub-scrub (PFO/PSS)
-  Pond (PUB)
-  Lake

\* Data Is Digitized From USFWS Paper Easement Documents Provided By Sweetland Wind Farm, LLC

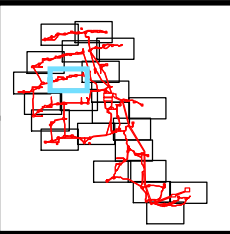
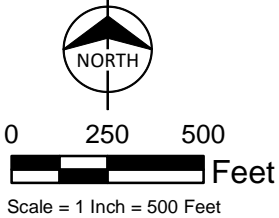
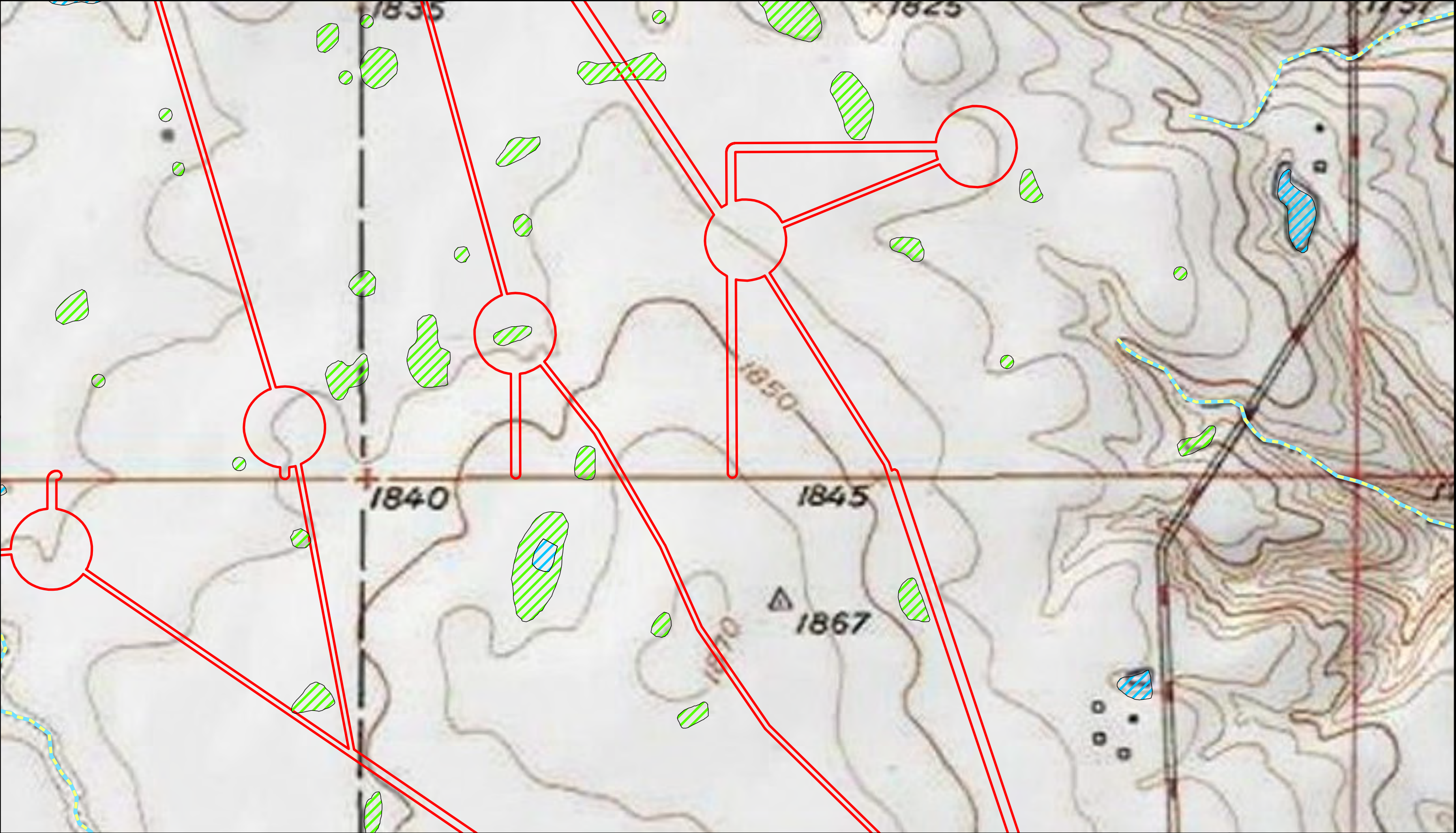




Figure A-3.7  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

-  Survey Area
-  NHD Stream/River

-  USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

-  Emergent Wetland (PEM)
-  Pond (PUB)
-  Forested/Shrub-scrub (PFO/PSS)
-  Lake

\* Data Is Digitized From USFWS Paper Easement Documents Provided By Sweetland Wind Farm, LLC

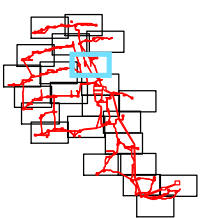
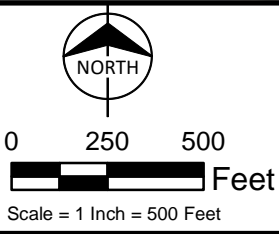
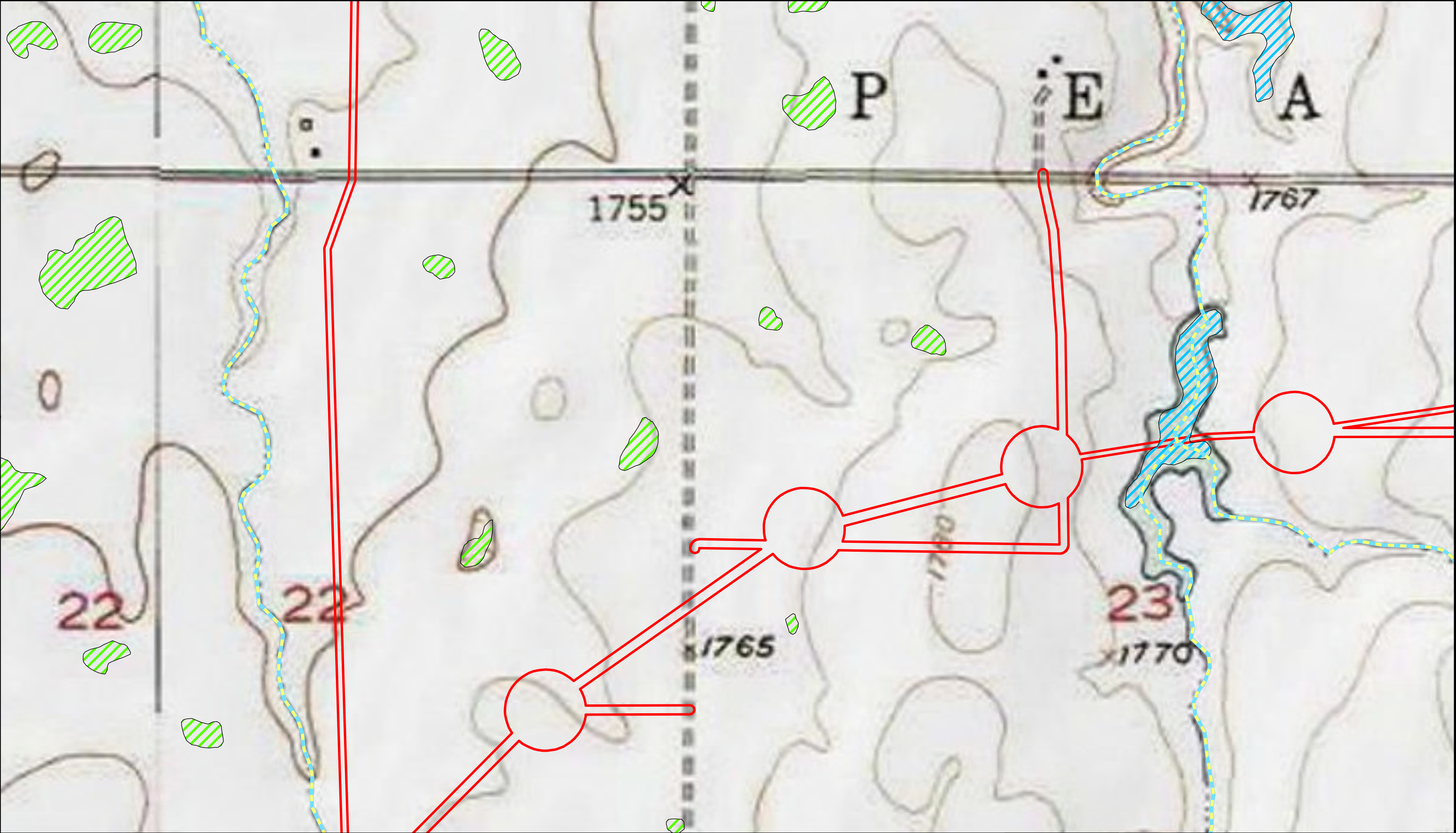




Figure A-3.8  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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


**Legend**

-  Survey Area
-  NHD Stream/River

-  USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

-  Emergent Wetland (PEM)
-  Forested/Shrub-scrub (PFO/PSS)
-  Pond (PUB)
-  Lake

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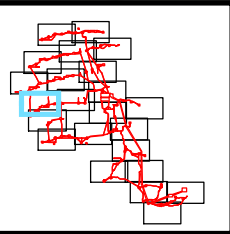
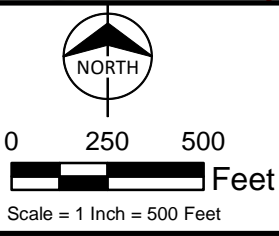
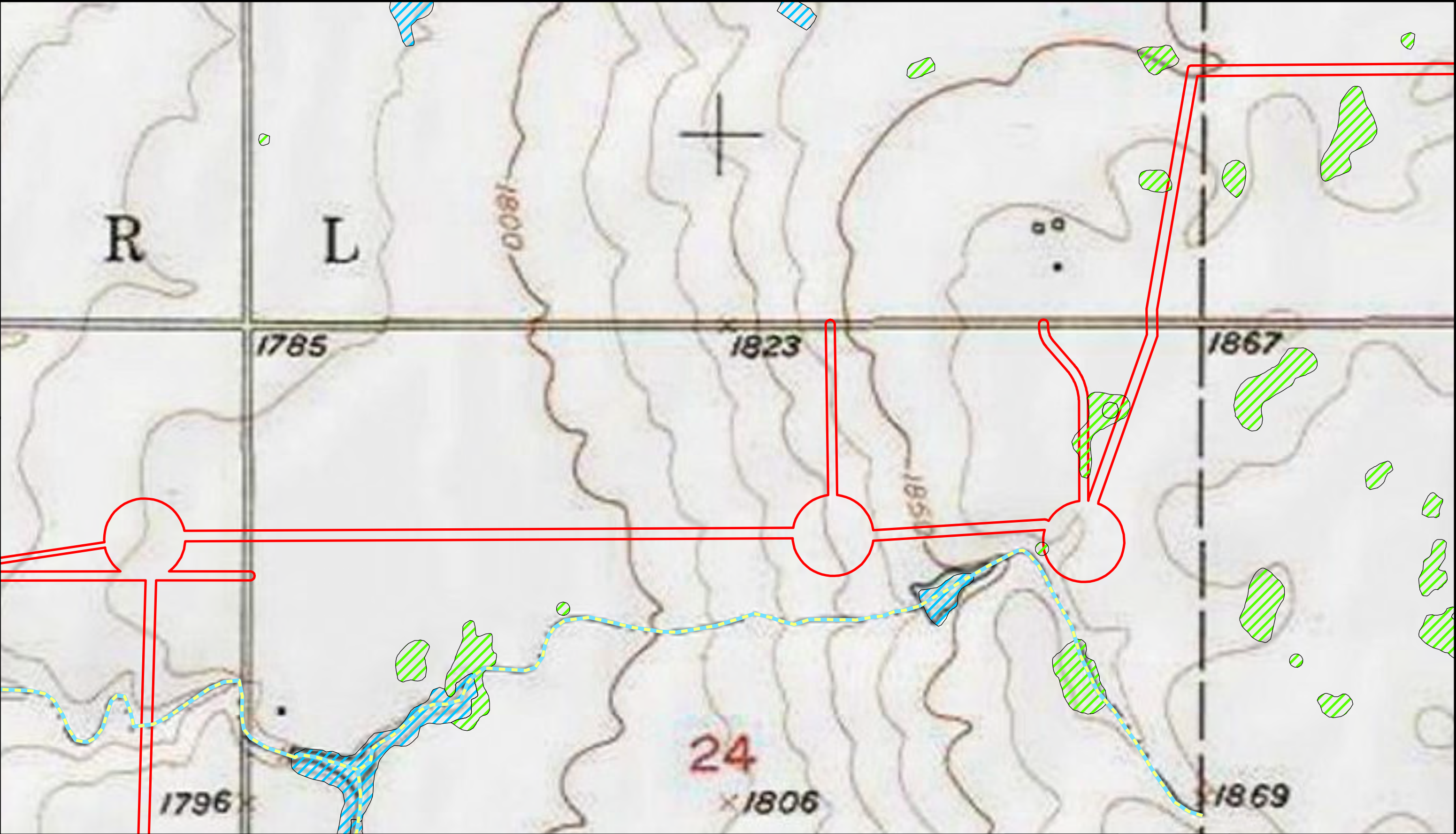


Figure A-3.9  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- NHD Stream/River

- USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

- Emergent Wetland (PEM)
- Pond (PUB)
- Lake
- Forested/Shrub-scrub (PFO/PSS)

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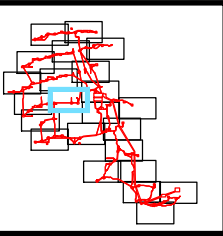
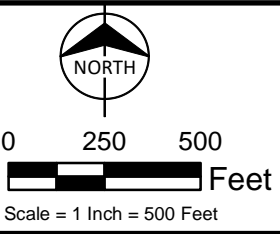
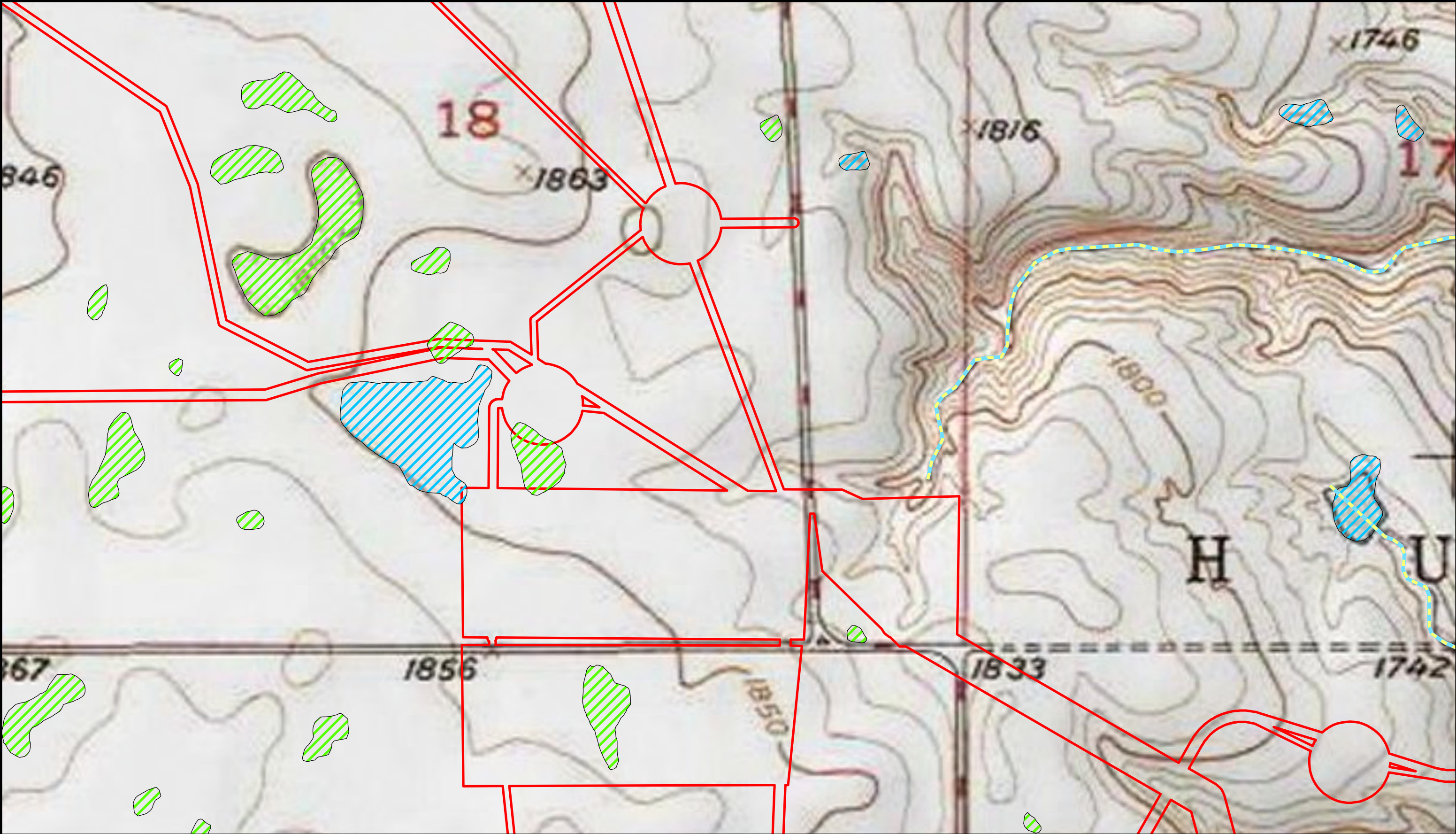




Figure A-3.10  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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


**Legend**

-  Survey Area
-  NHD Stream/River

-  USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

-  Emergent Wetland (PEM)
-  Forested/Shrub-scrub (PFO/PSS)
-  Pond (PUB)
-  Lake

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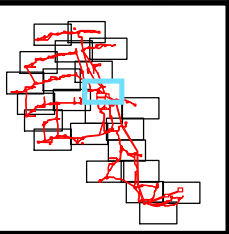
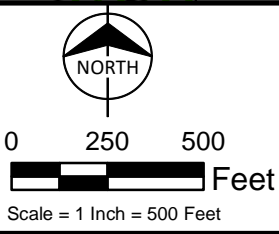
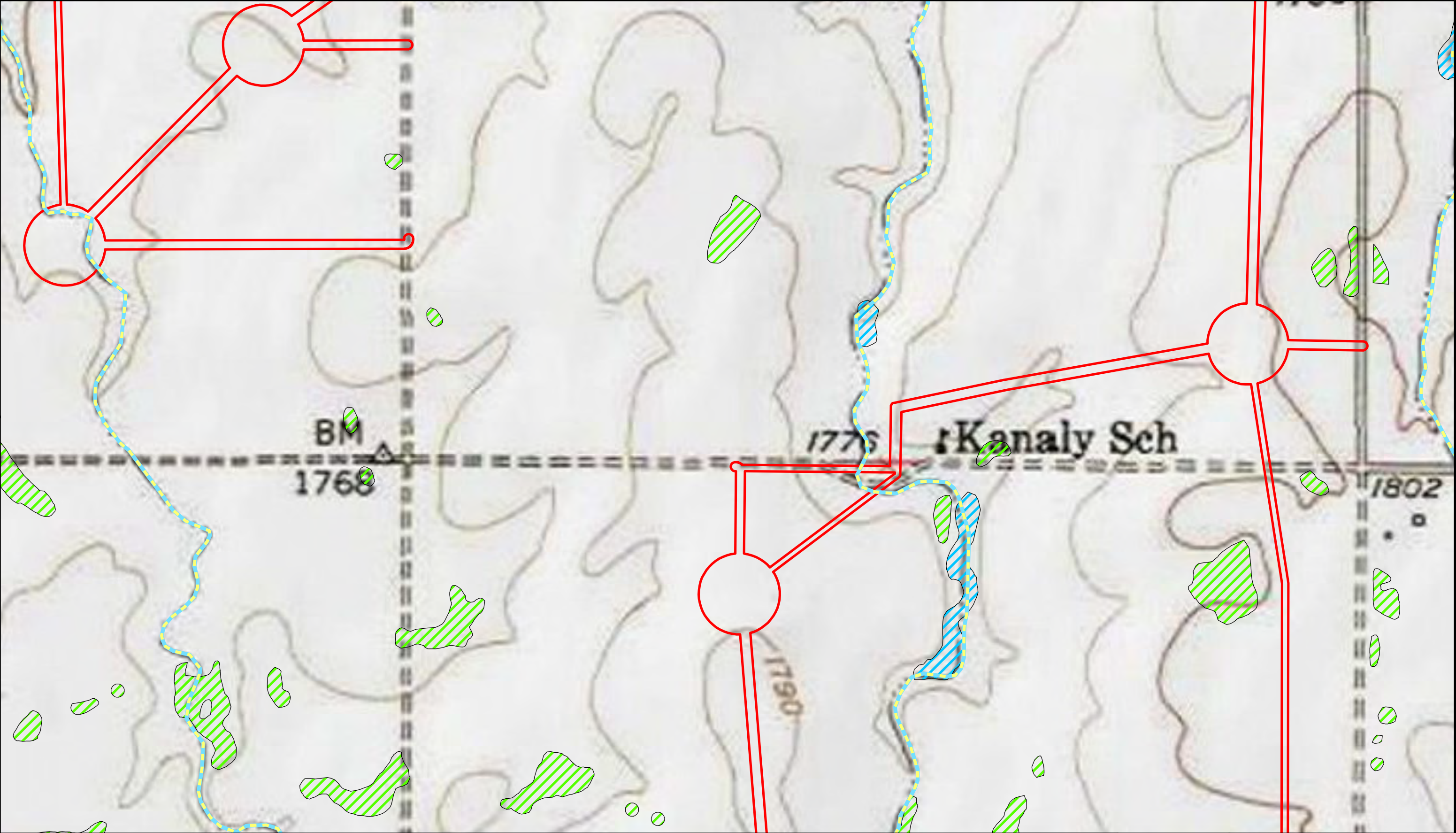




Figure A-3.11  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

-  Survey Area
-  NHD Stream/River

-  USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

-  Emergent Wetland (PEM)
-  Forested/Shrub-scrub (PFO/PSS)
-  Pond (PUB)
-  Lake

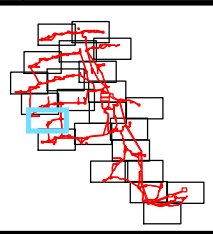
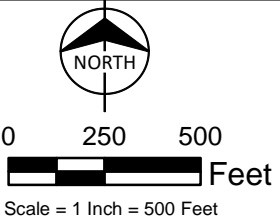
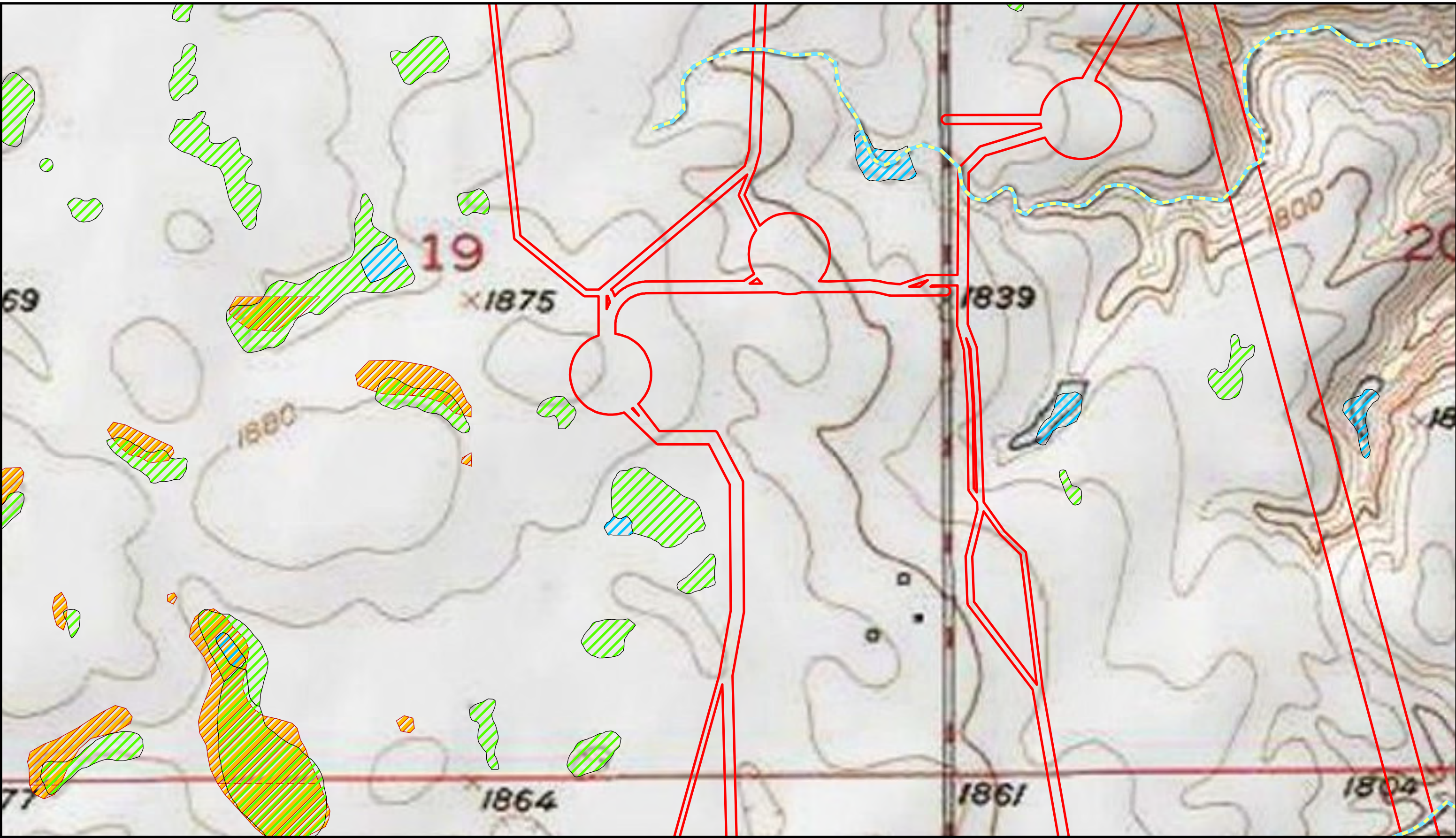


Figure A-3.12  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota

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**Legend**

- Survey Area
- NHD Stream/River

- USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

- Emergent Wetland (PEM)
- Pond (PUB)
- Lake
- Forested/Shrub-scrub (PFO/PSS)

\* Data Is Digitized From USFWS Paper Easement Documents Provided By Sweetland Wind Farm, LLC

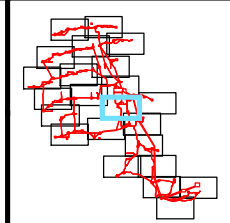
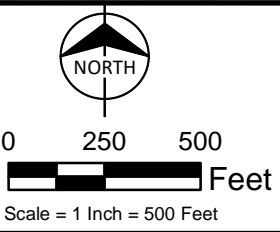
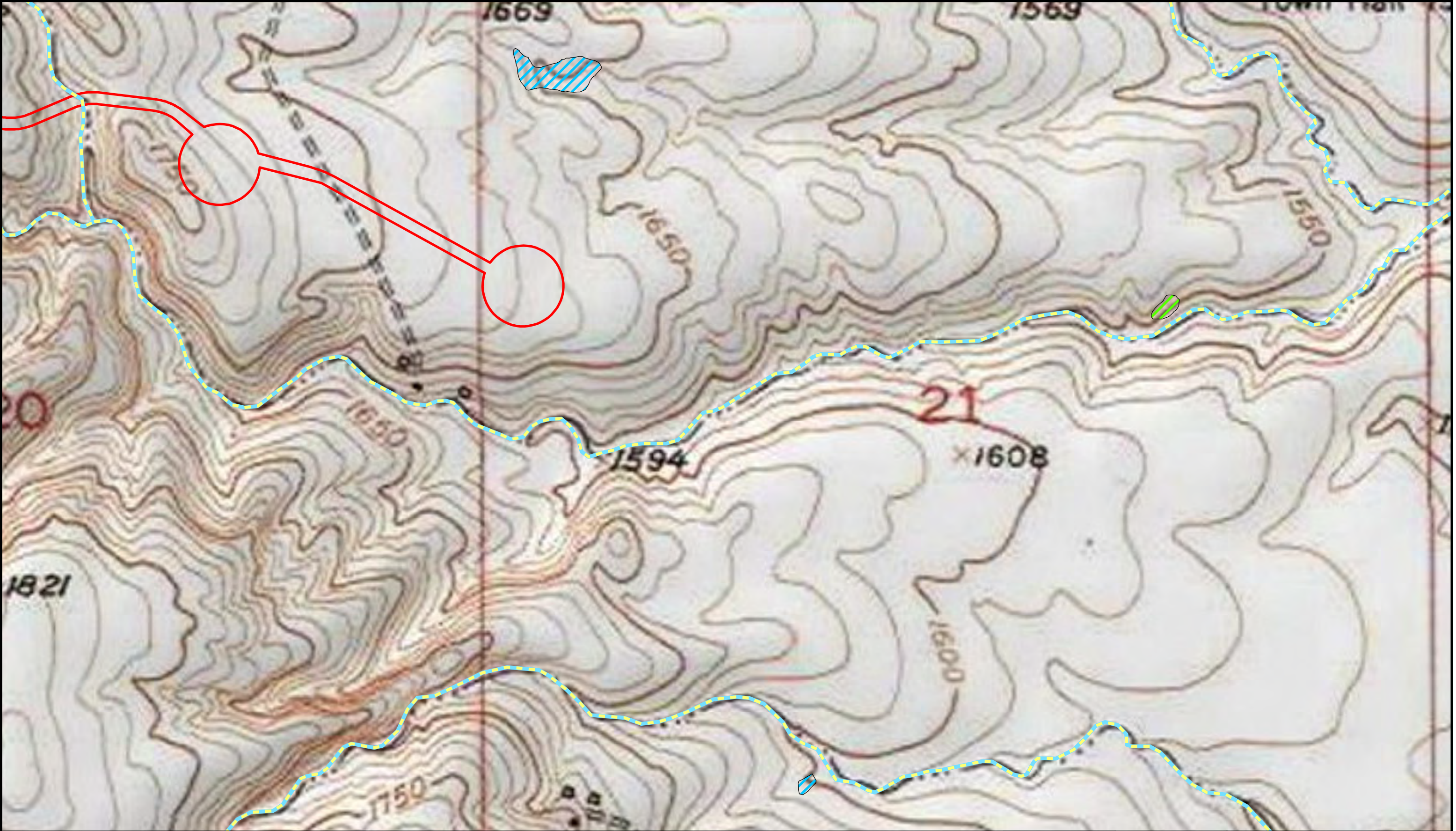




Figure A-3.13  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

-  Survey Area
-  NHD Stream/River

-  USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

-  Emergent Wetland (PEM)
-  Forested/Shrub-scrub (PFO/PSS)
-  Pond (PUB)
-  Lake

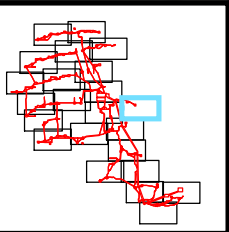
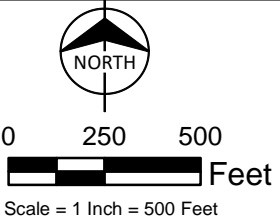
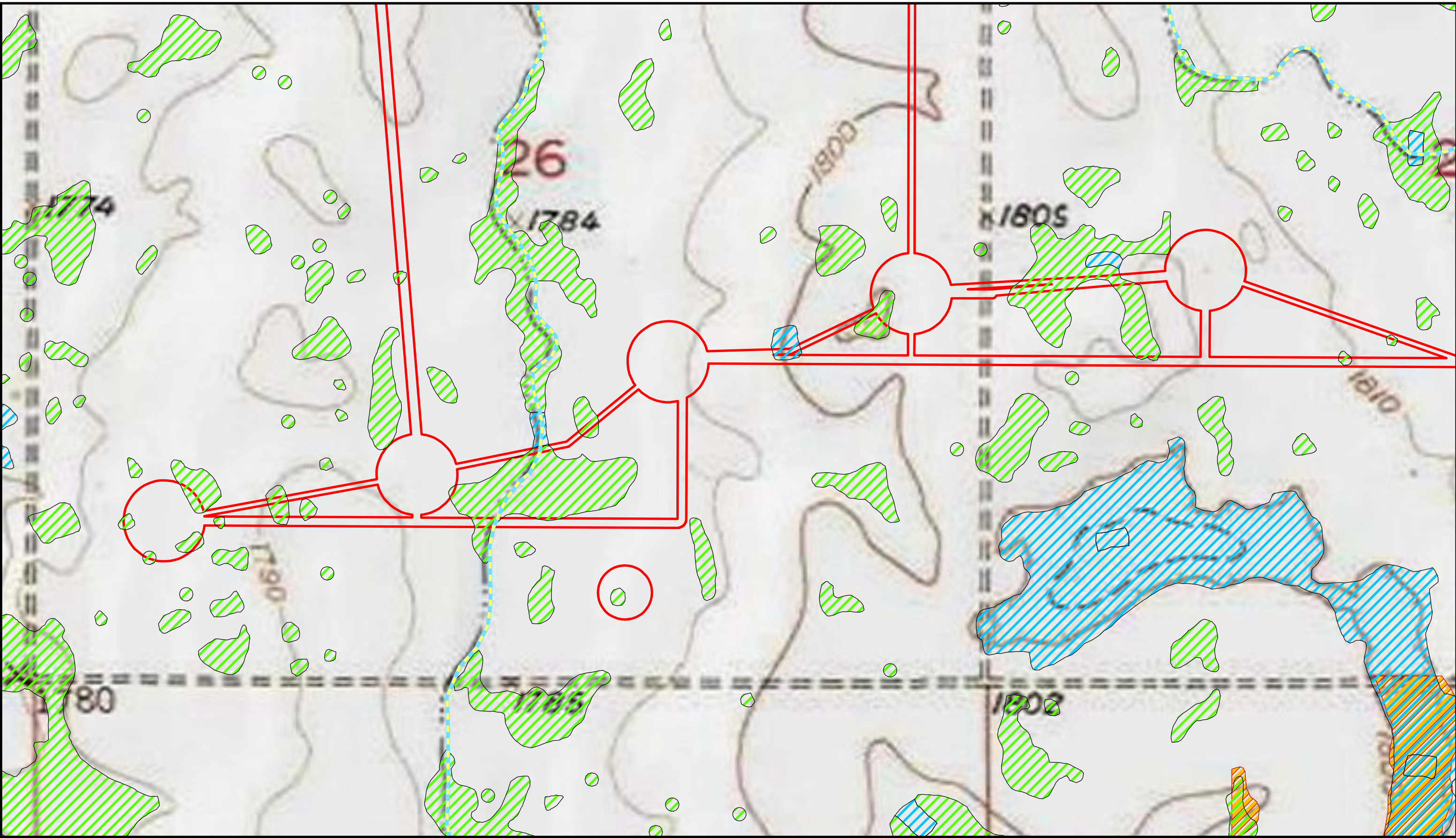


Figure A-3.14  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota

\* Data Is Digitized From USFWS Paper Easement Documents Provided By Sweetland Wind Farm, LLC



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**Legend**

- Survey Area
- NHD Stream/River

- USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

- Emergent Wetland (PEM)
- Forested/Shrub-scrub (PFO/PSS)
- Pond (PUB)
- Lake

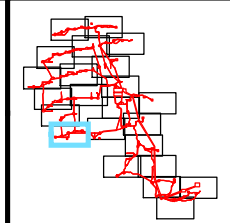
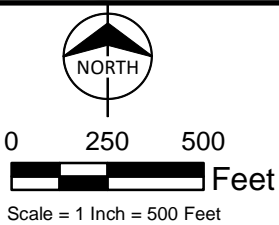
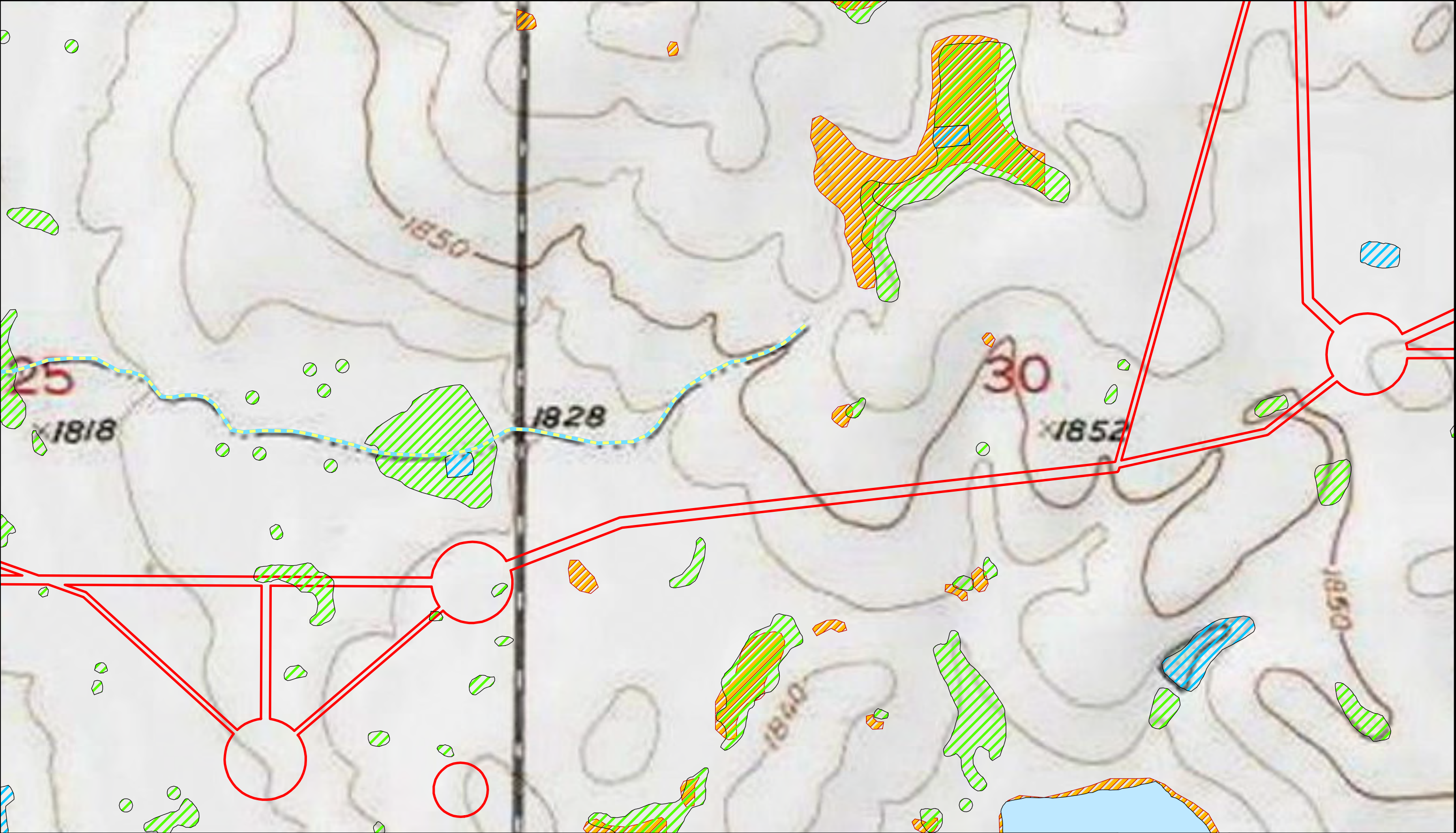


Figure A-3.15  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota

\* Data Is Digitized From USFWS Paper Easement Documents Provided By Sweetland Wind Farm, LLC



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**Legend**

- Survey Area
- NHD Stream/River

- USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

- Emergent Wetland (PEM)
- Forested/Shrub-scrub (PFO/PSS)
- Pond (PUB)
- Lake

\* Data Is Digitized From USFWS Paper Easement Documents Provided By Sweetland Wind Farm, LLC

