Memorandum

To:	Bill Behling, Joe Griffiths, Bob Evans, Capital Power Corporation, Inc.
From:	Steve Yarbrough, Sarah McCall, Tetra Tech, Inc.
Date:	May 2, 2018
Project:	New Frontier Wind Energy Project
Subject:	Evaluation of Wetlands within Previously Un-Surveyed Areas of Project Layout

Introduction

On May 10, 2017, the North Dakota Public Service Commission (PSC or Commission) issued the Order on Continuing Suitability (PSC Order) to Meadowlark Wind I, LLC (Meadowlark) for the New Frontier Wind Energy Project (Project) in McHenry County, North Dakota (Figure 1). Order Number 6 of the PSC Order states "If modifications are made to the Project layout, Meadowlark shall complete a wetland delineation of any previously un-surveyed areas affected by Project-related activities, as necessary, and file the report with the Commission". Since the PSC Order was issued, Meadowlark has again made minor modifications to the Project layout. This memorandum documents wetlands and other waters of the United States (WOTUS) surveys conducted for the modifications to the Project layout, as requested in the PSC Order.

In October 2011, HDR Engineering, Inc. (HDR) performed wetland and other WOTUS surveys for the Project. The Wetland Delineation Report for those surveys (HDR 2011) was submitted to the U.S. Army Corps of Engineers (USACE) in November 2011 (HDR 2011). An approved jurisdictional determination (JD) from the USACE was received on February 24, 2012; this JD was set to expire February 24, 2017. Meadowlark submitted a request to the USACE to re-verify the JD for an additional 5 years and the new JD from the USACE was received on December 8, 2016. The Project layout was modified and Capital Power requested Tetra Tech conduct follow-up wetland surveys to determine whether potential jurisdictional wetlands occurred within the portions of the revised Project layout that had not previously been surveyed (Project layout dated October 17, 2017). That work was completed and a letter report was filed on November 27, 2017. Minor modifications to the layout were made again in 2018, and Tetra Tech has completed a second survey for potential jurisdictional wetlands and other WOTUS in previously un-surveyed areas of the Project. These wetland surveys were conducted April 27 and 28, 2018.

Methods

Prior to conducting the field surveys, Tetra Tech conducted a desktop analysis of the portions of the revised Project layout that had not previously been surveyed to identify potential jurisdictional wetlands and other WOTUS. The desktop analysis reviewed the following sources of information: results of the previous wetland delineation conducted for the project in 2011 by HDR 2011, aerial imagery, the U.S.

Geological Survey (USGS) National Hydrography Dataset (NHD), the National Wetlands Inventory (NWI), and the data from the October 2017 survey effort by Tetra Tech.

During this field survey, Tetra Tech wetland scientists evaluated the previously un-surveyed areas of the most current 2018 Project layout and made one of four determinations:

- Upland—no wetland or other WOTUS present
- USACE Non-Jurisdictional wetland present
- USACE Jurisdictional wetland present
- Stream—not previously mapped

During the field survey, wetland boundaries were determined based on observations of dominant hydrophytic vegetation and the presence of characteristic wetland hydrology. No formal delineations of wetlands according to USACE methodology were undertaken because no new potentially jurisdictional wetlands were encountered. Observations of each wetland that was identified during the survey were documented through mapping of an observation point (OB-B-01, -02, etc.).

A geographic information specialist (GIS) specialist designed a Project-specific geodatabase that was used to (1) capture wetland and non-wetland feature location data in the field with Trimble GPS technology. To complete the field surveys, the geodatabase was loaded on a Trimble Geo 7X handheld GPS with sub-meter accuracy running ESRI's ArcPad 10.2 software.

Results

A total of 65 previously un-surveyed areas were evaluated during field surveys conducted on April 27 and 28, 2018. Locational data was collected using a GPS at each observation point. Photographs were taken and notes were collected in a field logbook. Of these 65 observation points, 36 were identified as upland areas with no wetlands or other WOTUS present. Twenty-six of the observation points came from portions of un-surveyed area that contained USACE non-jurisdictional wetlands. Two observation points were from previously un-surveyed area that contain USACE jurisdictional wetlands. In addition to the 64 observation points, the field team mapped one intermittent stream feature (ST-B-01) at a position along the transmission line corridor north of the main wind farm site in the vicinity of a transmission line pulling site.

Sixty-four observation points and one intermittent stream were evaluated within previously un-surveyed portions of the Project layout during this survey event. Three locations will be avoided during construction and will be flagged prior to construction to ensure no impacts to these features will occur. These three locations are:

Stream ST-B-01—The observation point on this stream (Blacktail Coulee) is located at latitude 47.96560893, longitude -100.88844079. This location is near a planned pulling site for the transmission line north of the Project (Figure Stream ST-B-01). The stream will be flagged along its ordinary high water mark prior to construction, and impacts will be avoided in this surface water feature. Observations of this stream were documented using wetland determination forms (Attachment 1).

Observation Point OB-B-58— This previously un-surveyed area is near a planned pulling site for the transmission line at latitude 47.86306663, longitude -100.86270185 (Figure Observation Point OB-B-58).

It contains a small portion of a USACE jurisdictional wetland. The wetland boundary will be flagged prior to construction and the planned pulling site along the transmission line will avoid any impact to the jurisdictional wetland feature.

Observation Point OB-B-64— This previously un-surveyed area is near Turbine 19 and contains a USACE jurisdictional wetland at latitude 47.88571268, longitude -100.92449798 (Figure Observation Point OB-B-64). The wetland boundary will be flagged prior to construction and the proposed access road that leads to Turbine 19 will avoid any impacts to the jurisdictional wetland feature.

Conclusions

A total of 65 previously un-surveyed areas were evaluated during field surveys conducted on April 27 and 28, 2018. Of the 64 observation points, 36 were identified as upland areas with no wetlands or other WOTUS present, 26 were identified as USACE non-jurisdictional wetlands, and two were identified as USACE jurisdictional wetlands. In addition, one intermittent stream feature was identified.

Other than the three areas noted above, there were no other wetlands or other WoUS identified during the field survey that would likely be considered jurisdictional wetlands or other WoUS. Based on these findings and the avoidance of jurisdictional wetland features, we do not anticipate a need to consult with the USACE nor obtain a permit under Section 404 of the Clean Water Act.

References

Cowardin, L.M. et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. United States Fish and Wildlife Service. Biological services program; FWS/OBS-79/31.

HDR (HDR Engineering, Inc.). 2011. Wetland Delineation Report for New Frontier Wind Farm McHenry County, North Dakota. November 2011. Prepared for Meadowlark Wind I LLC.

Table 1:
Field Observations for Wetlands and Streams in Previously Un-Surveyed Areas of the New Frontier Wind Energy Project

Observation Point ID	Upland—no wetland or other WOTUS present	USACE Non-Jurisdictional wetland present	USACE Jurisdictional wetland present	Named Stream	Notes
OB-B-01		X			Soybean field. Non-JD wetland in its north end.
OB-B-02		X			Northern edge in non-JD wetland
OB-B-03		X			Within a non-JD wetland
OB-B-04		X			Roadside ditch. Non-JD wetland.
OB-B-05		X			Roadside ditch/pothole.
OB-B-06	X				Same polygon as OB-B-01. This point is on the south end where there are no mapped water features, but it is in an isolated roadside ditch.
OB-B-07	X				Roadside ditch. Not previously mapped as wetland. It is isolated in the landscape.
OB-B-08	X				Wheat stubble. No water features.
OB-B-09	X				Soybean field. No water features.
OB-B-10		X			Soybean field.
OB-B-11		X			Corn stubble. Non-JD wetland in this previously un-surveyed area.
OB-B-12	X				Ag field. No water features.
OB-B-13		X			Wheat stubble. No water features. Adjacent non-JD wetland.
OB-B-14	X				Wheat stubble. No water features.
OB-B-15	X				Turbine 15 buffer area. Soybean field plus forested area. No water features.
OB-B-16	X				Soybean field. No water features.
OB-B-17	X				Wheat stubble. No water features.
OB-B-18	X				Wheat stubble. No water features.
OB-B-19	X				Wheat stubble. No water features.
OB-B-20		X			Wheat stubble, but the polygon does intersect a non-JD wetland.
OB-B-21	X				Wheat stubble. No water features.
OB-B-22		X			Plowed field. Non-JD wetland in the un-surveyed polygon.
OB-B-23		X			Non-JD wetland in the un-surveyed polygon
OB-B-24		X			Plowed field. Non-JD wetland in the un-surveyed polygon.

Table 1:
Field Observations for Wetlands and Streams in Previously Un-Surveyed Areas of the New Frontier Wind Energy Project

Observation Point ID	Upland—no wetland or other WOTUS present	USACE Non-Jurisdictional wetland present	USACE Jurisdictional wetland present	Named Stream	Notes
OB-B-25	X				Soybean stubble. No water features.
OB-B-26	X				Corn stubble. No water features.
OB-B-27	X				Corn stubble. No water features.
OB-B-28	X				Corn. No water features.
OB-B-29	X				Native prairie. No water features.
OB-B-30	X				Crop field. There are adjacent water features, but none in this polygon.
OB-B-31	X				Soybean field. No water features.
OB-B-32	X				Soybean field. No water features.
OB-B-33	X				Wheat stubble. No water features.
OB-B-34	X				Soybean stubble. No water features.
OB-B-35		X			Mostly wheat stubble, but intersects two non-JD wetlands.
OB-B-36	X				Soybean field. No water features.
OB-B-37	X				No water features intersected.
OB-B-38		X			Intersects a non-JD wetland.
OB-B-39		X			Intersects a non-JD wetland.
OB-B-40	X				Wheat stubble. No water features.
OB-B-41	X				Wheat stubble. No water features.
OB-B-42	X				Wheat stubble. No water features. USAF power cable intersects this polygon.
OB-B-43		X			Rangeland.
OB-B-44		X			Rangeland. Intersects non-JD wetland.
OB-B-45	X				Rangeland. Lies in a low area of topography between two non-JD pothole wetlands.
OB-B-46		X			Rangeland.
OB-B-47		X			Rangeland.
OB-B-48		X			Rangeland.
OB-B-49		X			Rangeland.