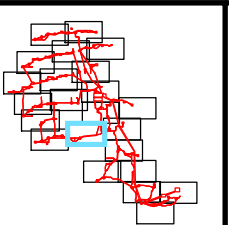
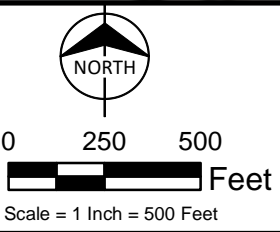
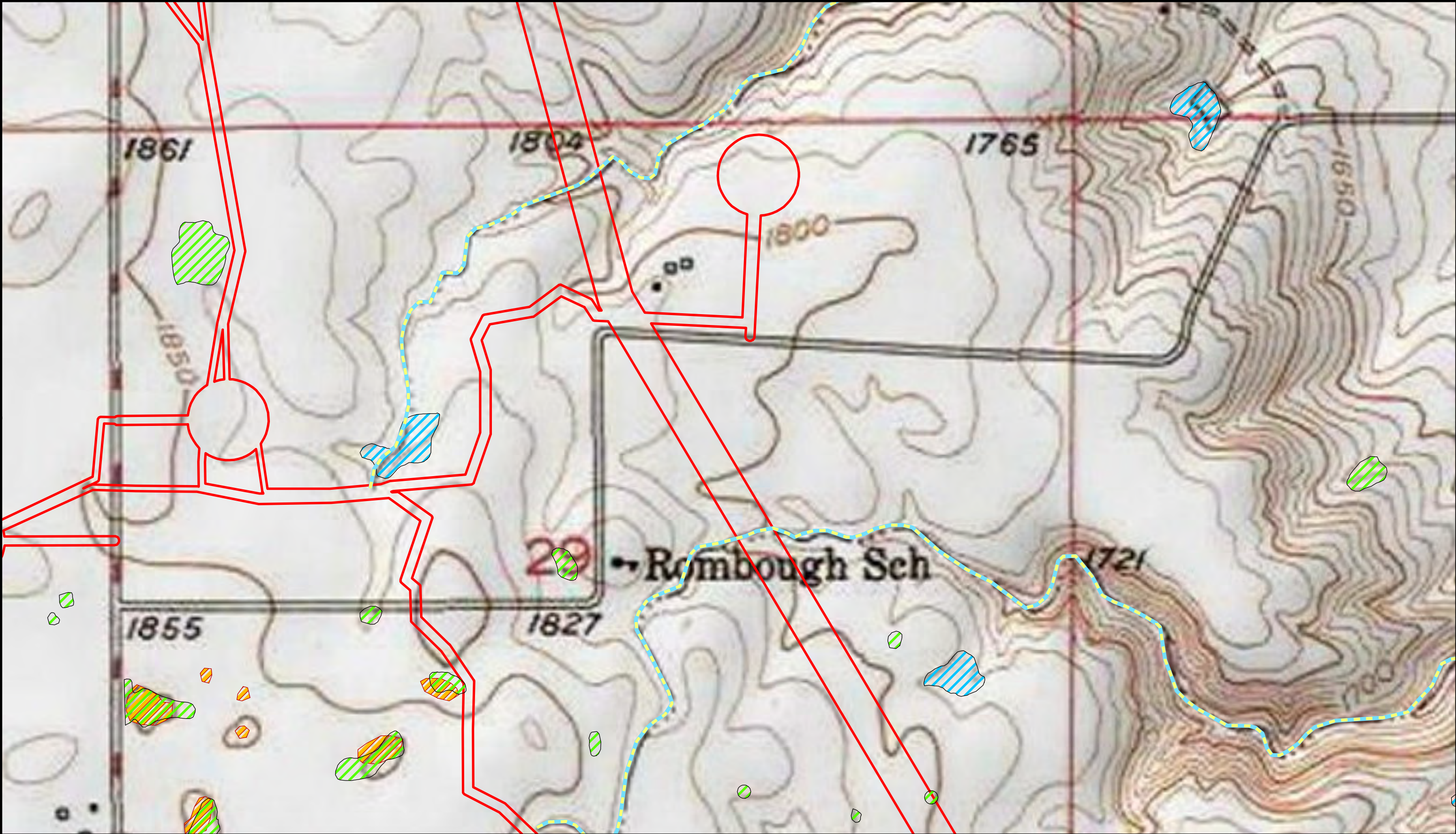


Figure A-3.16  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- NHD Stream/River

- USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

- Emergent Wetland (PEM)
- Forested/Shrub-scrub (PFO/PSS)
- Pond (PUB)
- Lake

\* Data Is Digitized From USFWS Paper Easement Documents Provided By Sweetland Wind Farm, LLC

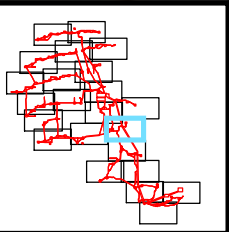
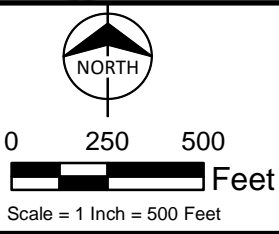
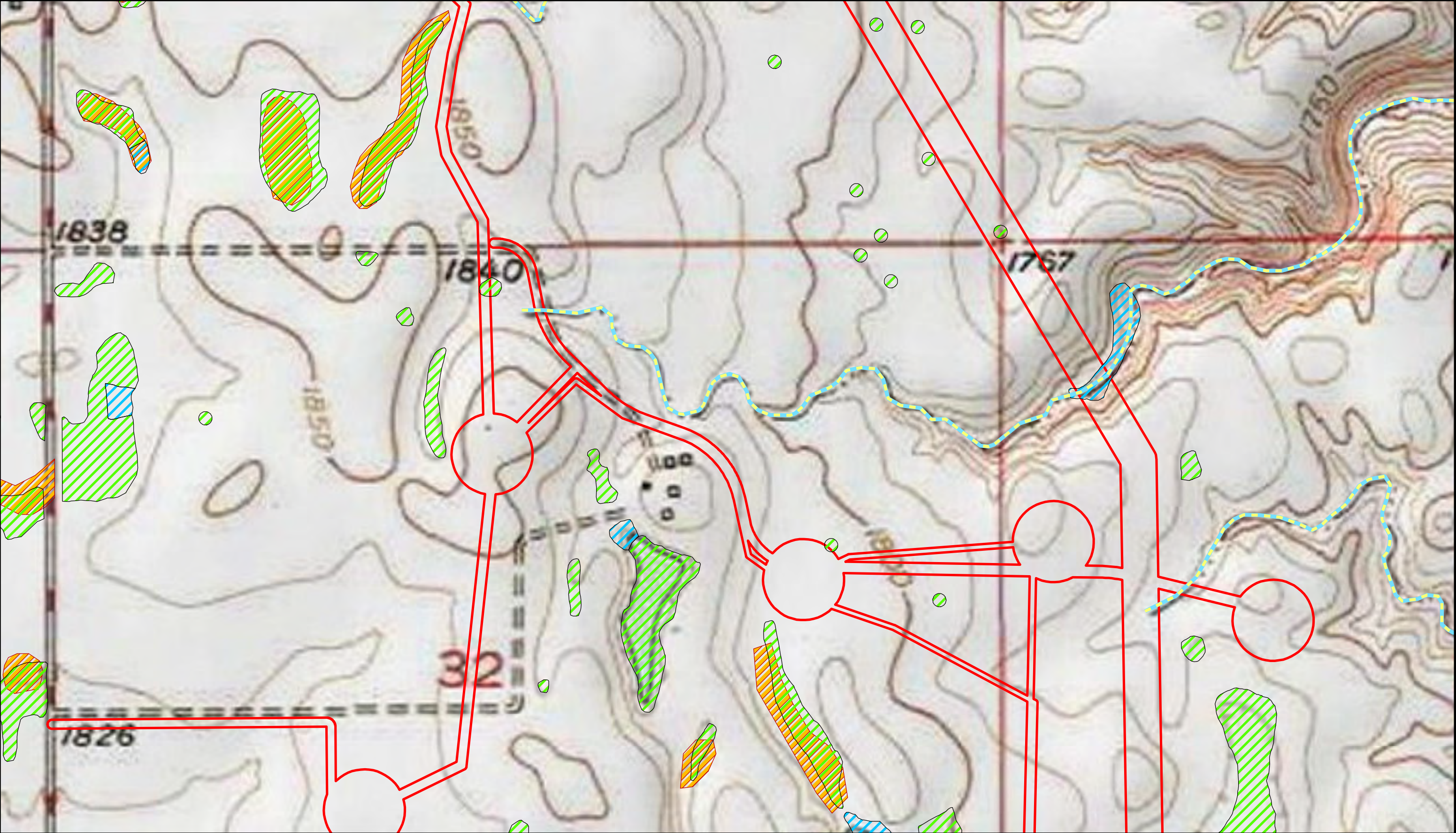


Figure A-3.17  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- NHD Stream/River

- USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

- Emergent Wetland (PEM)
- Forested/Shrub-scrub (PFO/PSS)
- Pond (PUB)
- Lake

\* Data Is Digitized From USFWS Paper Easement Documents Provided By Sweetland Wind Farm, LLC

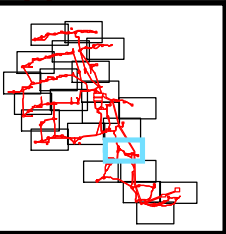
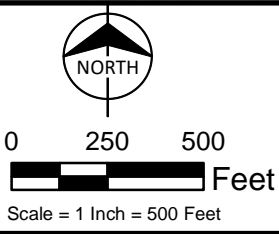
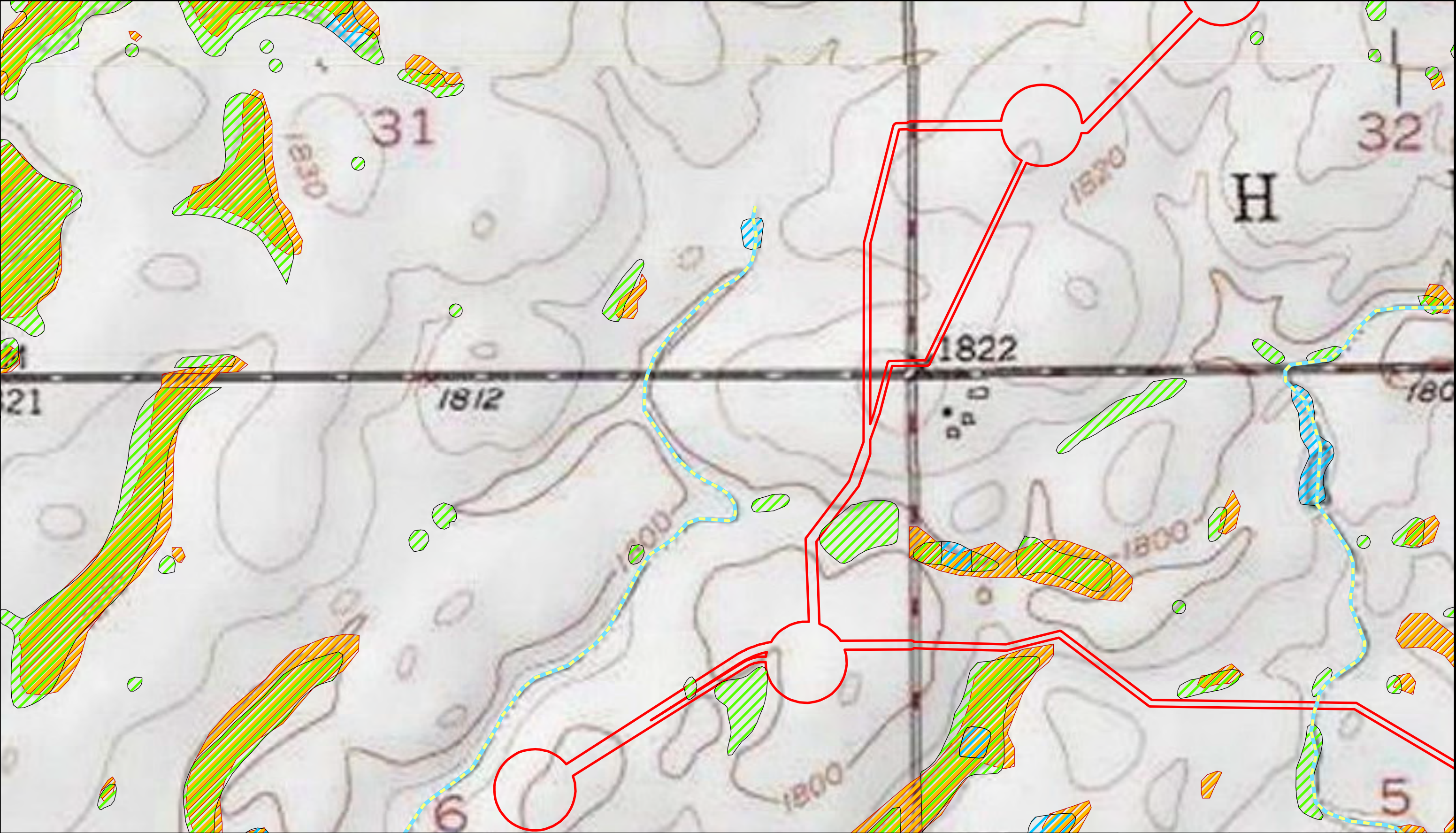


Figure A-3.18  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- NHD Stream/River

- USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

- Emergent Wetland (PEM)
- Forested/Shrub-scrub (PFO/PSS)
- Pond (PUB)
- Lake

\* Data Is Digitized From USFWS Paper Easement Documents Provided By Sweetland Wind Farm, LLC

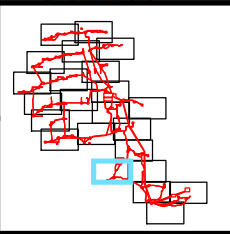
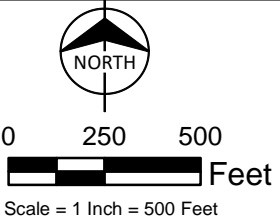
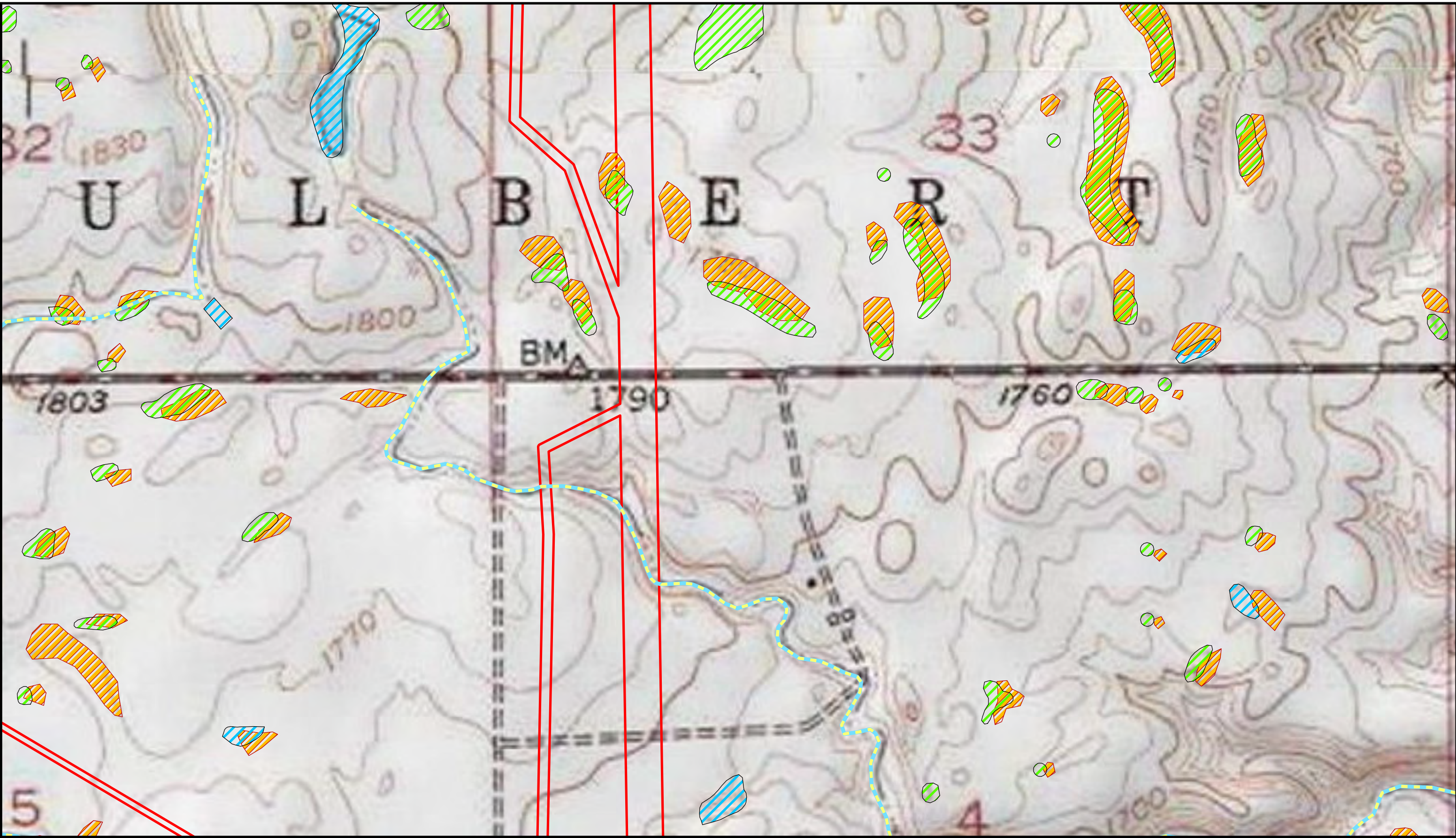


Figure A-3.19  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- NHD Stream/River

**NWI Wetland Classification**

- USFWS Easement Wetland Areas\*
- Emergent Wetland (PEM)
- Forested/Shrub-scrub (PFO/PSS)
- Pond (PUB)
- Lake

\* Data Is Digitized From USFWS Paper Easement Documents Provided By Sweetland Wind Farm, LLC

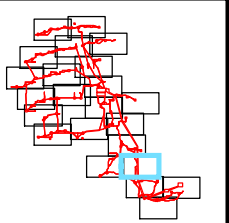
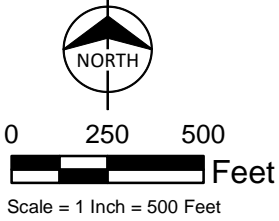
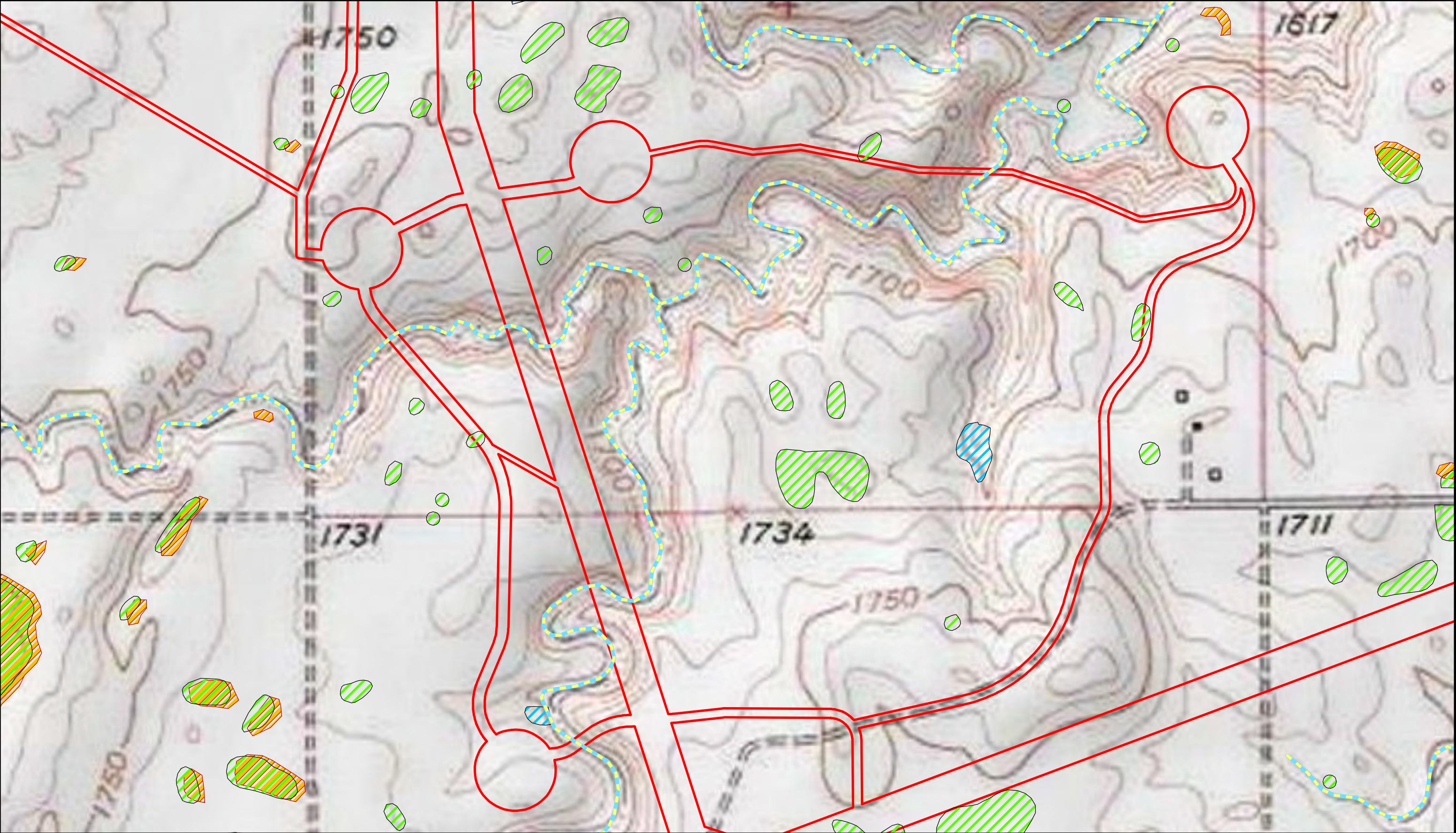


Figure A-3.20  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- NHD Stream/River

- USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

- Emergent Wetland (PEM)
- Forested/Shrub-scrub (PFO/PSS)
- Pond (PUB)
- Lake

\* Data Is Digitized From USFWS Paper Easement Documents Provided By Sweetland Wind Farm, LLC

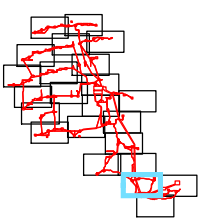
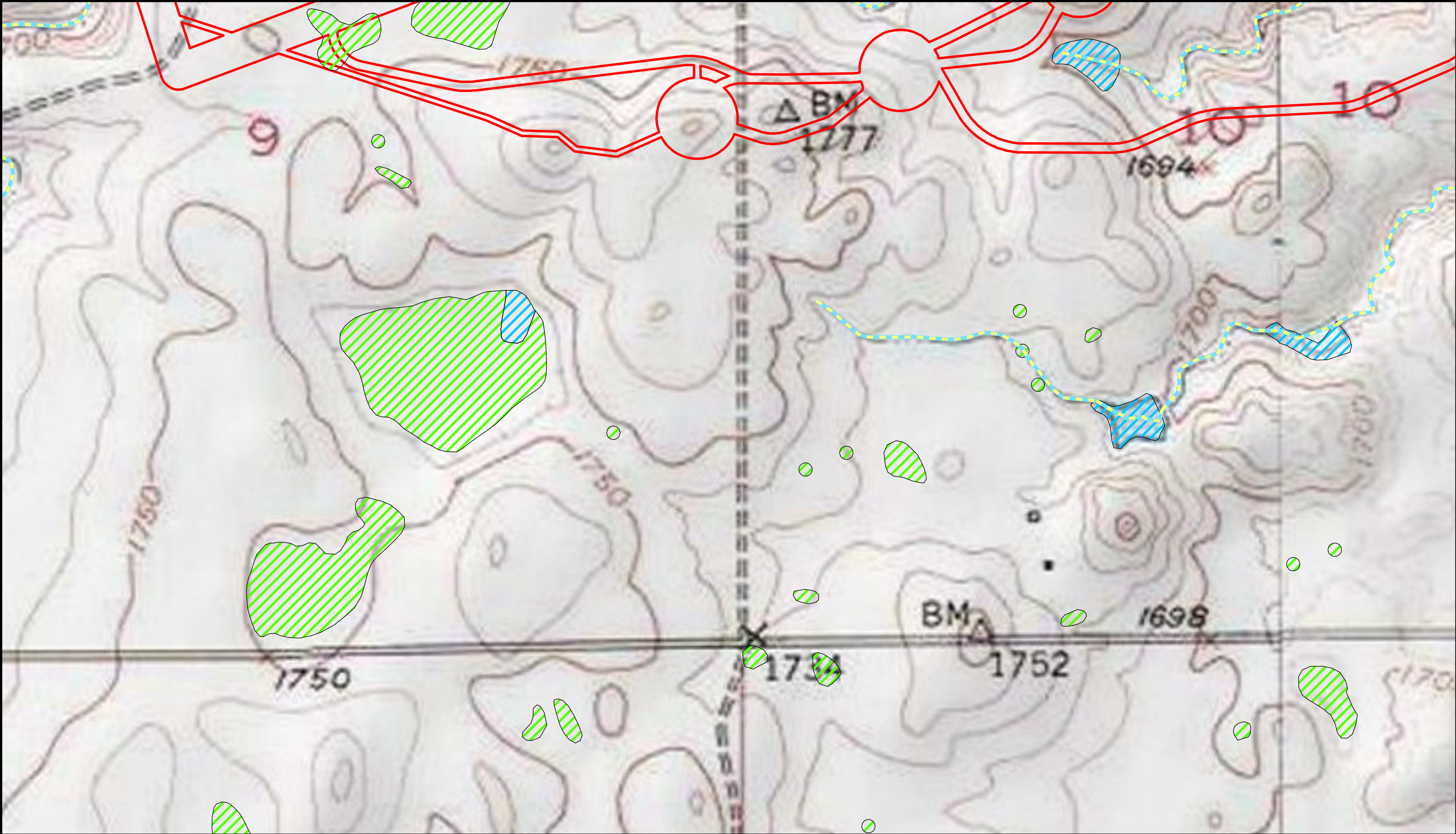


Figure A-3.21  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- NHD Stream/River

- USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

- Emergent Wetland (PEM)
- Pond (PUB)
- Forested/Shrub-scrub (PFO/PSS)
- Lake

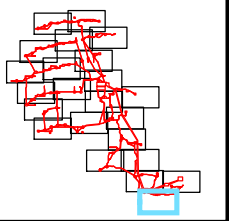
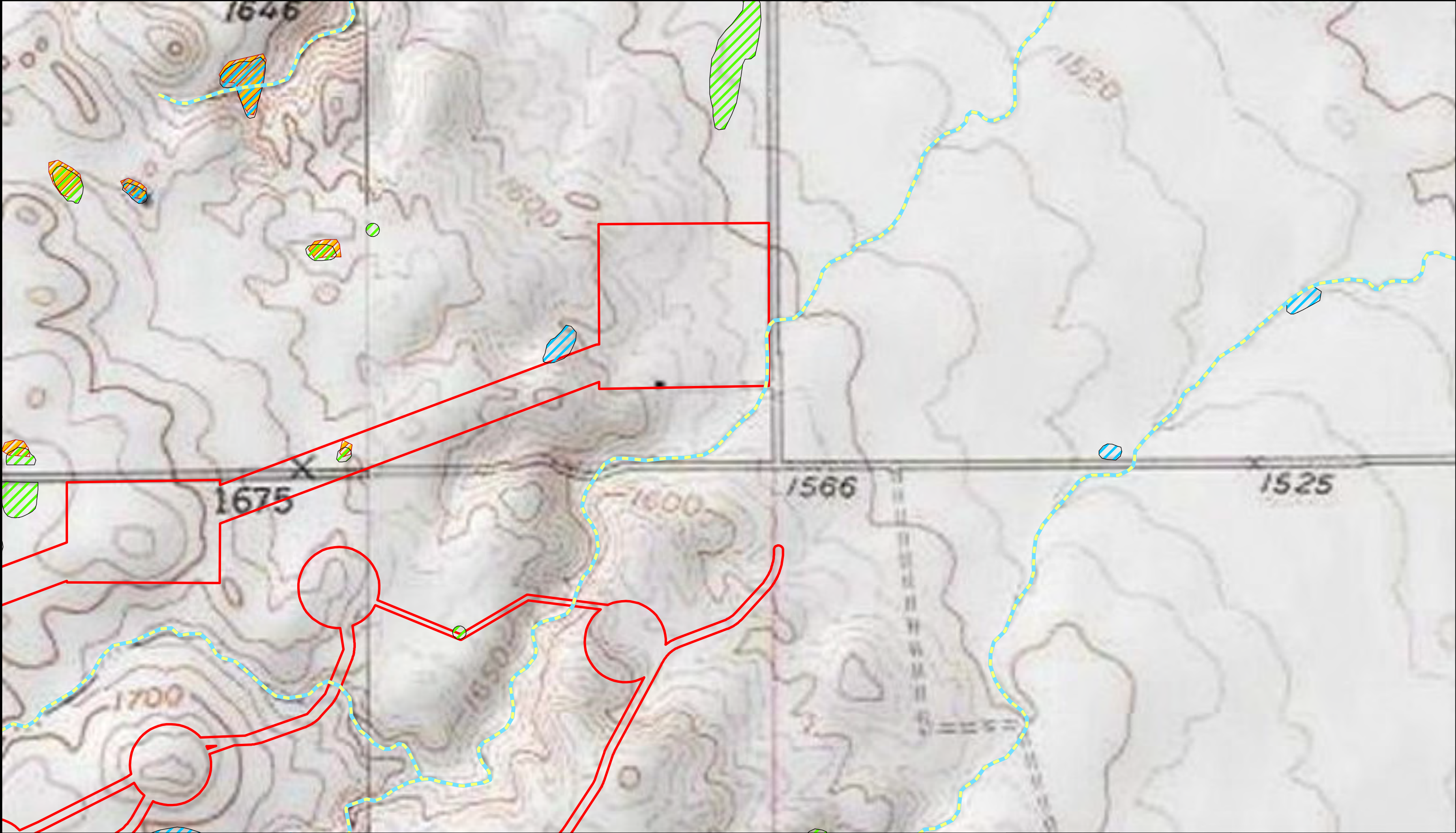


Figure A-3.22  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota



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





**Legend**

-  Survey Area
-  NHD Stream/River

-  USFWS Easement Wetland Areas\*

**NWI Wetland Classification**

-  Emergent Wetland (PEM)
-  Forested/Shrub-scrub (PFO/PSS)
-  Pond (PUB)
-  Lake

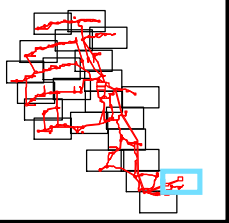
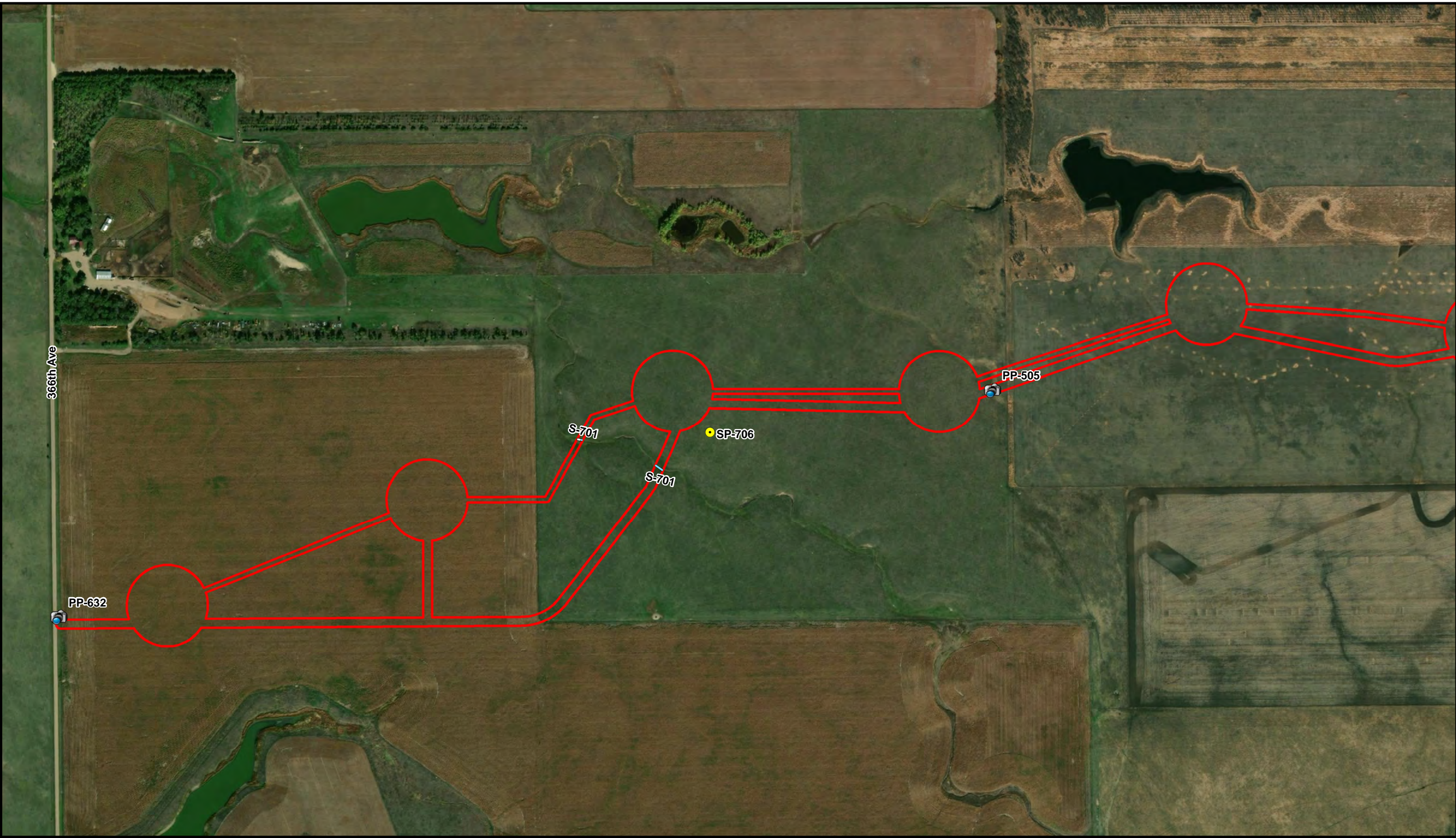


Figure A-3.23  
NWI & Topographical Map  
Sweetland Wind Farm Project  
Hand County, South Dakota

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**Legend**

- Survey Area
- Photo Point\*
- Wetland Plot
- Upland Plot

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

- PEM Wetland
- Ephemeral Stream
- Intermittent Stream

\*\* Features ending with "d" were delineated via desktop methodologies

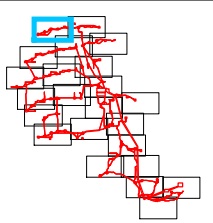
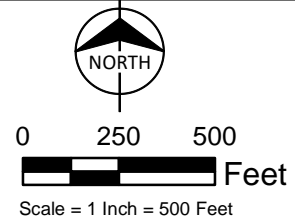
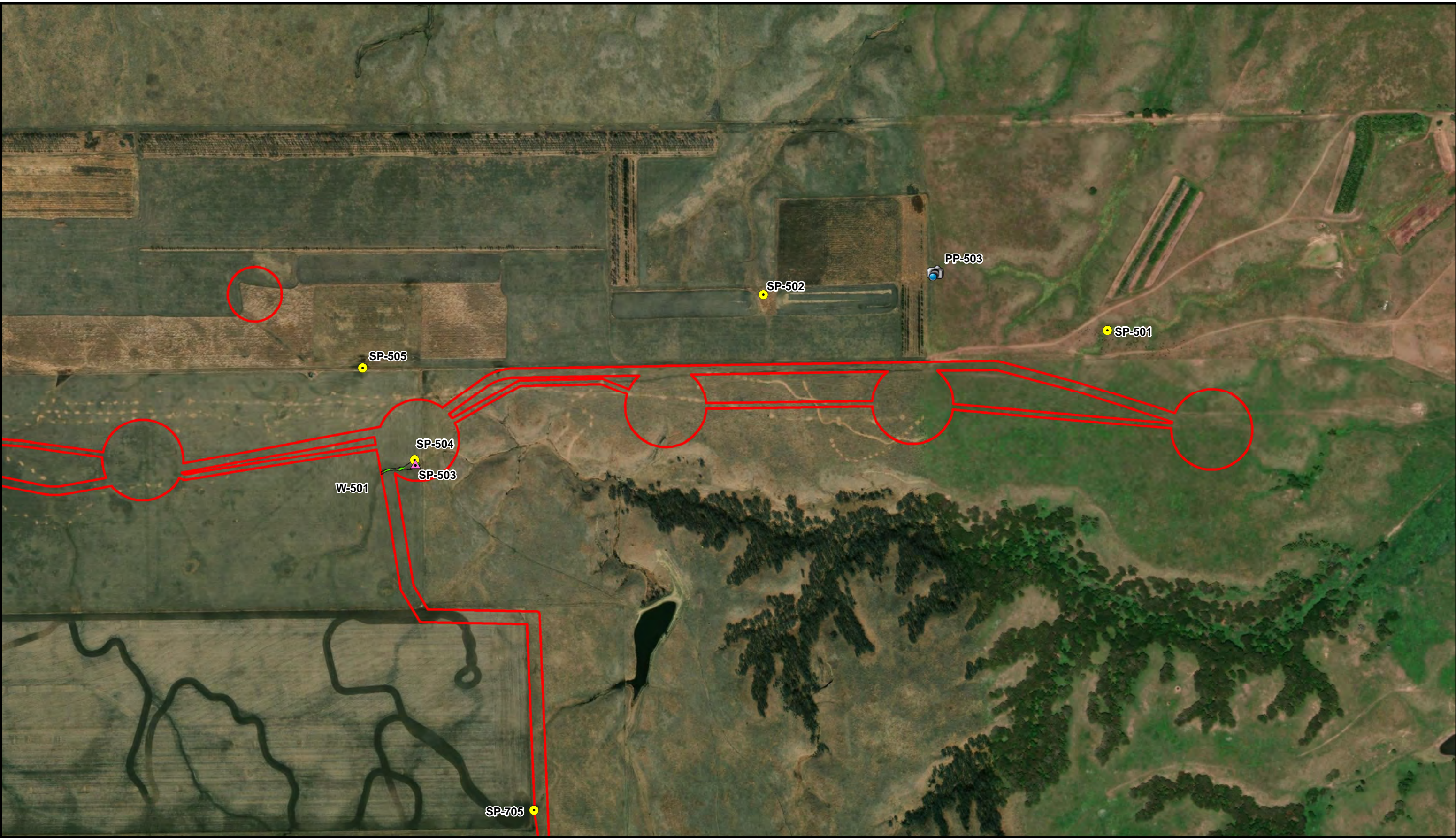


Figure A-4.1  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- Photo Point\*
- Wetland Plot
- Upland Plot

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

- PEM Wetland
- Ephemeral Stream
- Intermittent Stream

\*\* Features ending with "d" were delineated via desktop methodologies

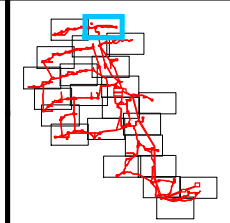
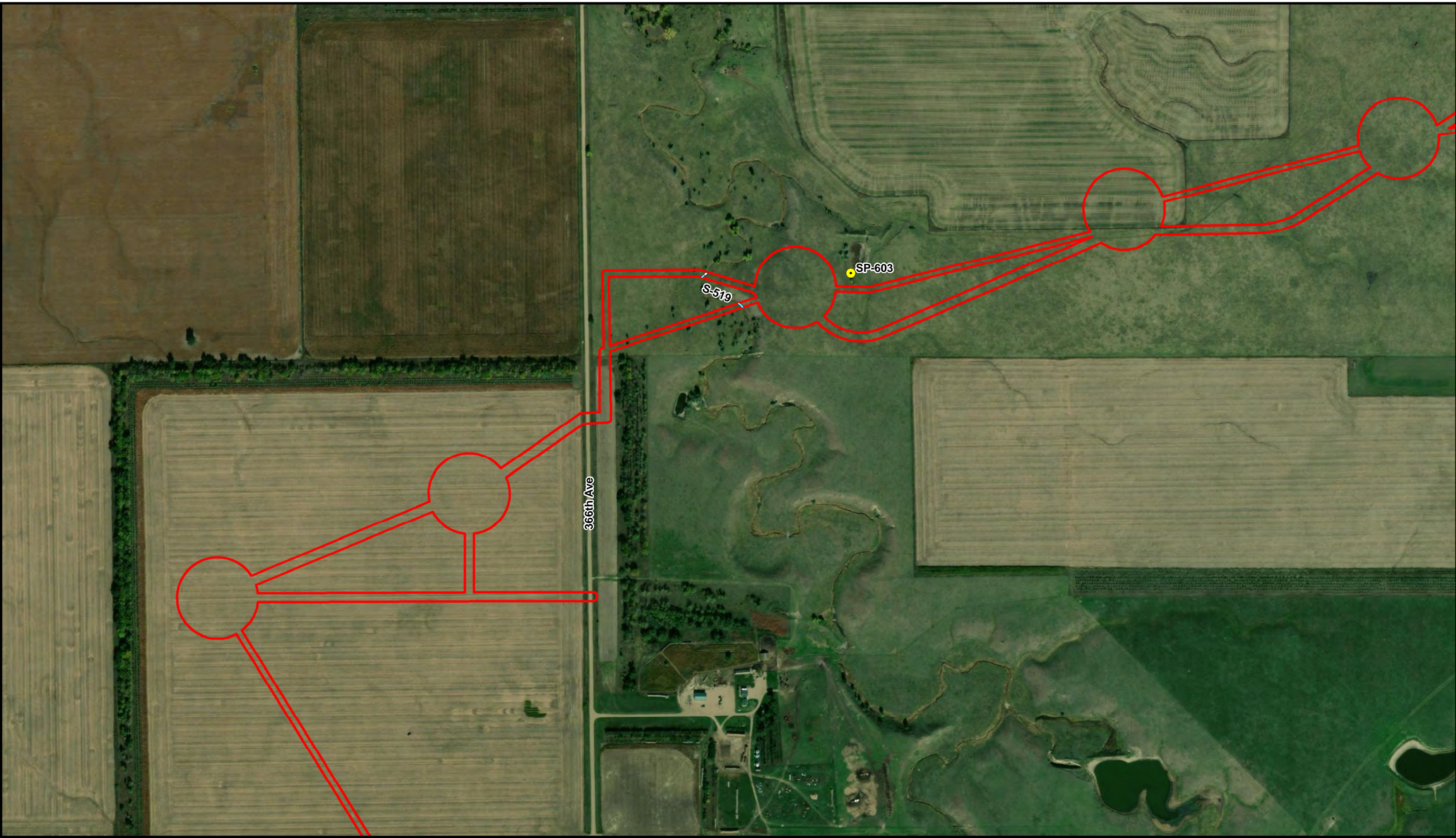


Figure A-4.2  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- Photo Point\*
- Wetland Plot
- Upland Plot

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

- PEM Wetland
- Ephemeral Stream
- Intermittent Stream

\*\* Features ending with "d" were delineated via desktop methodologies

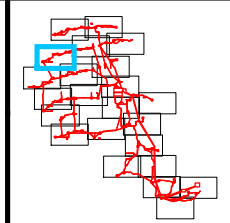


Figure A-4.3  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- Photo Point\*
- Wetland Plot
- Upland Plot

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

- PEM Wetland
- Ephemeral Stream
- Intermittent Stream

\*\* Features ending with "d" were delineated via desktop methodologies

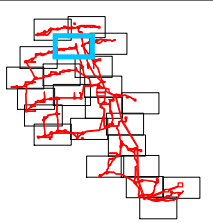
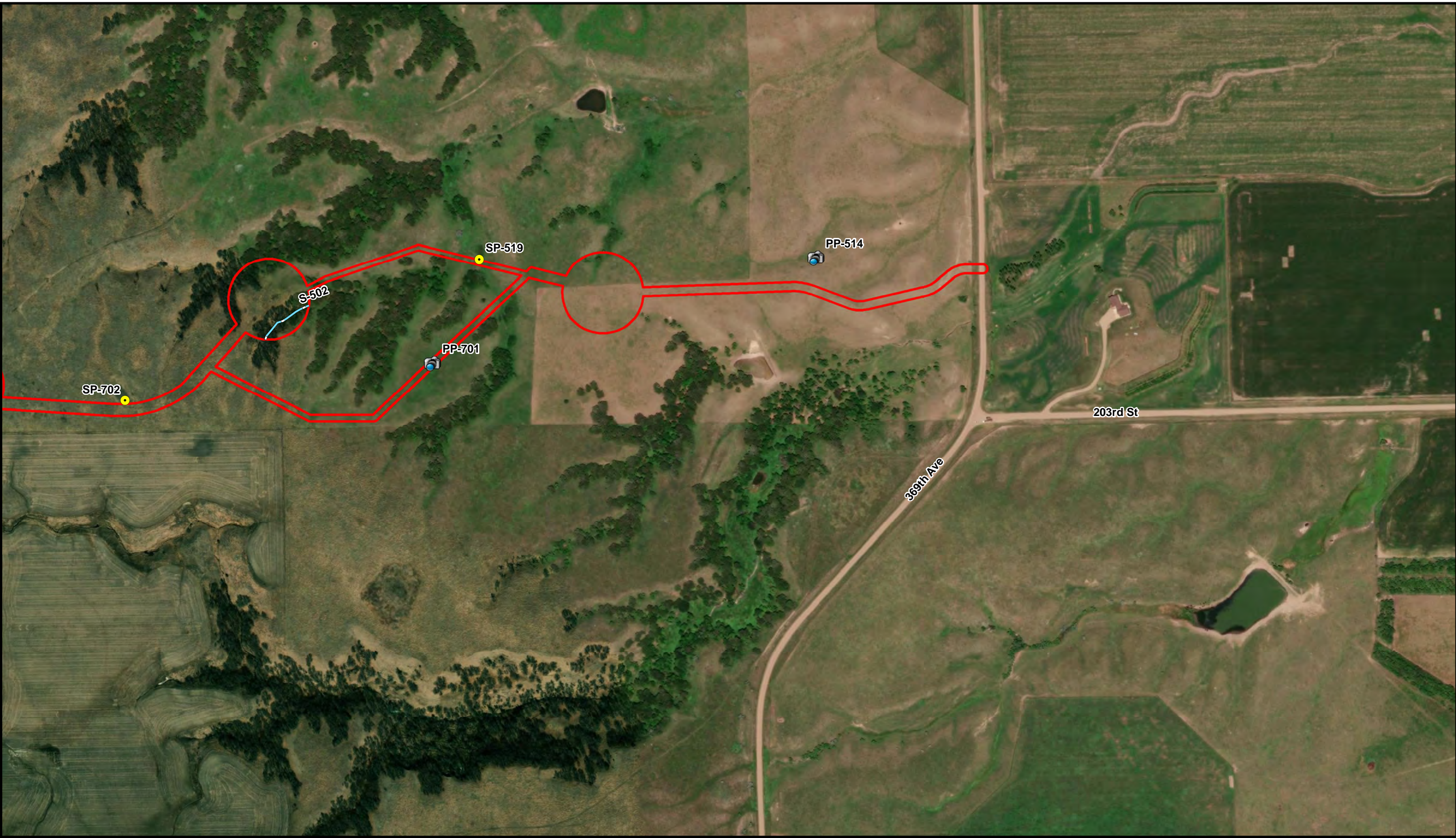


Figure A-4.4  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**  

Survey Area

Photo Point\*

Wetland Plot

Upland Plot

**Delineated Features\*\***  

PEM Wetland

Ephemeral Stream

Intermittent Stream

\*\* Features ending with "d" were delineated via desktop methodologies

\* Additional photos were taken throughout the Project Area and are available by request

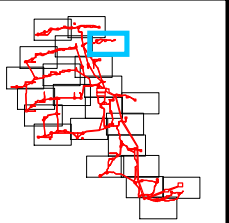
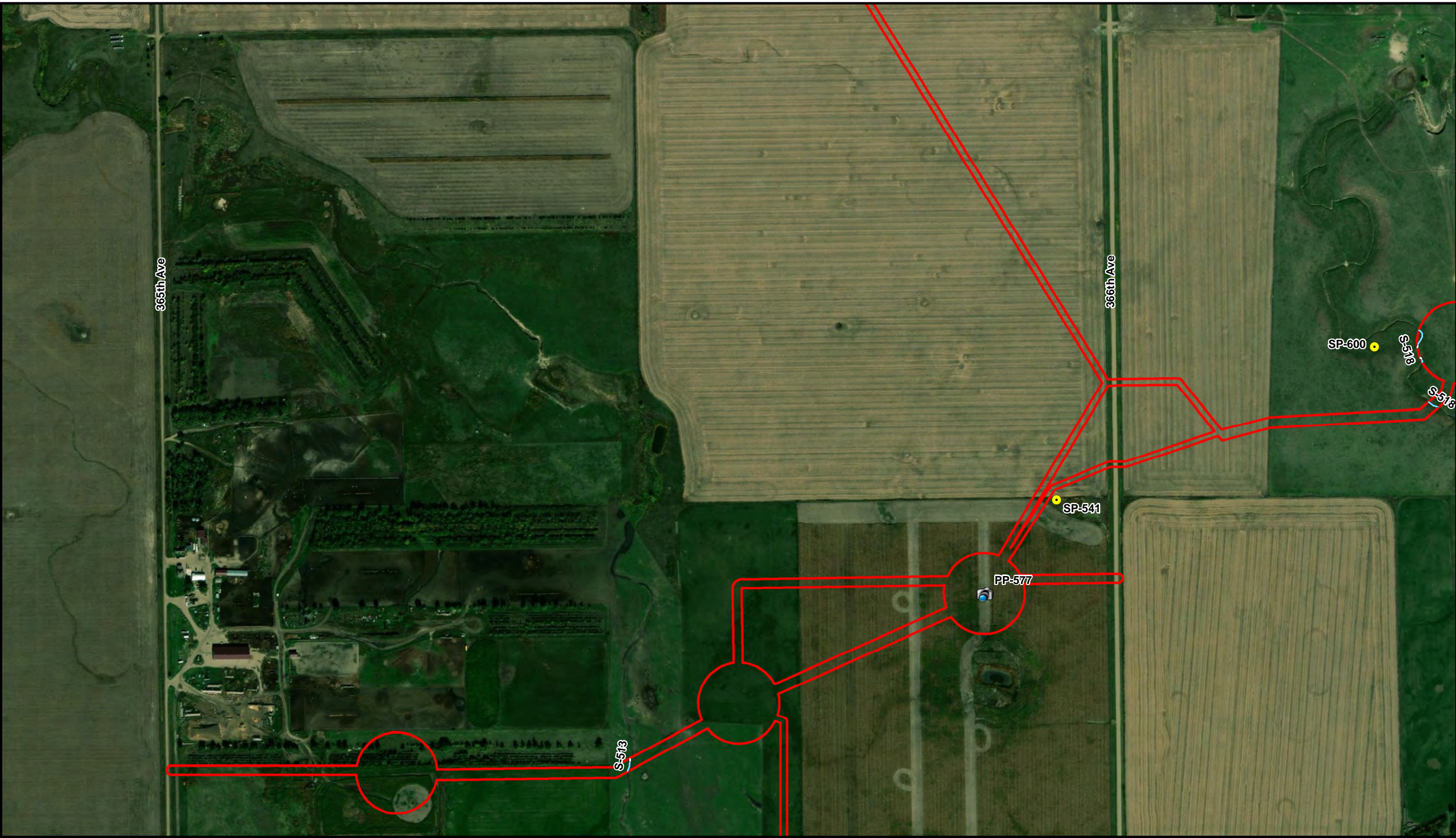


Figure A-4.5  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

|              |              |
|--------------|--------------|
| Survey Area  | Wetland Plot |
| Photo Point* | Upland Plot  |

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

|   |                     |
|---|---------------------|
| PEM Wetland   | Ephemeral Stream    |
| ** Features ending with "d" were delineated via desktop methodologies |                     |
|   | Intermittent Stream |

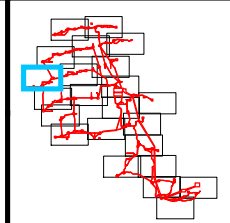


Figure A-4.6  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- Photo Point\*
- Wetland Plot
- Upland Plot

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

- PEM Wetland
- Ephemeral Stream
- Intermittent Stream

\*\* Features ending with "d" were delineated via desktop methodologies

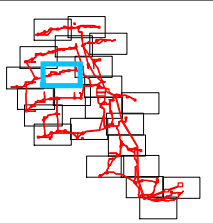
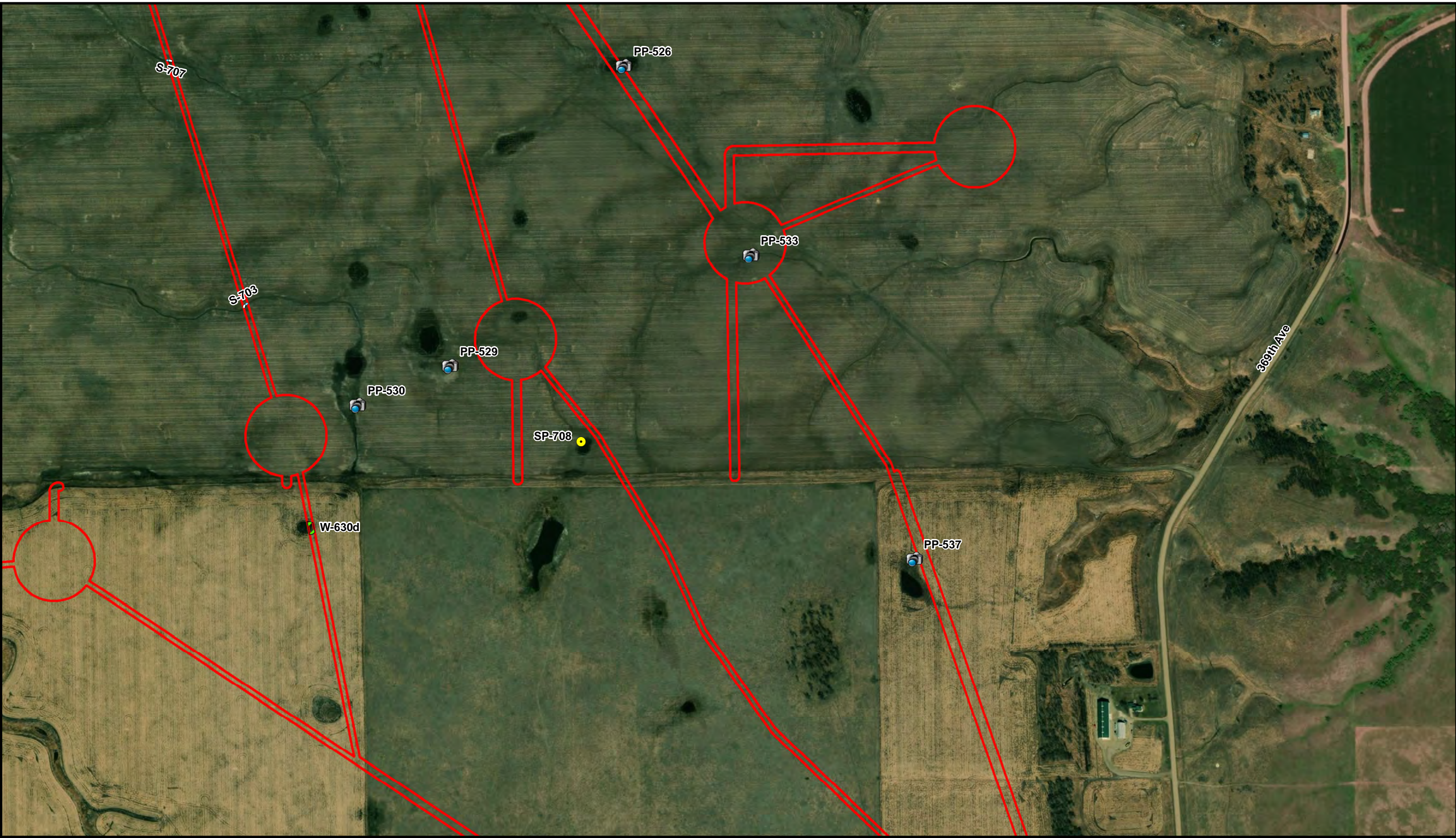


Figure A-4.7  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

|              |              |
|--------------|--------------|
| Survey Area  | Wetland Plot |
| Photo Point* | Upland Plot  |

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

|   |                     |
|---|---------------------|
| PEM Wetland   | Ephemeral Stream    |
| ** Features ending with "d" were delineated via desktop methodologies |                     |
|   | Intermittent Stream |

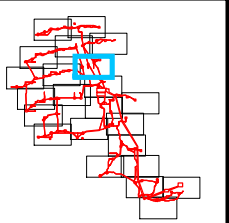
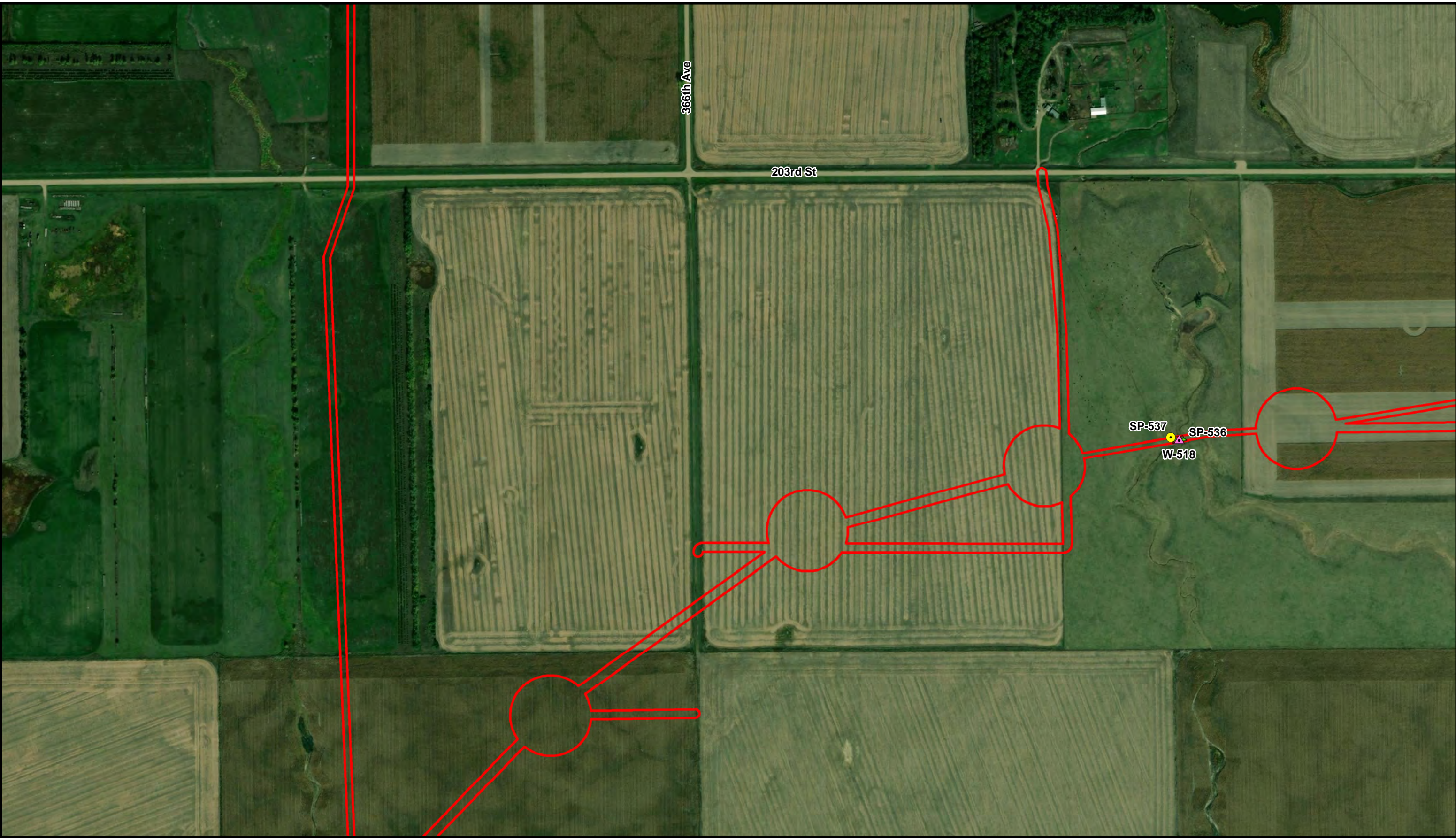


Figure A-4.8  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

|              |              |
|--------------|--------------|
| Survey Area  | Wetland Plot |
| Photo Point* | Upland Plot  |

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

|   |                     |
|---|---------------------|
| PEM Wetland   | Ephemeral Stream    |
| ** Features ending with "d" were delineated via desktop methodologies |                     |
|   | Intermittent Stream |

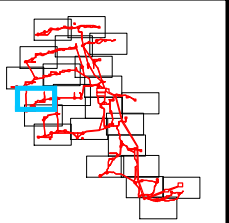


Figure A-4.9  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- Photo Point\*
- Wetland Plot
- Upland Plot

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

- PEM Wetland
- Ephemeral Stream
- Intermittent Stream

\*\* Features ending with "d" were delineated via desktop methodologies

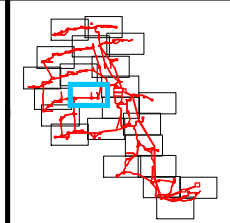
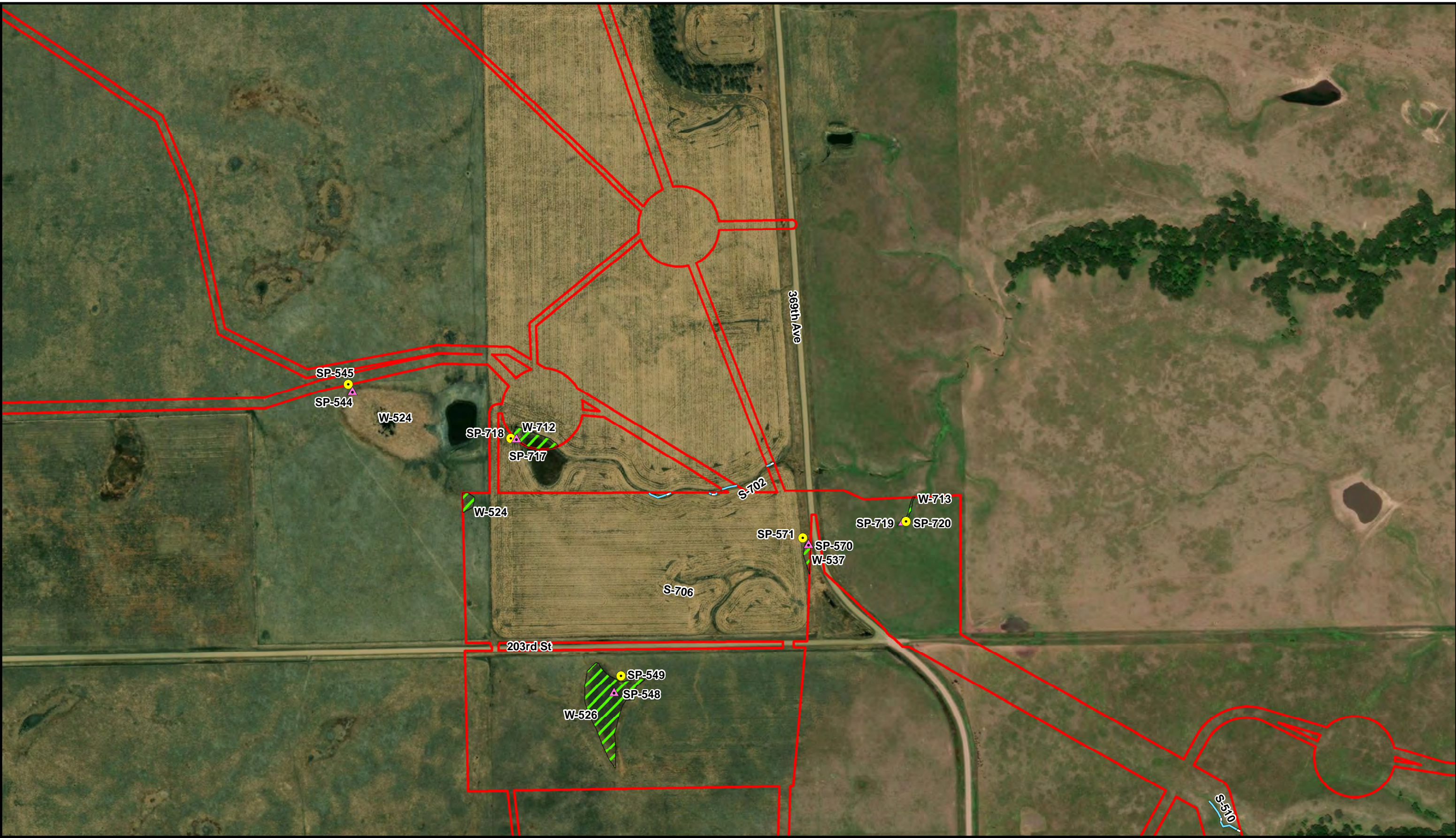


Figure A-4.10  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- Wetland Plot
- Upland Plot
- Photo Point\*

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

- PEM Wetland
- Ephemeral Stream
- Intermittent Stream

\*\* Features ending with "d" were delineated via desktop methodologies

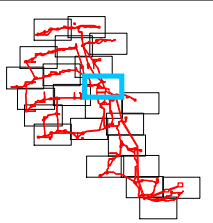
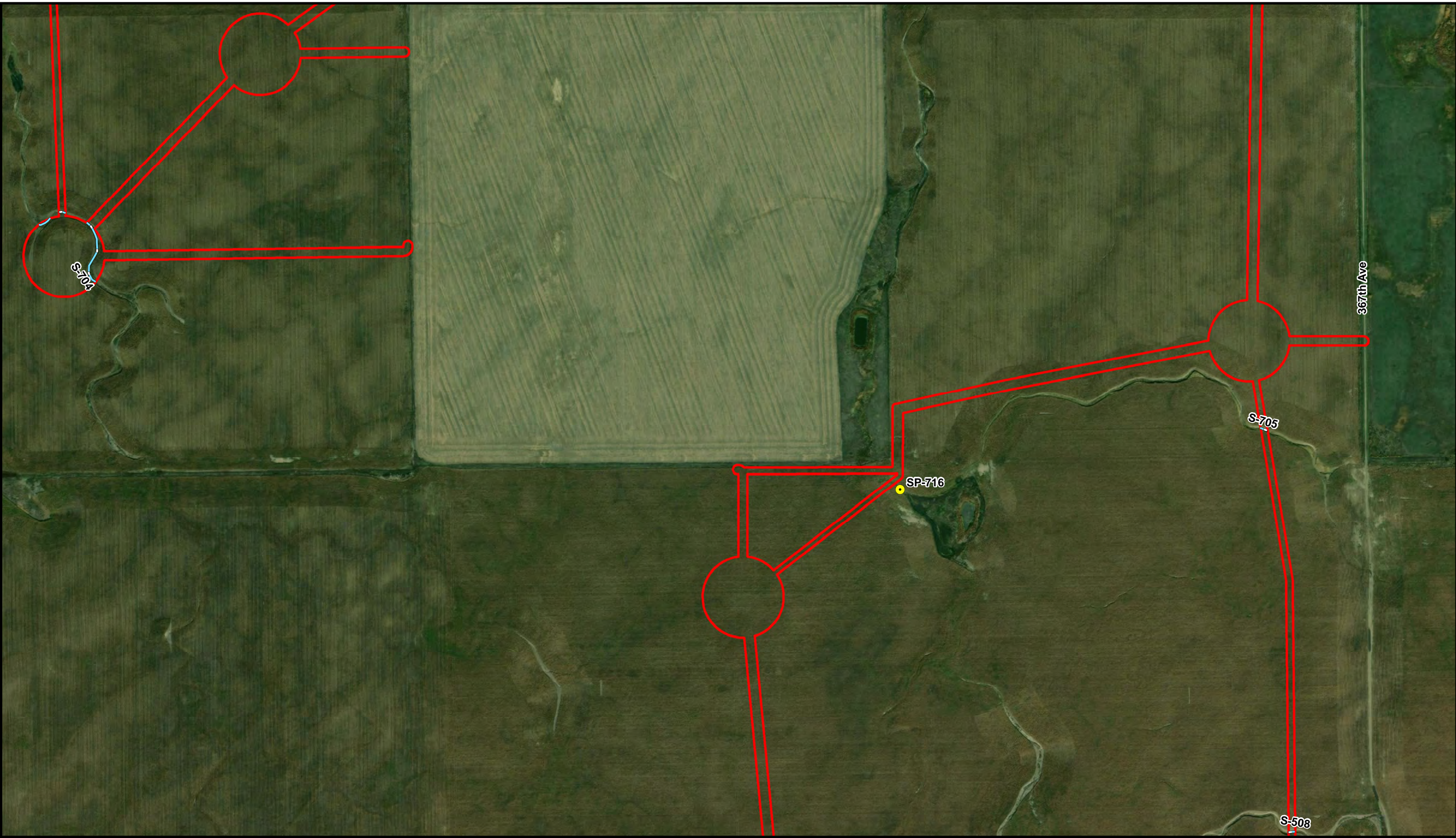


Figure A-4.11  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

|  |              |  |              |
|--|--------------|--|--------------|
|  | Survey Area  |  | Wetland Plot |
|  | Photo Point* |  | Upland Plot  |

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

|  |             |  |                     |
|--|-------------|--|---------------------|
|  | PEM Wetland |  | Ephemeral Stream    |
|  |             |  | Intermittent Stream |

\*\* Features ending with "d" were delineated via desktop methodologies

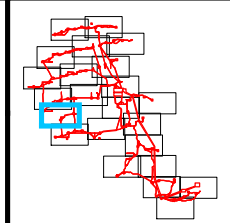
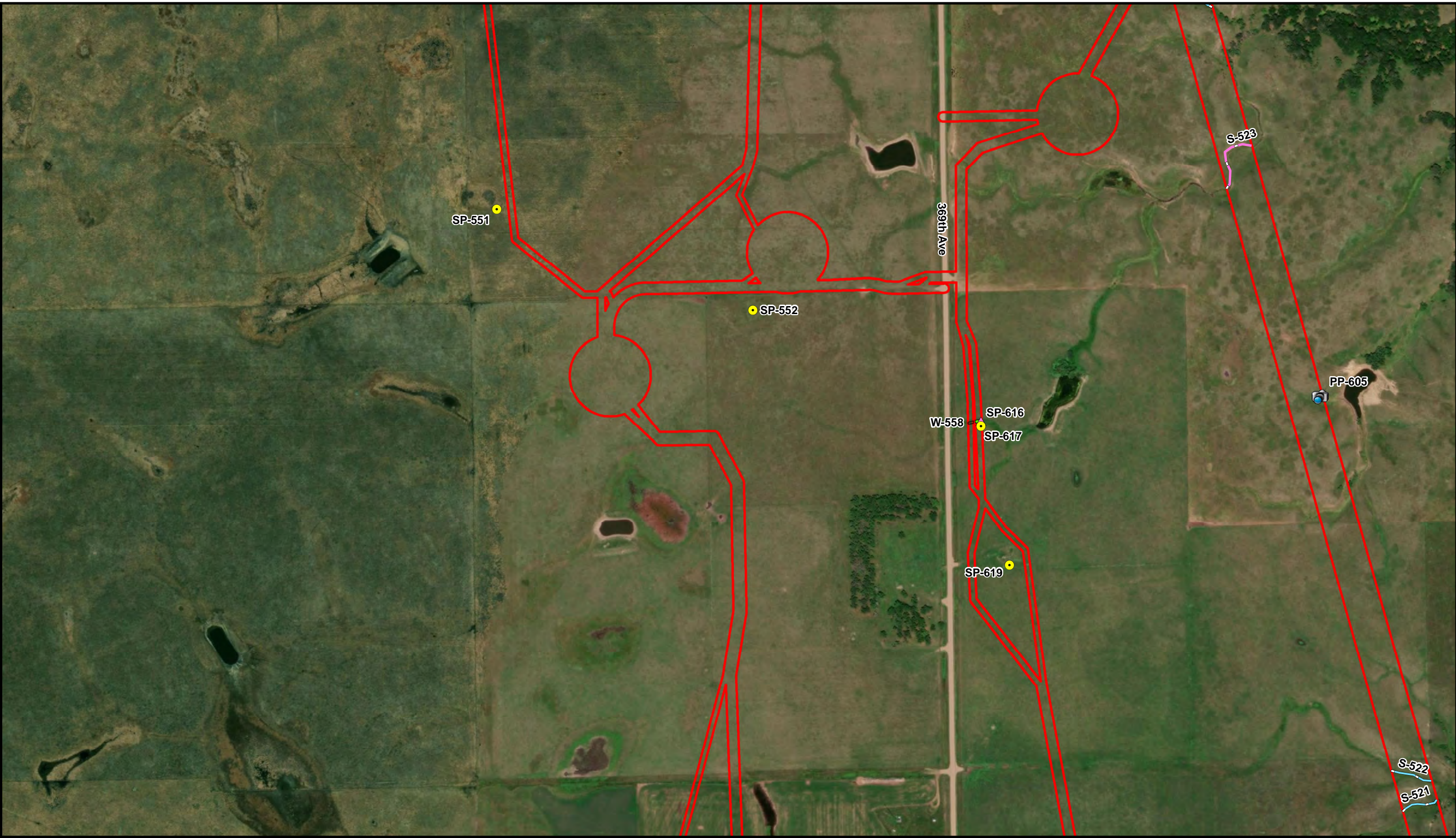


Figure A-4.12  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

|              |              |
|--------------|--------------|
| Survey Area  | Wetland Plot |
| Photo Point* | Upland Plot  |

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

|   |                     |
|---|---------------------|
| PEM Wetland   | Ephemeral Stream    |
| ** Features ending with "d" were delineated via desktop methodologies |                     |
|   | Intermittent Stream |

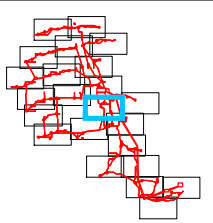
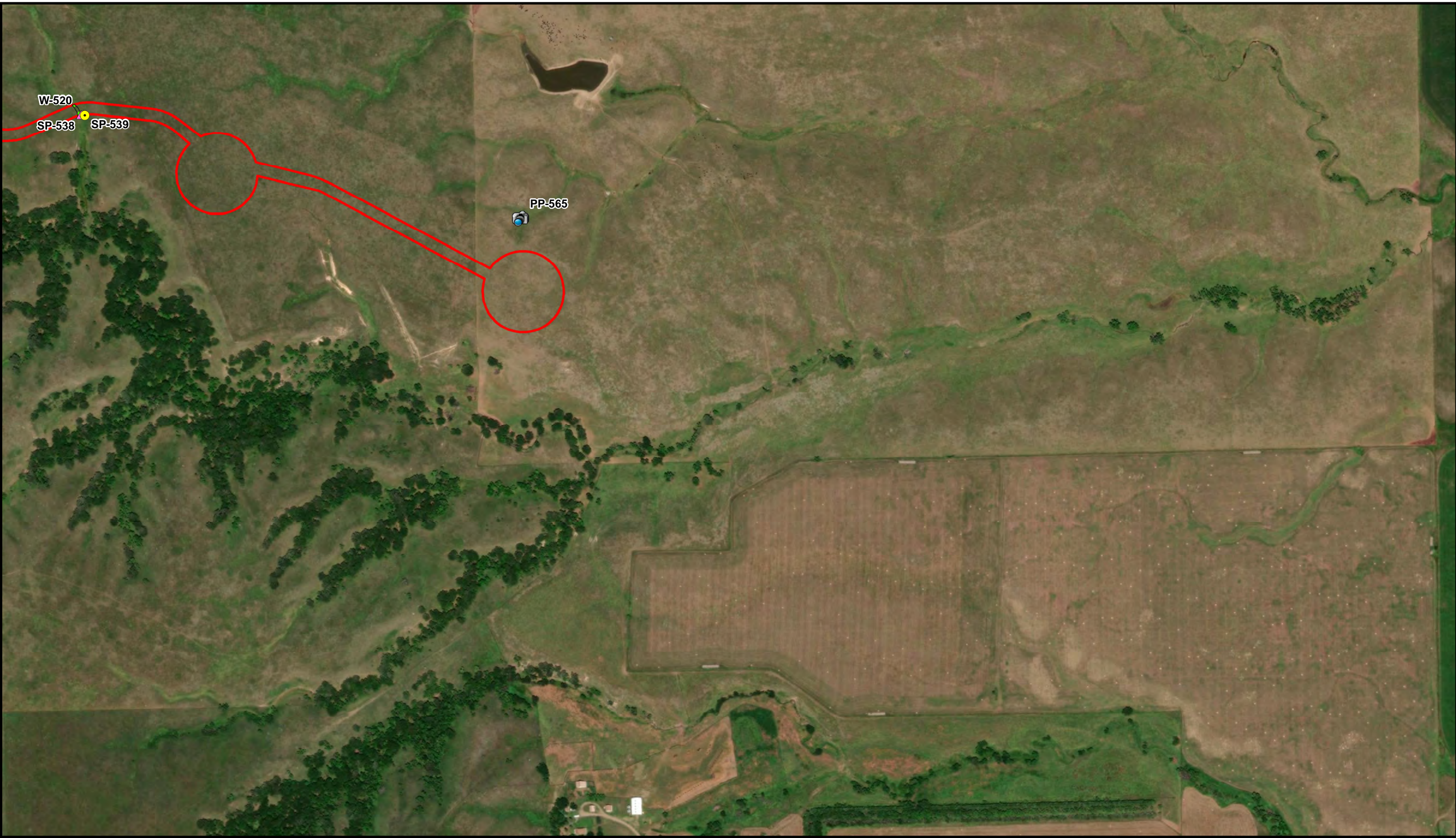






Figure A-4.13  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

|  |   |
|--|---|
|  Survey Area  |  Wetland Plot |
|  Photo Point* |  Upland Plot  |

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

|   |   |
|---|---|
|  PEM Wetland |  Ephemeral Stream    |
| ** Features ending with "d" were delineated via desktop methodologies                             |  Intermittent Stream |

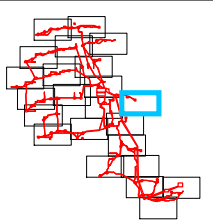
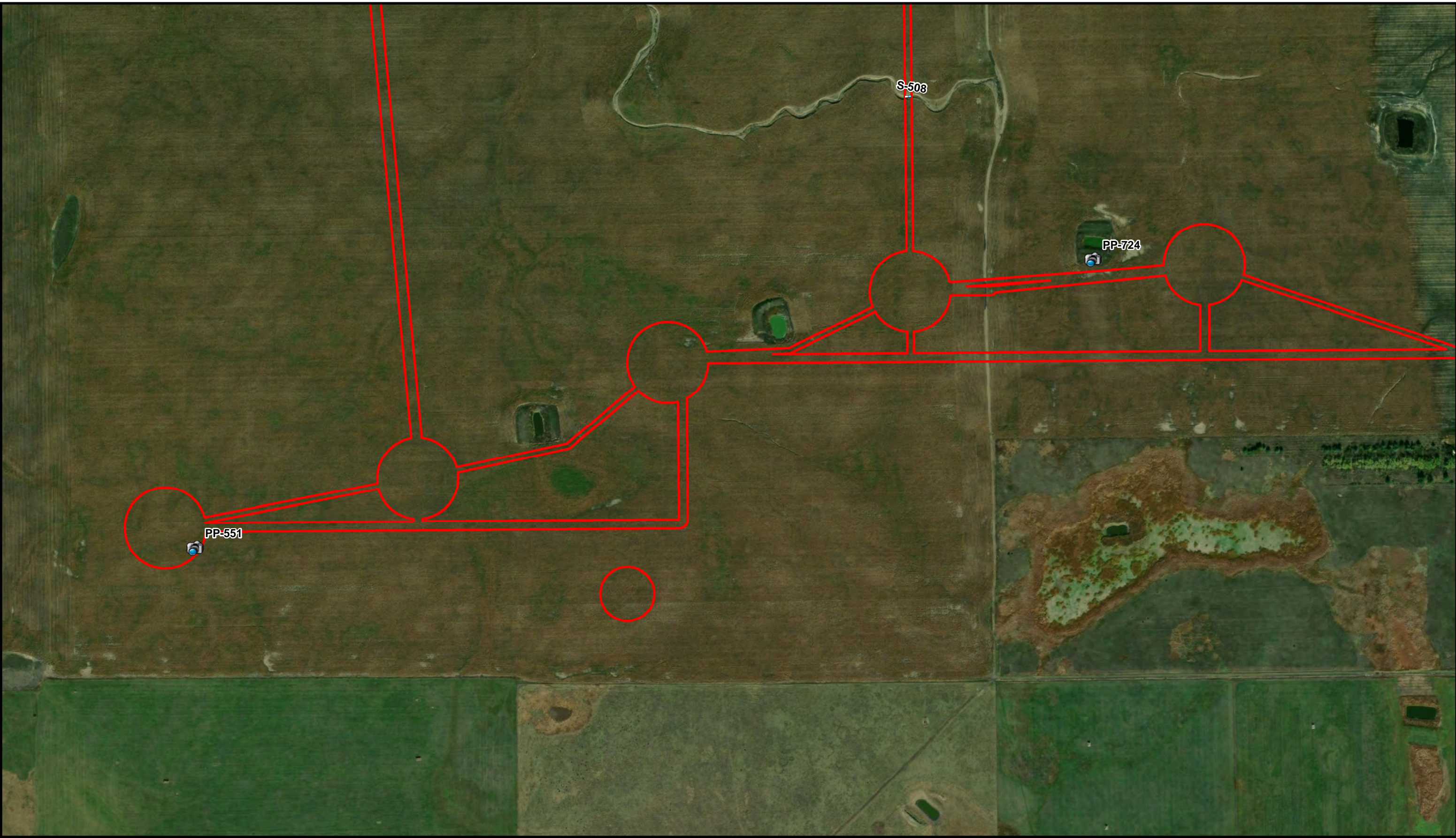


Figure A-4.14  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- Photo Point\*
- Wetland Plot
- Upland Plot

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

- PEM Wetland
- Ephemeral Stream
- Intermittent Stream

\*\* Features ending with "d" were delineated via desktop methodologies

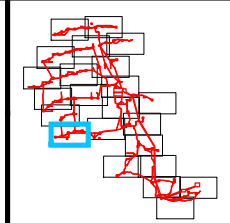


Figure A-4.15  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

|  |              |  |              |
|--|--------------|--|--------------|
|  | Survey Area  |  | Wetland Plot |
|  | Photo Point* |  | Upland Plot  |

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

|  |             |  |                     |
|--|-------------|--|---------------------|
|  | PEM Wetland |  | Ephemeral Stream    |
|  |             |  | Intermittent Stream |

\*\* Features ending with "d" were delineated via desktop methodologies

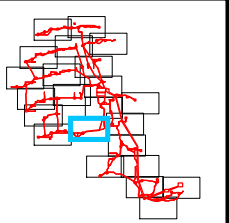
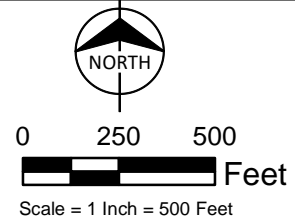


Figure A-4.16  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



Path: Z:\Resources\Local\Clients\KCM\EN\Scoot\CleanEn\103828\_SweetlandWind\ArcGIS\Geospatial\DataFiles\ArcDocs\WDR\FigureA4\_Results.mxd tbeemer 11/12/2019  
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**Legend**