Table 1:
Field Observations for Wetlands and Streams in Previously Un-Surveyed Areas of the New Frontier Wind Energy Project

Observation Point ID	Upland—no wetland or other WOTUS present	USACE Non-Jurisdictional wetland present	USACE Jurisdictional wetland present	Named Stream	Notes
OB-B-50		X			Rangeland.
OB-B-51		X			Rangeland. Intersects a non-JD wetland on its northern end.
OB-B-52	X				Wheat stubble. No water features.
OB-B-53	X				Old wheat field. No water features.
OB-B-54	X				Rangeland. No water features.
OB-B-55	X				Rangeland. No water features.
OB-B-56	X				Rangeland. No water features.
OB-B-57	X				Rangeland. No water features.
OB-B-58			X		Pulling site. USACE Jurisdictional wetland will be flagged prior to construction and the wetland will be avoided.
OB-B-59		X			Pulling site. Non-jurisdictional wetland in surveyed area.
OB-B-60		X			Pulling site. Non-jurisdictional wetland in surveyed area.
OB-B-61	X				Pulling site. No water features.
OB-B-62		X			Mapped perimeter. Non-JD wetland.
OB-B-63	X				Pulling site. Rangeland near ADM industrial property. No water features.
OB-B-64			X		Wetland will be flagged prior to construction. Access road to Turbine 19 will avoid any impact to the USACE Jurisdictional Wetland.
ST-B-01				X	Blacktail Coulee. Stream's ordinary high water mark will be flagged prior to construction and the stream will be avoided by activity associated with the transmission line pulling site.

Figures

This page intentionally left blank.

Exhibit F

NEW FRONTIER WIND ENERGY PROJECT

Figure 1: Project Overview

Project Area

Access Road

Collector Line

Switchyard/O&M Leased Parcel

***Project layout provided April 24th, 2018*

Additional Area To Be Surveyed

Previously Surveyed Area

0 0.5 1 Miles

Scale is 1:32,000 when printed at 22x34"

TETRA TECH

P:\5563_New_Frontier_Wind\GIS\Layouts\2018_Field_Survey\Project_Area.mxd Source: BTS, ESRI, NREL, FCC, DOD, and Ventyx Last Modified: 5/2/2018

Vicinity Map

NEW FRONTIER WIND ENERGY PROJECT

Stream ST-B-01

0 250 500 Feet

Scale is 1:2,000 when printed at 22x34"

- Project Area
- Access Road
- Collector Line
- Switchyard/O&M Leased Parcel

***Project layout provided April 24th, 2018*

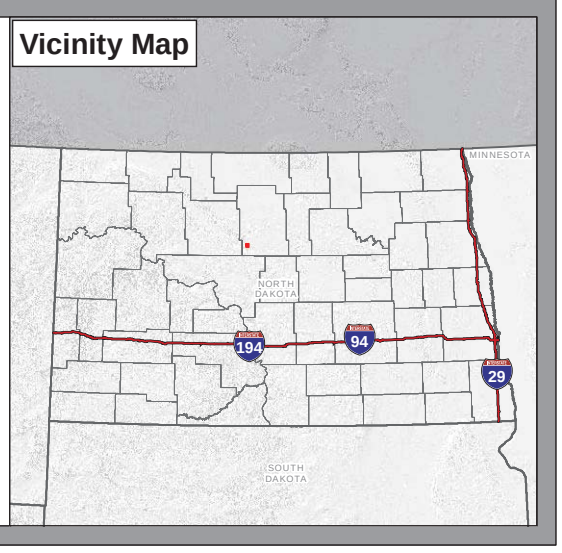
- Additional Area To Be Surveyed
- Previously Surveyed Area

Hydrology

- Perennial Stream
- Intermittent Stream
- Canal Ditch
- USACE Jurisdictional Wetland

TETRA TECH

Vicinity Map



P:\5563_New_Frontier_Wind\GIS\Layouts\2018_Field_Survey\Sheetmaps.mxd Source: BTS, ESRI, NREL, FCC, DOD, and Ventyx Last Modified: 5/2/2018

Exhibit F

NEW FRONTIER WIND ENERGY PROJECT

Observation Point OB-B-58

- Project Area
- Access Road
- Collector Line
- Switchyard/O&M Leased Parcel

***Project layout provided April 24th, 2018*

- Additional Area To Be Surveyed
- Previously Surveyed Area

Hydrology

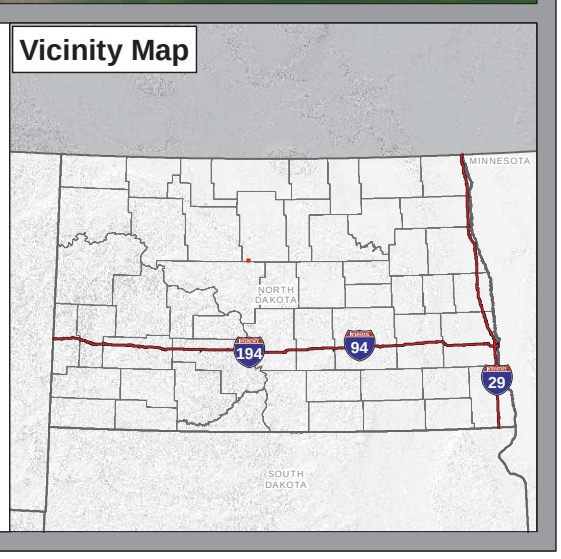
- Perennial Stream
- Intermittent Stream
- Canal Ditch
- USACE Jurisdictional Wetland

0 100 200 Feet

Scale is 1:800 when printed at 22x34"

TETRA TECH

Vicinity Map



P:\5563_New_Frontier_Wind\GIS\Layouts\2018_Field_Survey\Sheetmaps.mxd Source: BTS, ESRI, NREL, FCC, DOD, and Ventyx Last Modified: 5/2/2018

NEW FRONTIER WIND ENERGY PROJECT

Observation Point OB-B-64

0 100 200 Feet

Scale is 1:800 when printed at 22x34"

- Project Area
- Access Road
- Collector Line
- Switchyard/O&M Leased Parcel

***Project layout provided April 24th, 2018*

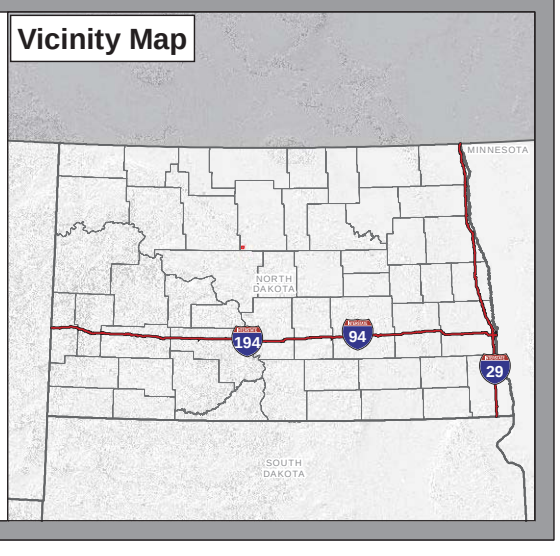
- Additional Area To Be Surveyed
- Previously Surveyed Area

Hydrology

- Perennial Stream
- Intermittent Stream
- Canal Ditch
- USACE Jurisdictional Wetland

TETRA TECH

Vicinity Map



P:\5563_New_Frontier_Wind\GIS\Layouts\2018_Field_Survey\Sheetmaps.mxd Source: BTS, ESRI, NREL, FCC, DOD, and Ventyx Last Modified: 5/2/2018

Attachment 1:
Wetland Determination Data Forms

This page intentionally left blank.

GENERAL ID			
Stream ID S-B-01	Stream Name: Blacktail Coulee		
Lat: 47.96560893	Long: -100.88844079	Date: 04/28/2018	
Project Name: New Frontier		Client: Capitol Power	
Investigators: Ryan Sparhawk, Steve Yarbrough			
Flow Regime: Intermittent	Water Type: RPW	Photo ID: Multiple photos	

CHANNEL FEATURES			
Estimate Measurements		**Stream Erosion**	
Top of Bank Width (feet):	20	Stream Erosion:	Moderate
Top of Bank Height (feet):		Artificial, Modified, or Channelized:	No
LB (feet):	3	Dam Present:	No
RB (feet):	3	Sinuosity:	Medium
Water Depth (in.):	8	Gradient:	Flat (0.5-100ft)
Water Width (feet):	5		
High Water Mark (inches):	12		

FLOW CHARACTERISTICS				
Water Present:	Flowing Water	Proportion of Reach Represented by Stream Morphology Types:		
Velocity:	Moderate	Riffle (%): 40	Pool (%): 20	Run (%): 40
Turbidity:	Clear			
	Other:			

SUBSTRATE COMPONENTS

Inorganic Substrate Components—Should add to 100%			Organic Substrate Components—Does not necessarily add to 100%		
Substrate Type	Diameter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Reach
Bedrock			Detritus	Sticks, wood, coarse plant materials (CPOM)	
Boulder	> 256mm (10")	5	Muck–Mud	Black, very fine grain organic	
Cobble	64–256mm (2.5"–10"	20	Marl	Grey, shell fragments	
Gravel	2–64mm (0.1"–2.5")	25			
Sand	0.06–2mm (gritty)	40			
Silt	0.004–0.06mm	10			
Clay	< 0.004mm (slick)				

WATERSHED FEATURES		
Predominant Surrounding Land Use:	☐ Forest ☒ Field/Pasture ☐ Agricultural ☐ Commercial	☐ Industrial (gravel quarry) ☐ Residential Other: Bulls in pasture
Indicate the dominant type:	☐ Trees ☐ Shrubs	☒ Grasses ☐ Herbaceous

Canopy Cover:	Open			
Floodplain Width:	Moderate (15-30 ft)	Wetland Present:	☒ Yes ☐ No	Wetland ID: In-channel

AQUATIC VEGETATION			
Indicate the dominant type and record the dominant species present:			
☒ Rooted emergent	☐ Rooted submergent	☐ Rooted floating	☐ Free floating
☐ Floating algae	☐ Attached algae	☐ None	☐ Reed canary grass

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OBSERVATIONS AND NOTES

This stream location is north of the main wind farm site, but may be impacted from pulling sites along the transmission line.

Memorandum

To: Bill Behling, Joe Griffiths, Bob Evans, Capital Power Corporation, Inc.
From: Sarah McCall, Chris Ansari, Karen Brimacombe, Tetra Tech, Inc.
Date: November 27, 2017
Project: New Frontier Wind Energy Project
Subject: Evaluation of Wetlands within Previously Un-surveyed Areas of Project Layout

Introduction

On May 10, 2017, the North Dakota Public Service Commission (PSC or Commission) issued the Order on Continuing Suitability (PSC Order) to Meadowlark Wind I, LLC (Meadowlark) for the New Frontier Wind Energy Project (Project) in McHenry County, North Dakota. Order Number 6 of the PSC Order states "If modifications are made to the Project layout, Meadowlark shall complete a wetland delineation of any previously un-surveyed areas affected by Project-related activities, as necessary, and file the report with the Commission". Since the PSC Order was issued, Meadowlark has made minor modifications to the Project layout. This memorandum documents the wetland delineation conducted for the modifications to the Project layout, as requested in the PSC Order.

In October 2011, HDR Engineering, Inc. (HDR) performed wetland and other waters of the U.S. (WoUS) surveys for the Project. The Wetland Delineation Report for these surveys (HDR 2011) was submitted to the U.S. Army Corps of Engineers (USACE) in November 2011 (HDR 2011). An approved jurisdictional determination (JD) from the USACE was received on February 24, 2012; this JD expired February 24, 2017. Meadowlark submitted a request to the USACE to re-verify the JD for an additional five years and the JD from the USACE was received on December 8, 2016. Subsequently, the Project layout has been modified and Capital Power requested that Tetra Tech conduct follow-up wetland surveys to determine if potentially jurisdictional wetlands occur within the portions of the revised Project layout that had not previously been surveyed (Project layout dated October 17, 2017; Figures 1 and 2). Wetland surveys were conducted within these previously un-surveyed areas on October 18-20, 2017.

Methods

Prior to conducting the field surveys, Tetra Tech conducted a desktop analysis of the portions of the revised Project layout that had not previously been surveyed to identify potential jurisdictional wetlands and other WoUS. The desktop analysis reviewed the following sources of information: results of the previous wetland delineation conducted for the project in 2011 by HDR 2011, aerial imagery, the U.S. Geological Survey (USGS) National Hydrography Dataset (NHD), and the National Wetlands Inventory (NWI).

Field surveys of the previously un-surveyed areas were conducted on October 18-20, 2017. The field surveys followed the protocols established during the initial surveys conducted by HDR in 2011. These protocols used a combination of the following approaches: 1) Routine Determination, On-site Inspection

Unnecessary (i.e., routine determination from aerial imagery) and 2) Routine Determination, On-site Inspection Necessary as outlined in the 1987 USACE Wetland Delineation Manual (USACE 1987). On-site wetland determinations and delineations were conducted using the methodology in the USACE *Wetland Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region* (Version 2.0).

During the field surveys, Tetra Tech biologists evaluated the previously un-surveyed areas of the current Project layout and made one of four determinations:

- Upland – no wetland or other WoUS present
- Swale – no wetland or other WoUS present
- Previously Mapped Wetland Boundary Confirmed – boundaries of wetlands mapped during the 2011 surveys that occurred immediately adjacent to or within areas that, under the revised layout, had not previously been surveyed were verified
- Wetland – Wetland not previously mapped

During the field survey, wetland boundaries were determined based on observations of vegetation, hydrology, and topography. For a site to be considered a wetland, there must be positive indication of dominance by hydrophytic vegetation, presence of hydric soils, and characteristic wetland hydrology. Observations of each wetland identified during the survey were documented using wetland determination forms (Attachment 1).

A GIS specialist designed a geodatabase specifically for the Project that was used to (1) capture wetland and non-wetland feature location data in the field with Trimble GPS technology and (2) manage and display features for quality control and electronic deliverables. The geodatabase was loaded on the Trimble Geo 7X handheld GPS with sub-meter accuracy running ESRI's ArcPad 10 which was used during the field surveys. After the field data were post-processed, a quality control review of the geodatabase containing the field data was conducted to ensure the features collected corresponded with field observations.

Results

A total of 75 previously un-surveyed areas were evaluated during field surveys conducted on October 18-20, 2017. Seventy of these areas were visited during the field surveys and five areas were evaluated by aerial imagery. Of these, 35 areas were identified as upland areas or swales with no wetlands or other WoUS present. In addition, 31 areas contained wetlands that were previously mapped with the previous determination and the wetland boundary was field-confirmed to be accurate. All 31 of these wetlands were previously determined to be non-jurisdictional wetlands. The five areas not visited during the field surveys were evaluated using aerial imagery and determined to be located within active cropland with no visible evidence of wetlands or other WoUS identified. The remaining four areas contained wetlands that had not previously been delineated. These four new wetlands are described below.

Wetland A-12

Wetland A-12 is a prairie pothole previously mapped by NWI. This feature is located in the southeast portion of the construction buffer of turbine 11 (Figure 2, Mapsheet 3). Vegetation in the wetland sample plot was dominated by cattails (*Typha latifolia*, OBL) and prairie cordgrass (*Spartina pectinata*, FACW). Soils were observed to be a silty clay that qualified for the hydric soil indicator Redox Dark Surface (F6). Hydrology indicators for the wetland included Saturation in the upper 12 inches of the soil profile (A3), Oxidized Rhizospheres on Living Roots (C3), Geomorphic Position (D2) and FAC-Neutral Test (D5). The feature appeared to be an isolated wetland that had no visible signs of inflow or outflow of water to connect it to a WoUS. Therefore, the wetland does not likely meet the definition of a jurisdictional WoUS.

Wetland A-13

Wetland A-13 is a linear wetland within a roadside ditch. The feature is located on the south side of 32nd Street between Highway 41 and 17th Avenue west of turbine 54 (Figure 2, Mapsheet 4). Vegetation in the plot was dominated by prairie cordgrass and meadow foxtail (*Alopecurus arundinaceus*, FACW). Soils were observed to be a silty clay that qualified for the hydric soil indicators Depleted Matrix (F3) and Redox Dark Surface (F6). Hydrology indicators for the wetland included Geomorphic Position (D2) and FAC-Neutral Test (D5). The feature is connected to a previously mapped non-jurisdictional wetland with no connection to a WoUS. Therefore, the wetland does not likely meet the definition of a jurisdictional WoUS.

Wetland A-15

Wetland A-15 is prairie pothole previously mapped by NWI. The feature is located in the northern construction buffer of turbine 43 (Figure 2, Mapsheet 9). The NWI mapped two wetlands in this area; however, field investigations determined that the two NWI features are connected. Vegetation in the wetland plot was dominated by foxtail barley (*Hordeum jubatum*, FACW) and an unknown sedge (*Carex* sp.). Soils were observed to be a silty clay that qualified for the hydric soil indicators Depleted Matrix (F3) and Redox Dark Surface (F6). Hydrology indicators for the wetland included Oxidized Rhizospheres on Living Roots (C3), Salt Crust (B11), and Geomorphic Position (D2). The feature appeared to be an isolated wetland that had no visible signs of inflow or outflow of water to connect it to a WoUS. Therefore, the wetland does not likely meet the definition of a jurisdictional WoUS.

Wetland A-16

Wetland A-13 is a linear wetland within a roadside ditch. The feature is located within the transmission line corridor along the east side of McHenry substation south of Highway 97 (Figure 2, Mapsheet 11). This wetland was previously mapped; however, this wetland was re-mapped during the field surveys. Vegetation in the plot was dominated by cattails and white dock (*Rumex triangulivalvis,* FACW), which was still identifiable despite the fact that the area had recently been mowed. Soils were observed to be a silty clay that qualified for the hydric soil indicators Depleted Matrix (F3) and Redox Dark Surface (F6). Hydrology indicators for the wetland included Oxidized Rhizospheres on Living Roots (C3), FAC-Neutral Test (D5) and Geomorphic Position (D2). The feature is connected to a previously mapped non-

jurisdictional wetland with no connection to a WoUS. Therefore, the wetland does not likely meet the definition of a jurisdictional WoUS.

Conclusions

A total of 75 previously un-surveyed areas were evaluated during field surveys conducted October 18-20, 2017. Seventy areas were visited during the field surveys and five areas were evaluated by aerial imagery. Of these, 35 areas were identified as upland areas or swales with no wetlands or other WoUS present. In addition, 31 areas contained wetlands that were previously mapped and the previous determination and wetland boundaries were confirmed to be accurate. These 31 wetlands were previously determined to be non-jurisdictional wetlands. The five areas not visited during the field visit were evaluated using aerial imagery and determined to be located within active cropland with no visible evidence of wetland or other WoUS identified. The remaining four areas contained wetland features that had not previously been mapped. There were no wetlands or other WoUS identified during the field survey that would likely be considered jurisdictional wetlands or other WoUS.

References

HDR (HDR Engineering, Inc.). 2011. Wetland Delineation Report for New Frontier Wind Farm McHenry County, North Dakota November 2011. Prepared for: Meadowlark Wind I LLC.

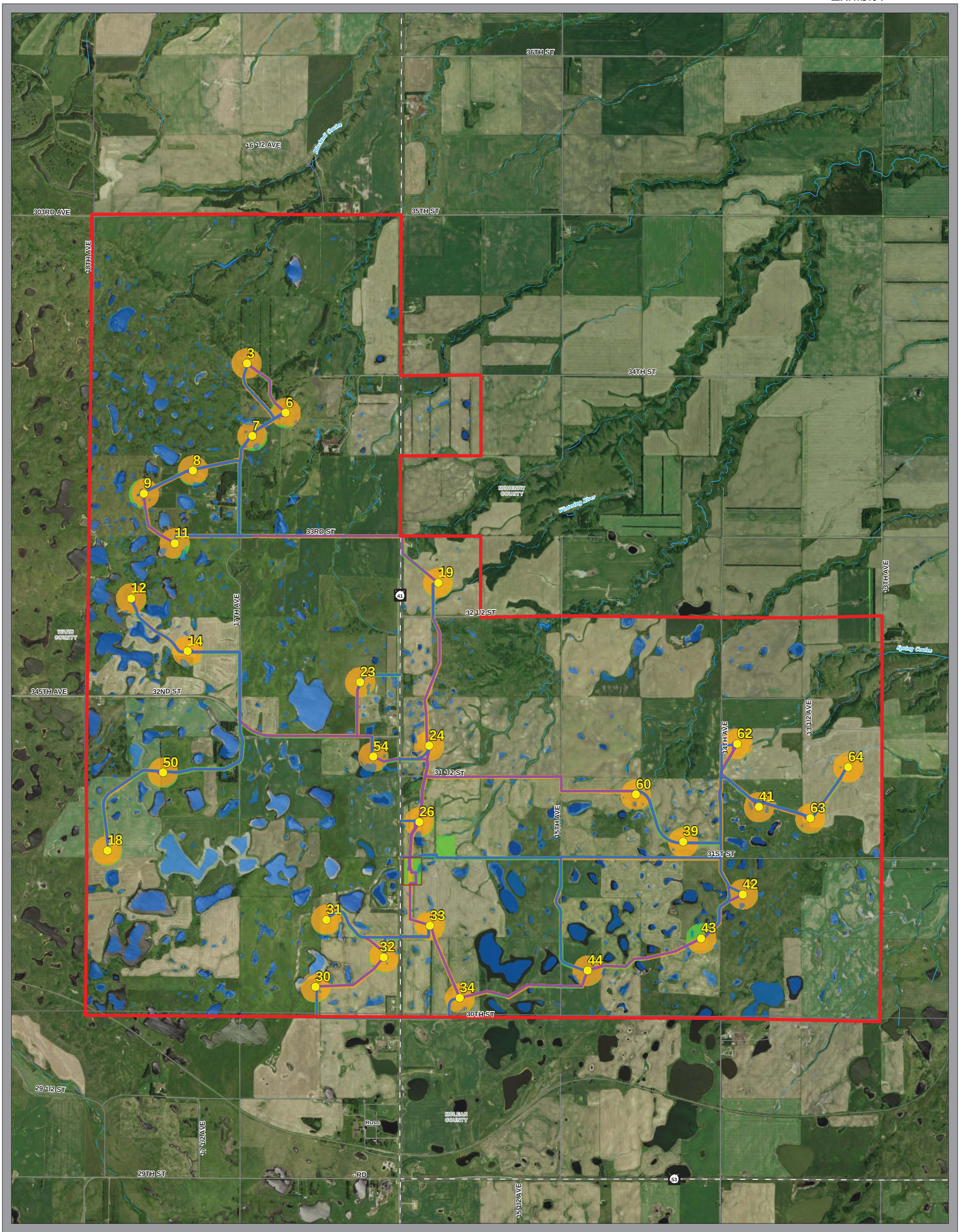
USACE (U.S. Army Corps of Engineers). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region. Version 2.0. ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

———. 1987. Corps of Engineers Wetland Delineation Manual. Environmental Laboratory. U.S. Army Corps of Engineers Waterways Experiment Station. Technical Report Y-87-1. January.