- Survey Area
- Photo Point\*
- Wetland Plot
- Upland Plot

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

- PEM Wetland
- Ephemeral Stream
- Intermittent Stream

\*\* Features ending with "d" were delineated via desktop methodologies

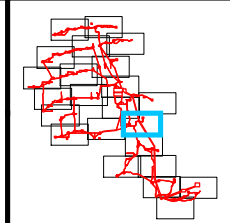
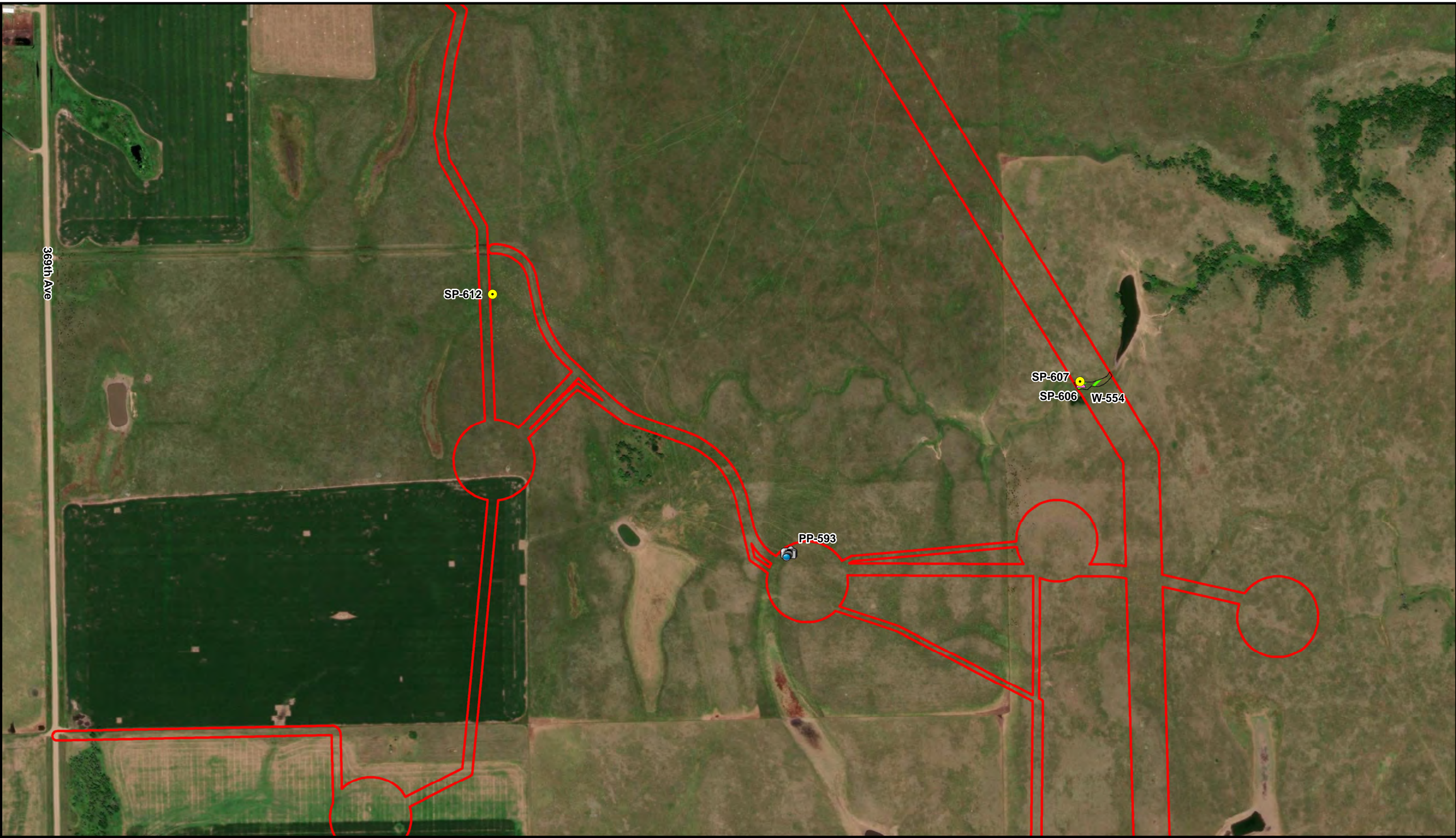


Figure A-4.17  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- Photo Point\*
- Wetland Plot
- Upland Plot

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

- PEM Wetland
- Ephemeral Stream
- Intermittent Stream

\*\* Features ending with "d" were delineated via desktop methodologies

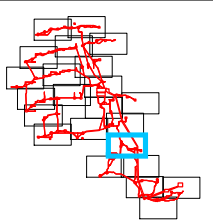
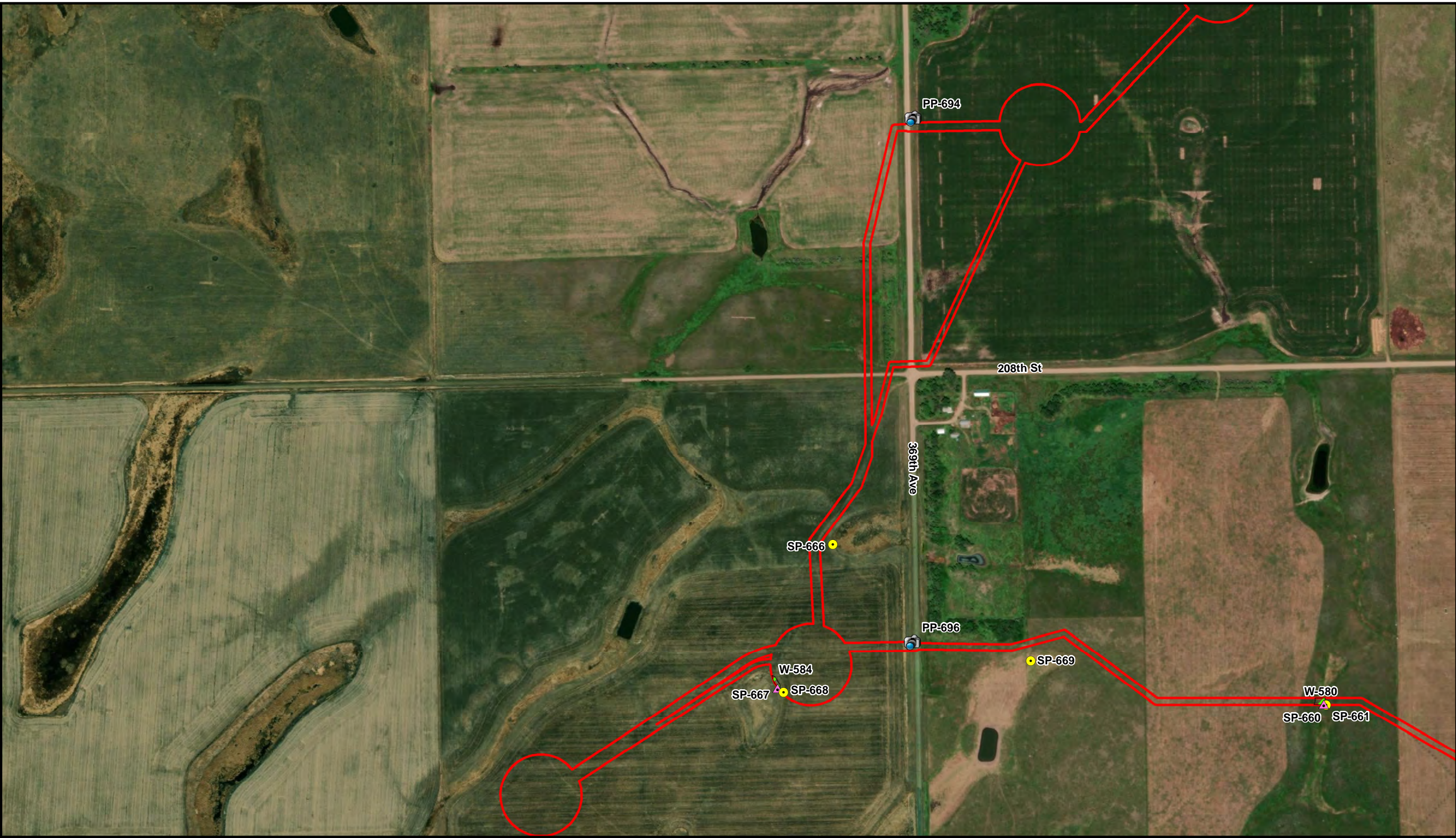


Figure A-4.18  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



Path: Z:\Resources\Local\Clients\KCM\EN\Scoot\CleanEn\103828\_SweetlandWind\ArcGIS\Geospatial\DataFiles\ArcDocs\WDR\FigureA4\_Results.mxd tbeemer 11/12/2019  
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**Legend**

- Survey Area
- Photo Point\*
- Wetland Plot
- Upland Plot

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

- PEM Wetland
- Ephemeral Stream
- Intermittent Stream

\*\* Features ending with "d" were delineated via desktop methodologies

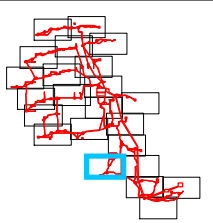
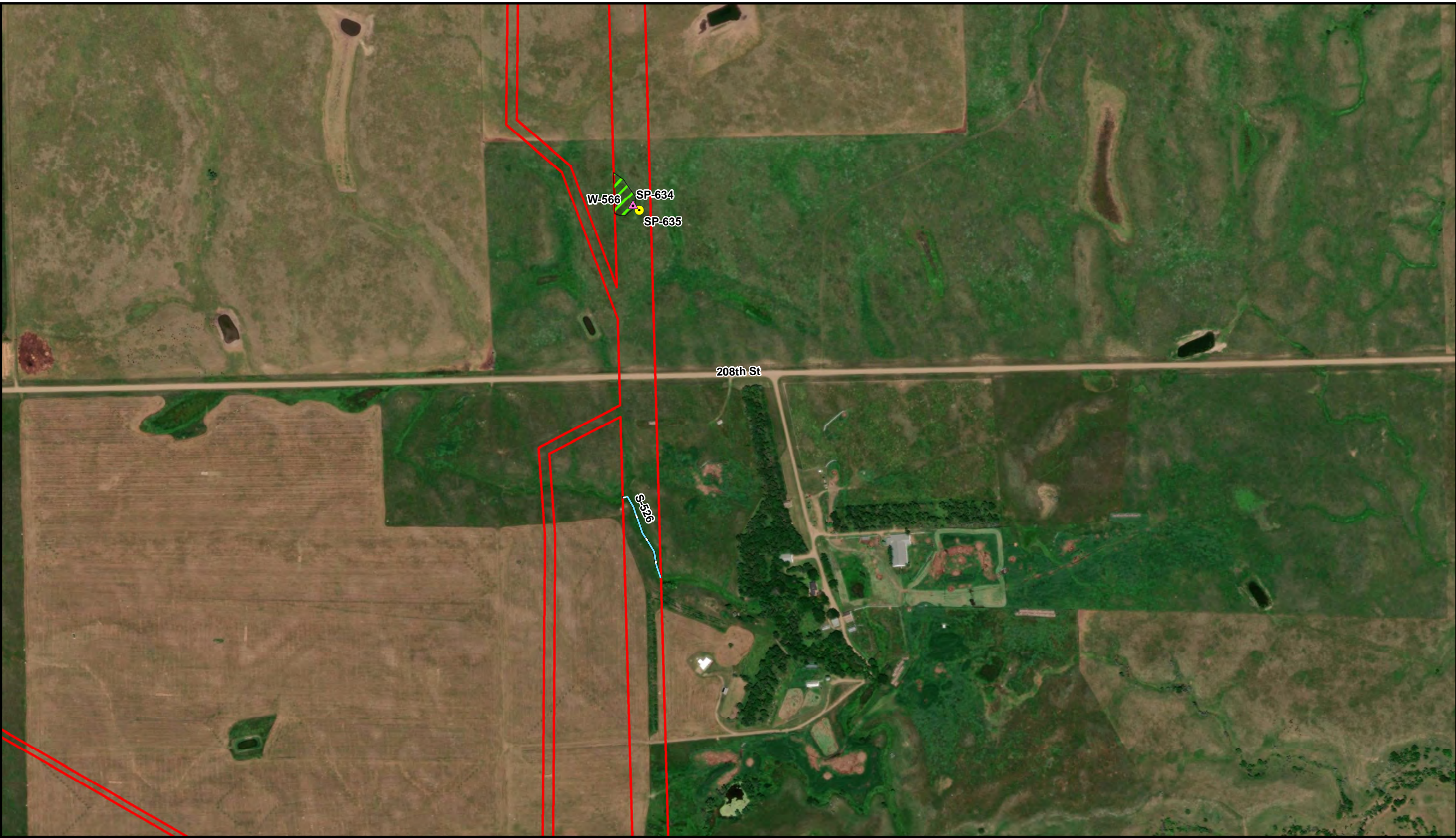


Figure A-4.19  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- Photo Point\*
- Wetland Plot
- Upland Plot

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

- PEM Wetland
- Ephemeral Stream
- Intermittent Stream

\*\* Features ending with "d" were delineated via desktop methodologies

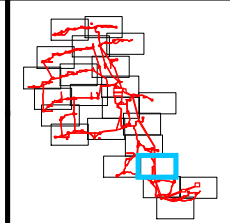
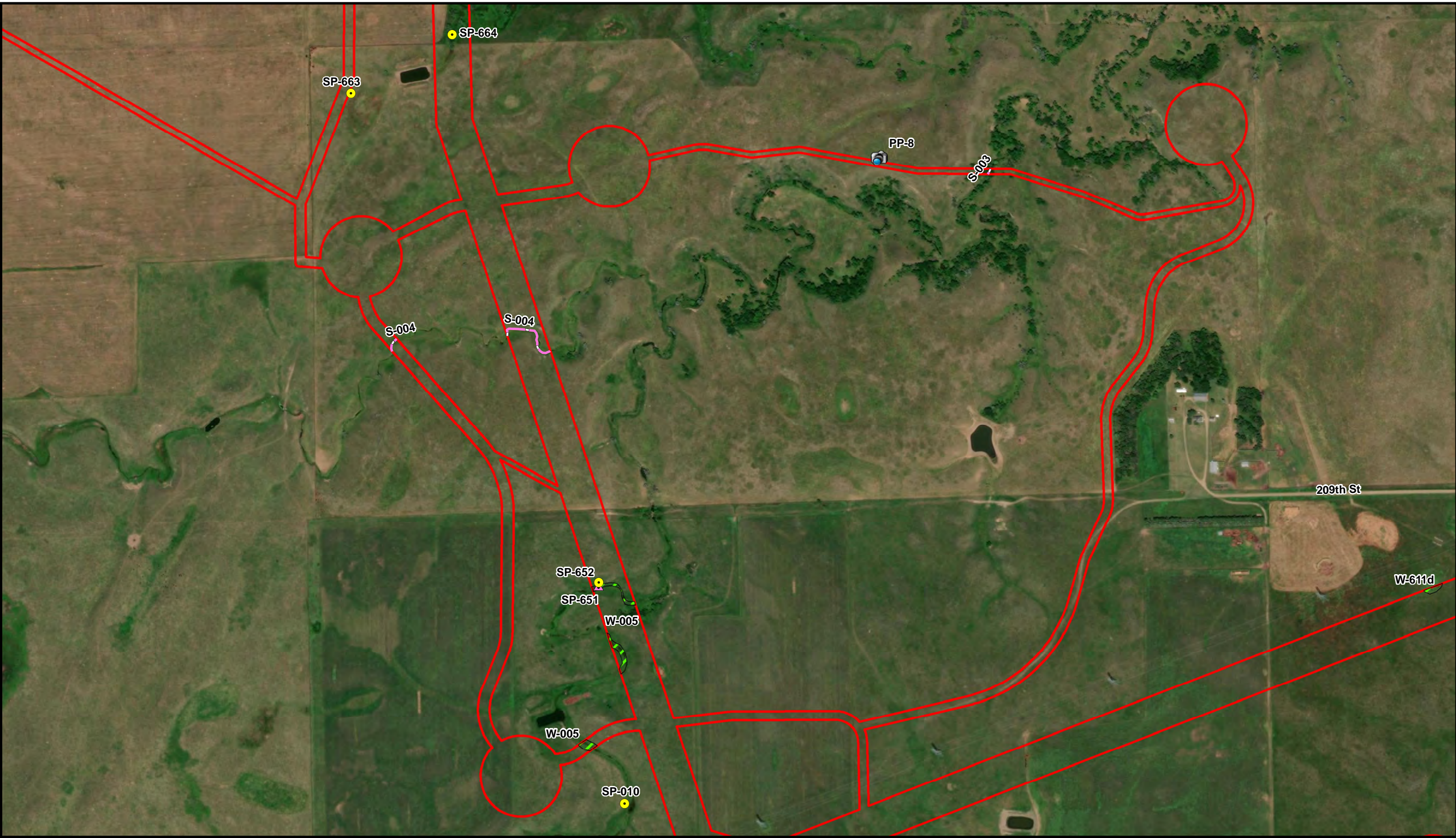


Figure A-4.20  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- Photo Point\*
- Wetland Plot
- Upland Plot

**Delineated Features\*\***

- PEM Wetland
- Ephemeral Stream
- Intermittent Stream

\*\* Features ending with "d" were delineated via desktop methodologies

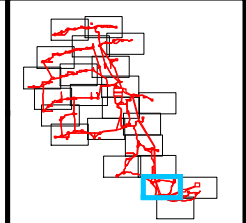
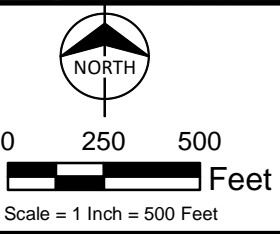
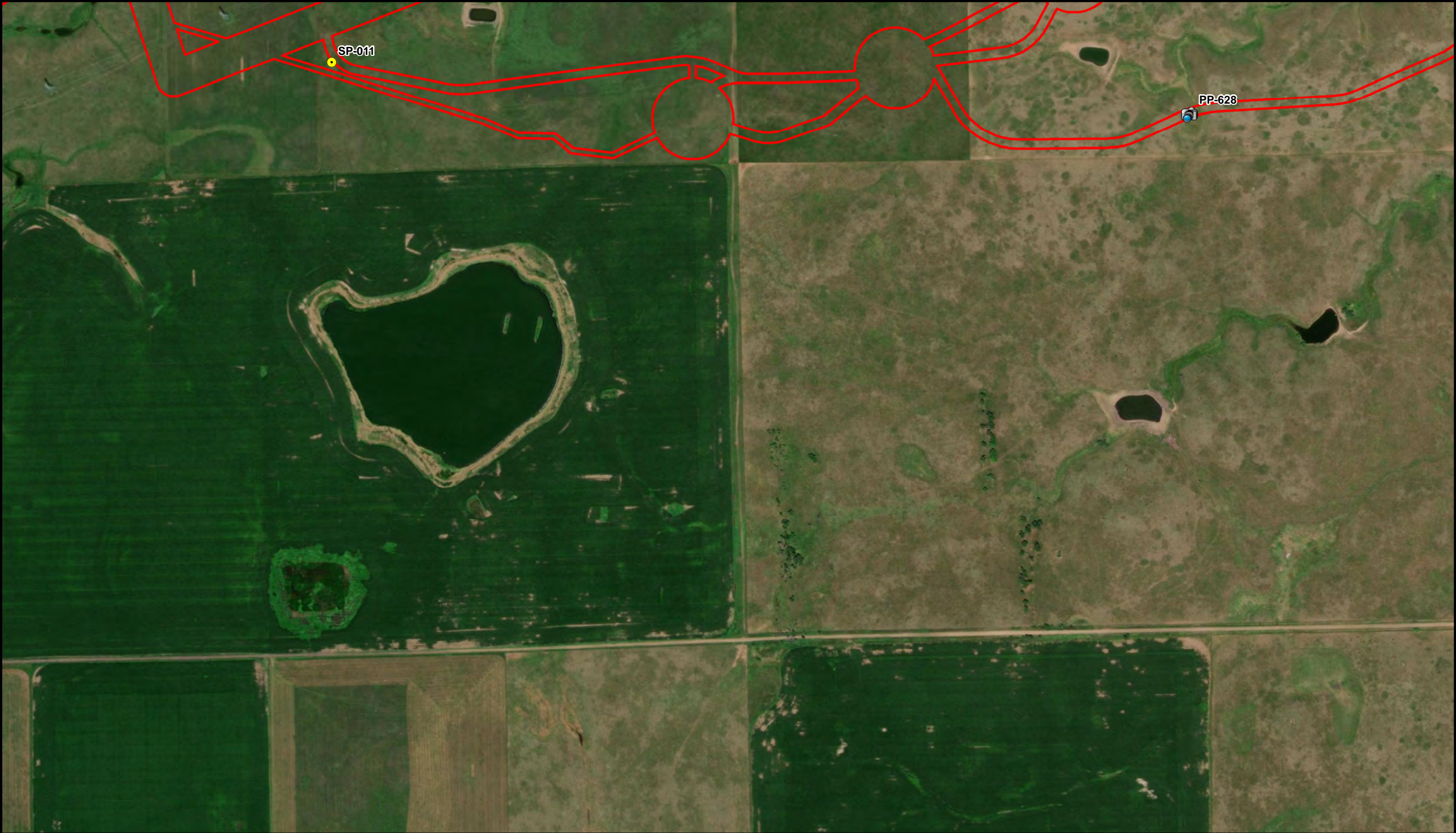


Figure A-4.21  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

Survey Area

Photo Point\*

Wetland Plot

Upland Plot

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

PEM Wetland

Ephemeral Stream

Intermittent Stream

\*\* Features ending with "d" were delineated via desktop methodologies

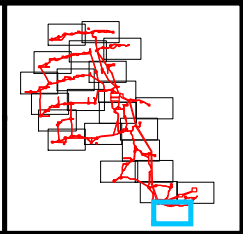
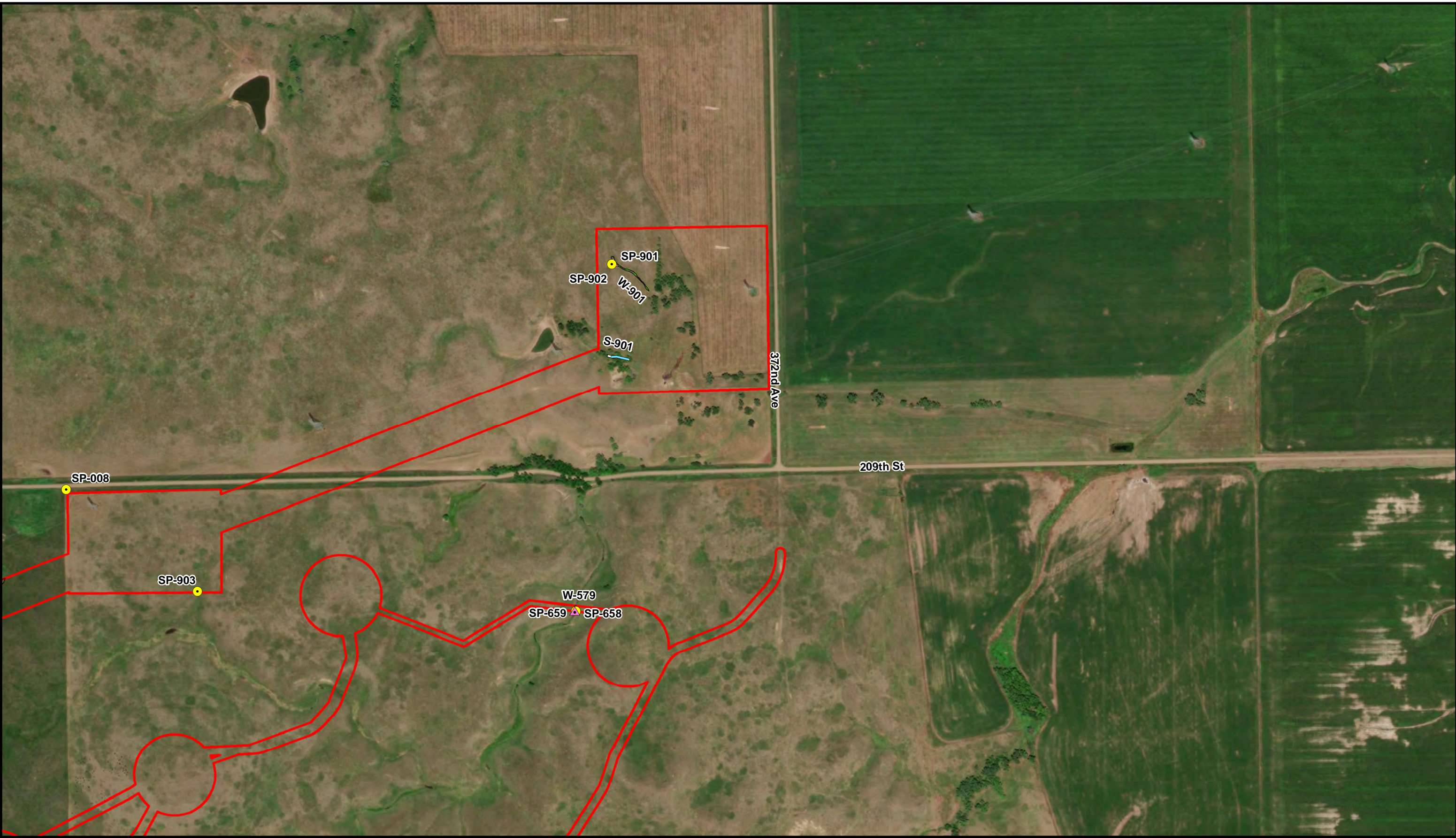


Figure A-4.22  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



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**Legend**

- Survey Area
- Photo Point\*
- Wetland Plot
- Upland Plot

\* Additional photos were taken throughout the Project Area and are available by request

**Delineated Features\*\***

- PEM Wetland
- Ephemeral Stream
- Intermittent Stream

\*\* Features ending with "d" were delineated via desktop methodologies

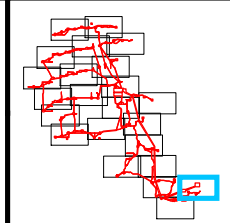


Figure A-4.23  
Delineation Results  
Sweetland Wind Farm Project  
Hand County, South Dakota



**APPENDIX B - ROUTINE WETLAND DETERMINATION DATA FORMS,  
GREAT PLAINS REGION**



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/25/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-008  
 Investigator(s): R. Williams; A. Woehler Section, Township, Range: S3, T110N, R66W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 5 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.355968 Long: -98.756745 Datum: NAD83  
 Soil Map Unit Name: Glenham-Java loams, rolling NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year?

☒ Yes ☐ No (If no, explain in Remarks)

Vegetation Soil Hydrology

Are "Normal Circumstances" present? ☒ Yes ☐ No

Significantly Disturbed? ☐

☐

☐

☐

Naturally Problematic? ☐

☐

☐

☐

(If needed, explain any answers in Remarks)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                                 | No                                  | Remarks:  |
|---------------------------------------|-------------------------------------|-------------------------------------|---|
| Hydrophytic Vegetation Present?       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Upland confirmation plot adjacent to PEM W-004. |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |   |
| Wetland Hydrology Present?            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |   |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |   |

## VEGETATION – Use scientific names of plants

| Tree Stratum                            | (Plot size: <u>30'</u> ) | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test Worksheet:</b><br>Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)   |
|---|--------------------------|------------------|-------------------|------------------|---|
| 1.                                      |                          | %                |                   |                  |   |
| 2.                                      |                          | %                |                   |                  |   |
| 3.                                      |                          | %                |                   |                  |   |
| 4.                                      |                          | %                |                   |                  |   |
|   |                          | <u>0 %</u>       | = Total Cover     |                  | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: Multiply by:<br>OBL species % x 1 = <u>0</u><br>FACW species % x 2 = <u>0</u><br>FAC species % x 3 = <u>0</u><br>FACU species % x 4 = <u>0</u><br>UPL species % x 5 = <u>0</u><br>Column Totals: <u>0 %</u> (A) <u>0</u> (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum                   | (Plot size: <u>15'</u> ) |                  |                   |                  |   |
| 1.                                      |                          | %                |                   |                  |   |
| 2.                                      |                          | %                |                   |                  |   |
| 3.                                      |                          | %                |                   |                  |   |
| 4.                                      |                          | %                |                   |                  |   |
| 5.                                      |                          | %                |                   |                  |   |
|   |                          | <u>0 %</u>       | = Total Cover     |                  |   |
| Herb Stratum                            | (Plot size: <u>5'</u> )  |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 1.                                      | <u>Bromus inermis</u>    | <u>85 %</u>      | <u>Y</u>          | <u>UPL</u>       |   |
| 2.                                      | <u>Persicaria sp. *</u>  | <u>5 %</u>       | <u>N</u>          | <u>FAC</u>       |   |
| 3.                                      | <u>Bromus arvensis</u>   | <u>5 %</u>       | <u>N</u>          | <u>FACU</u>      |   |
| 4.                                      | <u>Medicago lupulina</u> | <u>2 %</u>       | <u>N</u>          | <u>FACU</u>      |   |
| 5.                                      |                          | %                |                   |                  |   |
| 6.                                      |                          | %                |                   |                  |   |
| 7.                                      |                          | %                |                   |                  |   |
| 8.                                      |                          | %                |                   |                  |   |
| 9.                                      |                          | %                |                   |                  |   |
| 10.                                     |                          | %                |                   |                  |   |
|   |                          | <u>97 %</u>      | = Total Cover     |                  |   |
| Woody Vine Stratum                      | (Plot size: <u>30'</u> ) |                  |                   |                  |   |
| 1.                                      |                          | %                |                   |                  |   |
| 2.                                      |                          | %                |                   |                  |   |
|   |                          | <u>0 %</u>       | = Total Cover     |                  |   |
| Bare Ground in Herb Stratum <u>20 %</u> |                          |                  |                   |                  |   |

Remarks: Hydrophytic vegetation is not present. \* Persicaria species could not be identified past genus. Most of the species in this region have an indicator of FAC or wetter, therefore, an indicator of FAC is assumed. Photograph C-1.



## SOIL

Sampling Point: SP-008

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |    | Redox Features |    |                   |                  | Texture         | Remarks |
|-------------------|---------------|----|----------------|----|-------------------|------------------|-----------------|---------|
|                   | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |                 |         |
| 0-12              | 5YR 2.5/1     | 80 | 5YR 4/6        | 20 | C                 | M                | silty clay loam |         |
|                   |               |    |                |    |                   |                  |                 |         |
|                   |               |    |                |    |                   |                  |                 |         |
|                   |               |    |                |    |                   |                  |                 |         |
|                   |               |    |                |    |                   |                  |                 |         |
|                   |               |    |                |    |                   |                  |                 |         |
|                   |               |    |                |    |                   |                  |                 |         |
|                   |               |    |                |    |                   |                  |                 |         |
|                   |               |    |                |    |                   |                  |                 |         |
|                   |               |    |                |    |                   |                  |                 |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |   |
|---|---|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: compact soil

Depth (inches): 12

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: No hydrology indicator is present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/26/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-011  
 Investigator(s): R. Williams; A. Woehler Section, Township, Range: S9, T110N, R66W  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.350397 Long: -98.770315 Datum: NAD83  
 Soil Map Unit Name: Tetonka silt loam, 0 to 1 percent slopes NWI Classification: PEM1C

Are climate/hydrologic conditions on the site typical for this time of year?

☒ Yes ☐ No (If no, explain in Remarks)

Vegetation Soil Hydrology  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☐

Are "Normal Circumstances" present? ☒ Yes ☐ No

(If needed, explain any answers in Remarks)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                                 | No                                  |                                    |
|---------------------------------------|-------------------------------------|-------------------------------------|------------------------------------|
| Hydrophytic Vegetation Present?       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Remarks: Upland confirmation plot. |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                    |
| Wetland Hydrology Present?            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                    |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                    |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: <u>30'</u> )  | Absolute % Cover | Dominant Species? | Indicator Status |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
|--|------------------|-------------------|------------------|---|-------------------|--------------|---------------------|---------------|----------------------|---------------|---------------------|---------------|----------------------|---------------|---------------------|---------------|------------------------------|-------------|
| 1. _____   | %                | _____             | _____            | <b>Dominance Test Worksheet:</b><br>Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 2. _____   | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 3. _____   | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 4. _____   | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
|  | 0 %              | = Total Cover     |                  | <b>Prevalence Index Worksheet:</b><br><table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____ 0</td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____ 0</td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____ 0</td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____ 0</td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____ 0</td> </tr> <tr> <td>Column Totals: _____ 0 % (A)</td> <td>_____ 0 (B)</td> </tr> </table> Prevalence Index = B/A = _____ | Total % Cover of: | Multiply by: | OBL species _____ % | x 1 = _____ 0 | FACW species _____ % | x 2 = _____ 0 | FAC species _____ % | x 3 = _____ 0 | FACU species _____ % | x 4 = _____ 0 | UPL species _____ % | x 5 = _____ 0 | Column Totals: _____ 0 % (A) | _____ 0 (B) |
| Total % Cover of:  | Multiply by:     |                   |                  |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| OBL species _____ %  | x 1 = _____ 0    |                   |                  |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| FACW species _____ %   | x 2 = _____ 0    |                   |                  |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| FAC species _____ %  | x 3 = _____ 0    |                   |                  |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| FACU species _____ %   | x 4 = _____ 0    |                   |                  |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| UPL species _____ %  | x 5 = _____ 0    |                   |                  |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| Column Totals: _____ 0 % (A)   | _____ 0 (B)      |                   |                  |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| Sapling/Shrub Stratum (Plot size: <u>15'</u> )   |                  |                   |                  |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 1. _____   | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 2. _____   | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 3. _____   | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 4. _____   | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 5. _____   | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
|  | 0 %              | = Total Cover     |                  |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| Herb Stratum (Plot size: <u>5'</u> )   |                  |                   |                  |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 1. <u>Bromus arvensis</u>  | 60 %             | Y                 | FACU             |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 2. <u>Xanthium strumarium</u>  | 5 %              | N                 | FAC              |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 3. <u>Eleocharis compressa</u>   | 5 %              | N                 | FACW             |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 4. _____   | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 5. _____   | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 6. _____   | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 7. _____   | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 8. _____   | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 9. _____   | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 10. _____  | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
|  | 70 %             | = Total Cover     |                  |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| Woody Vine Stratum (Plot size: <u>30'</u> )  |                  |                   |                  |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 1. _____   | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| 2. _____   | %                | _____             | _____            |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
|  | 0 %              | = Total Cover     |                  |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| Bare Ground in Herb Stratum <u>60 %</u>  |                  |                   |                  |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |
| Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Remarks: Hydrophytic vegetation is not present. Photograph C-2. |                  |                   |                  |   |                   |              |                     |               |                      |               |                     |               |                      |               |                     |               |                              |             |



**SOIL**

 Sampling Point: SP-011
**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks |
|-------------------|---------------|----|----------------|---|-------------------|------------------|---------|---------|
|                   | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-20              | 10YR 2/1      | 95 | 10YR 3/3       | 5 | C                 | M                | clay    |         |
|                   |               |    |                |   |                   |                  |         |         |
|                   |               |    |                |   |                   |                  |         |         |
|                   |               |    |                |   |                   |                  |         |         |
|                   |               |    |                |   |                   |                  |         |         |
|                   |               |    |                |   |                   |                  |         |         |
|                   |               |    |                |   |                   |                  |         |         |
|                   |               |    |                |   |                   |                  |         |         |
|                   |               |    |                |   |                   |                  |         |         |
|                   |               |    |                |   |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

<sup>2</sup>Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |   |
|---|---|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)  
☐ Coast Prairie Redox (A16) (**LRR F, G, H**)  
☐ Dark Surface (S7) (**LRR G**)  
☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Very Shallow Dark Surface (TF 12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**
☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is present.

**HYDROLOGY**
**Wetland Hydrology Indicators:**
Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)  
☐ Sparsely Vegetated Concave Surface (B8)  
☐ Drainage Patterns (B10)  
☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☒ Geomorphic Position (D2)  
☐ FAC-Neutral Test (D5)  
☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicator D2 is present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/25/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-501  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S6, T111N, R66W  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 5 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.454069 Long: -98.813009 Datum: NAD83  
 Soil Map Unit Name: Betts-Java loams, steep NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |                              |
|---------------------------------------|--------------------------|-------------------------------------|------------------------------|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|---|------------------|-------------------|------------------|---|
| 1. _____  | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____  | _____ %          | _____             | _____            |   |
| 3. _____  | _____ %          | _____             | _____            |   |
| 4. _____  | _____ %          | _____             | _____            |   |
| 0 % = Total Cover   |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                   |                  |                   |                  |   |
| 1. _____  | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____  | _____ %          | _____             | _____            |   |
| 3. _____  | _____ %          | _____             | _____            |   |
| 4. _____  | _____ %          | _____             | _____            |   |
| 5. _____  | _____ %          | _____             | _____            |   |
| 0 % = Total Cover   |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                             |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>   | 100 %            | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____  | _____ %          | _____             | _____            |   |
| 3. _____  | _____ %          | _____             | _____            |   |
| 4. _____  | _____ %          | _____             | _____            |   |
| 5. _____  | _____ %          | _____             | _____            |   |
| 6. _____  | _____ %          | _____             | _____            |   |
| 7. _____  | _____ %          | _____             | _____            |   |
| 8. _____  | _____ %          | _____             | _____            |   |
| 9. _____  | _____ %          | _____             | _____            |   |
| 10. _____   | _____ %          | _____             | _____            |   |
| 100 % = Total Cover   |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                      |                  |                   |                  |   |
| 1. _____  | _____ %          | _____             | _____            |   |
| 2. _____  | _____ %          | _____             | _____            |   |
| 0 % = Total Cover   |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0 %</u>                          |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-3. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-501

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-6               | 10YR 3/2      | 100 |                |   |                   |                  | Silt Loam |         |
| 6-18              | 10YR 3/3      | 100 |                |   |                   |                  | Silt Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicator D2 is present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/25/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-502  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S6, T111N, 66W  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 5 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.454681 Long: -98.820307 Datum: NAD83  
 Soil Map Unit Name: Betts-Java loams, steep NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                                 | No                                  | Remarks: Upland sample plot. |
|---------------------------------------|-------------------------------------|-------------------------------------|------------------------------|
| Hydrophytic Vegetation Present?       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                              |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                   | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test Worksheet:</b><br>Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)   |
|---|------------------|-------------------|------------------|---|
| 1. _____  | %                | _____             | _____            |   |
| 2. _____  | %                | _____             | _____            |   |
| 3. _____  | %                | _____             | _____            |   |
| 4. _____  | %                | _____             | _____            |   |
| 0 % = Total Cover   |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____% x 1 = <u>0</u><br>FACW species _____% x 2 = <u>0</u><br>FAC species _____% x 3 = <u>0</u><br>FACU species _____% x 4 = <u>0</u><br>UPL species _____% x 5 = <u>0</u><br>Column Totals: <u>0</u> % (A) <u>0</u> (B)<br>Prevalence Index = B/A = _____   |
| Sapling/Shrub Stratum (Plot size: 15')                          |                  |                   |                  |   |
| 1. _____  | %                | _____             | _____            |   |
| 2. _____  | %                | _____             | _____            |   |
| 3. _____  | %                | _____             | _____            |   |
| 0 % = Total Cover   |                  |                   |                  |   |
| Herb Stratum (Plot size: 5')                                    |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 1. <u>Poa pratensis</u>   | 10 %             | Y                 | FACU             |   |
| 2. _____  | %                | _____             | _____            |   |
| 3. _____  | %                | _____             | _____            |   |
| 4. _____  | %                | _____             | _____            |   |
| 5. _____  | %                | _____             | _____            |   |
| 6. _____  | %                | _____             | _____            |   |
| 7. _____  | %                | _____             | _____            |   |
| 8. _____  | %                | _____             | _____            |   |
| 9. _____  | %                | _____             | _____            |   |
| 10. _____   | %                | _____             | _____            |   |
| 10 % = Total Cover  |                  |                   |                  |   |
| Woody Vine Stratum (Plot size: 30')                             |                  |                   |                  |   |
| 1. _____  | %                | _____             | _____            |   |
| 2. _____  | %                | _____             | _____            |   |
| 0 % = Total Cover   |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>90</u> %                         |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-4. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-502

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |    |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-8               | 10YR 3/2      | 100 |                |    |                   |                  | Silt Loam |         |
| 8-18              | 10YR 3/2      | 90  | 10YR 4/4       | 10 | C                 | M                | Silt Loam |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                             | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           |
| <input type="checkbox"/> Histic Epipedon (A2)                      | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Black Histic (A3)                         | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                     | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F)            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)              | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)         | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12)                  | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                  | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)      |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)  
(LRR H outside of MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
(where tilled)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicator D2 is met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/25/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-503  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S1, T111N, R67W  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.452187 Long: -98.827746 Datum: NAD83  
 Soil Map Unit Name: Betts-Java loams, steep NWI Classification: R4SBC  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☒ ☐ (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                                     |                          |  |
|---------------------------------------|-------------------------------------|--------------------------|--|
|                                       | Yes                                 | No                       | Remarks: Sample plot located in PEM W-501. |
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')  | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|--|------------------|-------------------|------------------|--|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br>Total Number of Dominant Species Across All Strata: _____ (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |  |
| 3. _____   | _____ %          | _____             | _____            |  |
| 4. _____   | _____ %          | _____             | _____            |  |
| 0 % = Total Cover  |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: 15')   |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____<br>FACW species _____ % x 2 = _____<br>FAC species _____ % x 3 = _____<br>FACU species _____ % x 4 = _____<br>UPL species _____ % x 5 = _____<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 1. _____   | _____ %          | _____             | _____            |  |
| 2. _____   | _____ %          | _____             | _____            |  |
| 3. _____   | _____ %          | _____             | _____            |  |
| 4. _____   | _____ %          | _____             | _____            |  |
| 0 % = Total Cover  |                  |                   |                  |  |
| Herb Stratum (Plot size: 5')   |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 1. <u>Spartina pectinata</u>   | 90 %             | Y                 | FACW             |  |
| 2. <u>Carex sp.*</u>   | 10 %             | N                 | FAC              |  |
| 3. _____   | _____ %          | _____             | _____            |  |
| 4. _____   | _____ %          | _____             | _____            |  |
| 5. _____   | _____ %          | _____             | _____            |  |
| 6. _____   | _____ %          | _____             | _____            |  |
| 7. _____   | _____ %          | _____             | _____            |  |
| 8. _____   | _____ %          | _____             | _____            |  |
| 9. _____   | _____ %          | _____             | _____            |  |
| 10. _____  | _____ %          | _____             | _____            |  |
| 100 % = Total Cover  |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: 30')  |                  |                   |                  |  |
| 1. _____   | _____ %          | _____             | _____            |  |
| 2. _____   | _____ %          | _____             | _____            |  |
| 0 % = Total Cover  |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>0 %</u>   |                  |                   |                  |  |
| Remarks: Rapid test for hydrophytic vegetation is met. * Carex species could not be identified past genus. Most Carex species in this region are Facultative or wetter, therefore, an indicator of FAC is assumed. Photograph C-5. |                  |                   |                  |  |