Figures

This page intentionally left blank.

Exhibit F



NEW FRONTIER WIND ENERGY PROJECT

Figure 1: Project Overview

- Project Area
- Access Road
- Collector Line
- Switchyard/O&M Leased Parcel

***Project layout dated October 17, 2017*

- Previously Un-surveyed Area
- Previous Survey within Current Layout Buffers

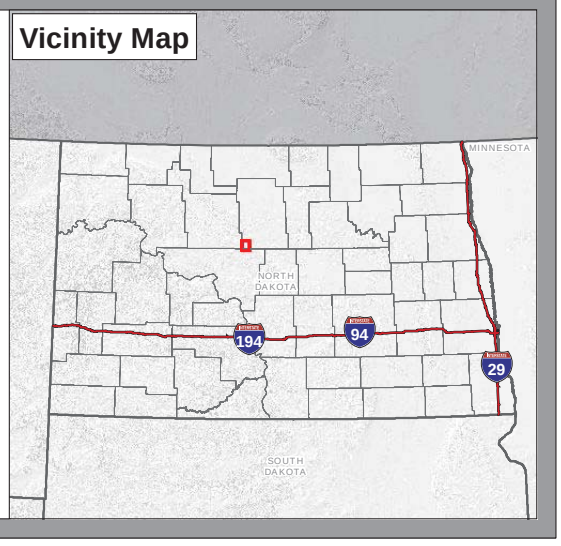
Hydrology

- Perennial Stream
- Intermittent Stream
- Canal Ditch
- NWI Wetland

0 0.25 0.5 Miles

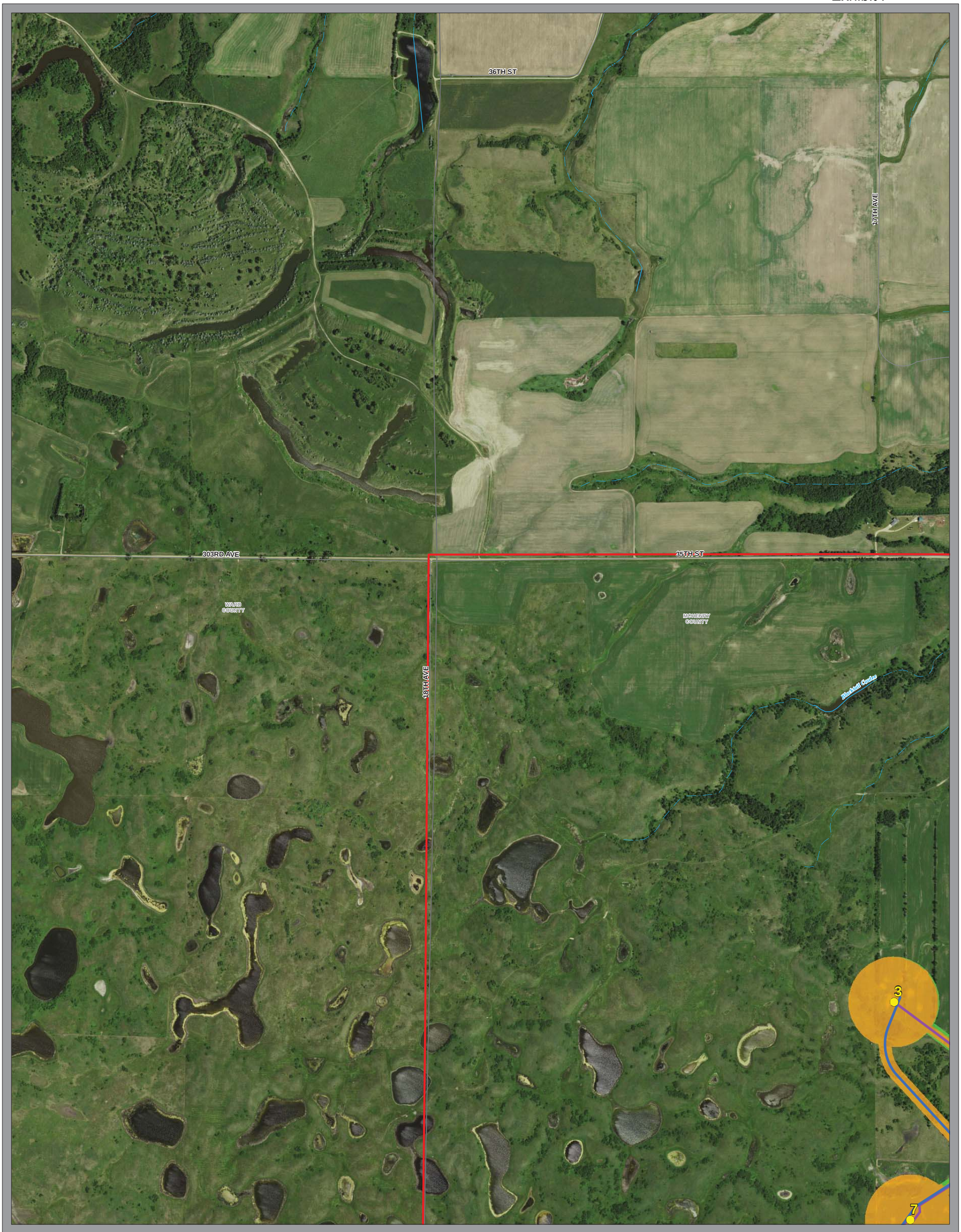
Scale is 1:18,000 when printed at 22x34"

TETRA TECH



P:\5563_New_Frontier_Wind\GIS\Layouts\Wetlands\Project_Area.mxd Source: BTS, ESRI, NREL, FCC, DOD, and Ventyx Last Modified: 11/14/2017

Exhibit F



NEW FRONTIER WIND ENERGY PROJECT

Figure 2: Project Detail Map Sheet:1

0 500 1,000 1,500 Feet

Scale is 1:6,000 when printed at 22x34"

- Proposed Turbine
- Project Area
- Access Road
- Collector Line
- Switchyard/O&M Leased Parcel

***Project layout dated October 17, 2017*

- Previously Un-surveyed Area
- Previous Survey within Current Layout Buffers

Hydrology

- Perennial Stream
- Intermittent Stream
- Canal Ditch

Wetland Determination[1]

- USACE Jurisdictional
- USACE Non-Jurisdictional

[1]Wetland Determinations – USACE approved jurisdictional determinations on February 2012, re-verified December 2016.

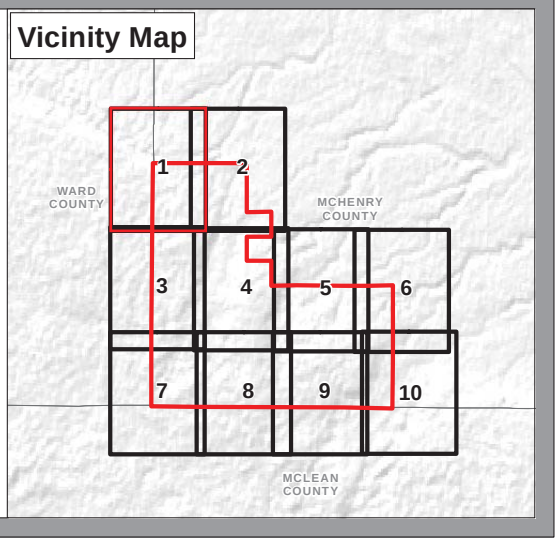
2017 Wetland Surveys[2]

- Wetland (plot point)
- Upland (plot point)
- Wetland – Likely Non-Jurisdictional

[2]2017 Wetland Surveys - Only the USACE can render an approved Jurisdictional Determination (JD). The likely non-jurisdictional reflect Tetra Tech's understanding of Jurisdictional Waters of the United States.

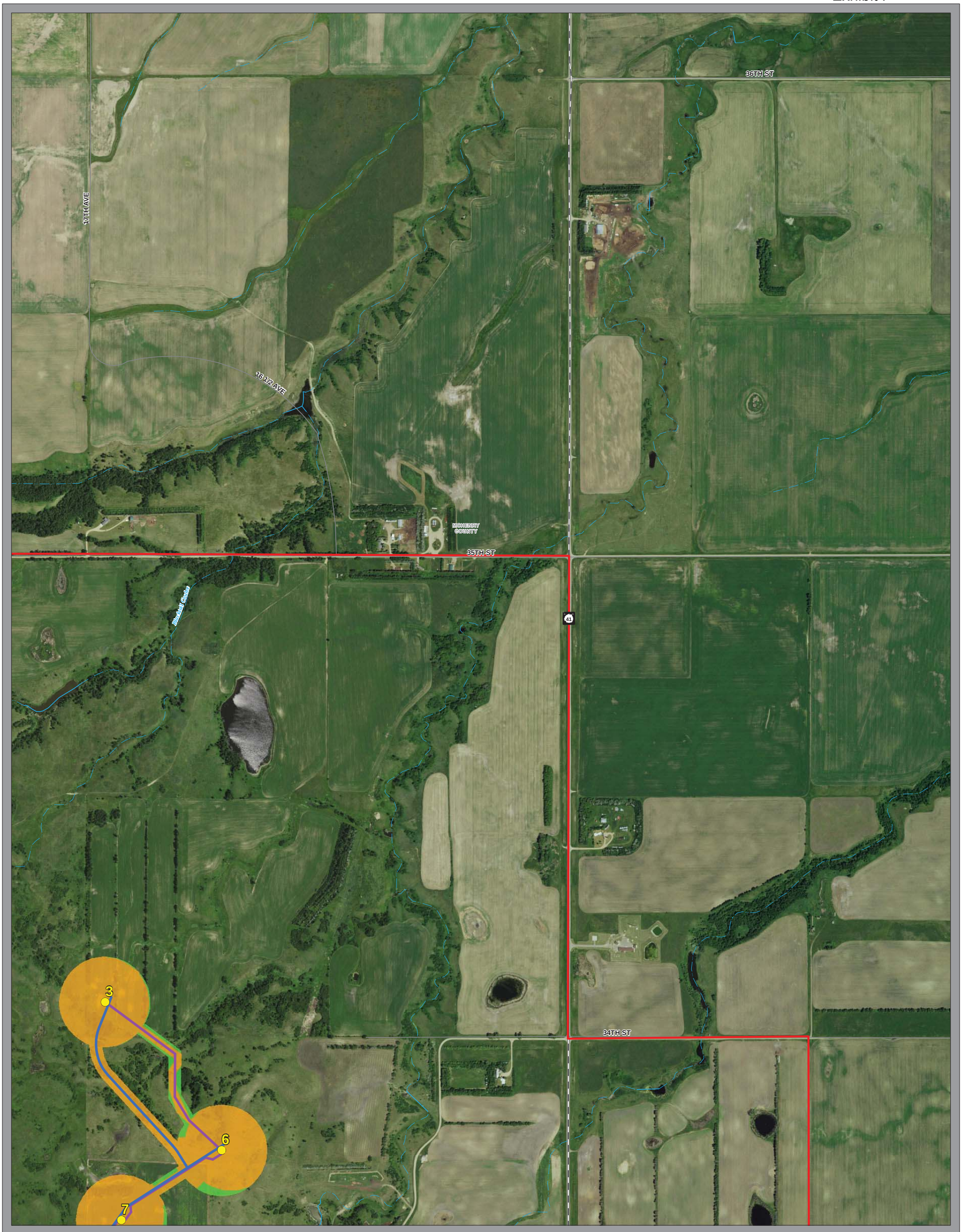
TETRA TECH

Vicinity Map



P:\5563_New_Frontier_Wind\GIS\Layouts\Wetlands\Wetland_Survey_6k_sheets.mxd Source: BTS, ESRI, NREL, FCC, DOD, and Ventyx Last Modified: 11/16/2017

Exhibit F



NEW FRONTIER WIND ENERGY PROJECT

Figure 2: Project Detail Map Sheet:2

0 500 1,000 1,500 Feet

Scale is 1:6,000 when printed at 22x34"

- Proposed Turbine
- Project Area
- Access Road
- Collector Line
- Switchyard/O&M Leased Parcel

***Project layout dated October 17, 2017*

- Previously Un-surveyed Area
- Previous Survey within Current Layout Buffers

Hydrology

- Perennial Stream
- Intermittent Stream
- Canal Ditch

Wetland Determination[1]

- USACE Jurisdictional
- USACE Non-Jurisdictional

[1]Wetland Determinations – USACE approved jurisdictional determinations on February 2012, re-verified December 2016.

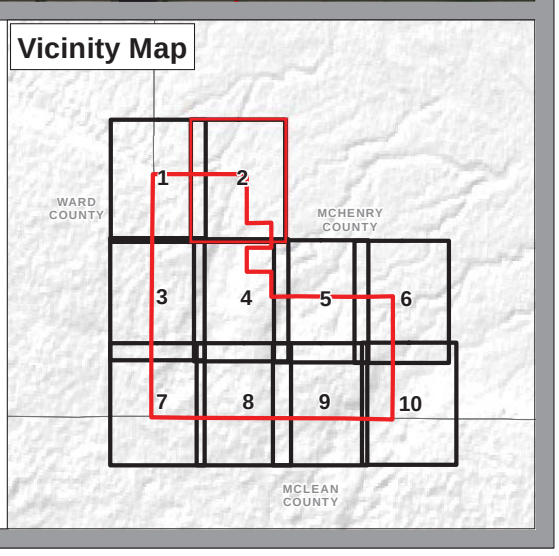
2017 Wetland Surveys[2]

- Wetland (plot point)
- Upland (plot point)
- Wetland – Likely Non-Jurisdictional

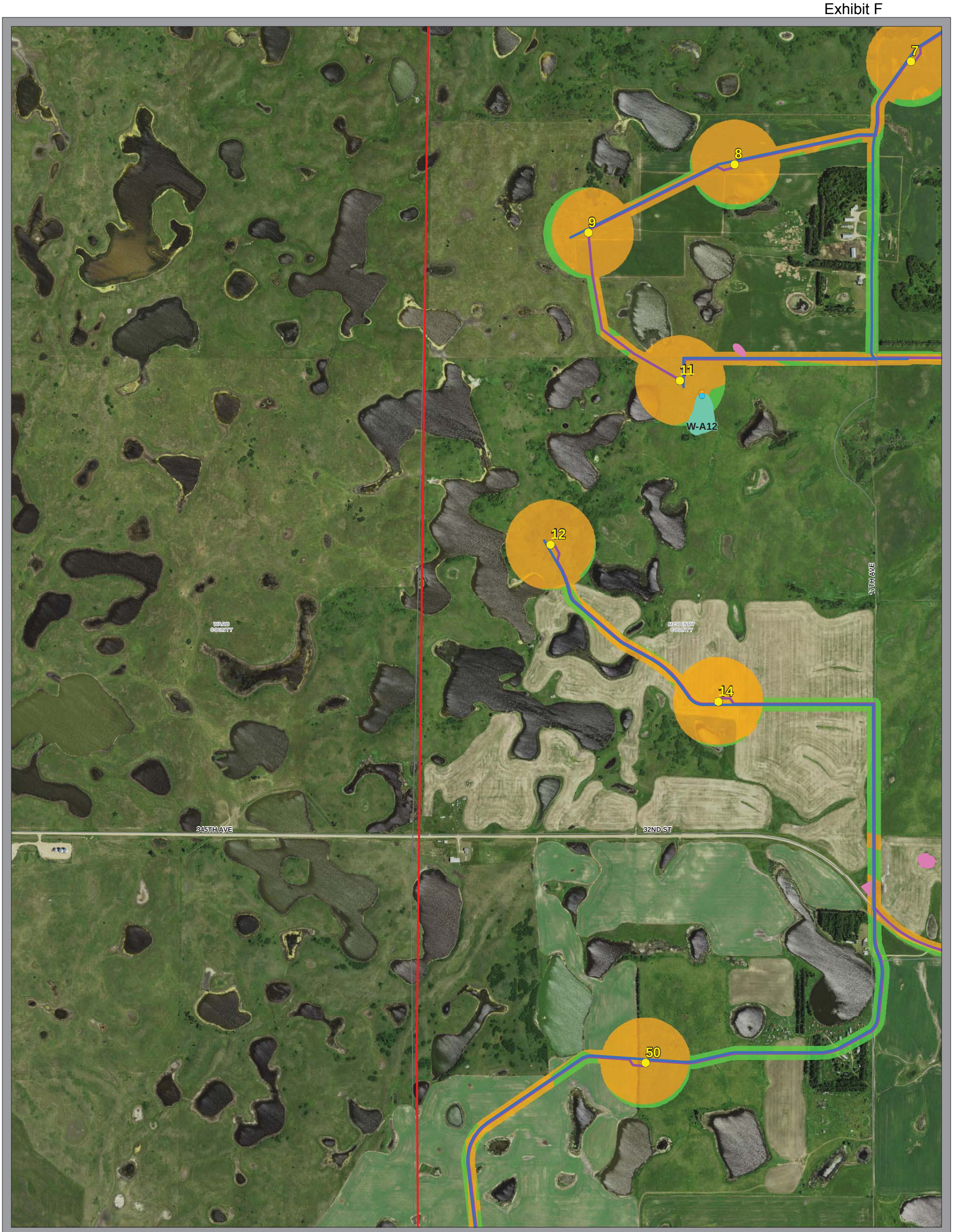
[2]2017 Wetland Surveys - Only the USACE can render an approved Jurisdictional Determination (JD). The likely non-jurisdictional reflect Tetra Tech's understanding of Jurisdictional Waters of the United States.

TETRA TECH

Vicinity Map



P:\5563_New_Frontier_Wind\GIS\Layouts\Wetlands\Wetland_Survey_6k_sheets.mxd Source: BTS, ESRI, NREL, FCC, DOD, and Ventyx Last Modified: 11/16/2017



NEW FRONTIER WIND ENERGY PROJECT

Figure 2: Project Detail Map Sheet:3

0 500 1,000 1,500 Feet

Scale is 1:6,000 when printed at 22x34"

- Proposed Turbine
- Project Area
- Access Road
- Collector Line
- Switchyard/O&M Leased Parcel

***Project layout dated October 17, 2017*

- Previously Un-surveyed Area
- Previous Survey within Current Layout Buffers

Hydrology

- Perennial Stream
- Intermittent Stream
- Canal Ditch

Wetland Determination[1]

- USACE Jurisdictional
- USACE Non-Jurisdictional

[1]Wetland Determinations – USACE approved jurisdictional determinations on February 2012, re-verified December 2016.

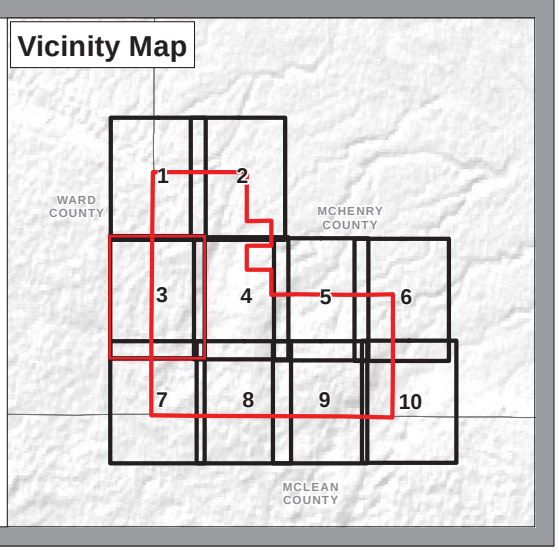
2017 Wetland Surveys[2]

- Wetland (plot point)
- Upland (plot point)
- Wetland – Likely Non-Jurisdictional

[2]2017 Wetland Surveys - Only the USACE can render an approved Jurisdictional Determination (JD). The likely non-jurisdictional reflect Tetra Tech's understanding of Jurisdictional Waters of the United States.