## SOIL

Sampling Point: SP-503

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture    | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-18              | 10YR 3/1      | 100 |                |   |                   |                  | Silty Clay |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☒ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Redox is likely masked. The soil considered hydric soil based upon the positive presence of hydrophytic vegetation and wetland hydrology.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                                  | Depth<br>(inches) |
|--|-------------------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators D2 and D5 are present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/25/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-504  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S1, T111N, R67W  
 Landform (hillslope, terrace, etc.) toeslope Local relief (concave, convex, none): none Slope (%): 3 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.452245 Long: -98.827764 Datum: NAD83  
 Soil Map Unit Name: Betts-Java loams, steep NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: An upland plot adjacent to PEM W-501. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum<br>(Plot size: 30')   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>  |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>  |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>  | 70 %             | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. <u>Euphorbia sp.*</u>   | 10 %             | N                 | -                |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 80 % = Total Cover   |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>   |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>20 %</u>  |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. * Euphorbia species could not be identified past genus, no indicator is given. Photograph C-6. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-504

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-6               | 10YR 3/2      | 100 |                |   |                   |                  | Silt Loam |         |
| 6-18              | 10YR 4/3      | 100 |                |   |                   |                  | Silt Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                             | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                      | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                         | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                     | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F)            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)         | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                  | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                  | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)      |  |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)  
(LRR H outside of MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
(where tilled)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Hydrology indicators are not present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/25/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-505  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S1, T111N, R67W  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.453695 Long: 98.828842 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent slopes NWI Classification: PEM1A  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |                                    |
|---------------------------------------|--------------------------|-------------------------------------|------------------------------------|
|                                       | Yes                      | No                                  | Remarks: Upland confirmation plot. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                                    |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                                    |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                                    |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                                    |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                 | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test Worksheet:</b><br>Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)   |
|---|------------------|-------------------|------------------|---|
| 1. _____                                      | %                | _____             | _____            |   |
| 2. _____                                      | %                | _____             | _____            |   |
| 3. _____                                      | %                | _____             | _____            |   |
| 4. _____                                      | %                | _____             | _____            |   |
| 0 % = Total Cover                             |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____% x 1 = <u>0</u><br>FACW species _____% x 2 = <u>0</u><br>FAC species _____% x 3 = <u>0</u><br>FACU species _____% x 4 = <u>0</u><br>UPL species _____% x 5 = <u>0</u><br>Column Totals: <u>0</u> % (A) <u>0</u> (B)<br>Prevalence Index = B/A = _____   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b> |                  |                   |                  |   |
| 1. _____                                      | %                | _____             | _____            |   |
| 2. _____                                      | %                | _____             | _____            |   |
| 3. _____                                      | %                | _____             | _____            |   |
| 4. _____                                      | %                | _____             | _____            |   |
| 5. _____                                      | %                | _____             | _____            |   |
| 0 % = Total Cover                             |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>           |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 1. <u>Poa pratensis</u>                       | 100 %            | Y                 | FACU             |   |
| 2. _____                                      | %                | _____             | _____            |   |
| 3. _____                                      | %                | _____             | _____            |   |
| 4. _____                                      | %                | _____             | _____            |   |
| 5. _____                                      | %                | _____             | _____            |   |
| 6. _____                                      | %                | _____             | _____            |   |
| 7. _____                                      | %                | _____             | _____            |   |
| 8. _____                                      | %                | _____             | _____            |   |
| 9. _____                                      | %                | _____             | _____            |   |
| 10. _____                                     | %                | _____             | _____            |   |
| 100 % = Total Cover                           |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>    |                  |                   |                  |   |
| 1. _____                                      | %                | _____             | _____            |   |
| 2. _____                                      | %                | _____             | _____            |   |
| 0 % = Total Cover                             |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0</u> %        |                  |                   |                  |   |
| Remarks: No test is met. Photograph C-7.      |                  |                   |                  |   |



## SOIL

Sampling Point: SP-505

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture    | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-18              | 10YR 3/2      | 100 |                |   |                   |                  | Silty Loam |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicator D2 is present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/25/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-515  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S6, T111N, R66W  
 Landform (hillslope, terrace, etc.) depression Local relief (concave, convex, none): concave Slope (%): 10 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.442974 Long: -98.820747 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent slopes NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                      | No                                  | Remarks: Upland sample plot. |
|---------------------------------------|--------------------------|-------------------------------------|------------------------------|
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')  | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>  |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>  |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>  | 90 %             | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. <u>Salvia sp.*</u>  | 5 %              | N                 | -                |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 95 % = Total Cover   |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>   |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>5 %</u>   |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. * Salvia species could not be identified beyond genus, therefore, no indicator status is listed. Photograph C-8. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-515

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-8               | 10YR 3/2      | 100 |                |   |                   |                  | Silt Loam |         |
| 8-18              | 10YR 3/3      | 100 |                |   |                   |                  | Silt Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicator D2 is present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/25/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-516  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S6, T11N, R66W  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.443806 Long: -98.819913 Datum: NAD83  
 Soil Map Unit Name: Glenham-Prosper loams, 1 to 6 percent slopes NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                                 | No                       | Remarks: Wetland sample plot located in PEM W-507. |
|---------------------------------------|-------------------------------------|--------------------------|--|
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')  | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|--|------------------|-------------------|------------------|--|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br>Total Number of Dominant Species Across All Strata: _____ (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |  |
| 3. _____   | _____ %          | _____             | _____            |  |
| 4. _____   | _____ %          | _____             | _____            |  |
| 0 % = Total Cover  |                  |                   |                  |  |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                          |                  |                   |                  |  |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____<br>FACW species _____ % x 2 = _____<br>FAC species _____ % x 3 = _____<br>FACU species _____ % x 4 = _____<br>UPL species _____ % x 5 = _____<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |  |
| 3. _____   | _____ %          | _____             | _____            |  |
| 4. _____   | _____ %          | _____             | _____            |  |
| 5. _____   | _____ %          | _____             | _____            |  |
| 0 % = Total Cover  |                  |                   |                  |  |
| <b>Herb Stratum (Plot size: 5')</b>                                    |                  |                   |                  |  |
| 1. <u>Spartina pectinata</u>   | 90 %             | Y                 | FACW             | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. _____   | _____ %          | _____             | _____            |  |
| 3. _____   | _____ %          | _____             | _____            |  |
| 4. _____   | _____ %          | _____             | _____            |  |
| 5. _____   | _____ %          | _____             | _____            |  |
| 6. _____   | _____ %          | _____             | _____            |  |
| 7. _____   | _____ %          | _____             | _____            |  |
| 8. _____   | _____ %          | _____             | _____            |  |
| 9. _____   | _____ %          | _____             | _____            |  |
| 10. _____  | _____ %          | _____             | _____            |  |
| 90 % = Total Cover   |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: 30')</b>                             |                  |                   |                  |  |
| 1. _____   | _____ %          | _____             | _____            |  |
| 2. _____   | _____ %          | _____             | _____            |  |
| 0 % = Total Cover  |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>10 %</u>                                |                  |                   |                  |  |
| Remarks: Rapid test for hydrophytic vegetation is met. Photograph C-9. |                  |                   |                  |  |



## SOIL

Sampling Point: SP-516

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |    |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-4               | 10YR 3/1      | 100 |                |    |                   |                  | Silt Loam |         |
| 4-20              | 10YR 3/1      | 90  | 10YR 5/6       | 10 | C                 | M                | Silt Loam |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                             | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           |
| <input type="checkbox"/> Histic Epipedon (A2)                      | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Black Histic (A3)                         | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                     | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F)            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)              | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)         | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12)                  | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                  | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

**Field Observations:**

|  | Yes                                 | No                                  | Depth<br>(inches) |
|--|-------------------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators D2 and D5 are present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/25/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-517  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S6, T111N, R66W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 1 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.443847 Long: -98.819407 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent slopes NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                      | No                                  | Remarks:  |
|---------------------------------------|--------------------------|-------------------------------------|---|
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> | An upland plot adjacent to PEM W-507 and PEM W-508. |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>  | 95 %             | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 95 % = Total Cover   |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>5 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-10. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-517

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-8               | 10YR 3/2      | 100 |                |   |                   |                  | Silt Loam |         |
| 8-18              | 10YR 3/3      | 100 |                |   |                   |                  | Silt Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                             | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                      | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                         | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                     | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F)            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)         | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                  | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                  | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)      |  |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)  
(LRR H outside of MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: Hydric soil indicators are not present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
(where tilled)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: No hydrology indicator present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/25/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-518  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S6, T111N, R66W  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.443892 Long: -98.818880 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent slopes NWI Classification: PEM1A  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                                 | No                       | Remarks: Wetland sample plot located in PEM W-508. |
|---------------------------------------|-------------------------------------|--------------------------|--|
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br>Total Number of Dominant Species Across All Strata: _____ (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: 15')                                  |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____<br>FACW species _____ % x 2 = _____<br>FAC species _____ % x 3 = _____<br>FACU species _____ % x 4 = _____<br>UPL species _____ % x 5 = _____<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| Herb Stratum (Plot size: 5')  |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 1. <u>Spartina pectinata</u>  | 90 %             | Y                 | FACW             |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 6. _____  | _____ %          | _____             | _____            |  |
| 7. _____  | _____ %          | _____             | _____            |  |
| 8. _____  | _____ %          | _____             | _____            |  |
| 9. _____  | _____ %          | _____             | _____            |  |
| 10. _____   | _____ %          | _____             | _____            |  |
| 90 % = Total Cover  |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: 30')                                     |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>10 %</u>                                 |                  |                   |                  |  |
| Remarks: Rapid test for hydrophytic vegetation is met. Photograph C-11. |                  |                   |                  |  |



## SOIL

Sampling Point: SP-518

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |    |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-4               | 10YR 3/1      | 100 |                |    |                   |                  | Silt Loam |         |
| 4-20              | 10YR 3/1      | 90  | 10YR 5/6       | 10 | C                 | M                | Silt Loam |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |   |
|---|---|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                                  | Depth<br>(inches) |
|--|-------------------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators D2 and D5 are present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/25/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-519  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S6, T111N, R66W  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 3 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.445278 Long: -98.808208 Datum: NAD83  
 Soil Map Unit Name: Betts-Java loams, steep NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |                              |
|---------------------------------------|--------------------------|-------------------------------------|------------------------------|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>  | 100 %            | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 95 % = Total Cover   |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-12. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-519

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-20              | 10YR 3/2      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                             | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                      | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                         | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                     | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F)            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)         | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                  | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                  | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)      | (MLRA 72 & 73 of LRR H)                                |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)  
(LRR H outside of MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | (where not tilled)  |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
(where tilled)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicator D2 is met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/26/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-522  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S12, T111N, R67W  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.440352 Long: -98.829151 Datum: NAD83  
 Soil Map Unit Name: Hoven silt loam, 0 to 1 percent slopes NWI Classification: PEM1C  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                                 | No                       | Remarks:  |
|---------------------------------------|-------------------------------------|--------------------------|---|
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Wetland sample plot located in PEM W-510. No upland sample plot was recorded for W-510 due to adjacent agricultural fields. |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |   |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |   |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |   |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br>Total Number of Dominant Species Across All Strata: _____ (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| <b>0 % = Total Cover</b>  |                  |                   |                  |  |
|   |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____<br>FACW species _____ % x 2 = _____<br>FAC species _____ % x 3 = _____<br>FACU species _____ % x 4 = _____<br>UPL species _____ % x 5 = _____<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
|   |                  |                   |                  |  |
|   |                  |                   |                  |  |
|   |                  |                   |                  |  |
|   |                  |                   |                  |  |
|   |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
|   |                  |                   |                  |  |
|   |                  |                   |                  |  |
|   |                  |                   |                  |  |
|   |                  |                   |                  |  |
|   |                  |                   |                  |  |
|   |                  |                   |                  |  |
|   |                  |                   |                  |  |
|   |                  |                   |                  |  |
|   |                  |                   |                  |  |
|   |                  |                   |                  | Bare Ground in Herb Stratum <u>20 %</u>  |
|   |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: 30')<br>1. _____ % _____<br>2. _____ % _____<br><b>0 % = Total Cover</b> |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>20 %</u>   |                  |                   |                  |  |
| Remarks: Rapid test for hydrophytic vegetation is met. Photograph C-13.                                 |                  |                   |                  |  |



## SOIL

Sampling Point: SP-522

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |    |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-2               | 10YR 3/1      | 100 |                |    |                   |                  | Clay Loam |         |
| 2-10              | 10YR 3/1      | 85  | 10YR 4/6       | 15 | C                 | M                | Clay Loam |         |
| 10-20             | 10YR 3/1      | 75  | 10YR 5/6       | 25 | C                 | M                | Clay Loam |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |   |
|---|---|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                                  | Depth<br>(inches) |
|--|-------------------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 8                 |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators D2 and D5 present. Although saturation was observed at a depth of 8 inches, an accompanying water table was not observed. Therefore, indicator A3 is not met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/26/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-536  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S23, T111N, R67W  
 Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope (%): 2 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.409783 Long: -98.853713 Datum: NAD83  
 Soil Map Unit Name: Water NWI Classification: PABFh  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                                     |                          |  |
|---------------------------------------|-------------------------------------|--------------------------|--|
|                                       | Yes                                 | No                       | Remarks: Wetland sample plot located in PEM W-518. |
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br>Total Number of Dominant Species Across All Strata: _____ (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                           |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____<br>FACW species _____ % x 2 = _____<br>FAC species _____ % x 3 = _____<br>FACU species _____ % x 4 = _____<br>UPL species _____ % x 5 = _____<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| <b>Herb Stratum (Plot size: 5')</b>                                     |                  |                   |                  |  |
| 1. <u>Hordeum jubatum</u>   | 60 %             | Y                 | FACW             | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. <u>Persicaria maculosa</u>   | 30 %             | Y                 | FACW             |  |
| 3. <u>Phalaris arundinacea</u>  | 20 %             | N                 | FACW             |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 6. _____  | _____ %          | _____             | _____            |  |
| 7. _____  | _____ %          | _____             | _____            |  |
| 8. _____  | _____ %          | _____             | _____            |  |
| 9. _____  | _____ %          | _____             | _____            |  |
| 10. _____   | _____ %          | _____             | _____            |  |
| 110 % = Total Cover   |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: 30')</b>                              |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>0 %</u>                                  |                  |                   |                  |  |
| Remarks: Rapid test for hydrophytic vegetation is met. Photograph C-14. |                  |                   |                  |  |



## SOIL

Sampling Point: SP-536

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |    |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-4               | 10YR 3/2      | 100 |                |    |                   |                  | Clay Loam |         |
| 4-10              | 10YR 3/2      | 95  | 10YR 4/6       | 5  | C                 | M                | Clay Loam |         |
| 10-20             | 10YR 3/2      | 90  | 10YR 4/6       | 10 | C                 | M                | Clay Loam |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |   |
|---|---|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                                  | Depth<br>(inches) |
|--|-------------------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators B10, D2 and D5 are present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/26/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-537  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S23, T111N, 67W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 5 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.409805 Long: -98.853890 Datum: NAD83  
 Soil Map Unit Name: Water NWI Classification: PABFh  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot adjacent to PEM W-518. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')              | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test Worksheet:</b><br>Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)   |
|--|------------------|-------------------|------------------|---|
| 1. _____                                   | %                | _____             | _____            |   |
| 2. _____                                   | %                | _____             | _____            |   |
| 3. _____                                   | %                | _____             | _____            |   |
| 4. _____                                   | %                | _____             | _____            |   |
| 0 % = Total Cover                          |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____% x 1 = <u>0</u><br>FACW species _____% x 2 = <u>0</u><br>FAC species _____% x 3 = <u>0</u><br>FACU species _____% x 4 = <u>0</u><br>UPL species _____% x 5 = <u>0</u><br>Column Totals: <u>0</u> % (A) <u>0</u> (B)<br>Prevalence Index = B/A = _____   |
| 0 % = Total Cover                          |                  |                   |                  |   |
| 0 % = Total Cover                          |                  |                   |                  |   |
| 0 % = Total Cover                          |                  |                   |                  |   |
| 0 % = Total Cover                          |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>        |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>                    | 90 %             | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. <u>Solidago canadensis</u>              | 15 %             | N                 | FACU             |   |
| 3. _____                                   | %                | _____             | _____            |   |
| 4. _____                                   | %                | _____             | _____            |   |
| 5. _____                                   | %                | _____             | _____            |   |
| 6. _____                                   | %                | _____             | _____            |   |
| 7. _____                                   | %                | _____             | _____            |   |
| 8. _____                                   | %                | _____             | _____            |   |
| 9. _____                                   | %                | _____             | _____            |   |
| 10. _____                                  | %                | _____             | _____            |   |
| 105 % = Total Cover                        |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b> |                  |                   |                  |   |
| 1. _____                                   | %                | _____             | _____            | Bare Ground in Herb Stratum <u>0</u> %  |
| 2. _____                                   | %                | _____             | _____            |   |
| 0 % = Total Cover                          |                  |                   |                  | Remarks: Hydrophytic vegetation is not present. Photograph C-15.  |
| 0 % = Total Cover                          |                  |                   |                  |   |



## SOIL

Sampling Point: SP-537

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-20              | 10YR 3/2      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/27/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-538  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S20, T111N, R66W  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 3 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.411377 Long: -98.790429 Datum: NAD83  
 Soil Map Unit Name: Betts-Java loams, steep NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                                     |                          |  |
|---------------------------------------|-------------------------------------|--------------------------|--|
|                                       | Yes                                 | No                       | Remarks: Wetland sample plot located in PEM W-520. |
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum<br>(Plot size: 30')  | Absolute<br>% Cover | Dominant<br>Species? | Indicator<br>Status | Dominance Test Worksheet:  |
|---|---------------------|----------------------|---------------------|--|
| 1. _____  | _____ %             | _____                | _____               | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____  | _____ %             | _____                | _____               |  |
| 3. _____  | _____ %             | _____                | _____               |  |
| 4. _____  | _____ %             | _____                | _____               |  |
| 0 % = Total Cover   |                     |                      |                     |  |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                           |                     |                      |                     |  |
| 1. _____  | _____ %             | _____                | _____               | <b>Prevalence Index Worksheet:</b><br><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____<br>FACW species _____ % x 2 = _____<br>FAC species _____ % x 3 = _____<br>FACU species _____ % x 4 = _____<br>UPL species _____ % x 5 = _____<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br><br>Prevalence Index = B/A = _____  |
| 2. _____  | _____ %             | _____                | _____               |  |
| 3. _____  | _____ %             | _____                | _____               |  |
| 4. _____  | _____ %             | _____                | _____               |  |
| 5. _____  | _____ %             | _____                | _____               |  |
| 0 % = Total Cover   |                     |                      |                     |  |
| <b>Herb Stratum (Plot size: 5')</b>                                     |                     |                      |                     |  |
| 1. <u>Carex vulpinoidea</u>   | 100 %               | Y                    | FACW                | <b>Hydrophytic Vegetation Indicators:</b><br><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br><br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. _____  | _____ %             | _____                | _____               |  |
| 3. _____  | _____ %             | _____                | _____               |  |
| 4. _____  | _____ %             | _____                | _____               |  |
| 5. _____  | _____ %             | _____                | _____               |  |
| 6. _____  | _____ %             | _____                | _____               |  |
| 7. _____  | _____ %             | _____                | _____               |  |
| 8. _____  | _____ %             | _____                | _____               |  |
| 9. _____  | _____ %             | _____                | _____               |  |
| 10. _____   | _____ %             | _____                | _____               |  |
| 100 % = Total Cover   |                     |                      |                     |  |
| <b>Woody Vine Stratum (Plot size: 30')</b>                              |                     |                      |                     |  |
| 1. _____  | _____ %             | _____                | _____               |  |
| 2. _____  | _____ %             | _____                | _____               |  |
| 0 % = Total Cover   |                     |                      |                     |  |
| Bare Ground in Herb Stratum <u>0 %</u>                                  |                     |                      |                     |  |
| Remarks: Rapid test for hydrophytic vegetation is met. Photograph C-16. |                     |                      |                     |  |



## SOIL

Sampling Point: SP-538

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |    |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-2               | 10YR 3/1      | 100 |                |    |                   |                  | Clay Loam |         |
| 2-12              | 10YR 5/2      | 85  | 10YR 4/6       | 15 | C                 | M                | Clay Loam |         |
| 12-20             | 10YR 5/1      | 85  | 10YR 5/6       | 15 | C                 | M                | Clay Loam |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)        |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)            |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)        |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)        |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)         |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)      |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)          |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)   |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                       |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1)             | <input type="checkbox"/> Salt Crust (B11)                           |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                       | Depth<br>(inches) |
|--|-------------------------------------|--------------------------|-------------------|
| Surface Water present?                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 1                 |
| Water Table present?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| Saturation Present?<br>(includes capillary fringe) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators A1, A2, A3, B10, D2 and D5 present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/27/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-539  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S20, T111N, R66W  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 10 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.411369 Long: -98.790267 Datum: NAD83  
 Soil Map Unit Name: Betts-Java loams, steep NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot adjacent to PEM W-520. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 2 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. <u>Lonicera japonica</u>                                      | 20 %             | Y                 | FACU             | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = 0<br>FACW species _____ % x 2 = 0<br>FAC species _____ % x 3 = 0<br>FACU species _____ % x 4 = 0<br>UPL species _____ % x 5 = 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 20 % = Total Cover   |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>  | 80 %             | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. <u>Solidago canadensis</u>                                    | 10 %             | N                 | FACU             |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 90 % = Total Cover   |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>10 %</u>                          |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-17. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-539

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-6               | 10YR 3/2      | 100 |                |   |                   |                  | Clay Loam |         |
| 6-18              | 10YR 3/3      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: No hydrology indicators are present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/27/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-541  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S15, T111N, R67W  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.421129 Long: -98.864577 Datum: NAD83  
 Soil Map Unit Name: Houdek-Dudley complex, 0 to 2 percent slopes NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                      | No                                  | Remarks: Upland sample plot. |
|---------------------------------------|--------------------------|-------------------------------------|------------------------------|
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>  | 100 %            | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 100 % = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-18. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-541

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-6               | 10YR 3/1      | 100 |                |   |                   |                  | Clay Loam |         |
| 6-18              | 10YR 3/2      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicator D2 is present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/27/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-544  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S18, T111N, R66W  
 Landform (hillslope, terrace, etc.) depression Local relief (concave, convex, none): concave Slope (%): 0 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.417732 Long: -98.815380 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent slopes NWI Classification: PABFh  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                                 | No                       | Remarks: Wetland sample plot located in PEM W-524. |
|---------------------------------------|-------------------------------------|--------------------------|--|
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br>Total Number of Dominant Species Across All Strata: _____ (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                           |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____<br>FACW species _____ % x 2 = _____<br>FAC species _____ % x 3 = _____<br>FACU species _____ % x 4 = _____<br>UPL species _____ % x 5 = _____<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| <b>Herb Stratum (Plot size: 5')</b>                                     |                  |                   |                  |  |
| 1. <u><i>Typha latifolia</i></u>  | 50 %             | Y                 | OBL              | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. <u><i>Carex vulpinoidea</i></u>                                      | 40 %             | Y                 | FACW             |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 6. _____  | _____ %          | _____             | _____            |  |
| 7. _____  | _____ %          | _____             | _____            |  |
| 8. _____  | _____ %          | _____             | _____            |  |
| 9. _____  | _____ %          | _____             | _____            |  |
| 10. _____   | _____ %          | _____             | _____            |  |
| 90 % = Total Cover  |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: 30')</b>                              |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>10 %</u>                                 |                  |                   |                  |  |
| Remarks: Rapid test for hydrophytic vegetation is met. Photograph C-19. |                  |                   |                  |  |



## SOIL

Sampling Point: SP-544

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |    |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-2               | 10YR 3/1      | 100 |                |    |                   |                  | Clay Loam |         |
| 2-10              | 10YR 3/1      | 85  | 10YR 4/6       | 15 | C                 | M                | Clay Loam |         |
| 10-20             | 10YR 3/1      | 75  | 10YR 5/6       | 25 | C                 | M                | Clay Loam |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |   |
|---|---|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1)             | <input type="checkbox"/> Salt Crust (B11)                           |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                       | Depth<br>(inches) |
|--|-------------------------------------|--------------------------|-------------------|
| Surface Water present?                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 2                 |
| Water Table present?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| Saturation Present?<br>(includes capillary fringe) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators A1, A2, A3, D2, and D5 are present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/27/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-545  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S18, T111N, R66W  
 Landform (hillslope, terrace, etc.): roadside ditch Local relief (concave, convex, none): concave Slope (%): 3 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.417936 Long: -98.815433 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent slopes NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot adjacent to PEM W-524. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum<br>(Plot size: 30')                                 | Absolute<br>% Cover | Dominant<br>Species? | Indicator<br>Status | Dominance Test Worksheet:   |
|--|---------------------|----------------------|---------------------|---|
| 1. _____   | _____ %             | _____                | _____               | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br><br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %             | _____                | _____               |   |
| 3. _____   | _____ %             | _____                | _____               |   |
| 4. _____   | _____ %             | _____                | _____               |   |
| _____ 0 % = Total Cover  |                     |                      |                     |   |
| Sapling/Shrub Stratum (Plot size: 15')                           |                     |                      |                     | <b>Prevalence Index Worksheet:</b><br><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br><br>Prevalence Index = B/A = _____  |
| 1. _____   | _____ %             | _____                | _____               |   |
| 2. _____   | _____ %             | _____                | _____               |   |
| 3. _____   | _____ %             | _____                | _____               |   |
| 4. _____   | _____ %             | _____                | _____               |   |
| _____ 0 % = Total Cover  |                     |                      |                     |   |
| Herb Stratum (Plot size: 5')                                     |                     |                      |                     | <b>Hydrophytic Vegetation Indicators:</b><br><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br><br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 1. <u>Poa pratensis</u>  | 95 %                | Y                    | FACU                |   |
| 2. <u>Toxicodendron radicans</u>                                 | 5 %                 | N                    | FACU                |   |
| 3. _____   | _____ %             | _____                | _____               |   |
| 4. _____   | _____ %             | _____                | _____               |   |
| 5. _____   | _____ %             | _____                | _____               |   |
| 6. _____   | _____ %             | _____                | _____               |   |
| 7. _____   | _____ %             | _____                | _____               |   |
| 8. _____   | _____ %             | _____                | _____               |   |
| 9. _____   | _____ %             | _____                | _____               |   |
| 10. _____  | _____ %             | _____                | _____               |   |
| _____ 100 % = Total Cover  |                     |                      |                     |   |
| Woody Vine Stratum (Plot size: 30')                              |                     |                      |                     |   |
| 1. _____   | _____ %             | _____                | _____               |   |
| 2. _____   | _____ %             | _____                | _____               |   |
| _____ 0 % = Total Cover  |                     |                      |                     |   |
| Bare Ground in Herb Stratum _____ 0 %                            |                     |                      |                     |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-20. |                     |                      |                     |   |



## SOIL

Sampling Point: SP-545

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-6               | 10YR 3/2      | 100 |                |   |                   |                  | Clay Loam |         |
| 6-18              | 10YR 3/3      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicator D2 is met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/27/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-548  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S19, T111N, R66W  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.412908 Long: -98.810003 Datum: NAD83  
 Soil Map Unit Name: Tetonka silt loam, 0 to 1 percent slopes NWI Classification: PEM1C  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                                 | No                       | Remarks: Wetland sample plot located in PEM W-526. |
|---------------------------------------|-------------------------------------|--------------------------|--|
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br>Total Number of Dominant Species Across All Strata: _____ (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                           |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____<br>FACW species _____ % x 2 = _____<br>FAC species _____ % x 3 = _____<br>FACU species _____ % x 4 = _____<br>UPL species _____ % x 5 = _____<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| <b>Herb Stratum (Plot size: 5')</b>                                     |                  |                   |                  |  |
| 1. <u>Spartina pectinata</u>  | 100 %            | Y                 | FACW             | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 6. _____  | _____ %          | _____             | _____            |  |
| 7. _____  | _____ %          | _____             | _____            |  |
| 8. _____  | _____ %          | _____             | _____            |  |
| 9. _____  | _____ %          | _____             | _____            |  |
| 10. _____   | _____ %          | _____             | _____            |  |
| 100 % = Total Cover   |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: 30')</b>                              |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>0 %</u>                                  |                  |                   |                  |  |
| Remarks: Rapid test for hydrophytic vegetation is met. Photograph C-21. |                  |                   |                  |  |



## SOIL

Sampling Point: SP-548

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-4               | 10YR 3/2      | 100 |                |   |                   |                  | Silt Loam |         |
| 4-18              | 10YR 3/2      | 95  | 10YR 4/6       | 5 | C                 | M                | Silt Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |   |
|---|---|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                                  | Depth<br>(inches) |
|--|-------------------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicator D2 and D5 are present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/27/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-549  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S19, T111N, R66W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 3 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.413227 Long: -98.809759 Datum: NAD83  
 Soil Map Unit Name: Tetonka silt loam, 0 to 1 percent slopes NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot adjacent to PEM W-526. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>  | 100 %            | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 100 % = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-22. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-549

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-6               | 10YR 3/2      | 100 |                |   |                   |                  | Silt Loam |         |
| 6-18              | 10YR 3/3      | 100 |                |   |                   |                  | Silt Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: No hydrology indicators are present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/27/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-551  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S19, T111N, R66W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 5 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.407936 Long: -98.812115 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent slopes NWI Classification: PEM1C  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                      | No                                  | Remarks: Upland sample plot. |
|---------------------------------------|--------------------------|-------------------------------------|------------------------------|
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 1 (A)<br>Total Number of Dominant Species Across All Strata: _____ 2 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 50% (A/B)   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Sapling/Shrub Stratum (Plot size: 15')                           |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Herb Stratum (Plot size: 5')                                     |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>  | 60 %             | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. <u>Alopecurus pratensis</u>                                   | 20 %             | Y                 | FACW             |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 80 % = Total Cover   |                  |                   |                  |   |
| Woody Vine Stratum (Plot size: 30')                              |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>20 %</u>                          |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-23. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-551

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-6               | 10YR 3/2      | 100 |                |   |                   |                  | Silt Loam |         |
| 6-18              | 10YR 3/3      | 100 |                |   |                   |                  | Silt Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: No hydrology indicators are present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/27/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-552  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S19, T111N, R66W  
 Landform (hillslope, terrace, etc.) depression Local relief (concave, convex, none): concave Slope (%): 0 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.406381 Long: -98.806473 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent slopes NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |                              |
|---------------------------------------|--------------------------|-------------------------------------|------------------------------|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|---|------------------|-------------------|------------------|---|
| 1. _____  | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 1 (A)<br>Total Number of Dominant Species Across All Strata: _____ 2 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 50% (A/B)   |
| 2. _____  | _____ %          | _____             | _____            |   |
| 3. _____  | _____ %          | _____             | _____            |   |
| 4. _____  | _____ %          | _____             | _____            |   |
| 0 % = Total Cover   |                  |                   |                  |   |
| Sapling/Shrub Stratum (Plot size: 15')  |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 1. _____  | _____ %          | _____             | _____            |   |
| 2. _____  | _____ %          | _____             | _____            |   |
| 3. _____  | _____ %          | _____             | _____            |   |
| 4. _____  | _____ %          | _____             | _____            |   |
| 5. _____  | _____ %          | _____             | _____            |   |
| 0 % = Total Cover   |                  |                   |                  |   |
| Herb Stratum (Plot size: 5')  |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 1. <u>Poa pratensis</u>   | 60 %             | Y                 | FACU             |   |
| 2. <u>Alopecurus pratensis</u>  | 20 %             | Y                 | FACW             |   |
| 3. <u>Salvia sp.*</u>   | 10 %             | N                 | -                |   |
| 4. _____  | _____ %          | _____             | _____            |   |
| 5. _____  | _____ %          | _____             | _____            |   |
| 6. _____  | _____ %          | _____             | _____            |   |
| 7. _____  | _____ %          | _____             | _____            |   |
| 8. _____  | _____ %          | _____             | _____            |   |
| 9. _____  | _____ %          | _____             | _____            |   |
| 10. _____   | _____ %          | _____             | _____            |   |
| 90 % = Total Cover  |                  |                   |                  |   |
| Woody Vine Stratum (Plot size: 30')   |                  |                   |                  |   |
| 1. _____  | _____ %          | _____             | _____            |   |
| 2. _____  | _____ %          | _____             | _____            |   |
| 0 % = Total Cover   |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>10 %</u>   |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. * Salvia species could not be identified past genus, therefore, no indicator status is listed. Photograph C-24. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-552

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-6               | 10YR 3/2      | 100 |                |   |                   |                  | Silt Loam |         |
| 6-18              | 10YR 3/3      | 100 |                |   |                   |                  | Silt Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicator D2 is met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/27/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-570  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S18, T111N, R66W  
 Landform (hillslope, terrace, etc.): roadside ditch Local relief (concave, convex, none): concave Slope (%): 0 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.413980 Long: -98.804757 Datum: NAD83  
 Soil Map Unit Name: Glenham loam, rolling NWI Classification: PEM1C  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                                     |                          |  |
|---------------------------------------|-------------------------------------|--------------------------|--|
|                                       | Yes                                 | No                       | Remarks: Wetland sample plot located in PEM W-537. |
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br>Total Number of Dominant Species Across All Strata: _____ (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                           |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by:<br>OBL species _____ % x 1 = _____<br>FACW species _____ % x 2 = _____<br>FAC species _____ % x 3 = _____<br>FACU species _____ % x 4 = _____<br>UPL species _____ % x 5 = _____<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| <b>Herb Stratum (Plot size: 5')</b>                                     |                  |                   |                  |  |
| 1. <u>Typha latifolia</u>   | 100 %            | Y                 | OBL              | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 6. _____  | _____ %          | _____             | _____            |  |
| 7. _____  | _____ %          | _____             | _____            |  |
| 8. _____  | _____ %          | _____             | _____            |  |
| 9. _____  | _____ %          | _____             | _____            |  |
| 10. _____   | _____ %          | _____             | _____            |  |
| 100 % = Total Cover   |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: 30')</b>                              |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>0 %</u>                                  |                  |                   |                  |  |
| Remarks: Rapid test for hydrophytic vegetation is met. Photograph C-25. |                  |                   |                  |  |



## SOIL

Sampling Point: SP-570

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |    | Redox Features |    |                   |                  | Texture   | Remarks |
|-------------------|---------------|----|----------------|----|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-10              | 10YR 5/1      | 80 | 10YR 5/6       | 20 | C                 | M                | Clay Loam |         |
| 10-20             | 10YR 6/1      | 80 | 10YR 5/6       | 20 | C                 | M                | Clay Loam |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)        |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)            |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)        |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)        |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)         |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)      |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)          |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)   |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                       |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1)             | <input type="checkbox"/> Salt Crust (B11)                           |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                       | Depth<br>(inches) |
|--|-------------------------------------|--------------------------|-------------------|
| Surface Water present?                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <u>2</u>          |
| Water Table present?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <u>0</u>          |
| Saturation Present?<br>(includes capillary fringe) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <u>0</u>          |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators A1, A2, A3, D2, and D5 are met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/27/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-571  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S18, T111N, R66W  
 Landform (hillslope, terrace, etc.): berm Local relief (concave, convex, none): convex Slope (%): 0 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.414015 Long: -98.805000 Datum: NAD83  
 Soil Map Unit Name: Glenham loam, rolling NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot adjacent to W-537. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br><br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br><br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>  | 100 %            | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br><br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 100 % = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-26. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-571

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-8               | 10YR 3/2      | 100 |                |   |                   |                  | Clay Loam |         |
| 8-18              | 10YR 3/3      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: No hydrology indicators are present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/28/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-591  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S24, T111N, R67W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 2 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.412711 Long: -98.825603 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent slopes NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |                              |
|---------------------------------------|--------------------------|-------------------------------------|------------------------------|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>  | 80 %             | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 80 % = Total Cover   |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>20 %</u>                          |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-27. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-591

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-10              | 10YR 3/2      | 100 |                |   |                   |                  | Silt Loam |         |
| 10-20             | 10YR 3/3      | 100 |                |   |                   |                  | Silt Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: No wetland hydrology indicators are present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/28/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-592  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S13, T111N, R67W  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 1 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.427160 Long: -98.832553 Datum: NAD83  
 Soil Map Unit Name: Water NWI Classification: PABFh  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                                     |                          |  |
|---------------------------------------|-------------------------------------|--------------------------|--|
|                                       | Yes                                 | No                       | Remarks: Wetland sample plot located in PEM W-548. |
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br>Total Number of Dominant Species Across All Strata: _____ (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                           |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____<br>FACW species _____ % x 2 = _____<br>FAC species _____ % x 3 = _____<br>FACU species _____ % x 4 = _____<br>UPL species _____ % x 5 = _____<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| <b>Herb Stratum (Plot size: 5')</b>                                     |                  |                   |                  |  |
| 1. <u>Persicaria maculosa</u>   | 60 %             | Y                 | FACW             | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. <u>Typha latifolia</u>   | 30 %             | Y                 | OBL              |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 6. _____  | _____ %          | _____             | _____            |  |
| 7. _____  | _____ %          | _____             | _____            |  |
| 8. _____  | _____ %          | _____             | _____            |  |
| 9. _____  | _____ %          | _____             | _____            |  |
| 10. _____   | _____ %          | _____             | _____            |  |
| 90 % = Total Cover  |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: 30')</b>                              |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>10 %</u>                                 |                  |                   |                  |  |
| Remarks: Rapid test for hydrophytic vegetation is met. Photograph C-28. |                  |                   |                  |  |



## SOIL

Sampling Point: SP-592

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |    | Redox Features |    |                   |                  | Texture   | Remarks |
|-------------------|---------------|----|----------------|----|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-10              | 10YR 5/1      | 80 | 10YR 5/6       | 20 | C                 | M                | Clay Loam |         |
| 10-20             | 10YR 6/1      | 80 | 10YR 5/6       | 20 | C                 | M                | Clay Loam |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                             | <input type="checkbox"/> Sandy Gleyed Matrix (S4)        |
| <input type="checkbox"/> Histic Epipedon (A2)                      | <input type="checkbox"/> Sandy Redox (S5)                |
| <input type="checkbox"/> Black Histic (A3)                         | <input type="checkbox"/> Stripped Matrix (S6)            |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                     | <input type="checkbox"/> Loamy Mucky Mineral (F1)        |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F)            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)        |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)              | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)         | <input type="checkbox"/> Redox Dark Surface (F6)         |
| <input type="checkbox"/> Thick Dark Surface (A12)                  | <input type="checkbox"/> Depleted Dark Surface (F7)      |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                  | <input type="checkbox"/> Redox Depressions (F8)          |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16)   |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                       |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1)             | <input type="checkbox"/> Salt Crust (B11)                           |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

**Field Observations:**

|  | Yes                                 | No                       | Depth<br>(inches) |
|--|-------------------------------------|--------------------------|-------------------|
| Surface Water present?                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 1                 |
| Water Table present?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| Saturation Present?<br>(includes capillary fringe) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators A1, A2, A3, D2, and D5 are met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/28/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-593  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S13, T111N, R67W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 5 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.427162 Long: -98.832692 Datum: NAD83  
 Soil Map Unit Name: Water NWI Classification: PABFh  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☒ ☐ (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                                     |                                     |  |
|---------------------------------------|-------------------------------------|-------------------------------------|--|
|                                       | Yes                                 | No                                  | Remarks: Upland sample plot adjacent to PEM W-548. |
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |  |
| Hydric Soil Present?                  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|--|------------------|-------------------|------------------|--|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 1 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 100% (A/B)   |
| 2. _____   | _____ %          | _____             | _____            |  |
| 3. _____   | _____ %          | _____             | _____            |  |
| 4. _____   | _____ %          | _____             | _____            |  |
| 0 % = Total Cover                                |                  |                   |                  |  |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>    |                  |                   |                  |  |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by:<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____   |
| 2. _____   | _____ %          | _____             | _____            |  |
| 3. _____   | _____ %          | _____             | _____            |  |
| 4. _____   | _____ %          | _____             | _____            |  |
| 5. _____   | _____ %          | _____             | _____            |  |
| 0 % = Total Cover                                |                  |                   |                  |  |
| <b>Herb Stratum (Plot size: 5')</b>              |                  |                   |                  |  |
| 1. <u>Phalaris arundinacea</u>                   | 90 %             | Y                 | FACW             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input checked="" type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. <u>Solidago canadensis</u>                    | 20 %             | N                 | FACU             |  |
| 3. _____   | _____ %          | _____             | _____            |  |
| 4. _____   | _____ %          | _____             | _____            |  |
| 5. _____   | _____ %          | _____             | _____            |  |
| 6. _____   | _____ %          | _____             | _____            |  |
| 7. _____   | _____ %          | _____             | _____            |  |
| 8. _____   | _____ %          | _____             | _____            |  |
| 9. _____   | _____ %          | _____             | _____            |  |
| 10. _____  | _____ %          | _____             | _____            |  |
| 110 % = Total Cover                              |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: 30')</b>       |                  |                   |                  |  |
| 1. _____   | _____ %          | _____             | _____            |  |
| 2. _____   | _____ %          | _____             | _____            |  |
| 0 % = Total Cover                                |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>0 %</u>           |                  |                   |                  |  |
| Remarks: Dominance test is met. Photograph C-29. |                  |                   |                  |  |