TETRA TECH

Vicinity Map



P:\5563_New_Frontier_Wind\GIS\Layouts\Wetlands\Wetland_Survey_6k_sheets.mxd Source: BTS, ESRI, NREL, FCC, DOD, and Ventyx Last Modified: 11/16/2017

Exhibit F

NEW FRONTIER WIND ENERGY PROJECT

Figure 2: Project Detail Map Sheet:4

0 500 1,000 1,500 Feet

Scale is 1:6,000 when printed at 22x34"

- Proposed Turbine
- Project Area
- Access Road
- Collector Line
- Switchyard/O&M Leased Parcel

**Project layout dated October 17, 2017*

- Previously Un-surveyed Area
- Previous Survey within Current Layout Buffers

Hydrology

- Perennial Stream
- Intermittent Stream
- Canal Ditch

Wetland Determination[1]

- USACE Jurisdictional
- USACE Non-Jurisdictional

[1]Wetland Determinations – USACE approved jurisdictional determinations on February 2012, re-verified December 2016.

2017 Wetland Surveys[2]

- Wetland (plot point)
- Upland (plot point)
- Wetland – Likely Non-Jurisdictional

[2]2017 Wetland Surveys - Only the USACE can render an approved Jurisdictional Determination (JD). The likely non-jurisdictional reflect Tetra Tech's understanding of Jurisdictional Waters of the United States.

TETRA TECH

P:\5563_New_Frontier_Wind\GIS\Layouts\Wetlands\Wetland_Survey_6k_sheets.mxd Source: BTS, ESRI, NREL, FCC, DOD, and Ventyx Last Modified: 11/16/2017

Vicinity Map

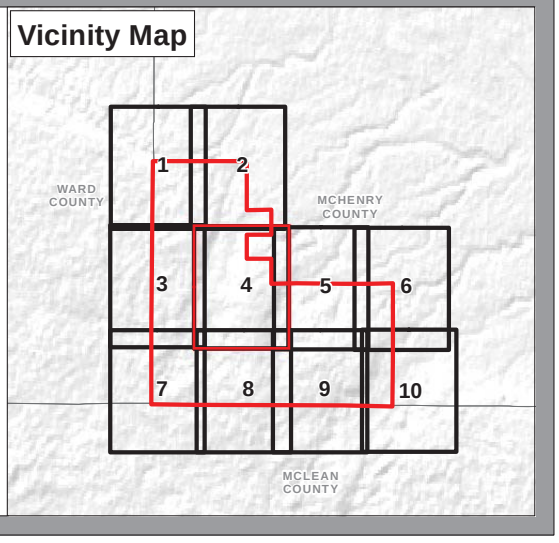
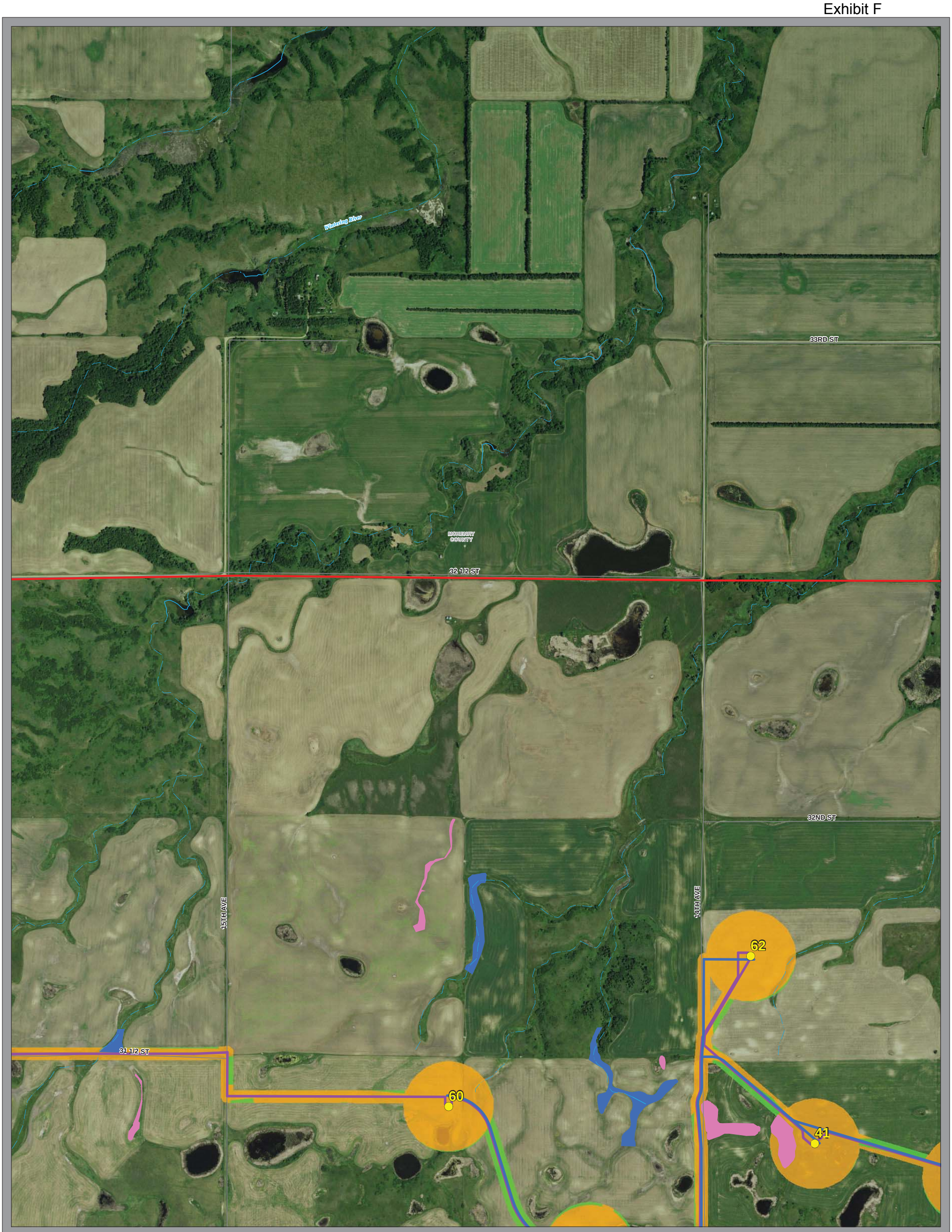


Exhibit F



NEW FRONTIER WIND ENERGY PROJECT

Figure 2: Project Detail Map Sheet:5

0 500 1,000 1,500 Feet

Scale is 1:6,000 when printed at 22x34"

- Proposed Turbine
- Project Area
- Access Road
- Collector Line
- Switchyard/O&M Leased Parcel

***Project layout dated October 17, 2017*

- Previously Un-surveyed Area
- Previous Survey within Current Layout Buffers

Hydrology

- Perennial Stream
- Intermittent Stream
- Canal Ditch

Wetland Determination[1]

- USACE Jurisdictional
- USACE Non-Jurisdictional

[1]Wetland Determinations – USACE approved jurisdictional determinations on February 2012, re-verified December 2016.

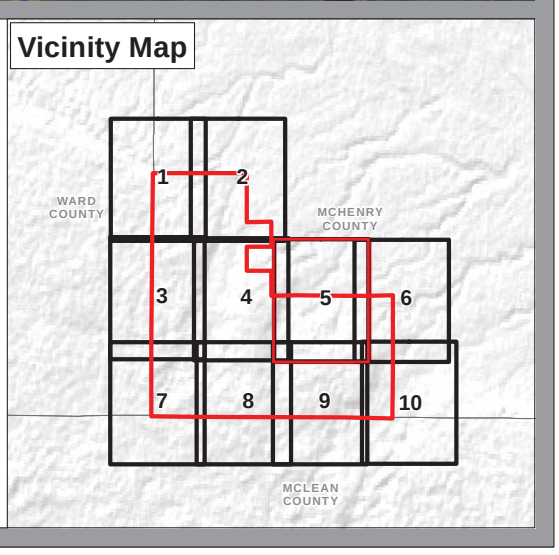
2017 Wetland Surveys[2]

- Wetland (plot point)
- Upland (plot point)
- Wetland – Likely Non-Jurisdictional

[2]2017 Wetland Surveys - Only the USACE can render an approved Jurisdictional Determination (JD). The likely non-jurisdictional reflect Tetra Tech's understanding of Jurisdictional Waters of the United States.

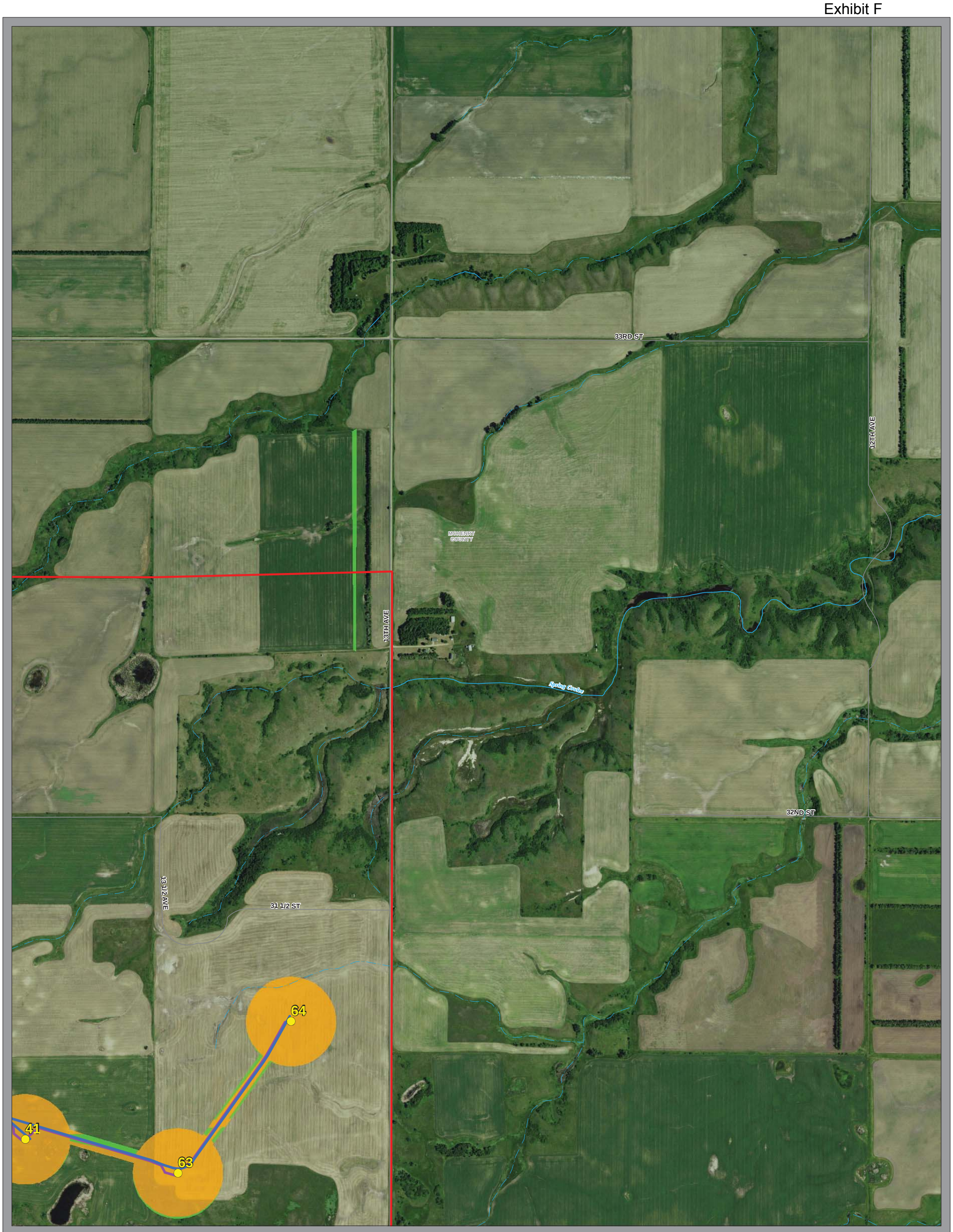
TETRA TECH

Vicinity Map



P:\5563_New_Frontier_Wind\GIS\Layouts\Wetlands\Wetland_Survey_6k_sheets.mxd Source: BTS, ESRI, NREL, FCC, DOD, and Ventyx Last Modified: 11/16/2017

Exhibit F



NEW FRONTIER WIND ENERGY PROJECT

Figure 2: Project Detail Map Sheet:6

0 500 1,000 1,500 Feet

Scale is 1:6,000 when printed at 22x34"

- Proposed Turbine
- Project Area
- Access Road
- Collector Line
- Switchyard/O&M Leased Parcel

**Project layout dated October 17, 2017

- Previously Un-surveyed Area
- Previous Survey within Current Layout Buffers

Hydrology

- Perennial Stream
- Intermittent Stream
- Canal Ditch

Wetland Determination[1]

- USACE Jurisdictional
- USACE Non-Jurisdictional

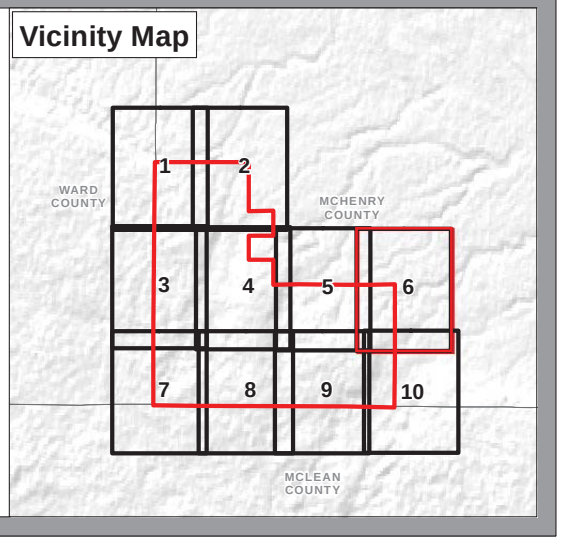
[1]Wetland Determinations – USACE approved jurisdictional determinations on February 2012, re-verified December 2016.

2017 Wetland Surveys[2]

- Wetland (plot point)
- Upland (plot point)
- Wetland – Likely Non-Jurisdictional

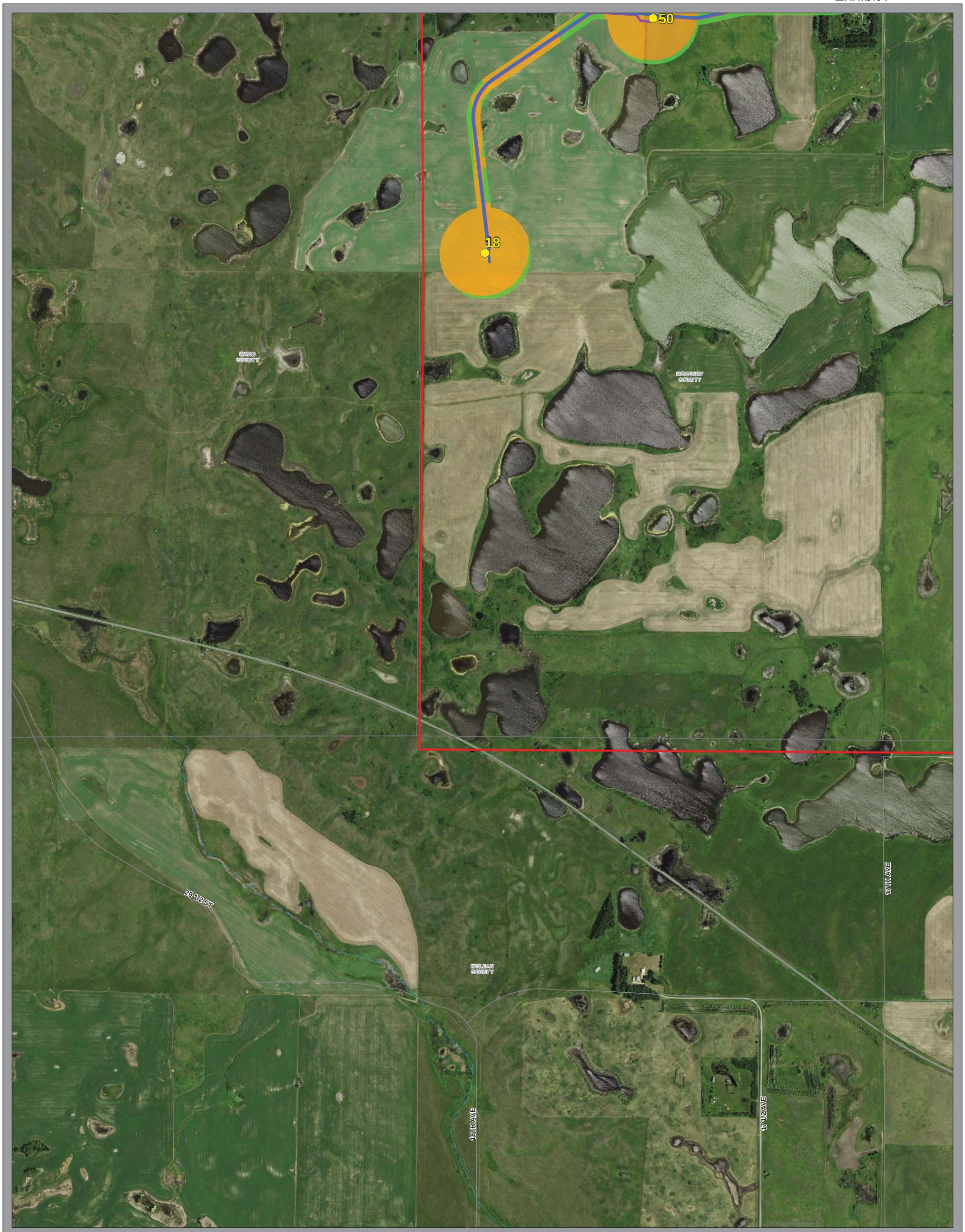
[2]2017 Wetland Surveys - Only the USACE can render an approved Jurisdictional Determination (JD). The likely non-jurisdictional reflect Tetra Tech's understanding of Jurisdictional Waters of the United States.

TETRA TECH



P:\5563_New_Frontier_Wind\GIS\Layouts\Wetlands\Wetland_Survey_6k_sheets.mxd Source: BTS, ESRI, NREL, FCC, DOD, and Ventyx Last Modified: 11/16/2017

Exhibit F



NEW FRONTIER WIND ENERGY PROJECT

Figure 2: Project Detail Map Sheet:7

0 500 1,000 1,500 Feet

Scale is 1:6,000 when printed at 22x34"

- Proposed Turbine
- Project Area
- Access Road
- Collector Line
- Switchyard/O&M Leased Parcel

***Project layout dated October 17, 2017*

- Previously Un-surveyed Area
- Previous Survey within Current Layout Buffers

Hydrology

- Perennial Stream
- Intermittent Stream
- Canal Ditch

Wetland Determination[1]

- USACE Jurisdictional
- USACE Non-Jurisdictional

[1]Wetland Determinations – USACE approved jurisdictional determinations on February 2012, re-verified December 2016.

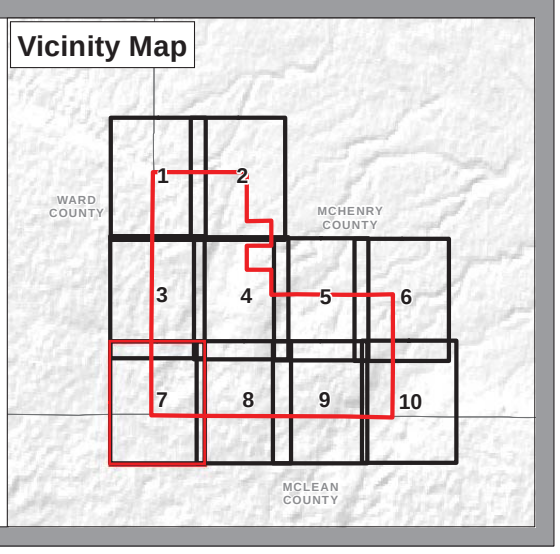
2017 Wetland Surveys[2]

- Wetland (plot point)
- Upland (plot point)
- Wetland – Likely Non-Jurisdictional

[2]2017 Wetland Surveys - Only the USACE can render an approved Jurisdictional Determination (JD). The likely non-jurisdictional reflect Tetra Tech's understanding of Jurisdictional Waters of the United States.