## SOIL

Sampling Point: SP-593

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-6               | 10YR 3/2      | 100 |                |   |                   |                  | Silt Loam |         |
| 6-10              | 10YR 3/3      | 100 |                |   |                   |                  | Silt Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**Type: Compacted Depth (inches): 10**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present. Naturally problematic soil due to compaction at 10 inches.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <u>          </u> |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <u>          </u> |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <u>          </u> |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicator D5 is met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/28/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-596  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S14, T111N, R67W  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.425833 Long: -98.844313 Datum: NAD83  
 Soil Map Unit Name: Glenham loam, undulating NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                                     |                          |  |
|---------------------------------------|-------------------------------------|--------------------------|--|
|                                       | Yes                                 | No                       | Remarks: Wetland sample plot located in PEM W-550. |
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum<br>(Plot size: 30')  | Absolute<br>% Cover | Dominant<br>Species? | Indicator<br>Status | Dominance Test Worksheet:  |
|---|---------------------|----------------------|---------------------|--|
| 1. _____  | _____ %             | _____                | _____               | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____  | _____ %             | _____                | _____               |  |
| 3. _____  | _____ %             | _____                | _____               |  |
| 4. _____  | _____ %             | _____                | _____               |  |
| 0 % = Total Cover   |                     |                      |                     |  |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                           |                     |                      |                     |  |
| 1. _____  | _____ %             | _____                | _____               | <b>Prevalence Index Worksheet:</b><br><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____<br>FACW species _____ % x 2 = _____<br>FAC species _____ % x 3 = _____<br>FACU species _____ % x 4 = _____<br>UPL species _____ % x 5 = _____<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br><br>Prevalence Index = B/A = _____  |
| 2. _____  | _____ %             | _____                | _____               |  |
| 3. _____  | _____ %             | _____                | _____               |  |
| 4. _____  | _____ %             | _____                | _____               |  |
| 5. _____  | _____ %             | _____                | _____               |  |
| 0 % = Total Cover   |                     |                      |                     |  |
| <b>Herb Stratum (Plot size: 5')</b>                                     |                     |                      |                     |  |
| 1. <u>Spartina pectinata</u>  | 100 %               | Y                    | FACW                | <b>Hydrophytic Vegetation Indicators:</b><br><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br><br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. _____  | _____ %             | _____                | _____               |  |
| 3. _____  | _____ %             | _____                | _____               |  |
| 4. _____  | _____ %             | _____                | _____               |  |
| 5. _____  | _____ %             | _____                | _____               |  |
| 6. _____  | _____ %             | _____                | _____               |  |
| 7. _____  | _____ %             | _____                | _____               |  |
| 8. _____  | _____ %             | _____                | _____               |  |
| 9. _____  | _____ %             | _____                | _____               |  |
| 10. _____   | _____ %             | _____                | _____               |  |
| 100 % = Total Cover   |                     |                      |                     |  |
| <b>Woody Vine Stratum (Plot size: 30')</b>                              |                     |                      |                     |  |
| 1. _____  | _____ %             | _____                | _____               |  |
| 2. _____  | _____ %             | _____                | _____               |  |
| 0 % = Total Cover   |                     |                      |                     |  |
| Bare Ground in Herb Stratum <u>0 %</u>                                  |                     |                      |                     |  |
| Remarks: Rapid test for hydrophytic vegetation is met. Photograph C-30. |                     |                      |                     |  |



## SOIL

Sampling Point: SP-596

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |    | Redox Features |    |                   |                  | Texture   | Remarks |
|-------------------|---------------|----|----------------|----|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-10              | 10YR 5/1      | 80 | 10YR 5/6       | 20 | C                 | M                | Clay Loam |         |
| 10-20             | 10YR 6/1      | 80 | 10YR 5/6       | 20 | C                 | M                | Clay Loam |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)        |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)            |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)        |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)        |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)         |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)      |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)          |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)   |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                       |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F3 is met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1)             | <input type="checkbox"/> Salt Crust (B11)                           |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                       | Depth<br>(inches) |
|--|-------------------------------------|--------------------------|-------------------|
| Surface Water present?                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| Water Table present?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| Saturation Present?<br>(includes capillary fringe) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators A1, A2, A3, B10, D2, and D5 are met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/28/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-597  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S14, T111N, R67W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 3 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.425766 Long: -98.844374 Datum: NAD83  
 Soil Map Unit Name: Glenham loam, undulating NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot adjacent to PEM W-550. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>  | 90 %             | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. <u>Solidago canadensis</u>                                    | 5 %              | N                 | FACU             |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 95 % = Total Cover   |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>5 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-31. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-597

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-6               | 10YR 3/1      | 100 |                |   |                   |                  | Silt Loam |         |
| 6-12              | 10YR 3/2      | 100 |                |   |                   |                  | Silt Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**Type: Compacted Depth (inches): 12**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <u>          </u> |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <u>          </u> |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <u>          </u> |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: No wetland hydrology indicators are present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/28/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-600  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S14, T111N, R67W  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 0 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.423495 Long: -98.858857 Datum: NAD83  
 Soil Map Unit Name: Glenham loam, undulating NWI Classification: PABFh  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |                              |
|---------------------------------------|--------------------------|-------------------------------------|------------------------------|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>  | 100 %            | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 100 % = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-32. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-600

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-12              | 10YR 3/2      | 100 |                |   |                   |                  | Silt Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**Type: Compacted Depth (inches): 12**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <u>          </u> |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <u>          </u> |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <u>          </u> |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicator D2 is met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 6/28/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-603  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S11, T111N, R67W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 5 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.437162 Long: -98.858469 Datum: NAD83  
 Soil Map Unit Name: Glenham-Prosper loams, 0 to 2 percent slopes NWI Classification: PABFh  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot adjacent to PEM W-552. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>  | 100 %            | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 100 % = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-33. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-603

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-12              | 10YR 3/2      | 100 |                |   |                   |                  | Silt Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**Type: Compacted Depth (inches): 12**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <u>          </u> |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <u>          </u> |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <u>          </u> |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: No wetland hydrology indicators are present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/16/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-606  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S33, T111N, R66W  
 Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope (%): 2 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.382675 Long: -98.780460 Datum: NAD83  
 Soil Map Unit Name: Betts-Java loams, steep NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                                     |                          |  |
|---------------------------------------|-------------------------------------|--------------------------|--|
|                                       | Yes                                 | No                       | Remarks: Wetland sample plot located in PEM W-554. |
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br>Total Number of Dominant Species Across All Strata: _____ (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____<br>FACW species _____ % x 2 = _____<br>FAC species _____ % x 3 = _____<br>FACU species _____ % x 4 = _____<br>UPL species _____ % x 5 = _____<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15')                                  |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| Herb Stratum (Plot size: 5')  |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 1. <u>Spartina pectinata</u>  | 90 %             | Y                 | FACW             |  |
| 2. <u>Xanthium strumarium</u>   | 5 %              | N                 | FAC              |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 6. _____  | _____ %          | _____             | _____            |  |
| 7. _____  | _____ %          | _____             | _____            |  |
| 8. _____  | _____ %          | _____             | _____            |  |
| 9. _____  | _____ %          | _____             | _____            |  |
| 10. _____   | _____ %          | _____             | _____            |  |
| 95 % = Total Cover  |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: 30')                                     |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>5 %</u>                                  |                  |                   |                  |  |
| Remarks: Rapid test for hydrophytic vegetation is met. Photograph C-34. |                  |                   |                  |  |



## SOIL

Sampling Point: SP-606

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |    |                   |                  | Texture         | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|-----------------|---------|
|                   | Color (moist) | %   | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |                 |         |
| 0-2               | 10YR 2/1      | 100 |                |    |                   |                  | silty clay loam |         |
| 2-8               | 10YR 2/2      | 90  | 10YR 5/4       | 10 | C                 | M                | clay            |         |
| 8-20              | 10YR 5/1      | 60  | 10YR 2/2       | 30 | C                 | M                | clay            |         |
|                   |               |     | 10YR 5/4       | 10 | C                 | M                |                 |         |
|                   |               |     |                |    |                   |                  |                 |         |
|                   |               |     |                |    |                   |                  |                 |         |
|                   |               |     |                |    |                   |                  |                 |         |
|                   |               |     |                |    |                   |                  |                 |         |
|                   |               |     |                |    |                   |                  |                 |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |   |
|---|---|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input checked="" type="checkbox"/> Depleted Matrix (F3)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F3 and F6 are met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                                  | Depth<br>(inches) |
|--|-------------------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 0                 |
| Saturation Present?<br>(includes capillary fringe) | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 0                 |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators A2, A3, B10, D2, and D5 are met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/16/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-607  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S33, T111N, R66W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 7 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.382969 Long: -98.780482 Datum: NAD83  
 Soil Map Unit Name: Betts-Java loams, steep NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot adjacent to PEM W-554. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 2 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Bromus inermis</u>   | 50 %             | Y                 | UPL              | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. <u>Poa pratensis</u>  | 50 %             | Y                 | FACU             |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 100 % = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-35. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-607

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-6               | 10YR 3/2      | 100 |                |   |                   |                  | Silt Loam |         |
| 6-18              | 10YR 3/3      | 100 |                |   |                   |                  | Silt Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: No wetland hydrology indicators are present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/16/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-612  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S32, T111N, R66W  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 5 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.384156 Long: -98.792923 Datum: NAD83  
 Soil Map Unit Name: Glenham loam, undulating NWI Classification: PEM1Ad  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |                              |
|---------------------------------------|--------------------------|-------------------------------------|------------------------------|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Bromus inermis</u>   | 100 %            | Y                 | UPL              | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 100 % = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-36. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-612

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-8               | 10YR 3/3      | 100 |                |   |                   |                  | Clay Loam |         |
| 8-20              | 10YR 3/4      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                             | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                      | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                         | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                     | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F)            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)         | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                  | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                  | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicator D2 is met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/16/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-615  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S29, T111N, R66W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 2 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.390799 Long: -98.795293 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent slopes NWI Classification: PEM1Ad  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |                              |
|---------------------------------------|--------------------------|-------------------------------------|------------------------------|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br><br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Sapling/Shrub Stratum (Plot size: 15')                           |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br><br>Prevalence Index = B/A = _____  |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Herb Stratum (Plot size: 5')                                     |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br><br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 1. <u>Poa pratensis</u>  | 90 %             | Y                 | FACU             |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 90 % = Total Cover   |                  |                   |                  |   |
| Woody Vine Stratum (Plot size: 30')                              |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>10 %</u>                          |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-37. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-615

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-20              | 10YR 3/3      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/16/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-616  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S20, T111N, R66W  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 4 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.404606 Long: -98.801614 Datum: NAD83  
 Soil Map Unit Name: Glenham-Java loams, rolling NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                                     |                          |  |
|---------------------------------------|-------------------------------------|--------------------------|--|
|                                       | Yes                                 | No                       | Remarks: Wetland sample plot located in PEM W-558. |
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br>Total Number of Dominant Species Across All Strata: _____ (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| <b>0 % = Total Cover</b>  |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: 15')                                  |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____<br>FACW species _____ % x 2 = _____<br>FAC species _____ % x 3 = _____<br>FACU species _____ % x 4 = _____<br>UPL species _____ % x 5 = _____<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| <b>0 % = Total Cover</b>  |                  |                   |                  |  |
| Herb Stratum (Plot size: 5')  |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 1. <u>Spartina pectinata</u>  | 100 %            | Y                 | FACW             |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 6. _____  | _____ %          | _____             | _____            |  |
| 7. _____  | _____ %          | _____             | _____            |  |
| 8. _____  | _____ %          | _____             | _____            |  |
| 9. _____  | _____ %          | _____             | _____            |  |
| 10. _____   | _____ %          | _____             | _____            |  |
| <b>100 % = Total Cover</b>  |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: 30')                                     |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| <b>0 % = Total Cover</b>  |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>0 %</u>                                  |                  |                   |                  |  |
| Remarks: Rapid test for hydrophytic vegetation is met. Photograph C-38. |                  |                   |                  |  |



## SOIL

Sampling Point: SP-616

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-6               | 10YR 3/2      | 100 |                |   |                   |                  | Clay Loam |         |
| 6-18              | 10YR 3/2      | 95  | 10YR 4/6       | 5 | C                 | M                | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                             | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           |
| <input type="checkbox"/> Histic Epipedon (A2)                      | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Black Histic (A3)                         | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                     | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F)            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)              | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)         | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12)                  | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                  | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)      | (MLRA 72 & 73 of LRR H)                                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)  
(LRR H outside of MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | (where not tilled)  |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
(where tilled)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

**Field Observations:**

|  | Yes                                 | No                                  | Depth<br>(inches) |
|--|-------------------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators B10, D2 and D5 are met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/16/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-617  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S20, T111N, R66W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 5 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.404534 Long: -98.801618 Datum: NAD83  
 Soil Map Unit Name: Glenham-Java loams, rolling NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot adjacent to PEM W-558. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Bromus inermis</u>   | 65 %             | Y                 | UPL              | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. <u>Poa pratensis</u>  | 15 %             | N                 | FACU             |   |
| 3. <u>Spartina pectinata</u>                                     | 10 %             | N                 | FACW             |   |
| 4. <u>Trifolium repens</u>                                       | 5 %              | N                 | FACU             |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 95 % = Total Cover   |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>5 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-39. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-617

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-8               | 10YR 3/2      | 100 |                |   |                   |                  | Clay Loam |         |
| 8-20              | 10YR 3/3      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/16/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-619  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S20, T111N, R66W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 7 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.402410 Long: -98.801110 Datum: NAD83  
 Soil Map Unit Name: Glenham-Java loams, rolling NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |                              |
|---------------------------------------|--------------------------|-------------------------------------|------------------------------|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Sapling/Shrub Stratum (Plot size: 15')                           |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Herb Stratum (Plot size: 5')                                     |                  |                   |                  |   |
| 1. <u>Bromus inermis</u>   | 100 %            | Y                 | UPL              | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 100 % = Total Cover  |                  |                   |                  |   |
| Woody Vine Stratum (Plot size: 30')                              |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum _____ 0 %                            |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-40. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-619

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-8               | 10YR 3/2      | 100 |                |   |                   |                  | Clay Loam |         |
| 8-20              | 10YR 3/3      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/16/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-621  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S29, T111N, R66W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 3 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.397585 Long: -98.800258 Datum: NAD83  
 Soil Map Unit Name: Tetonka silt loam, 0 to 1 percent slopes NWI Classification: PEM1C  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |                              |
|---------------------------------------|--------------------------|-------------------------------------|------------------------------|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Bromus inermis</u>   | 100 %            | Y                 | UPL              | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 100 % = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-41. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-621

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-8               | 10YR 3/2      | 100 |                |   |                   |                  | Clay Loam |         |
| 8-20              | 10YR 3/3      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/16/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-623  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S29, T111N, R66W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 2 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.395976 Long: -98.799820 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent slopes NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot adjacent to PEM W-561. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum<br>(Plot size: 30')                                 | Absolute<br>% Cover | Dominant<br>Species? | Indicator<br>Status | Dominance Test Worksheet:   |
|--|---------------------|----------------------|---------------------|---|
| 1. _____   | ____%               | _____                | _____               | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br><br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | ____%               | _____                | _____               |   |
| 3. _____   | ____%               | _____                | _____               |   |
| 4. _____   | ____%               | _____                | _____               |   |
| 0 % = Total Cover  |                     |                      |                     |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                     |                      |                     |   |
| 1. _____   | ____%               | _____                | _____               | <b>Prevalence Index Worksheet:</b><br><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____% x 1 = _____ 0<br>FACW species _____% x 2 = _____ 0<br>FAC species _____% x 3 = _____ 0<br>FACU species _____% x 4 = _____ 0<br>UPL species _____% x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br><br>Prevalence Index = B/A = _____   |
| 2. _____   | ____%               | _____                | _____               |   |
| 3. _____   | ____%               | _____                | _____               |   |
| 4. _____   | ____%               | _____                | _____               |   |
| 5. _____   | ____%               | _____                | _____               |   |
| 0 % = Total Cover  |                     |                      |                     |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                     |                      |                     |   |
| 1. <u>Bromus inermis</u>   | 100 %               | Y                    | UPL                 | <b>Hydrophytic Vegetation Indicators:</b><br><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br><br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | ____%               | _____                | _____               |   |
| 3. _____   | ____%               | _____                | _____               |   |
| 4. _____   | ____%               | _____                | _____               |   |
| 5. _____   | ____%               | _____                | _____               |   |
| 6. _____   | ____%               | _____                | _____               |   |
| 7. _____   | ____%               | _____                | _____               |   |
| 8. _____   | ____%               | _____                | _____               |   |
| 9. _____   | ____%               | _____                | _____               |   |
| 10. _____  | ____%               | _____                | _____               |   |
| 100 % = Total Cover  |                     |                      |                     |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                     |                      |                     |   |
| 1. _____   | ____%               | _____                | _____               |   |
| 2. _____   | ____%               | _____                | _____               |   |
| 0 % = Total Cover  |                     |                      |                     |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                     |                      |                     |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-42. |                     |                      |                     |   |



## SOIL

Sampling Point: SP-623

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-8               | 10YR 3/2      | 100 |                |   |                   |                  | Clay Loam |         |
| 8-20              | 10YR 3/3      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/16/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-634  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S33, T111N, R66W  
 Landform (hillslope, terrace, etc.): pothole Local relief (concave, convex, none): concave Slope (%): 1 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.373034 Long: -98.779054 Datum: NAD83  
 Soil Map Unit Name: Glenham-Java loams, rolling NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                                     |                          |  |
|---------------------------------------|-------------------------------------|--------------------------|--|
|                                       | Yes                                 | No                       | Remarks: Wetland sample plot located in PEM W-566. |
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                           |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____<br>FACW species _____ % x 2 = _____<br>FAC species _____ % x 3 = _____<br>FACU species _____ % x 4 = _____<br>UPL species _____ % x 5 = _____<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br><br>Prevalence Index = B/A = _____  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| <b>Herb Stratum (Plot size: 5')</b>                                     |                  |                   |                  |  |
| 1. <u>Eleocharis obtusa</u>   | 35 %             | Y                 | OBL              | <b>Hydrophytic Vegetation Indicators:</b><br><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br><br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. <u>Spartina pectinata</u>  | 25 %             | Y                 | FACW             |  |
| 3. <u>Alisma gramineum</u>  | 5 %              | N                 | OBL              |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 6. _____  | _____ %          | _____             | _____            |  |
| 7. _____  | _____ %          | _____             | _____            |  |
| 8. _____  | _____ %          | _____             | _____            |  |
| 9. _____  | _____ %          | _____             | _____            |  |
| 10. _____   | _____ %          | _____             | _____            |  |
| 65 % = Total Cover  |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: 30')</b>                              |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>35 %</u>                                 |                  |                   |                  |  |
| Remarks: Rapid test for hydrophytic vegetation is met. Photograph C-43. |                  |                   |                  |  |



## SOIL

Sampling Point: SP-634

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |    |                   |                  | Texture | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|---------|---------|
|                   | Color (moist) | %   | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-1               | 10YR 2/1      | 100 |                |    |                   |                  | clay    |         |
| 1-6               | 10YR 2/1      | 90  | 10YR 6/4       | 10 | C                 | M                | clay    |         |
| 6-20              | 10YR 6/1      | 70  | 10YR 2/1       | 20 | C                 | M                | clay    |         |
|                   |               |     | 10YR 6/4       | 10 | C                 | M                |         |         |
|                   |               |     |                |    |                   |                  |         |         |
|                   |               |     |                |    |                   |                  |         |         |
|                   |               |     |                |    |                   |                  |         |         |
|                   |               |     |                |    |                   |                  |         |         |
|                   |               |     |                |    |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |   |
|---|---|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input checked="" type="checkbox"/> Depleted Matrix (F3)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicators F3 and F6 are met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1)             | <input type="checkbox"/> Salt Crust (B11)                           |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                       | Depth<br>(inches) |
|--|-------------------------------------|--------------------------|-------------------|
| Surface Water present?                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 1                 |
| Water Table present?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| Saturation Present?<br>(includes capillary fringe) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators A1, A2, A3, D2, and D5 are met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/16/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-635  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S33, T111N, R66W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 2 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.372942 Long: -98.778920 Datum: NAD83  
 Soil Map Unit Name: Glenham-Java loams, rolling NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot adjacent to PEM W-566. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>  | 90 %             | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 90 % = Total Cover   |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>10 %</u>                          |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-44. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-635

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-8               | 10YR 3/2      | 100 |                |   |                   |                  | Clay Loam |         |
| 8-20              | 10YR 3/3      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/16/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-651  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S9, T110N, R66W  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 3 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.354788 Long: -98.775955 Datum: NAD83  
 Soil Map Unit Name: Betts-Java loams, steep NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)  
 Vegetation Soil Hydrology  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☐ Are "Normal Circumstances" present? ☒ Yes ☐ No  
 (If needed, explain any answers in Remarks)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                                 | No                       | Remarks                                   |
|---------------------------------------|-------------------------------------|--------------------------|---|
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Wetland sample plot located in PEM W-005. |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |   |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |   |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |   |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: <u>30'</u> )            | Absolute % Cover | Dominant Species? | Indicator Status |  |
|--|------------------|-------------------|------------------|--|
| 1. _____   | _____ %          | _____             | _____            |  |
| 2. _____   | _____ %          | _____             | _____            |  |
| 3. _____   | _____ %          | _____             | _____            |  |
| 4. _____   | _____ %          | _____             | _____            |  |
|  | <u>0 %</u>       | = Total Cover     |                  |  |
| Sapling/Shrub Stratum (Plot size: <u>15'</u> )   |                  |                   |                  |  |
| 1. _____   | _____ %          | _____             | _____            |  |
| 2. _____   | _____ %          | _____             | _____            |  |
| 3. _____   | _____ %          | _____             | _____            |  |
| 4. _____   | _____ %          | _____             | _____            |  |
| 5. _____   | _____ %          | _____             | _____            |  |
|  | <u>0 %</u>       | = Total Cover     |                  |  |
| Herb Stratum (Plot size: <u>5'</u> )             |                  |                   |                  |  |
| 1. <u>Schoenoplectus fluviatilis</u>             | <u>50 %</u>      | <u>Y</u>          | <u>OBL</u>       |  |
| 2. <u>Xanthium strumarium</u>                    | <u>25 %</u>      | <u>Y</u>          | <u>FAC</u>       |  |
| 3. <u>Hordeum jubatum</u>                        | <u>5 %</u>       | <u>N</u>          | <u>FACW</u>      |  |
| 4. <u>Rumex crispus</u>                          | <u>2 %</u>       | <u>N</u>          | <u>FAC</u>       |  |
| 5. _____   | _____ %          | _____             | _____            |  |
| 6. _____   | _____ %          | _____             | _____            |  |
| 7. _____   | _____ %          | _____             | _____            |  |
| 8. _____   | _____ %          | _____             | _____            |  |
| 9. _____   | _____ %          | _____             | _____            |  |
| 10. _____  | _____ %          | _____             | _____            |  |
|  | <u>82 %</u>      | = Total Cover     |                  |  |
| Woody Vine Stratum (Plot size: <u>30'</u> )      |                  |                   |                  |  |
| 1. _____   | _____ %          | _____             | _____            |  |
| 2. _____   | _____ %          | _____             | _____            |  |
|  | <u>0 %</u>       | = Total Cover     |                  |  |
| Bare Ground in Herb Stratum <u>0 %</u>           |                  |                   |                  |  |
| Remarks: Dominance test is met. Photograph C-45. |                  |                   |                  |  |

### Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

### Prevalence Index Worksheet:

| Total % Cover of:             | Multiply by:   |
|-------------------------------|----------------|
| OBL species _____ %           | x 1 = <u>0</u> |
| FACW species _____ %          | x 2 = <u>0</u> |
| FAC species _____ %           | x 3 = <u>0</u> |
| FACU species _____ %          | x 4 = <u>0</u> |
| UPL species _____ %           | x 5 = <u>0</u> |
| Column Totals: <u>0 %</u> (A) | <u>0</u> (B)   |

Prevalence Index = B/A = \_\_\_\_\_

### Hydrophytic Vegetation Indicators:

☐ 1 Rapid Test for Hydrophytic Vegetation

☒ 2 Dominance Test is >50%

☐ 3 Prevalence Index is ≤3.0<sup>1</sup>

☐ 4 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? ☒ Yes ☐ No



## SOIL

Sampling Point: SP-651

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |    | Redox Features |   |                   |                  | Texture         | Remarks |
|-------------------|---------------|----|----------------|---|-------------------|------------------|-----------------|---------|
|                   | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |                 |         |
| 0-20              | 10YR 2/1      | 95 | 10YR 4/4       | 5 | C                 | M                | silty clay loam | gravel  |
|                   |               |    |                |   |                   |                  |                 |         |
|                   |               |    |                |   |                   |                  |                 |         |
|                   |               |    |                |   |                   |                  |                 |         |
|                   |               |    |                |   |                   |                  |                 |         |
|                   |               |    |                |   |                   |                  |                 |         |
|                   |               |    |                |   |                   |                  |                 |         |
|                   |               |    |                |   |                   |                  |                 |         |
|                   |               |    |                |   |                   |                  |                 |         |
|                   |               |    |                |   |                   |                  |                 |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |   |
|---|---|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)  
☐ Coast Prairie Redox (A16) (**LRR F, G, H**)  
☐ Dark Surface (S7) (**LRR G**)  
☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Very Shallow Dark Surface (TF 12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)  
☐ Sparsely Vegetated Concave Surface (B8)  
☒ Drainage Patterns (B10)  
☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☒ Geomorphic Position (D2)  
☒ FAC-Neutral Test (D5)  
☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators B10, D2, and D5 are present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/16/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-652  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S9, T110N, R66W  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.354836 Long: -98.775943 Datum: NAD83  
 Soil Map Unit Name: Betts-Java loams, steep NWI Classification: NA

Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks)  
 Vegetation Soil Hydrology  
 Significantly Disturbed? ☐ ☐ ☐  
 Naturally Problematic? ☐ ☐ ☐ Are "Normal Circumstances" present? ☒ Yes ☐ No  
 (If needed, explain any answers in Remarks)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                      | No                                  | Remarks:  |
|---------------------------------------|--------------------------|-------------------------------------|---|
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Upland confirmation plot adjacent to PEM W-005. |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: <u>30'</u> )   | Absolute % Cover     | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
|---|----------------------|-------------------|------------------|--|-------------------|--------------|---------------------|----------------------|----------------------|----------------------|---------------------|----------------------|----------------------|----------------------|---------------------|----------------------|-------------------------------------|--------------------|
| 1. _____  | _____ %              | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: _____ <u>3</u> (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ <u>0%</u> (A/B)  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 2. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 3. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 4. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| <u>0 %</u>  |                      | = Total Cover     |                  | <b>Prevalence Index Worksheet:</b><br><br><table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____ <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____ <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____ <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____ <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____ <u>0</u></td> </tr> <tr> <td>Column Totals: _____ <u>0 %</u> (A)</td> <td>_____ <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____ | Total % Cover of: | Multiply by: | OBL species _____ % | x 1 = _____ <u>0</u> | FACW species _____ % | x 2 = _____ <u>0</u> | FAC species _____ % | x 3 = _____ <u>0</u> | FACU species _____ % | x 4 = _____ <u>0</u> | UPL species _____ % | x 5 = _____ <u>0</u> | Column Totals: _____ <u>0 %</u> (A) | _____ <u>0</u> (B) |
| Total % Cover of:   | Multiply by:         |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| OBL species _____ %   | x 1 = _____ <u>0</u> |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| FACW species _____ %  | x 2 = _____ <u>0</u> |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| FAC species _____ %   | x 3 = _____ <u>0</u> |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| FACU species _____ %  | x 4 = _____ <u>0</u> |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| UPL species _____ %   | x 5 = _____ <u>0</u> |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| Column Totals: _____ <u>0 %</u> (A)   | _____ <u>0</u> (B)   |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| Sapling/Shrub Stratum (Plot size: <u>15'</u> )  |                      |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 1. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 2. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 3. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 4. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 5. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| <u>0 %</u>  |                      | = Total Cover     |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| Herb Stratum (Plot size: <u>5'</u> )  |                      |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 1. <u>Bromus arvensis</u>   | <u>50 %</u>          | <u>Y</u>          | <u>FACU</u>      |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 2. <u>Schedonorus arundinaceus</u>  | <u>30 %</u>          | <u>Y</u>          | <u>FACU</u>      |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 3. <u>Bromus inermis</u>  | <u>20 %</u>          | <u>Y</u>          | <u>UPL</u>       |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 4. <u>Cirsium arvense</u>   | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 5. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 6. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 7. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 8. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 9. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 10. _____   | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| <u>100 %</u>  |                      | = Total Cover     |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| Woody Vine Stratum (Plot size: <u>30'</u> )   |                      |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 1. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 2. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| <u>0 %</u>  |                      | = Total Cover     |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| Bare Ground in Herb Stratum <u>0 %</u>  |                      |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| Hydrophytic Vegetation Indicators:<br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic |                      |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No   |                      |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| Remarks: Hydrophytic vegetation is not present. Photograph C-46.  |                      |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |



## SOIL

Sampling Point: SP-652

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture         | Remarks                     |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------------|-----------------------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |                 |                             |
| 0-20              | 10YR 2/1      | 100 |                |   |                   |                  | silty clay loam | organic material/<br>gravel |
|                   |               |     |                |   |                   |                  |                 |                             |
|                   |               |     |                |   |                   |                  |                 |                             |
|                   |               |     |                |   |                   |                  |                 |                             |
|                   |               |     |                |   |                   |                  |                 |                             |
|                   |               |     |                |   |                   |                  |                 |                             |
|                   |               |     |                |   |                   |                  |                 |                             |
|                   |               |     |                |   |                   |                  |                 |                             |
|                   |               |     |                |   |                   |                  |                 |                             |
|                   |               |     |                |   |                   |                  |                 |                             |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)  
☐ Coast Prairie Redox (A16) (**LRR F, G, H**)  
☐ Dark Surface (S7) (**LRR G**)  
☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Very Shallow Dark Surface (TF 12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)  
☐ Sparsely Vegetated Concave Surface (B8)  
☐ Drainage Patterns (B10)  
☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Geomorphic Position (D2)  
☐ FAC-Neutral Test (D5)  
☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: No hydrology indicator is present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/17/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-658  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S10, T110N, R66W  
 Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope (%): 3 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.353970 Long: -98.746007 Datum: NAD83  
 Soil Map Unit Name: Betts-Java loams, steep NWI Classification: PEM1A  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                                 | No                       | Remarks: Wetland sample plot located in PEM W-579. |
|---------------------------------------|-------------------------------------|--------------------------|--|
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br>Total Number of Dominant Species Across All Strata: _____ (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| <b>0 % = Total Cover</b>  |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: 15')                                  |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____<br>FACW species _____ % x 2 = _____<br>FAC species _____ % x 3 = _____<br>FACU species _____ % x 4 = _____<br>UPL species _____ % x 5 = _____<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| <b>0 % = Total Cover</b>  |                  |                   |                  |  |
| Herb Stratum (Plot size: 5')  |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 1. <u>Hordeum jubatum</u>   | 50 %             | Y                 | FACW             |  |
| 2. <u>Spartina pectinata</u>  | 45 %             | Y                 | FACW             |  |
| 3. <u>Typha angustifolia</u>  | 5 %              | N                 | OBL              |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 6. _____  | _____ %          | _____             | _____            |  |
| 7. _____  | _____ %          | _____             | _____            |  |
| 8. _____  | _____ %          | _____             | _____            |  |
| 9. _____  | _____ %          | _____             | _____            |  |
| 10. _____   | _____ %          | _____             | _____            |  |
| <b>100 % = Total Cover</b>  |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: 30')                                     |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| <b>0 % = Total Cover</b>  |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>0 %</u>                                  |                  |                   |                  |  |
| Remarks: Rapid test for hydrophytic vegetation is met. Photograph C-47. |                  |                   |                  |  |



## SOIL

Sampling Point: SP-658

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture    | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-20              | 10YR 2/1      | 100 |                |   |                   |                  | mucky clay |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)            |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                    |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)                |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input checked="" type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)            |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)                |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)             |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)          |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)              |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)       |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                           |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F1 is met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1)             | <input type="checkbox"/> Salt Crust (B11)                           |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                       | Depth<br>(inches) |
|--|-------------------------------------|--------------------------|-------------------|
| Surface Water present?                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 1                 |
| Water Table present?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| Saturation Present?<br>(includes capillary fringe) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators A1, A2, A3, D2, and D5 are met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/17/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-659  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S10, T110N, R66W  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 10 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.353964 Long: -98.745979 Datum: NAD83  
 Soil Map Unit Name: Betts-Java loams, steep NWI Classification: PEM1A  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot adjacent to PEM W-579. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Poa pratensis</u>  | 100 %            | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 100 % = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-48. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-659

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-8               | 10YR 2/2      | 100 |                |   |                   |                  | Clay Loam |         |
| 8-20              | 10YR 3/3      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/17/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-660  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S5, T110N, R66W  
 Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope (%): 2 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.364107 Long: -98.793791 Datum: NAD83  
 Soil Map Unit Name: Glenham-Java loams, rolling NWI Classification: PEM1Cd  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                                     |                          |  |
|---------------------------------------|-------------------------------------|--------------------------|--|
|                                       | Yes                                 | No                       | Remarks: Wetland sample plot located in PEM W-580. |
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')   | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test Worksheet:</b><br>Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br>Total Number of Dominant Species Across All Strata: _____ (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____<br>FACW species _____ % x 2 = _____<br>FAC species _____ % x 3 = _____<br>FACU species _____ % x 4 = _____<br>UPL species _____ % x 5 = _____<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15')                                  |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Herb Stratum (Plot size: 5')  |                  |                   |                  |  |
| 1. <u>Spartina pectinata</u>  | 100 %            | Y                 | FACW             |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 6. _____  | _____ %          | _____             | _____            |  |
| 7. _____  | _____ %          | _____             | _____            |  |
| 8. _____  | _____ %          | _____             | _____            |  |
| 100 % = Total Cover   |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: 30')                                     |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| Bare Ground in Herb Stratum 0 %   |                  |                   |                  |  |
| Remarks: Rapid test for hydrophytic vegetation is met. Photograph C-49. |                  |                   |                  |  |



## SOIL

Sampling Point: SP-660

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture    | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-20              | 10YR 2/1      | 100 |                |   |                   |                  | mucky clay |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)            |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                    |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)                |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input checked="" type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)            |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)                |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)             |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)          |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)              |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)       |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                           |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F1 is met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                                  | Depth<br>(inches) |
|--|-------------------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators B10, D2, and D5 are met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/17/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-661  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S5, T110N, R66W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 5 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.364096 Long: -98.793736 Datum: NAD83  
 Soil Map Unit Name: Glenham-Java loams, rolling NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot adjacent to PEM W-580. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum<br>(Plot size: 30')                                 | Absolute<br>% Cover | Dominant<br>Species? | Indicator<br>Status | Dominance Test Worksheet:   |
|--|---------------------|----------------------|---------------------|---|
| 1. _____   | ____%               | _____                | _____               | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br><br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | ____%               | _____                | _____               |   |
| 3. _____   | ____%               | _____                | _____               |   |
| 4. _____   | ____%               | _____                | _____               |   |
| 0 % = Total Cover  |                     |                      |                     |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                     |                      |                     |   |
| 1. _____   | ____%               | _____                | _____               | <b>Prevalence Index Worksheet:</b><br><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____% x 1 = _____ 0<br>FACW species _____% x 2 = _____ 0<br>FAC species _____% x 3 = _____ 0<br>FACU species _____% x 4 = _____ 0<br>UPL species _____% x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br><br>Prevalence Index = B/A = _____   |
| 2. _____   | ____%               | _____                | _____               |   |
| 3. _____   | ____%               | _____                | _____               |   |
| 4. _____   | ____%               | _____                | _____               |   |
| 5. _____   | ____%               | _____                | _____               |   |
| 0 % = Total Cover  |                     |                      |                     |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                     |                      |                     |   |
| 1. <u>Bromus inermis</u>   | 100 %               | Y                    | UPL                 | <b>Hydrophytic Vegetation Indicators:</b><br><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br><br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | ____%               | _____                | _____               |   |
| 3. _____   | ____%               | _____                | _____               |   |
| 4. _____   | ____%               | _____                | _____               |   |
| 5. _____   | ____%               | _____                | _____               |   |
| 6. _____   | ____%               | _____                | _____               |   |
| 7. _____   | ____%               | _____                | _____               |   |
| 8. _____   | ____%               | _____                | _____               |   |
| 9. _____   | ____%               | _____                | _____               |   |
| 10. _____  | ____%               | _____                | _____               |   |
| 100 % = Total Cover  |                     |                      |                     |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                     |                      |                     |   |
| 1. _____   | ____%               | _____                | _____               |   |
| 2. _____   | ____%               | _____                | _____               |   |
| 0 % = Total Cover  |                     |                      |                     |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                     |                      |                     |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-50. |                     |                      |                     |   |



## SOIL

Sampling Point: SP-661

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-8               | 10YR 2/2      | 100 |                |   |                   |                  | Clay Loam |         |
| 8-20              | 10YR 3/3      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/17/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-663  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S4, T110N, R66W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 4 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.362340 Long: -98.781045 Datum: NAD83  
 Soil Map Unit Name: Tetonka silt loam, 0 to 1 percent slopes NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                      | No                                  | Remarks: Upland sample plot. |
|---------------------------------------|--------------------------|-------------------------------------|------------------------------|
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Bromus inermis</u>   | 100 %            | Y                 | UPL              | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 100 % = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-51. |                  |                   |                  |   |



## SOIL

Sampling Point: SP-663

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-8               | 10YR 2/2      | 100 |                |   |                   |                  | Clay Loam |         |
| 8-20              | 10YR 3/3      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/17/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-664  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S4, T110N, R66W  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.363204 Long: -98.778882 Datum: NAD83  
 Soil Map Unit Name: Oahe-Delmont loams, 2 to 6 percent slopes NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                                 | No                                  | Remarks: Upland sample plot. |
|---------------------------------------|-------------------------------------|-------------------------------------|------------------------------|
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                              |
| Hydric Soil Present?                  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|--|------------------|-------------------|------------------|--|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 1 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 100% (A/B)   |
| 2. _____   | _____ %          | _____             | _____            |  |
| 3. _____   | _____ %          | _____             | _____            |  |
| 4. _____   | _____ %          | _____             | _____            |  |
| 0 % = Total Cover                                |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: 15')           |                  |                   |                  |  |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____   |
| 2. _____   | _____ %          | _____             | _____            |  |
| 3. _____   | _____ %          | _____             | _____            |  |
| 4. _____   | _____ %          | _____             | _____            |  |
| 5. _____   | _____ %          | _____             | _____            |  |
| 0 % = Total Cover                                |                  |                   |                  |  |
| Herb Stratum (Plot size: 5')                     |                  |                   |                  |  |
| 1. <u>Echinochloa crus-galli</u>                 | 100 %            | Y                 | FAC              | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input checked="" type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. _____   | _____ %          | _____             | _____            |  |
| 3. _____   | _____ %          | _____             | _____            |  |
| 4. _____   | _____ %          | _____             | _____            |  |
| 5. _____   | _____ %          | _____             | _____            |  |
| 6. _____   | _____ %          | _____             | _____            |  |
| 7. _____   | _____ %          | _____             | _____            |  |
| 8. _____   | _____ %          | _____             | _____            |  |
| 9. _____   | _____ %          | _____             | _____            |  |
| 10. _____  | _____ %          | _____             | _____            |  |
| 100 % = Total Cover                              |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: 30')              |                  |                   |                  |  |
| 1. _____   | _____ %          | _____             | _____            |  |
| 2. _____   | _____ %          | _____             | _____            |  |
| 0 % = Total Cover                                |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>0 %</u>           |                  |                   |                  |  |
| Remarks: Dominance test is met. Photograph C-52. |                  |                   |                  |  |



## SOIL

Sampling Point: SP-664

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-12              | 10YR 2/2      | 100 |                |   |                   |                  | Clay    |         |
| 12-20             | 10YR 3/2      | 100 |                |   |                   |                  | Clay    |         |
|                   |               |     |                |   |                   |                  |         |         |
|                   |               |     |                |   |                   |                  |         |         |
|                   |               |     |                |   |                   |                  |         |         |
|                   |               |     |                |   |                   |                  |         |         |
|                   |               |     |                |   |                   |                  |         |         |
|                   |               |     |                |   |                   |                  |         |         |
|                   |               |     |                |   |                   |                  |         |         |
|                   |               |     |                |   |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicator D2 is met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/17/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-666  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S6, T110N, R66W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 5 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.367701 Long: -98.802809 Datum: NAD83  
 Soil Map Unit Name: Tetonka silt loam, 0 to 1 percent slopes NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                      | No                                  | Remarks: Upland sample plot. |
|---------------------------------------|--------------------------|-------------------------------------|------------------------------|
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | ____%            | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | ____%            | _____             | _____            |   |
| 3. _____   | ____%            | _____             | _____            |   |
| 4. _____   | ____%            | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | ____%            | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____% x 1 = _____ 0<br>FACW species _____% x 2 = _____ 0<br>FAC species _____% x 3 = _____ 0<br>FACU species _____% x 4 = _____ 0<br>UPL species _____% x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____   |
| 2. _____   | ____%            | _____             | _____            |   |
| 3. _____   | ____%            | _____             | _____            |   |
| 4. _____   | ____%            | _____             | _____            |   |
| 5. _____   | ____%            | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Bromus inermis</u>   | 100 %            | Y                 | UPL              | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. _____   | ____%            | _____             | _____            |   |
| 3. _____   | ____%            | _____             | _____            |   |
| 4. _____   | ____%            | _____             | _____            |   |
| 5. _____   | ____%            | _____             | _____            |   |
| 6. _____   | ____%            | _____             | _____            |   |
| 7. _____   | ____%            | _____             | _____            |   |
| 8. _____   | ____%            | _____             | _____            |   |
| 9. _____   | ____%            | _____             | _____            |   |
| 10. _____  | ____%            | _____             | _____            |   |
| 100 % = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | ____%            | _____             | _____            |   |
| 2. _____   | ____%            | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-53. |                  |                   |                  |   |

## SOIL

Sampling Point: SP-666

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-8               | 10YR 3/2      | 100 |                |   |                   |                  | Clay Loam |         |
| 8-20              | 10YR 3/3      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/17/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-667  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S6, T110N, R66W  
 Landform (hillslope, terrace, etc.): pothole Local relief (concave, convex, none): concave Slope (%): 0 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.365499 Long: -98.805284 Datum: NAD83  
 Soil Map Unit Name: Glenham loam, undulating NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                                     |                          |  |
|---------------------------------------|-------------------------------------|--------------------------|--|
|                                       | Yes                                 | No                       | Remarks: Wetland sample plot located in PEM W-584. |
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                           |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br><br>Prevalence Index = B/A = _____  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| <b>Herb Stratum (Plot size: 5')</b>                                     |                  |                   |                  |  |
| 1. <u>Phalaris arundinacea</u>  | 100 %            | Y                 | FACW             | <b>Hydrophytic Vegetation Indicators:</b><br><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br><br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 6. _____  | _____ %          | _____             | _____            |  |
| 7. _____  | _____ %          | _____             | _____            |  |
| 8. _____  | _____ %          | _____             | _____            |  |
| 9. _____  | _____ %          | _____             | _____            |  |
| 10. _____   | _____ %          | _____             | _____            |  |
| 100 % = Total Cover   |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: 30')</b>                              |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>0 %</u>                                  |                  |                   |                  |  |
| Remarks: Rapid test for hydrophytic vegetation is met. Photograph C-54. |                  |                   |                  |  |

## SOIL

Sampling Point: SP-667

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |    |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-6               | 10YR 2/2      | 100 |                |    |                   |                  | Clay Loam |         |
| 6-20              | 10YR 3/2      | 90  | 10YR 4/6       | 10 | C                 | M                | Clay Loam |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                             | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           |
| <input type="checkbox"/> Histic Epipedon (A2)                      | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Black Histic (A3)                         | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                     | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F)            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)              | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)         | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12)                  | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                  | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)      |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)  
(LRR H outside of MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
(where tilled)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

**Field Observations:**

|  | Yes                                 | No                                  | Depth<br>(inches) |
|--|-------------------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators D2 and D5 are met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/17/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-668  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S6, T110N, R66W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 4 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.365510 Long: -98.805115 Datum: NAD83  
 Soil Map Unit Name: Glenham loam, undulating NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: Upland sample plot adjacent to PEM W-584. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 2 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Bromus inermis</u>   | 20 %             | Y                 | UPL              | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. <u>Setaria pumila</u>   | 20 %             | Y                 | FACU             |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 40 % = Total Cover   |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>60 %</u>                          |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-55. |                  |                   |                  |   |

## SOIL

Sampling Point: SP-668

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-8               | 10YR 3/2      | 100 |                |   |                   |                  | Clay Loam |         |
| 8-20              | 10YR 3/3      | 100 |                |   |                   |                  | Clay Loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicator is present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 10/17/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-669  
 Investigator(s): T. Beemer, W. Hirst Section, Township, Range: S5, T110N, R66W  
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 2 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.365936 Long: -98.799860 Datum: NAD83  
 Soil Map Unit Name: Tetonka silt loam, 0 to 1 percent slopes NWI Classification: PEM1C  
 Are climate/hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                                     |                                     |                              |
|---------------------------------------|-------------------------------------|-------------------------------------|------------------------------|
|                                       | Yes                                 | No                                  | Remarks: Upland sample plot. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                              |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                              |
| Wetland Hydrology Present?            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                              |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                              |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Sapling/Shrub Stratum (Plot size: 15')                           |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0% (A) _____ 0 (B)<br>Prevalence Index = B/A = _____  |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Herb Stratum (Plot size: 5')                                     |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 1. <u>Bromus inermis</u>   | 100 %            | Y                 | UPL              |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 100 % = Total Cover  |                  |                   |                  |   |
| Woody Vine Stratum (Plot size: 30')                              |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-56. |                  |                   |                  |   |

## SOIL

Sampling Point: SP-669

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |    |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-6               | 10YR 2/2      | 100 |                |    |                   |                  | Clay Loam |         |
| 6-20              | 10YR 3/2      | 90  | 10YR 4/6       | 10 | C                 | M                | Clay Loam |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |
|                   |               |     |                |    |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |   |
|---|---|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Farm City/County: Hand County Sampling Date: 10/9/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-702  
 Investigator(s): K. Russo, J. Kensinger Section, Township, Range: S6, T111N, R66W  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.443172 Long: -98.815723 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent slopes NWI Classification: PEM1A

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

|                          |                          |                          |                          |   |
|--------------------------|--------------------------|--------------------------|--------------------------|---|
|                          | Vegetation               | Soil                     | Hydrology                | Are "Normal Circumstances" present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Significantly Disturbed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |
| Naturally Problematic?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (If needed, explain any answers in Remarks)   |

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|  |                                     |                                     |   |
|--|-------------------------------------|-------------------------------------|---|
|  | Yes                                 | No                                  | Remarks: SP-702 is an upland plot. Normal hydrologic conditions are not present due to recent rainfall. |
| Hydrophytic Vegetation Present?              | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |   |
| Hydric Soil Present?                         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |   |
| Wetland Hydrology Present?                   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |   |
| <b>Is the Sampled Area within a Wetland?</b> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |   |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: <u>30 ft.</u> )                                 | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|--|------------------|-------------------|------------------|---|-------------------|--------------|---------------------|----------------|----------------------|----------------|---------------------|----------------|----------------------|----------------|---------------------|----------------|-------------------------------|--------------|
| 1. _____   | %                | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | <u>0 %</u>       | = Total Cover     |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Sapling/Shrub Stratum (Plot size: <u>15 ft.</u> )                        |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br><br><table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0 %</u> (A)</td> <td><u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____  | Total % Cover of: | Multiply by: | OBL species _____ % | x 1 = <u>0</u> | FACW species _____ % | x 2 = <u>0</u> | FAC species _____ % | x 3 = <u>0</u> | FACU species _____ % | x 4 = <u>0</u> | UPL species _____ % | x 5 = <u>0</u> | Column Totals: <u>0 %</u> (A) | <u>0</u> (B) |
| Total % Cover of:  | Multiply by:     |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| OBL species _____ %  | x 1 = <u>0</u>   |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FACW species _____ %   | x 2 = <u>0</u>   |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FAC species _____ %  | x 3 = <u>0</u>   |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FACU species _____ %   | x 4 = <u>0</u>   |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| UPL species _____ %  | x 5 = <u>0</u>   |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Column Totals: <u>0 %</u> (A)  | <u>0</u> (B)     |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 5. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | <u>0 %</u>       | = Total Cover     |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Herb Stratum (Plot size: <u>5 ft.</u> )                                  |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br><br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. <u>Bromus inermis</u>   | <u>95 %</u>      | <u>Y</u>          | <u>UPL</u>       |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. <u>Helianthus maximiliani</u>   | <u>3 %</u>       | <u>N</u>          | <u>FACU</u>      |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. <u>Symphyotrichum pilosum</u>   | <u>2 %</u>       | <u>N</u>          | <u>FACU</u>      |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 5. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 6. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 7. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 8. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 9. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 10. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | <u>100 %</u>     | = Total Cover     |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Woody Vine Stratum (Plot size: <u>30 ft.</u> )                           |                  |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | <u>0 %</u>       | = Total Cover     |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Bare Ground in Herb Stratum <u>0 %</u>                                   |                  |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Remarks: Hydrophytic vegetation indicators are not met. Photograph C-57. |                  |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |

## SOIL

Sampling Point: SP-702

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture         | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |                 |         |
| 0-8               | 10YR 3/1      | 93  | 10YR 3/4       | 7 | C                 | M                | silty clay loam |         |
| 8-16              | 10YR 3/1      | 100 |                |   |                   |                  | clay            |         |
| 16-22             | 10YR 2/1      | 97  | 10YR 4/1       | 3 | D                 | M                | clay            |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5) (**LRR F**)  
☐ 1 cm Muck (A9) (**LRR F, G, H**)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1)  
☐ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)  
☐ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ☐ Sandy Gleyed Matrix (S4)  
☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Loamy Mucky Mineral (F1)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☒ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)  
☐ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)  
☐ Coast Prairie Redox (A16) (**LRR F, G, H**)  
☐ Dark Surface (S7) (**LRR G**)  
☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Very Shallow Dark Surface (TF 12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)  
☐ High Water Table (A2)  
☐ Saturation (A3)  
☐ Water Marks (B1)  
☐ Sediment Deposits (B2)  
☐ Drift Deposits (B3)  
☐ Algal Mat or Crust (B4)  
☐ Iron Deposits (B5)  
☐ Inundation Visible on Aerial Imagery (B7)  
☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)  
☐ Aquatic Invertebrates (B13)  
☐ Hydrogen Sulfide Odor (C1)  
☐ Dry-Season Water Table (C2)  
☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)  
☐ Presence of Reduced Iron (C4)  
☐ Thin Muck Surface (C7)  
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)  
☐ Sparsely Vegetated Concave Surface (B8)  
☐ Drainage Patterns (B10)  
☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Geomorphic Position (D2)  
☐ FAC-Neutral Test (D5)  
☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Farm City/County: Hand County Sampling Date: 10/9/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-705  
 Investigator(s): K. Russo, J. Kensinger Section, Township, Range: S1, T111N, R67W  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.446896 Long: -98.825337 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent slopes NWI Classification: PEM1A

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No

Significantly Disturbed? ☐ Naturally Problematic? ☐ (If needed, explain any answers in Remarks)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: SP-705 is an upland sample plot. Normal hydrologic conditions are not present due to recent rainfall. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: <u>30 ft.</u> )  | Absolute % Cover     | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
|---|----------------------|-------------------|------------------|--|-------------------|--------------|---------------------|----------------------|----------------------|----------------------|---------------------|----------------------|----------------------|----------------------|---------------------|----------------------|-------------------------------------|--------------------|
| 1. _____  | _____ %              | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: _____ <u>1</u> (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ <u>0%</u> (A/B)  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 2. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 3. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 4. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| <u>0 %</u>  |                      | = Total Cover     |                  | <b>Prevalence Index Worksheet:</b><br><br><table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____ <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____ <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____ <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____ <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____ <u>0</u></td> </tr> <tr> <td>Column Totals: _____ <u>0 %</u> (A)</td> <td>_____ <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____ | Total % Cover of: | Multiply by: | OBL species _____ % | x 1 = _____ <u>0</u> | FACW species _____ % | x 2 = _____ <u>0</u> | FAC species _____ % | x 3 = _____ <u>0</u> | FACU species _____ % | x 4 = _____ <u>0</u> | UPL species _____ % | x 5 = _____ <u>0</u> | Column Totals: _____ <u>0 %</u> (A) | _____ <u>0</u> (B) |
| Total % Cover of:   | Multiply by:         |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| OBL species _____ %   | x 1 = _____ <u>0</u> |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| FACW species _____ %  | x 2 = _____ <u>0</u> |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| FAC species _____ %   | x 3 = _____ <u>0</u> |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| FACU species _____ %  | x 4 = _____ <u>0</u> |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| UPL species _____ %   | x 5 = _____ <u>0</u> |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| Column Totals: _____ <u>0 %</u> (A)   | _____ <u>0</u> (B)   |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| Sapling/Shrub Stratum (Plot size: <u>15 ft.</u> )   |                      |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 1. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 2. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 3. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 4. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 5. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| <u>0 %</u>  |                      | = Total Cover     |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| Herb Stratum (Plot size: <u>5 ft.</u> )   |                      |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 1. <u>Bromus inermis</u>  | <u>50 %</u>          | <u>Y</u>          | <u>UPL</u>       |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 2. <u>Ambrosia artemisiifolia</u>   | <u>15 %</u>          | <u>N</u>          | <u>FACU</u>      |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 3. <u>Xanthium strumarium</u>   | <u>10 %</u>          | <u>N</u>          | <u>FAC</u>       |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 4. <u>Poa pratensis</u>   | <u>10 %</u>          | <u>N</u>          | <u>FACU</u>      |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 5. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 6. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 7. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 8. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 9. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 10. _____   | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| <u>85 %</u>   |                      | = Total Cover     |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| Woody Vine Stratum (Plot size: <u>30 ft.</u> )  |                      |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 1. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| 2. _____  | _____ %              | _____             | _____            |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| <u>0 %</u>  |                      | = Total Cover     |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| Bare Ground in Herb Stratum <u>15 %</u>   |                      |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |
| Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><br>Remarks: Hydrophytic vegetation indicators are not met. Photograph C-58. |                      |                   |                  |  |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                     |                    |

## SOIL

Sampling Point: SP-705

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture         | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |                 |         |
| 0-16              | 10YR 2/1      | 100 |                |   |                   |                  | silty clay loam |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)  
☐ Coast Prairie Redox (A16) (**LRR F, G, H**)  
☐ Dark Surface (S7) (**LRR G**)  
☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Very Shallow Dark Surface (TF 12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: Hydric soil indicators are not met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)  
☐ Sparsely Vegetated Concave Surface (B8)  
☐ Drainage Patterns (B10)  
☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☒ Geomorphic Position (D2)  
☐ FAC-Neutral Test (D5)  
☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicator D2 is met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Farm City/County: Hand County Sampling Date: 10/9/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-706  
 Investigator(s): K. Russo, J. Kensinger Section, Township, Range: S2, T111N, R67W  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.45108 Long: -98.849898 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent slopes NWI Classification: N/A

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

|                          |                          |                          |                          |   |
|--------------------------|--------------------------|--------------------------|--------------------------|---|
|                          | Vegetation               | Soil                     | Hydrology                | Are "Normal Circumstances" present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Significantly Disturbed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |   |
| Naturally Problematic?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (If needed, explain any answers in Remarks)   |

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                                     |                                     |  |
|---------------------------------------|-------------------------------------|-------------------------------------|--|
|                                       | Yes                                 | No                                  | Remarks: SP-706 is an upland sample plot. Normal hydrologic conditions are not present due to recent rainfall. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| <p><b>Tree Stratum</b> (Plot size: <u>30 ft.</u>)</p> <table border="0" style="width: 100%;"> <tr> <th style="width: 40%;"></th> <th style="width: 10%; text-align: center;">Absolute % Cover</th> <th style="width: 10%; text-align: center;">Dominant Species?</th> <th style="width: 10%; text-align: center;">Indicator Status</th> </tr> <tr><td>1. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td>2. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td>3. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td>4. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td></td><td style="text-align: center;"><u>0 %</u></td><td colspan="2" style="text-align: center;">= Total Cover</td></tr> </table> <p><b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft.</u>)</p> <table border="0" style="width: 100%;"> <tr> <th style="width: 40%;"></th> <th style="width: 10%; text-align: center;">%</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> </tr> <tr><td>1. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td>2. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td>3. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td>4. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td>5. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td></td><td style="text-align: center;"><u>0 %</u></td><td colspan="2" style="text-align: center;">= Total Cover</td></tr> </table> <p><b>Herb Stratum</b> (Plot size: <u>5 ft.</u>)</p> <table border="0" style="width: 100%;"> <tr> <th style="width: 40%;"></th> <th style="width: 10%; text-align: center;">%</th> <th style="width: 10%; text-align: center;">Y</th> <th style="width: 10%; text-align: center;">FACU</th> </tr> <tr><td>1. <u>Poa pratensis</u></td><td style="text-align: center;">95 %</td><td style="text-align: center;">Y</td><td style="text-align: center;">FACU</td></tr> <tr><td>2. <u>Echinochloa crus-galli</u></td><td style="text-align: center;">3 %</td><td style="text-align: center;">N</td><td style="text-align: center;">FAC</td></tr> <tr><td>3. <u>Xanthium strumarium</u></td><td style="text-align: center;">2 %</td><td style="text-align: center;">N</td><td style="text-align: center;">FAC</td></tr> <tr><td>4. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td>5. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td>6. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td>7. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td>8. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td>9. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td>10. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td></td><td style="text-align: center;"><u>100 %</u></td><td colspan="2" style="text-align: center;">= Total Cover</td></tr> </table> <p><b>Woody Vine Stratum</b> (Plot size: <u>30 ft.</u>)</p> <table border="0" style="width: 100%;"> <tr> <th style="width: 40%;"></th> <th style="width: 10%; text-align: center;">%</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> </tr> <tr><td>1. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td>2. _____</td><td style="text-align: center;">%</td><td></td><td></td></tr> <tr><td></td><td style="text-align: center;"><u>0 %</u></td><td colspan="2" style="text-align: center;">= Total Cover</td></tr> </table> <p>Bare Ground in Herb Stratum <u>0 %</u></p> |                  | Absolute % Cover  | Dominant Species? | Indicator Status | 1. _____ | % |  |  | 2. _____ | % |  |  | 3. _____ | % |  |  | 4. _____ | % |  |  |  | <u>0 %</u> | = Total Cover |  |  | % |  |  | 1. _____ | % |  |  | 2. _____ | % |  |  | 3. _____ | % |  |  | 4. _____ | % |  |  | 5. _____ | % |  |  |  | <u>0 %</u> | = Total Cover |  |  | % | Y | FACU | 1. <u>Poa pratensis</u> | 95 % | Y | FACU | 2. <u>Echinochloa crus-galli</u> | 3 % | N | FAC | 3. <u>Xanthium strumarium</u> | 2 % | N | FAC | 4. _____ | % |  |  | 5. _____ | % |  |  | 6. _____ | % |  |  | 7. _____ | % |  |  | 8. _____ | % |  |  | 9. _____ | % |  |  | 10. _____ | % |  |  |  | <u>100 %</u> | = Total Cover |  |  | % |  |  | 1. _____ | % |  |  | 2. _____ | % |  |  |  | <u>0 %</u> | = Total Cover |  | <p><b>Dominance Test Worksheet:</b></p> <p>Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>1</u> (B)</p> <p>Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)</p> <p><b>Prevalence Index Worksheet:</b></p> <table border="0" style="width: 100%;"> <tr> <th style="width: 50%; text-align: left;">Total % Cover of:</th> <th style="width: 50%; text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0 %</u> (A)</td> <td><u>0</u> (B)</td> </tr> </table> <p>Prevalence Index = B/A = _____</p> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation</p> <p><input type="checkbox"/> 2 Dominance Test is &gt;50%</p> <p><input type="checkbox"/> 3 Prevalence Index is ≤3.0<sup>1</sup></p> <p><input type="checkbox"/> 4 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (explain)</p> <p><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic</p> <p>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> | Total % Cover of: | Multiply by: | OBL species _____ % | x 1 = <u>0</u> | FACW species _____ % | x 2 = <u>0</u> | FAC species _____ % | x 3 = <u>0</u> | FACU species _____ % | x 4 = <u>0</u> | UPL species _____ % | x 5 = <u>0</u> | Column Totals: <u>0 %</u> (A) | <u>0</u> (B) |
|--|------------------|-------------------|-------------------|------------------|----------|---|--|--|----------|---|--|--|----------|---|--|--|----------|---|--|--|--|------------|---------------|--|--|---|--|--|----------|---|--|--|----------|---|--|--|----------|---|--|--|----------|---|--|--|----------|---|--|--|--|------------|---------------|--|--|---|---|------|-------------------------|------|---|------|----------------------------------|-----|---|-----|-------------------------------|-----|---|-----|----------|---|--|--|----------|---|--|--|----------|---|--|--|----------|---|--|--|----------|---|--|--|----------|---|--|--|-----------|---|--|--|--|--------------|---------------|--|--|---|--|--|----------|---|--|--|----------|---|--|--|--|------------|---------------|--|--|-------------------|--------------|---------------------|----------------|----------------------|----------------|---------------------|----------------|----------------------|----------------|---------------------|----------------|-------------------------------|--------------|
|  | Absolute % Cover | Dominant Species? | Indicator Status  |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | <u>0 %</u>       | = Total Cover     |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 5. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | <u>0 %</u>       | = Total Cover     |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | %                | Y                 | FACU              |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. <u>Poa pratensis</u>  | 95 %             | Y                 | FACU              |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. <u>Echinochloa crus-galli</u>   | 3 %              | N                 | FAC               |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. <u>Xanthium strumarium</u>  | 2 %              | N                 | FAC               |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 5. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 6. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 7. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 8. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 9. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 10. _____  | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | <u>100 %</u>     | = Total Cover     |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____   | %                |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | <u>0 %</u>       | = Total Cover     |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Total % Cover of:  | Multiply by:     |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| OBL species _____ %  | x 1 = <u>0</u>   |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FACW species _____ %   | x 2 = <u>0</u>   |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FAC species _____ %  | x 3 = <u>0</u>   |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FACU species _____ %   | x 4 = <u>0</u>   |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| UPL species _____ %  | x 5 = <u>0</u>   |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Column Totals: <u>0 %</u> (A)  | <u>0</u> (B)     |                   |                   |                  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |   |   |      |                         |      |   |      |                                  |     |   |     |                               |     |   |     |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |          |   |  |  |           |   |  |  |  |              |               |  |  |   |  |  |          |   |  |  |          |   |  |  |  |            |               |  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |

Remarks: Hydrophytic vegetation indicators are not met. Photograph C-59.

## SOIL

Sampling Point: SP-706

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture         | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |                 |         |
| 0-6               | 10YR 2/1      | 100 |                |   |                   |                  | silty clay loam |         |
| 6-8               | 10YR 3/1      | 95  | 10YR 4/4       | 5 | C                 | M                | silty clay      |         |
| 8-16              | 10YR 2/1      | 100 |                |   |                   |                  | clay            |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      |  |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
(**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: Hydric soil indicators are not met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
(**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                                  | Depth<br>(inches) |
|--|-------------------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 6                 |
| Saturation Present?<br>(includes capillary fringe) | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 6                 |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicator A2, A3, and D2 are met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Farm City/County: Hand County Sampling Date: 10/9/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-708  
 Investigator(s): K. Russo, J. Kensinger Section, Township, Range: S7, T111N, R66W  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.428708 Long: -98.818716 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent slopes NWI Classification: N/A

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

|                          |                                     |                                     |                          |   |
|--------------------------|-------------------------------------|-------------------------------------|--------------------------|---|
|                          | Vegetation                          | Soil                                | Hydrology                | Are "Normal Circumstances" present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Significantly Disturbed? | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |   |
| Naturally Problematic?   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | (If needed, explain any answers in Remarks)   |

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |   |
|---------------------------------------|--------------------------|-------------------------------------|---|
|                                       | Yes                      | No                                  | Remarks: SP-708 is an upland sample plot. Normal hydrologic conditions are not present due to recent rainfall. Soil and vegetation have been disturbed by agricultural practices. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: <u>30 ft.</u> )          | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|---|------------------|-------------------|------------------|--|-------------------|--------------|---------------------|----------------|----------------------|----------------|---------------------|----------------|----------------------|----------------|---------------------|----------------|-------------------------------|--------------|
| 1. _____  | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: _____ <u>1</u> (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ <u>0%</u> (A/B)  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|   | <u>0 %</u>       | = Total Cover     |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Sapling/Shrub Stratum (Plot size: <u>15 ft.</u> ) |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br><br><table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0 %</u> (A)</td> <td><u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____ | Total % Cover of: | Multiply by: | OBL species _____ % | x 1 = <u>0</u> | FACW species _____ % | x 2 = <u>0</u> | FAC species _____ % | x 3 = <u>0</u> | FACU species _____ % | x 4 = <u>0</u> | UPL species _____ % | x 5 = <u>0</u> | Column Totals: <u>0 %</u> (A) | <u>0</u> (B) |
| Total % Cover of:                                 | Multiply by:     |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| OBL species _____ %                               | x 1 = <u>0</u>   |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FACW species _____ %                              | x 2 = <u>0</u>   |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FAC species _____ %                               | x 3 = <u>0</u>   |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FACU species _____ %                              | x 4 = <u>0</u>   |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| UPL species _____ %                               | x 5 = <u>0</u>   |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Column Totals: <u>0 %</u> (A)                     | <u>0</u> (B)     |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 5. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|   | <u>0 %</u>       | = Total Cover     |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Herb Stratum (Plot size: <u>5 ft.</u> )           |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic                                       |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. <u>Glycine max</u>                             | <u>75 %</u>      | <u>Y</u>          | <u>UPL</u>       |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 5. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 6. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 7. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 8. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 9. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 10. _____   | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|   | <u>75 %</u>      | = Total Cover     |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Woody Vine Stratum (Plot size: <u>30 ft.</u> )    |                  |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____  | _____ %          | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|   | <u>0 %</u>       | = Total Cover     |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Bare Ground in Herb Stratum <u>25 %</u>           |                  |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |

Remarks: Hydrophytic vegetation indicators are not met. The only vegetation observed was agricultural soybean. Photograph C-60.

## SOIL

Sampling Point: SP-708

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture         | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |                 |         |
| 0-16              | 10YR 2/1      | 100 |                |   |                   |                  | silty clay loam |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: Hydric soil indicators are not met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)  |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)   |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)   |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)<br><b>(where not tilled)</b> |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Thin Muck Surface (C7)  |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Other (Explain in Remarks)  |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) |  |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |  |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Farm City/County: Hand County Sampling Date: 10/11/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-713  
 Investigator(s): K. Russo, J. Kensinger Section, Township, Range: S23, T111N, R67W  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 1 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.407817 Long: -98.845507 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent NWI Classification: PEM1C

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

|                          |                          |                          |                          |   |
|--------------------------|--------------------------|--------------------------|--------------------------|---|
|                          | Vegetation               | Soil                     | Hydrology                |   |
| Significantly Disturbed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are "Normal Circumstances" present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Naturally Problematic?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (If needed, explain any answers in Remarks)   |

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                                     |                          |  |
|---------------------------------------|-------------------------------------|--------------------------|--|
|                                       | Yes                                 | No                       | Remarks: SP-713 is a wetland sample plot located in W-710, an emergent wetland. Normal hydrologic conditions are not present due to recent rainfall. |
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: <u>30 ft.</u> )          | Absolute % Cover    | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
|---|---------------------|-------------------|------------------|--|-------------------|--------------|---------------------|-------------|----------------------|-------------|---------------------|-------------|----------------------|-------------|---------------------|-------------|------------------------|---------------------|
| 1. _____  | %                   | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 2. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 3. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 4. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
|   | 0 %                 | = Total Cover     |                  |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| Sapling/Shrub Stratum (Plot size: <u>15 ft.</u> ) |                     |                   |                  | <b>Prevalence Index Worksheet:</b><br><br><table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____ %</td> <td>(A) _____ (B) _____</td> </tr> </table> Prevalence Index = B/A = _____  | Total % Cover of: | Multiply by: | OBL species _____ % | x 1 = _____ | FACW species _____ % | x 2 = _____ | FAC species _____ % | x 3 = _____ | FACU species _____ % | x 4 = _____ | UPL species _____ % | x 5 = _____ | Column Totals: _____ % | (A) _____ (B) _____ |
| Total % Cover of:                                 | Multiply by:        |                   |                  |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| OBL species _____ %                               | x 1 = _____         |                   |                  |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| FACW species _____ %                              | x 2 = _____         |                   |                  |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| FAC species _____ %                               | x 3 = _____         |                   |                  |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| FACU species _____ %                              | x 4 = _____         |                   |                  |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| UPL species _____ %                               | x 5 = _____         |                   |                  |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| Column Totals: _____ %                            | (A) _____ (B) _____ |                   |                  |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 1. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 2. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 3. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 4. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 5. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
|   | 0 %                 | = Total Cover     |                  |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| Herb Stratum (Plot size: <u>5 ft.</u> )           |                     |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br><br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 1. <u>Spartina pectinata</u>                      | 95 %                | Y                 | FACW             |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 2. <u>Helianthus maximiliani</u>                  | 5 %                 | N                 | FACU             |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 3. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 4. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 5. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 6. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 7. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 8. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 9. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 10. _____   | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
|   | 100 %               | = Total Cover     |                  |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| Woody Vine Stratum (Plot size: <u>30 ft.</u> )    |                     |                   |                  |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 1. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 2. _____  | %                   | _____             | _____            |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
|   | 0 %                 | = Total Cover     |                  |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| Bare Ground in Herb Stratum <u>0 %</u>            |                     |                   |                  |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| Remarks: The Rapid Test is met. Photograph C-61.  |                     |                   |                  |  |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |

## SOIL

Sampling Point: SP-713

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |    | Redox Features |   |                   |                  | Texture         | Remarks |
|-------------------|---------------|----|----------------|---|-------------------|------------------|-----------------|---------|
|                   | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |                 |         |
| 0-16              | 10YR 2/1      | 94 | 10YR 4/4       | 6 | C                 | M                | silty clay loam |         |
|                   |               |    |                |   |                   |                  |                 |         |
|                   |               |    |                |   |                   |                  |                 |         |
|                   |               |    |                |   |                   |                  |                 |         |
|                   |               |    |                |   |                   |                  |                 |         |
|                   |               |    |                |   |                   |                  |                 |         |
|                   |               |    |                |   |                   |                  |                 |         |
|                   |               |    |                |   |                   |                  |                 |         |
|                   |               |    |                |   |                   |                  |                 |         |
|                   |               |    |                |   |                   |                  |                 |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5) (**LRR F**)  
☐ 1 cm Muck (A9) (**LRR F, G, H**)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1)  
☐ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)  
☐ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ☐ Sandy Gleyed Matrix (S4)  
☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Loamy Mucky Mineral (F1)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☒ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)  
☐ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)  
☐ Coast Prairie Redox (A16) (**LRR F, G, H**)  
☐ Dark Surface (S7) (**LRR G**)  
☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Very Shallow Dark Surface (TF 12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)  
☒ High Water Table (A2)  
☒ Saturation (A3)  
☐ Water Marks (B1)  
☐ Sediment Deposits (B2)  
☐ Drift Deposits (B3)  
☐ Algal Mat or Crust (B4)  
☐ Iron Deposits (B5)  
☐ Inundation Visible on Aerial Imagery (B7)  
☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)  
☐ Aquatic Invertebrates (B13)  
☐ Hydrogen Sulfide Odor (C1)  
☐ Dry-Season Water Table (C2)  
☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)  
☐ Presence of Reduced Iron (C4)  
☐ Thin Muck Surface (C7)  
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)  
☐ Sparsely Vegetated Concave Surface (B8)  
☐ Drainage Patterns (B10)  
☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☒ Geomorphic Position (D2)  
☒ FAC-Neutral Test (D5)  
☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                       | Depth<br>(inches) |
|--|-------------------------------------|--------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/>            | <input type="checkbox"/> | _____             |
| Water Table present?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| Saturation Present?<br>(includes capillary fringe) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators A2, A3, D2, and D5 are met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Farm City/County: Hand County Sampling Date: 10/11/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-714  
 Investigator(s): K. Russo, J. Kensinger Section, Township, Range: S23, T111N, R67W  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 3 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.407737 Long: -98.845541 Datum: NAD83  
 Soil Map Unit Name: Glenham-Propser loams, 1 to 6 percent slopes NWI Classification: N/A

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No

Significantly Disturbed? ☐ Naturally Problematic? ☐ (If needed, explain any answers in Remarks)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |   |
|---------------------------------------|--------------------------|-------------------------------------|---|
|                                       | Yes                      | No                                  | Remarks: SP-714 is an upland sample plot located adjacent to W-710, an emergent wetland. Normal hydrologic conditions are not present due to recent rainfall. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: <u>30 ft.</u> )                                 | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|--|------------------|-------------------|------------------|---|-------------------|--------------|---------------------|----------------|----------------------|----------------|---------------------|----------------|----------------------|----------------|---------------------|----------------|-------------------------------|--------------|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: _____ <u>1</u> (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ <u>0%</u> (A/B)   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____   | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. _____   | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____   | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | <u>0 %</u>       | = Total Cover     |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Sapling/Shrub Stratum (Plot size: <u>15 ft.</u> )                        |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br><br><table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0 %</u> (A)</td> <td><u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____  | Total % Cover of: | Multiply by: | OBL species _____ % | x 1 = <u>0</u> | FACW species _____ % | x 2 = <u>0</u> | FAC species _____ % | x 3 = <u>0</u> | FACU species _____ % | x 4 = <u>0</u> | UPL species _____ % | x 5 = <u>0</u> | Column Totals: <u>0 %</u> (A) | <u>0</u> (B) |
| Total % Cover of:  | Multiply by:     |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| OBL species _____ %  | x 1 = <u>0</u>   |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FACW species _____ %   | x 2 = <u>0</u>   |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FAC species _____ %  | x 3 = <u>0</u>   |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FACU species _____ %   | x 4 = <u>0</u>   |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| UPL species _____ %  | x 5 = <u>0</u>   |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Column Totals: <u>0 %</u> (A)  | <u>0</u> (B)     |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. _____   | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____   | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. _____   | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____   | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 5. _____   | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | <u>0 %</u>       | = Total Cover     |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Herb Stratum (Plot size: <u>5 ft.</u> )                                  |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br><br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. <u>Bromus inermis</u>   | <u>80 %</u>      | <u>Y</u>          | <u>UPL</u>       |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. <u>Solidago rugosa</u>  | <u>10 %</u>      | <u>N</u>          | <u>FAC</u>       |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. <u>Bouteloua curtipendula</u>   | <u>10 %</u>      | <u>N</u>          | <u>UPL</u>       |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____   | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 5. _____   | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 6. _____   | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 7. _____   | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 8. _____   | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 9. _____   | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 10. _____  | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | <u>100 %</u>     | = Total Cover     |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Woody Vine Stratum (Plot size: <u>30 ft.</u> )                           |                  |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. _____   | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____   | _____ %          | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | <u>0 %</u>       | = Total Cover     |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Bare Ground in Herb Stratum <u>0 %</u>                                   |                  |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Remarks: Hydrophytic vegetation indicators are not met. Photograph C-62. |                  |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |

## SOIL

Sampling Point: SP-714

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture         | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |                 |         |
| 0-16              | 10YR 3/1      | 100 |                |   |                   |                  | silty clay loam |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)  
☐ Coast Prairie Redox (A16) (**LRR F, G, H**)  
☐ Dark Surface (S7) (**LRR G**)  
☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Very Shallow Dark Surface (TF 12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: Hydric soil indicators are not met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)  
☐ Sparsely Vegetated Concave Surface (B8)  
☐ Drainage Patterns (B10)  
☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Geomorphic Position (D2)  
☐ FAC-Neutral Test (D5)  
☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Farm City/County: Hand County Sampling Date: 10/11/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-716  
 Investigator(s): K. Russo, J. Kensinger Section, Township, Range: S26, T111N, R67W  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.398812 Long: -98.853562 Datum: NAD83  
 Soil Map Unit Name: Prosper-Stickney loams, nearly level NWI Classification: N/A

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

|                          |                                     |                                     |                          |   |
|--------------------------|-------------------------------------|-------------------------------------|--------------------------|---|
|                          | Vegetation                          | Soil                                | Hydrology                | Are "Normal Circumstances" present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Significantly Disturbed? | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |   |
| Naturally Problematic?   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | (If needed, explain any answers in Remarks)   |

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |  |
|---------------------------------------|--------------------------|-------------------------------------|--|
|                                       | Yes                      | No                                  | Remarks: SP-716 is an upland sample plot. Normal hydrologic conditions are not present due to recent rainfall. Soil and vegetation have been disturbed by agricultural activities. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: <u>30 ft.</u> )          | Absolute % Cover     | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
|---|----------------------|-------------------|------------------|---|-------------------|--------------|---------------------|----------------------|----------------------|----------------------|---------------------|----------------------|----------------------|----------------------|---------------------|----------------------|------------------------------------|--------------------|
| 1. _____  | _____ %              | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: _____ <u>1</u> (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ <u>0%</u> (A/B)   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 2. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 3. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 4. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
|   | <u>0 %</u>           | = Total Cover     |                  |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| Sapling/Shrub Stratum (Plot size: <u>15 ft.</u> ) |                      |                   |                  | <b>Prevalence Index Worksheet:</b><br><br><table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____ <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____ <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____ <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____ <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____ <u>0</u></td> </tr> <tr> <td>Column Totals: _____ <u>0%</u> (A)</td> <td>_____ <u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____                             | Total % Cover of: | Multiply by: | OBL species _____ % | x 1 = _____ <u>0</u> | FACW species _____ % | x 2 = _____ <u>0</u> | FAC species _____ % | x 3 = _____ <u>0</u> | FACU species _____ % | x 4 = _____ <u>0</u> | UPL species _____ % | x 5 = _____ <u>0</u> | Column Totals: _____ <u>0%</u> (A) | _____ <u>0</u> (B) |
| Total % Cover of:                                 | Multiply by:         |                   |                  |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| OBL species _____ %                               | x 1 = _____ <u>0</u> |                   |                  |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| FACW species _____ %                              | x 2 = _____ <u>0</u> |                   |                  |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| FAC species _____ %                               | x 3 = _____ <u>0</u> |                   |                  |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| FACU species _____ %                              | x 4 = _____ <u>0</u> |                   |                  |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| UPL species _____ %                               | x 5 = _____ <u>0</u> |                   |                  |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| Column Totals: _____ <u>0%</u> (A)                | _____ <u>0</u> (B)   |                   |                  |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 1. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 2. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 3. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 4. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 5. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
|   | <u>0 %</u>           | = Total Cover     |                  |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| Herb Stratum (Plot size: <u>5 ft.</u> )           |                      |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br><br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 1. <u>Glycine max</u>                             | <u>40 %</u>          | <u>Y</u>          | <u>UPL</u>       |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 2. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 3. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 4. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 5. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 6. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 7. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 8. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 9. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 10. _____   | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
|   | <u>40 %</u>          | = Total Cover     |                  |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| Woody Vine Stratum (Plot size: <u>30 ft.</u> )    |                      |                   |                  |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 1. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| 2. _____  | _____ %              | _____             | _____            |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
|   | <u>0 %</u>           | = Total Cover     |                  |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |
| Bare Ground in Herb Stratum <u>60 %</u>           |                      |                   |                  |   |                   |              |                     |                      |                      |                      |                     |                      |                      |                      |                     |                      |                                    |                    |

Remarks: Hydrophytic vegetation indicators are not met. The only vegetation present is agricultural soybean. Photograph C-63.

## SOIL

Sampling Point: SP-716

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture         | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |                 |         |
| 0-4               | 10YR 2/1      | 100 |                |   |                   |                  | silty clay loam |         |
| 4-8               | 10YR 3/2      | 100 |                |   |                   |                  | sandy clay      |         |
| 8-16              | 10YR 2/1      | 100 |                |   |                   |                  | silty clay      |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: Hydric soil indicators are not met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)  |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)   |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)   |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)<br><b>(where not tilled)</b> |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Thin Muck Surface (C7)  |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Other (Explain in Remarks)  |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) |  |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |  |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Farm City/County: Hand County Sampling Date: 10/12/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-717  
 Investigator(s): K. Russo, J. Kensinger Section, Township, Range: S18, T111N, R66W  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.416593 Long: -98.811582 Datum: NAD83  
 Soil Map Unit Name: Tetonka silt loam, 0 to 1 percent slopes NWI Classification: PEM1C

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

|                          |                          |                          |                          |   |
|--------------------------|--------------------------|--------------------------|--------------------------|---|
|                          | Vegetation               | Soil                     | Hydrology                |   |
| Significantly Disturbed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are "Normal Circumstances" present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Naturally Problematic?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (If needed, explain any answers in Remarks)   |

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                                     |                          |  |
|---------------------------------------|-------------------------------------|--------------------------|--|
|                                       | Yes                                 | No                       | Remarks: SP-717 is a wetland sample plot located in W-712, an emergent wetland. Normal hydrologic conditions are not present due to recent rainfall. |
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: <u>30 ft.</u> )             | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|--|------------------|-------------------|------------------|--|-------------------|--------------|---------------------|----------------|----------------------|----------------|---------------------|----------------|----------------------|----------------|---------------------|----------------|-------------------------------|--------------|
| 1. _____   | %                | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: <u>100%</u> (A/B)  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | 0 %              | = Total Cover     |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Sapling/Shrub Stratum (Plot size: <u>15 ft.</u> )    |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br><br><table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> % (A)</td> <td><u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____   | Total % Cover of: | Multiply by: | OBL species _____ % | x 1 = <u>0</u> | FACW species _____ % | x 2 = <u>0</u> | FAC species _____ % | x 3 = <u>0</u> | FACU species _____ % | x 4 = <u>0</u> | UPL species _____ % | x 5 = <u>0</u> | Column Totals: <u>0</u> % (A) | <u>0</u> (B) |
| Total % Cover of:                                    | Multiply by:     |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| OBL species _____ %                                  | x 1 = <u>0</u>   |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FACW species _____ %                                 | x 2 = <u>0</u>   |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FAC species _____ %                                  | x 3 = <u>0</u>   |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FACU species _____ %                                 | x 4 = <u>0</u>   |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| UPL species _____ %                                  | x 5 = <u>0</u>   |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Column Totals: <u>0</u> % (A)                        | <u>0</u> (B)     |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 5. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | 0 %              | = Total Cover     |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Herb Stratum (Plot size: <u>5 ft.</u> )              |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input checked="" type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br><br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. <u>Echinochloa crus-galli</u>                     | 80 %             | Y                 | FAC              |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. <u>Rumex crispus</u>                              | 10 %             | N                 | FAC              |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 5. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 6. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 7. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 8. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 9. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 10. _____  | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | 90 %             | = Total Cover     |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Woody Vine Stratum (Plot size: <u>30 ft.</u> )       |                  |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____   | %                | _____             | _____            |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|  | 0 %              | = Total Cover     |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Bare Ground in Herb Stratum <u>10</u> %              |                  |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Remarks: The Dominance Test is met. Photograph C-64. |                  |                   |                  |  |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |

## SOIL

Sampling Point: SP-717

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture         | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |                 |         |
| 0-4               | 10YR 2/1      | 100 |                |   |                   |                  | silty clay loam |         |
| 4-16              | 10YR 2/1      | 92  | 10YR 3/3       | 5 | C                 | M                | silty clay loam |         |
|                   |               |     | 10YR 4/1       | 3 | D                 | M                |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5) (**LRR F**)  
☐ 1 cm Muck (A9) (**LRR F, G, H**)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1)  
☐ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)  
☐ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ☐ Sandy Gleyed Matrix (S4)  
☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Loamy Mucky Mineral (F1)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☒ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)  
☐ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)  
☐ Coast Prairie Redox (A16) (**LRR F, G, H**)  
☐ Dark Surface (S7) (**LRR G**)  
☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Very Shallow Dark Surface (TF 12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)  
☒ High Water Table (A2)  
☒ Saturation (A3)  
☐ Water Marks (B1)  
☐ Sediment Deposits (B2)  
☐ Drift Deposits (B3)  
☐ Algal Mat or Crust (B4)  
☐ Iron Deposits (B5)  
☐ Inundation Visible on Aerial Imagery (B7)  
☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)  
☐ Aquatic Invertebrates (B13)  
☐ Hydrogen Sulfide Odor (C1)  
☐ Dry-Season Water Table (C2)  
☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)  
☐ Presence of Reduced Iron (C4)  
☐ Thin Muck Surface (C7)  
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)  
☐ Sparsely Vegetated Concave Surface (B8)  
☐ Drainage Patterns (B10)  
☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☒ Geomorphic Position (D2)  
☐ FAC-Neutral Test (D5)  
☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                       | Depth<br>(inches) |
|--|-------------------------------------|--------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/>            | <input type="checkbox"/> | _____             |
| Water Table present?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4                 |
| Saturation Present?<br>(includes capillary fringe) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators A2, A3, and D2 are met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Farm City/County: Hand County Sampling Date: 10/12/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-718  
 Investigator(s): K. Russo, J. Kensinger Section, Township, Range: S18, T111N, R66W  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.416538 Long: -98.811671 Datum: NAD83  
 Soil Map Unit Name: Tetonka silt loam, 0 to 1 percent slopes NWI Classification: PEM1C

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

|                          |                                     |                                     |                          |   |
|--------------------------|-------------------------------------|-------------------------------------|--------------------------|---|
|                          | Vegetation                          | Soil                                | Hydrology                |   |
| Significantly Disturbed? | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Are "Normal Circumstances" present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Naturally Problematic?   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | (If needed, explain any answers in Remarks)   |

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       |                          |                                     |   |
|---------------------------------------|--------------------------|-------------------------------------|---|
|                                       | Yes                      | No                                  | Remarks: SP-718 is an upland sample plot located adjacent to W-712, an emergent wetland. Normal hydrologic conditions are not present due to recent rainfall. Soil and vegetation have been disturbed by agricultural activities. |
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: <u>30 ft.</u> )          | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|---|------------------|-------------------|------------------|---|-------------------|--------------|---------------------|----------------|----------------------|----------------|---------------------|----------------|----------------------|----------------|---------------------|----------------|-------------------------------|--------------|
| 1. _____  | %                | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: <u>0%</u> (A/B)   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|   | 0 %              | = Total Cover     |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Sapling/Shrub Stratum (Plot size: <u>15 ft.</u> ) |                  |                   |                  | <b>Prevalence Index Worksheet:</b><br><br><table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>0</u> % (A)</td> <td><u>0</u> (B)</td> </tr> </table> Prevalence Index = B/A = _____  | Total % Cover of: | Multiply by: | OBL species _____ % | x 1 = <u>0</u> | FACW species _____ % | x 2 = <u>0</u> | FAC species _____ % | x 3 = <u>0</u> | FACU species _____ % | x 4 = <u>0</u> | UPL species _____ % | x 5 = <u>0</u> | Column Totals: <u>0</u> % (A) | <u>0</u> (B) |
| Total % Cover of:                                 | Multiply by:     |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| OBL species _____ %                               | x 1 = <u>0</u>   |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FACW species _____ %                              | x 2 = <u>0</u>   |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FAC species _____ %                               | x 3 = <u>0</u>   |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| FACU species _____ %                              | x 4 = <u>0</u>   |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| UPL species _____ %                               | x 5 = <u>0</u>   |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Column Totals: <u>0</u> % (A)                     | <u>0</u> (B)     |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 5. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|   | 0 %              | = Total Cover     |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Herb Stratum (Plot size: <u>5 ft.</u> )           |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br><br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. <u>Glycine max</u>                             | 60 %             | Y                 | UPL              |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 3. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 4. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 5. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 6. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 7. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 8. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 9. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 10. _____   | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|   | 60 %             | = Total Cover     |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Woody Vine Stratum (Plot size: <u>30 ft.</u> )    |                  |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 1. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| 2. _____  | %                | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
|   | 0 %              | = Total Cover     |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |
| Bare Ground in Herb Stratum <u>40</u> %           |                  |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                               |              |

Remarks: Hydrophytic vegetation indicators are not met. The only vegetation present is agricultural soybean. Photograph C-65.

## SOIL

Sampling Point: SP-718

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture         | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |                 |         |
| 0-16              | 10YR 2/1      | 100 |                |   |                   |                  | silty clay loam |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: Hydric soil indicators are not met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Farm City/County: Hand County Sampling Date: 10/12/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-719  
 Investigator(s): K. Russo, J. Kensinger Section, Township, Range: S18, T111N, R66W  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.415644 Long: -98.803696 Datum: NAD83  
 Soil Map Unit Name: Betts-Java loams, steep NWI Classification: N/A

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

|                          |                          |                          |                          |  |
|--------------------------|--------------------------|--------------------------|--------------------------|--|
|                          | Vegetation               | Soil                     | Hydrology                |  |
| Significantly Disturbed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are "Normal Circumstances" present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><br>(If needed, explain any answers in Remarks) |
| Naturally Problematic?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  |

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|  |                                     |                          |  |
|--|-------------------------------------|--------------------------|--|
|  | Yes                                 | No                       | Remarks: SP-719 is a wetland sample plot located in W-713, an emergent wetland. Normal hydrologic conditions are not present due to recent rainfall. |
| Hydrophytic Vegetation Present?              | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Hydric Soil Present?                         | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| Wetland Hydrology Present?                   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| <b>Is the Sampled Area within a Wetland?</b> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: <u>30 ft.</u> )          | Absolute % Cover    | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
|---|---------------------|-------------------|------------------|---|-------------------|--------------|---------------------|-------------|----------------------|-------------|---------------------|-------------|----------------------|-------------|---------------------|-------------|------------------------|---------------------|
| 1. _____  | %                   | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ (A/B)   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 2. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 3. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 4. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
|   | 0 %                 | = Total Cover     |                  |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| Sapling/Shrub Stratum (Plot size: <u>15 ft.</u> ) |                     |                   |                  | <b>Prevalence Index Worksheet:</b><br><br><table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____ %</td> <td>(A) _____ (B) _____</td> </tr> </table> Prevalence Index = B/A = _____ | Total % Cover of: | Multiply by: | OBL species _____ % | x 1 = _____ | FACW species _____ % | x 2 = _____ | FAC species _____ % | x 3 = _____ | FACU species _____ % | x 4 = _____ | UPL species _____ % | x 5 = _____ | Column Totals: _____ % | (A) _____ (B) _____ |
| Total % Cover of:                                 | Multiply by:        |                   |                  |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| OBL species _____ %                               | x 1 = _____         |                   |                  |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| FACW species _____ %                              | x 2 = _____         |                   |                  |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| FAC species _____ %                               | x 3 = _____         |                   |                  |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| FACU species _____ %                              | x 4 = _____         |                   |                  |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| UPL species _____ %                               | x 5 = _____         |                   |                  |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| Column Totals: _____ %                            | (A) _____ (B) _____ |                   |                  |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 1. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 2. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 3. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 4. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 5. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
|   | 0 %                 | = Total Cover     |                  |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| Herb Stratum (Plot size: <u>5 ft.</u> )           |                     |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><br><input checked="" type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic             |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 1. <u>Spartina pectinata</u>                      | 95 %                | Y                 | FACW             |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 2. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 3. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 4. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 5. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 6. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 7. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 8. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 9. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 10. _____   | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
|   | 95 %                | = Total Cover     |                  |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| Woody Vine Stratum (Plot size: <u>30 ft.</u> )    |                     |                   |                  | Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 1. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| 2. _____  | %                   | _____             | _____            |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
|   | 0 %                 | = Total Cover     |                  |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| Bare Ground in Herb Stratum <u>5 %</u>            |                     |                   |                  |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |
| Remarks: The Rapid Test is met. Photograph C-66.  |                     |                   |                  |   |                   |              |                     |             |                      |             |                     |             |                      |             |                     |             |                        |                     |

## SOIL

Sampling Point: SP-719

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|-------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
|                   | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-16              | 10YR 2/1      | 96 | 10YR 3/3       | 4 | C                 | M                | silty clay |         |
|                   |               |    |                |   |                   |                  |            |         |
|                   |               |    |                |   |                   |                  |            |         |
|                   |               |    |                |   |                   |                  |            |         |
|                   |               |    |                |   |                   |                  |            |         |
|                   |               |    |                |   |                   |                  |            |         |
|                   |               |    |                |   |                   |                  |            |         |
|                   |               |    |                |   |                   |                  |            |         |
|                   |               |    |                |   |                   |                  |            |         |
|                   |               |    |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5) (**LRR F**)  
☐ 1 cm Muck (A9) (**LRR F, G, H**)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1)  
☐ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)  
☐ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ☐ Sandy Gleyed Matrix (S4)  
☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Loamy Mucky Mineral (F1)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☒ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)  
☐ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)  
☐ Coast Prairie Redox (A16) (**LRR F, G, H**)  
☐ Dark Surface (S7) (**LRR G**)  
☐ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Very Shallow Dark Surface (TF 12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- ☒ Surface Water (A1)  
☒ High Water Table (A2)  
☒ Saturation (A3)  
☐ Water Marks (B1)  
☐ Sediment Deposits (B2)  
☐ Drift Deposits (B3)  
☐ Algal Mat or Crust (B4)  
☐ Iron Deposits (B5)  
☐ Inundation Visible on Aerial Imagery (B7)  
☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)  
☐ Aquatic Invertebrates (B13)  
☐ Hydrogen Sulfide Odor (C1)  
☐ Dry-Season Water Table (C2)  
☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)  
☐ Presence of Reduced Iron (C4)  
☐ Thin Muck Surface (C7)  
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)  
☐ Sparsely Vegetated Concave Surface (B8)  
☐ Drainage Patterns (B10)  
☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☒ Geomorphic Position (D2)  
☒ FAC-Neutral Test (D5)  
☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                       | Depth<br>(inches) |
|--|-------------------------------------|--------------------------|-------------------|
| Surface Water present?                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0.5               |
| Water Table present?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| Saturation Present?<br>(includes capillary fringe) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators A1, A2, A3, D2, and D5 are met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Farm City/County: Hand County Sampling Date: 10/12/2018  
 Applicant/Owner: Sweetland Wind Farm, LLC State: SD Sampling Point: SP-720  
 Investigator(s): K. Russo, J. Kensinger Section, Township, Range: S18, T111N, R66W  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 5 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.415640 Long: -98.803628 Datum: NAD83  
 Soil Map Unit Name: Betts-Java loams, steep NWI Classification: N/A

Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks)

|                          |                          |                          |                          |   |
|--------------------------|--------------------------|--------------------------|--------------------------|---|
|                          | Vegetation               | Soil                     | Hydrology                |   |
| Significantly Disturbed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Are "Normal Circumstances" present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Naturally Problematic?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (If needed, explain any answers in Remarks)   |

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|  |                          |                                     |   |
|--|--------------------------|-------------------------------------|---|
|  | Yes                      | No                                  | Remarks: SP-720 is an upland sample plot located adjacent to W-712, an emergent wetland. Normal hydrologic conditions are not present due to recent rainfall. |
| Hydrophytic Vegetation Present?              | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Hydric Soil Present?                         | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Wetland Hydrology Present?                   | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| <b>Is the Sampled Area within a Wetland?</b> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: <u>30 ft.</u> )                                 | Absolute % Cover       | Dominant Species? | Indicator Status |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
|--|------------------------|-------------------|------------------|---|-------------------|--------------|---------------------|----------------|----------------------|----------------|---------------------|----------------|----------------------|----------------|---------------------|----------------|------------------------|------------------------|
| 1. _____   | %                      | _____             | _____            | <b>Dominance Test Worksheet:</b><br>Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: _____ <u>2</u> (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ <u>0%</u> (A/B)   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 2. _____   | %                      | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 3. _____   | %                      | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 4. _____   | %                      | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
|  | <u>0 %</u>             | = Total Cover     |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| Sapling/Shrub Stratum (Plot size: <u>15 ft.</u> )                        |                        |                   |                  | <b>Prevalence Index Worksheet:</b><br><table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____ %</td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species _____ %</td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species _____ %</td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species _____ %</td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species _____ %</td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: _____ %</td> <td>(A) _____ (B) <u>0</u></td> </tr> </table> Prevalence Index = B/A = _____   | Total % Cover of: | Multiply by: | OBL species _____ % | x 1 = <u>0</u> | FACW species _____ % | x 2 = <u>0</u> | FAC species _____ % | x 3 = <u>0</u> | FACU species _____ % | x 4 = <u>0</u> | UPL species _____ % | x 5 = <u>0</u> | Column Totals: _____ % | (A) _____ (B) <u>0</u> |
| Total % Cover of:  | Multiply by:           |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| OBL species _____ %  | x 1 = <u>0</u>         |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| FACW species _____ %   | x 2 = <u>0</u>         |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| FAC species _____ %  | x 3 = <u>0</u>         |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| FACU species _____ %   | x 4 = <u>0</u>         |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| UPL species _____ %  | x 5 = <u>0</u>         |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| Column Totals: _____ %   | (A) _____ (B) <u>0</u> |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 1. _____   | %                      | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 2. _____   | %                      | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 3. _____   | %                      | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 4. _____   | %                      | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 5. _____   | %                      | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
|  | <u>0 %</u>             | = Total Cover     |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| Herb Stratum (Plot size: <u>5 ft.</u> )                                  |                        |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 1. <u>Schedonorus arundinaceus</u>                                       | <u>50 %</u>            | <u>Y</u>          | <u>FACU</u>      |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 2. <u>Bromus inermis</u>   | <u>20 %</u>            | <u>Y</u>          | <u>UPL</u>       |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 3. <u>Poa pratensis</u>  | <u>15 %</u>            | <u>N</u>          | <u>FACU</u>      |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 4. <u>Solidago rugosa</u>  | <u>5 %</u>             | <u>N</u>          | <u>FAC</u>       |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 5. _____   | %                      | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 6. _____   | %                      | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 7. _____   | %                      | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 8. _____   | %                      | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 9. _____   | %                      | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 10. _____  | %                      | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
|  | <u>90 %</u>            | = Total Cover     |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| Woody Vine Stratum (Plot size: <u>30 ft.</u> )                           |                        |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 1. _____   | %                      | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| 2. _____   | %                      | _____             | _____            |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
|  | <u>0 %</u>             | = Total Cover     |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| Bare Ground in Herb Stratum <u>10 %</u>                                  |                        |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |
| Remarks: Hydrophytic vegetation indicators are not met. Photograph C-67. |                        |                   |                  |   |                   |              |                     |                |                      |                |                     |                |                      |                |                     |                |                        |                        |

## SOIL

Sampling Point: SP-720

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture         | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |                 |         |
| 0-16              | 10YR 2/2      | 100 |                |   |                   |                  | silty clay loam |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)  
☐ Coast Prairie Redox (A16) (**LRR F, G, H**)  
☐ Dark Surface (S7) (**LRR G**)  
☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Very Shallow Dark Surface (TF 12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: Hydric soil indicators are not met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)  
☐ Sparsely Vegetated Concave Surface (B8)  
☐ Drainage Patterns (B10)  
☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Geomorphic Position (D2)  
☐ FAC-Neutral Test (D5)  
☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____             |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators are not met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 9/30/2019  
 Applicant/Owner: Scout Clean Energy State: SD Sampling Point: SP-901  
 Investigator(s): W. Hirst Section, Township, Range: S3, T110N, R66W  
 Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope (%): 5 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.359293 Long: -98.745067 Datum: NAD83  
 Soil Map Unit Name: Java-Glenham loams, hilly NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                                 | No                       | Remarks:  |
|---------------------------------------|-------------------------------------|--------------------------|---|
| Hydrophytic Vegetation Present?       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Wetland sample plot located in PEM W-901. WETS analysis for this region shows prior 3 month period has been wetter than normal for this time of year. |
| Hydric Soil Present?                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |   |
| Wetland Hydrology Present?            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |   |
| Is the Sampled Area within a Wetland? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |   |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')   | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 1 (A)<br>Total Number of Dominant Species Across All Strata: _____ 2 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 50% (A/B)  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                                 |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ 50 % x 1 = _____ 50<br>FACW species _____ 0 % x 2 = _____ 0<br>FAC species _____ 0 % x 3 = _____ 0<br>FACU species _____ 20 % x 4 = _____ 80<br>UPL species _____ 0 % x 5 = _____ 0<br>Column Totals: _____ 70 % (A) _____ 130 (B)<br>Prevalence Index = B/A = _____ 1.85  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 3. _____  | _____ %          | _____             | _____            |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| <b>Herb Stratum (Plot size: 5')</b>   |                  |                   |                  |  |
| 1. <u>Eleocharis obtusa</u>   | 50 %             | Y                 | OBL              | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input checked="" type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. <u>Bromus arvensis</u>   | 20 %             | Y                 | FACU             |  |
| 3. <u>Carex sp.</u>   | 5 %              | N                 |                  |  |
| 4. _____  | _____ %          | _____             | _____            |  |
| 5. _____  | _____ %          | _____             | _____            |  |
| 6. _____  | _____ %          | _____             | _____            |  |
| 7. _____  | _____ %          | _____             | _____            |  |
| 8. _____  | _____ %          | _____             | _____            |  |
| 9. _____  | _____ %          | _____             | _____            |  |
| 10. _____   | _____ %          | _____             | _____            |  |
| 75 % = Total Cover  |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: 30')</b>                                    |                  |                   |                  |  |
| 1. _____  | _____ %          | _____             | _____            |  |
| 2. _____  | _____ %          | _____             | _____            |  |
| 0 % = Total Cover   |                  |                   |                  |  |
| Bare Ground in Herb Stratum <u>25 %</u>                                       |                  |                   |                  |  |
| Remarks: Prevalence Index for hydrophytic vegetation is met. Photograph C-68. |                  |                   |                  |  |

## SOIL

Sampling Point: SP-901

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |    | Redox Features |    |                   |                  | Texture    | Remarks |
|-------------------|---------------|----|----------------|----|-------------------|------------------|------------|---------|
|                   | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-14              | 10YR 3/1      | 90 | 10YR 3/6       | 10 | C                 | M                | Mucky Clay |         |
| 14-24             | 10YR 3/1      | 95 | 10YR 3/6       | 5  | C                 | M                | Silty Clay |         |
|                   |               |    |                |    |                   |                  |            |         |
|                   |               |    |                |    |                   |                  |            |         |
|                   |               |    |                |    |                   |                  |            |         |
|                   |               |    |                |    |                   |                  |            |         |
|                   |               |    |                |    |                   |                  |            |         |
|                   |               |    |                |    |                   |                  |            |         |
|                   |               |    |                |    |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |   |
|---|---|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)           |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☒ Yes ☐ No

Remarks: Hydric soil indicator F6 is met.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1)             | <input type="checkbox"/> Salt Crust (B11)                           |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                                 | No                       | Depth<br>(inches) |
|--|-------------------------------------|--------------------------|-------------------|
| Surface Water present?                             | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 1                 |
| Water Table present?                               | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| Saturation Present?<br>(includes capillary fringe) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0                 |
| <b>Wetland Hydrology Present?</b>                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: Wetland hydrology indicators A1, A2, A3, B10, and D2 are met.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 9/30/2019  
 Applicant/Owner: Scout Clean Energy State: SD Sampling Point: SP-902  
 Investigator(s): W. Hirst Section, Township, Range: S3, T110N, R66W  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 5 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.359264 Long: -98.745101 Datum: NAD83  
 Soil Map Unit Name: Java-Glenham loams, hilly NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                      | No                                  | Remarks:  |
|---------------------------------------|--------------------------|-------------------------------------|---|
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Upland sample plot located adjacent to PEM W-901. WETS analysis for this region shows prior 3 month period has been wetter than normal for this time of year. |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |   |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 1 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br>Prevalence Index = B/A = _____   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Bromus arvensis</u>  | 80 %             | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. <u>Poa pratensis</u>  | 20 %             | N                 | FACU             |   |
| 3. <u>Taraxacum officinale</u>                                   | 5 %              | N                 | FACU             |   |
| 4. <u>Cirsium arvense</u>  | 5 %              | N                 | FACU             |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 110 % = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-69. |                  |                   |                  |   |

## SOIL

Sampling Point: SP-902

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture             | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|---------------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |                     |         |
| 0-14              | 10YR 3/1      | 100 |                |   |                   |                  | Sandy Clay          |         |
| 14-24             | 10YR 4/2      | 100 |                |   |                   |                  | Gravelly Sandy Clay |         |
|                   |               |     |                |   |                   |                  |                     |         |
|                   |               |     |                |   |                   |                  |                     |         |
|                   |               |     |                |   |                   |                  |                     |         |
|                   |               |     |                |   |                   |                  |                     |         |
|                   |               |     |                |   |                   |                  |                     |         |
|                   |               |     |                |   |                   |                  |                     |         |
|                   |               |     |                |   |                   |                  |                     |         |
|                   |               |     |                |   |                   |                  |                     |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicators are present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 0                 |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 0                 |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 0                 |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: No wetland hydrology indicators are present.



# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Sweetland Wind Project City/County: Hand County Sampling Date: 9/30/2019  
 Applicant/Owner: Scout Clean Energy State: SD Sampling Point: SP-903  
 Investigator(s): W. Hirst Section, Township, Range: S10, T110N, R66W  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 5 %  
 Subregion (LRR): Northern Great Plains Spring Wheat Region Lat: 44.354380 Long: -98.753991 Datum: NAD83  
 Soil Map Unit Name: Glenham-Java loams, rolling NWI Classification: NA  
 Are climate/hydrologic conditions on the site typical for this time of year? ☐ Yes ☒ No (If no, explain in Remarks.)

Vegetation Soil Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No  
 Significantly Disturbed? ☐ ☐ ☐ (If needed, explain any answers in Remarks.)  
 Naturally Problematic? ☐ ☐ ☐

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                       | Yes                      | No                                  | Remarks: Upland sample plot. WETS analysis for this region shows prior 3 month period has been wetter than normal for this time of year. |
|---------------------------------------|--------------------------|-------------------------------------|--|
| Hydrophytic Vegetation Present?       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Hydric Soil Present?                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Wetland Hydrology Present?            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |
| Is the Sampled Area within a Wetland? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |  |

## VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30')                                    | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet:   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____ %          | _____             | _____            | Number of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): _____ 0 (A)<br>Total Number of Dominant Species Across All Strata: _____ 2 (B)<br>Percent of Dominant Species that are OBL, FACW, or FAC: _____ 0% (A/B)  |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Sapling/Shrub Stratum (Plot size: 15')</b>                    |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            | <b>Prevalence Index Worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ % x 1 = _____ 0<br>FACW species _____ % x 2 = _____ 0<br>FAC species _____ % x 3 = _____ 0<br>FACU species _____ % x 4 = _____ 0<br>UPL species _____ % x 5 = _____ 0<br>Column Totals: _____ 0 % (A) _____ 0 (B)<br>Prevalence Index = B/A = _____   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 3. _____   | _____ %          | _____             | _____            |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5')</b>                              |                  |                   |                  |   |
| 1. <u>Trifolium repens</u>                                       | 60 %             | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> 2 Dominance Test is >50%<br><input type="checkbox"/> 3 Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic<br>Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 2. <u>Poa pratensis</u>  | 50 %             | Y                 | FACU             |   |
| 3. <u>Cirsium arvense</u>  | 5 %              | N                 | FACU             |   |
| 4. _____   | _____ %          | _____             | _____            |   |
| 5. _____   | _____ %          | _____             | _____            |   |
| 6. _____   | _____ %          | _____             | _____            |   |
| 7. _____   | _____ %          | _____             | _____            |   |
| 8. _____   | _____ %          | _____             | _____            |   |
| 9. _____   | _____ %          | _____             | _____            |   |
| 10. _____  | _____ %          | _____             | _____            |   |
| 115 % = Total Cover  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: 30')</b>                       |                  |                   |                  |   |
| 1. _____   | _____ %          | _____             | _____            |   |
| 2. _____   | _____ %          | _____             | _____            |   |
| 0 % = Total Cover  |                  |                   |                  |   |
| Bare Ground in Herb Stratum <u>0 %</u>                           |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation is not present. Photograph C-70. |                  |                   |                  |   |

## SOIL

Sampling Point: SP-903

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture         | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |                 |         |
| 0-24              | 10YR 4/2      | 100 |                |   |                   |                  | Sandy Clay Loam |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |
|                   |               |     |                |   |                   |                  |                 |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains<sup>2</sup>Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                      | <input type="checkbox"/> Sandy Gleyed Matrix (S4)      |
| <input type="checkbox"/> Histic Epipedon (A2)                               | <input type="checkbox"/> Sandy Redox (S5)              |
| <input type="checkbox"/> Black Histic (A3)                                  | <input type="checkbox"/> Stripped Matrix (S6)          |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                              | <input type="checkbox"/> Loamy Mucky Mineral (F1)      |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR F</b> )            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)      |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR F, G, H</b> )              | <input type="checkbox"/> Depleted Matrix (F3)          |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                  | <input type="checkbox"/> Redox Dark Surface (F6)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                           | <input type="checkbox"/> Depleted Dark Surface (F7)    |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                           | <input type="checkbox"/> Redox Depressions (F8)        |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) ( <b>LRR G, H</b> ) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) ( <b>LRR F</b> )      | <b>(MLRA 72 &amp; 73 of LRR H)</b>                     |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)  
**(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic**Restrictive Layer (if present):**

Type: \_\_\_\_\_ Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**☐ Yes ☒ No

Remarks: No hydric soil indicators are present.

## HYDROLOGY

**Wetland Hydrology Indicators:**Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Salt Crust (B11)                           |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Invertebrates (B13)                |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <b>(where not tilled)</b>   |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)  
**(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

**Field Observations:**

|  | Yes                      | No                                  | Depth<br>(inches) |
|--|--------------------------|-------------------------------------|-------------------|
| Surface Water present?                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 0                 |
| Water Table present?                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 0                 |
| Saturation Present?<br>(includes capillary fringe) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 0                 |
| <b>Wetland Hydrology Present?</b>                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                   |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, etc.), if available:

Remarks: No wetland hydrology indicators are present.



## **APPENDIX C - PHOTOGRAPH LOG**



Photograph C-1: View of upland sample plot (SP-)008, facing east.



Photograph C-2: View of upland SP-011, facing south.





Photograph C-3: View of upland SP-501, facing south.



Photograph C-4: View of upland SP-502, facing north.



Photograph C-5: View of SP-503 in palustrine emergent (PEM) wetland (W- )501, facing north.



Photograph C-6: View of SP-504, an upland sample plot adjacent to W-501, facing east.





Photograph C-7: View of upland SP-505, facing west.



Photograph C-8: View of upland SP-515, facing south.



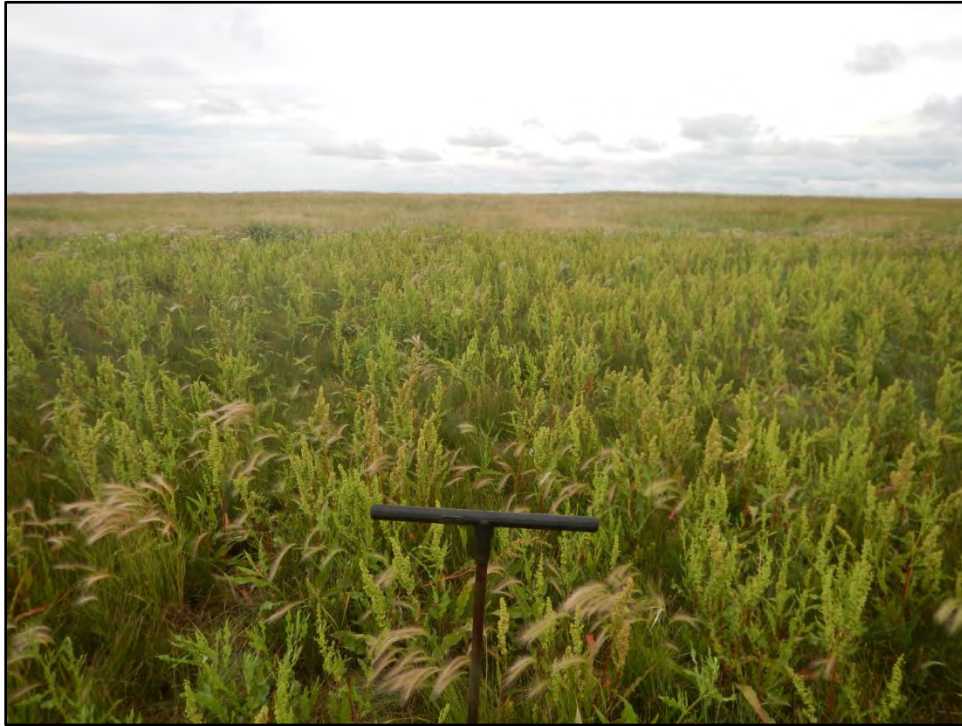


Photograph C-9: View of SP-516 in PEM W-507, facing north.



Photograph C-10: View of SP-517, an upland sample plot adjacent to W-507 and W-508, facing north.





Photograph C-11: View of SP-518 in PEM W-508, facing north.



Photograph C-12: View of upland SP-519, facing west.





Photograph C-13: View of SP-522 in PEM W-510, facing east.



Photograph C-14: View of SP-536 in PEM W-518, facing west.





Photograph C-15: View of SP-537, an upland sample plot adjacent to W-518, facing east.



Photograph C-16: View of SP-538 in PEM W-520, facing west.



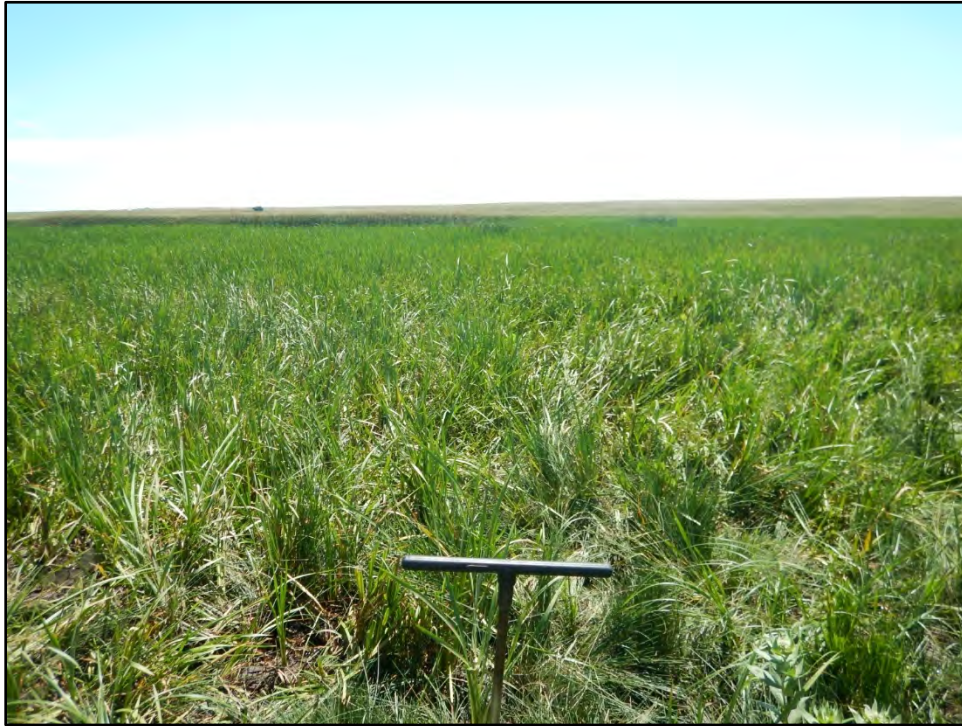


Photograph C-17: View of SP-539, an upland sample plot adjacent to W-520, facing west.



Photograph C-18: View of upland SP-541, facing west.





Photograph C-19: View of SP-544 in PEM W-524, facing south.



Photograph C-20: View of SP-545, an upland sample plot adjacent to W-524, facing south.





Photograph C-21: View of SP-548 in PEM W-526, facing east.



Photograph C-22: View of SP-549, an upland sample plot adjacent to W-526, facing east.





Photograph C-23: View of upland SP-551, facing north.



Photograph C-24: View of upland SP-552, facing north.





Photograph C-25: View of SP-570 in PEM W-537, facing north.



Photograph C-26: View of SP-571, an upland sample plot adjacent to W-537, facing south.





Photograph C-27: View of upland SP-591, facing south.



Photograph C-28: View of SP-592 in PEM W-548, facing east.





Photograph C-29: View of SP-593, an upland sample plot adjacent to W-548, facing east.



Photograph C-30: View of SP-596 in PEM W-550, facing east.





Photograph C-31: View of SP-597, an upland sample plot adjacent to W-550, facing east.



Photograph C-32: View of upland SP-600, facing north.





Photograph C-33: View of upland SP-603, facing east.



Photograph C-34: View of SP-606 in PEM W-554, facing south.





Photograph C-35: View of SP-607, an upland sample plot adjacent to W-554, facing south.



Photograph C-36: View of upland SP-612, facing north.





Photograph C-37: View of upland SP-615, facing south.



Photograph C-38: View of SP-616 in PEM W-558, facing north.





Photograph C-39: View of SP-617, an upland plot adjacent to W-558, facing north.



Photograph C-40: View of upland SP-619, facing north.





Photograph C-41: View of upland SP-621, facing north.

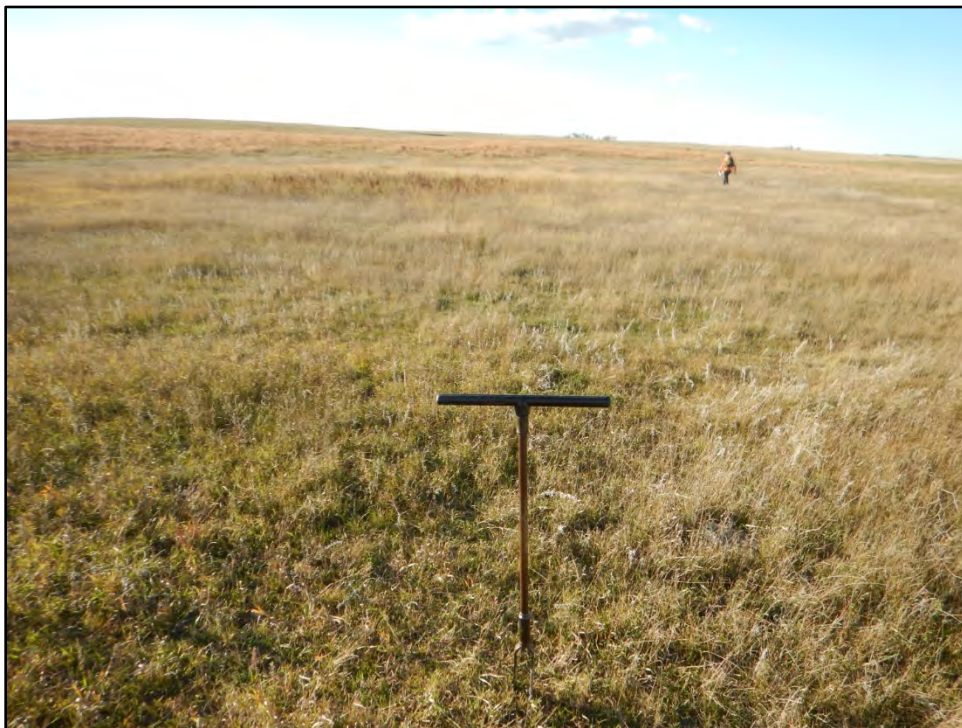


Photograph C-42: View of upland SP-623, facing north.





Photograph C-43: View of SP-634 in PEM W-566, facing west.



Photograph C-44: View of SP-635, an upland plot adjacent to W-566, facing west.





Photograph C-45: View of SP-651 in PEM W-005, facing south.



Photograph C-46: View of SP-652, an upland sample plot adjacent to W-005, facing north.





Photograph C-47: View of SP-658 in PEM W-579, facing west.



Photograph C-48: View of SP-659, an upland sample plot adjacent to W-579, facing west.





Photograph C-49: View of SP-660 in PEM W-580, facing west.



Photograph C-50: View of SP-661, an upland sample plot adjacent to W-580, facing west.





Photograph C-51: View of upland SP-663, facing west.



Photograph C-52: View of upland SP-664, facing west.





Photograph C-53: View of upland SP-666, facing north.



Photograph C-54: View of SP-667 in PEM W-584, facing west.





Photograph C-55: View of SP-668, an upland sample plot adjacent to W-584, facing west.



Photograph C-56: View of upland SP-669, facing north.





Photograph C-57: View of upland SP-702, facing northwest.



Photograph C-58: View of upland SP-705, facing north.





Photograph C-59: View of upland SP-706, facing southeast.



Photograph C-60: View of upland SP-708, facing west.





Photograph C-61: View of SP-713 in PEM W-710, facing south.



Photograph C-62: View of SP-714, an upland plot adjacent to W-710, facing northwest.





Photograph C-63: View of upland SP-716, facing west.



Photograph C-64: View of SP-717 in PEM W-712, facing east.





Photograph C-65: View of SP-718, an upland plot adjacent to W-712, facing northeast.



Photograph C-66: View of SP-719 in PEM W-713, facing northeast.





Photograph C-67: View of SP-720, an upland plot adjacent to W-713, facing north.



Photograph C-68: View of SP-901 in PEM W-901, facing southeast.





Photograph C-69: View of SP-902, an upland plot adjacent to W-901, facing southeast.



Photograph C-70: View of upland SP-903, facing southeast.





Photograph C-71: View of intermittent stream (S-)003, facing downstream.



Photograph C-72: View of intermittent S-004, facing upstream.





Photograph C-73: View of ephemeral S-502, facing downstream.



Photograph C-74: View of ephemeral S-504, facing downstream.





Photograph C-75: View of ephemeral S-508, facing downstream.



Photograph C-76: View of ephemeral S-510, facing upstream.





Photograph C-77: View of ephemeral S-513, facing upstream.



Photograph C-78: View of ephemeral S-514, facing across.





Photograph C-79: View of ephemeral S-516, facing upstream.



Photograph C-80: View of ephemeral S-517, facing upstream.





Photograph C-81: View of ephemeral S-518, facing downstream.



Photograph C-82: View of ephemeral S-519, facing upstream.





Photograph C-83: View of ephemeral S-521, facing downstream.



Photograph C-84: View of ephemeral S-522, facing downstream.





Photograph C-85: View of intermittent S-523, facing downstream.



Photograph C-86: View of ephemeral S-526, facing downstream.





Photograph C-87: View of ephemeral S-701, facing downstream.



Photograph C-88: View of ephemeral S-702, facing downstream.





Photograph C-89: View of ephemeral S-703, facing upstream.



Photograph C-90: View of ephemeral S-704, facing downstream.





Photograph C-91: View of ephemeral S-705, facing downstream.



Photograph C-92: View of ephemeral S-707, facing downstream.





Photograph C-93: View of ephemeral S-708, facing downstream.



Photograph C-94: View of ephemeral S-901, facing downstream.





Photograph C-95: View of Photo Point (PP-)008 in Project Area representative of upland pasture, facing west.



Photograph C-96: View of PP-503 in Project Area representative upland pasture, facing west.



Photograph C-97: View of PP-505 in Project Area representative upland pasture, facing east.



Photograph C-98: View of PP-512 in Project Area representative upland swale, facing north.





Photograph C-99: View of PP-514 in Project Area representative upland swale, facing west.



Photograph C-100: View of PP-526 in Project Area representative upland area that has hydric soil or NWI data, facing north.



Photograph C-101: View of PP-529 in Project Area representative upland area that has hydric soil or NWI data, facing west.



Photograph C-102: View of PP-530 in Project Area representative upland area that has hydric soil or NWI data, facing west.





Photograph C-103: View of PP-533 in Project Area representative upland area that has hydric soil or NWI data, facing east.



Photograph C-104: View of PP-537 in Project Area representative upland area that has hydric soil or NWI data, facing south.



Photograph C-105: View of PP-551 in Project Area representative upland area that has hydric soil or NWI data, facing west.



Photograph C-106: View of PP-565 in Project Area representative upland swale, facing east.





Photograph C-107: View of PP-577 in Project Area representative upland area that has hydric soil or NWI data, facing west.



Photograph C-108: View of PP-593 in Project Area representative upland pasture, facing west.



Photograph C-109: View of PP-599 in Project Area representative upland swale, facing south.



Photograph C-110: View of PP-605 in Project Area representative upland swale, facing west.





Photograph C-111: View of PP-628 in Project Area representative upland pasture, facing north.



Photograph C-112: View of PP-632 in Project Area representative roadside drainage, facing south.





Photograph C-113: View of PP-694 in Project Area representative roadside drainage, facing south.



Photograph C-114: View of PP-696 in Project Area representative roadside drainage, facing south.





Photograph C-115: View of PP-701 in Project Area representative upland pasture, facing north.



Photograph C-116: View of PP-724 in Project Area representative upland area with a spoil pile adjacent to an excavated pond, facing east.



CREATE AMAZING.

Burns & McDonnell World Headquarters  
9400 Ward Parkway  
Kansas City, MO 64114  
O 816-333-9400  
F 816-333-3690  
[www.burnsmcd.com](http://www.burnsmcd.com)