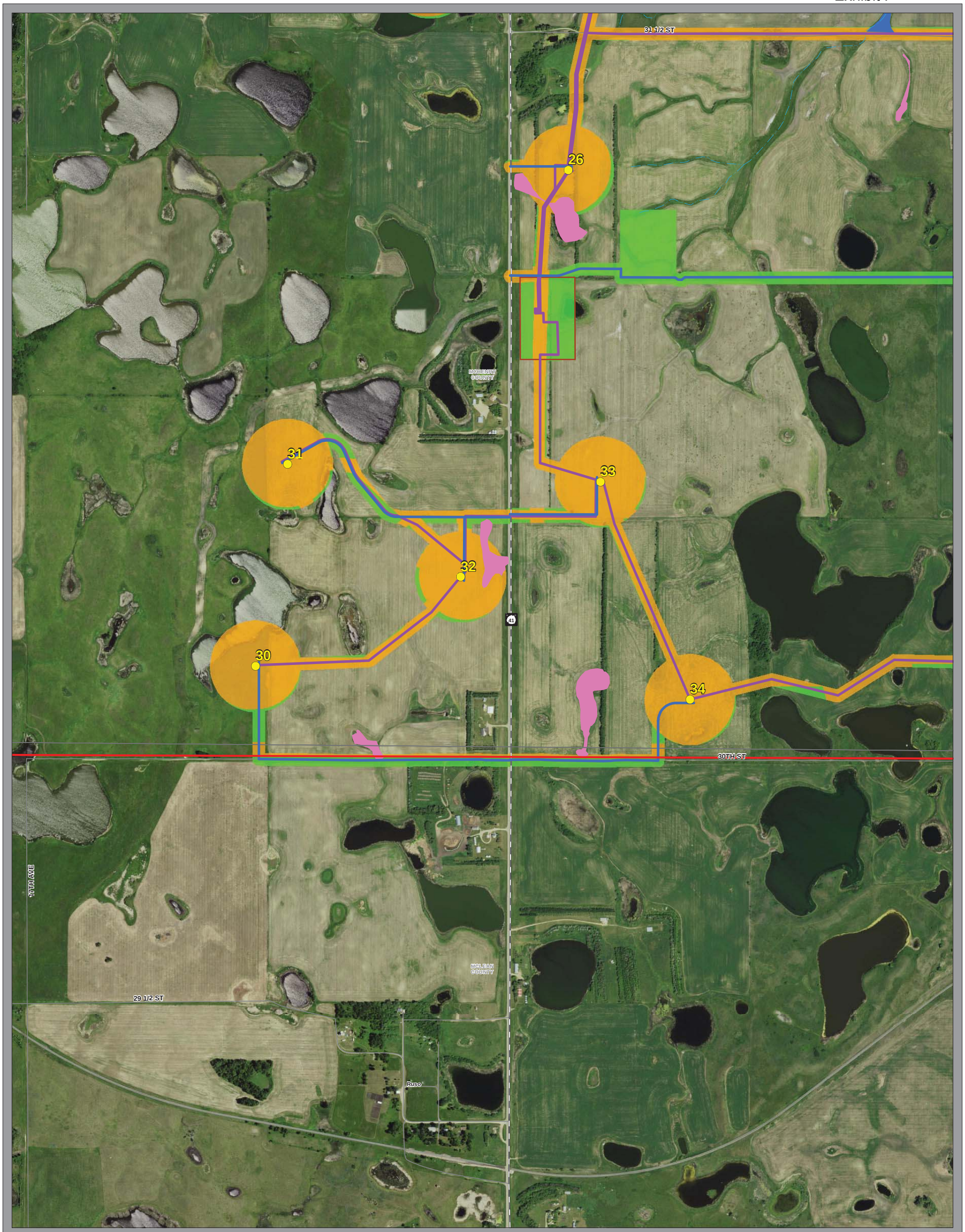
TETRA TECH

Vicinity Map



P:\5563_New_Frontier_Wind\GIS\Layouts\Wetlands\Wetland_Survey_6k_sheets.mxd Source: BTS, ESRI, NREL, FCC, DOD, and Ventyx Last Modified: 11/16/2017

Exhibit F



NEW FRONTIER WIND ENERGY PROJECT

Figure 2: Project Detail Map Sheet:8

0 500 1,000 1,500 Feet

Scale is 1:6,000 when printed at 22x34"

- Proposed Turbine
- Project Area
- Access Road
- Collector Line
- Switchyard/O&M Leased Parcel

***Project layout dated October 17, 2017*

- Previously Un-surveyed Area
- Previous Survey within Current Layout Buffers

Hydrology

- Perennial Stream
- Intermittent Stream
- Canal Ditch

Wetland Determination[1]

- USACE Jurisdictional
- USACE Non-Jurisdictional

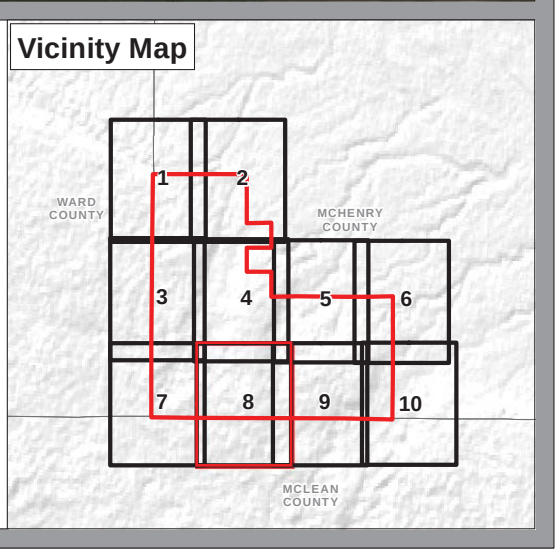
[1]Wetland Determinations – USACE approved jurisdictional determinations on February 2012, re-verified December 2016.

2017 Wetland Surveys[2]

- Wetland (plot point)
- Upland (plot point)
- Wetland – Likely Non-Jurisdictional

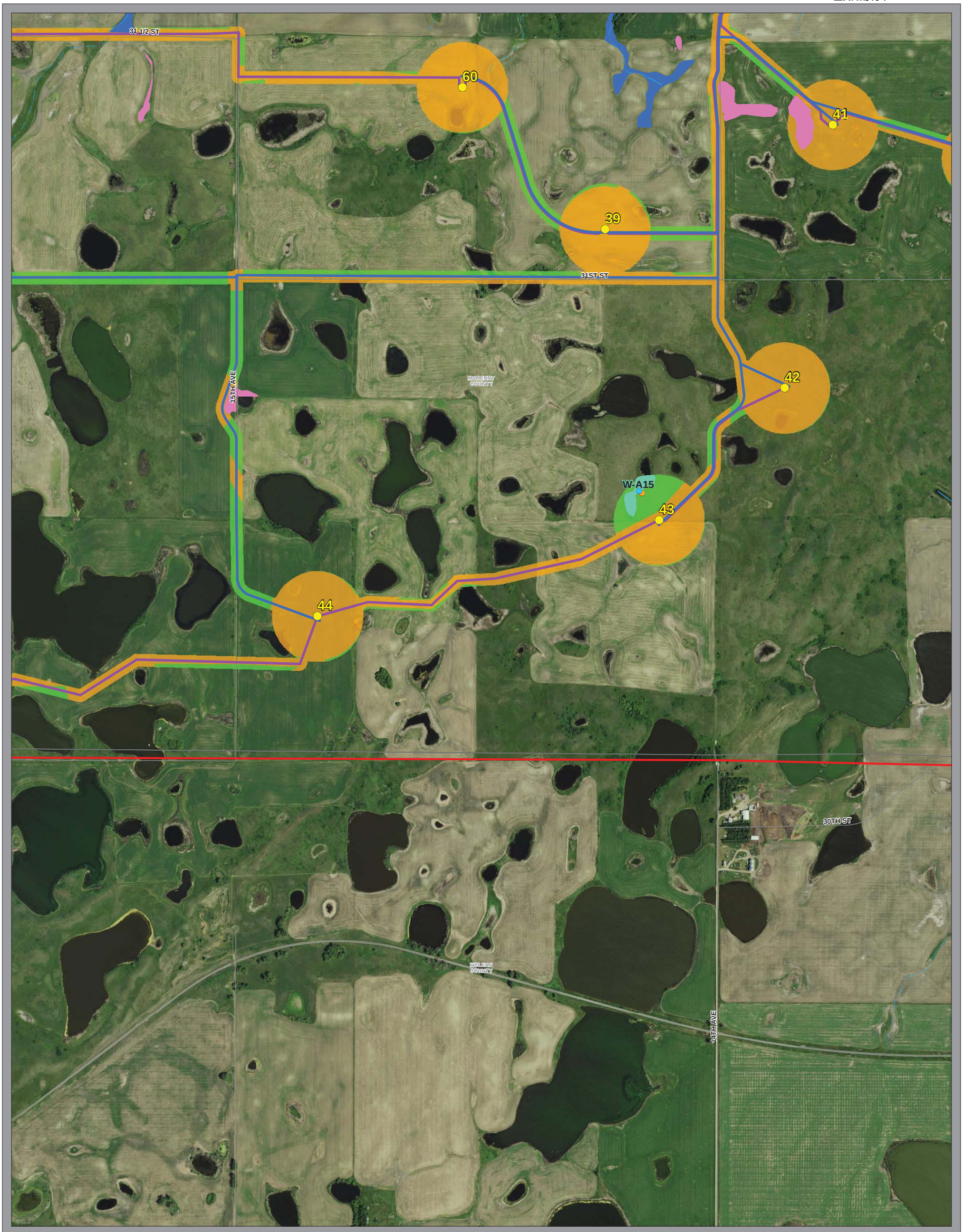
[2]2017 Wetland Surveys - Only the USACE can render an approved Jurisdictional Determination (JD). The likely non-jurisdictional reflect Tetra Tech's understanding of Jurisdictional Waters of the United States.

TETRA TECH



P:\5563_New_Frontier_Wind\GIS\Layouts\Wetlands\Wetland_Survey_6k_sheets.mxd Source: BTS, ESRI, NREL, FCC, DOD, and Ventyx Last Modified: 11/16/2017

Exhibit F



NEW FRONTIER WIND ENERGY PROJECT

Figure 2: Project Detail Map Sheet:9

0 500 1,000 1,500 Feet

Scale is 1:6,000 when printed at 22x34"

- Proposed Turbine
- Project Area
- Access Road
- Collector Line
- Switchyard/O&M Leased Parcel

**Project layout dated October 17, 2017*

- Previously Un-surveyed Area
- Previous Survey within Current Layout Buffers

Hydrology

- Perennial Stream
- Intermittent Stream
- Canal Ditch

Wetland Determination[1]

- USACE Jurisdictional
- USACE Non-Jurisdictional

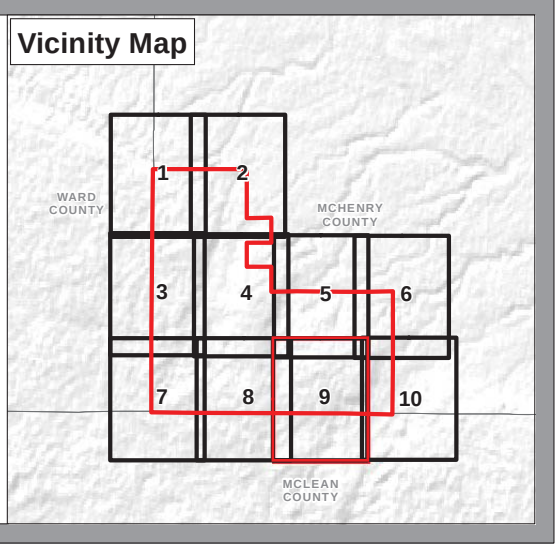
[1]Wetland Determinations – USACE approved jurisdictional determinations on February 2012, re-verified December 2016.

2017 Wetland Surveys[2]

- Wetland (plot point)
- Upland (plot point)
- Wetland – Likely Non-Jurisdictional

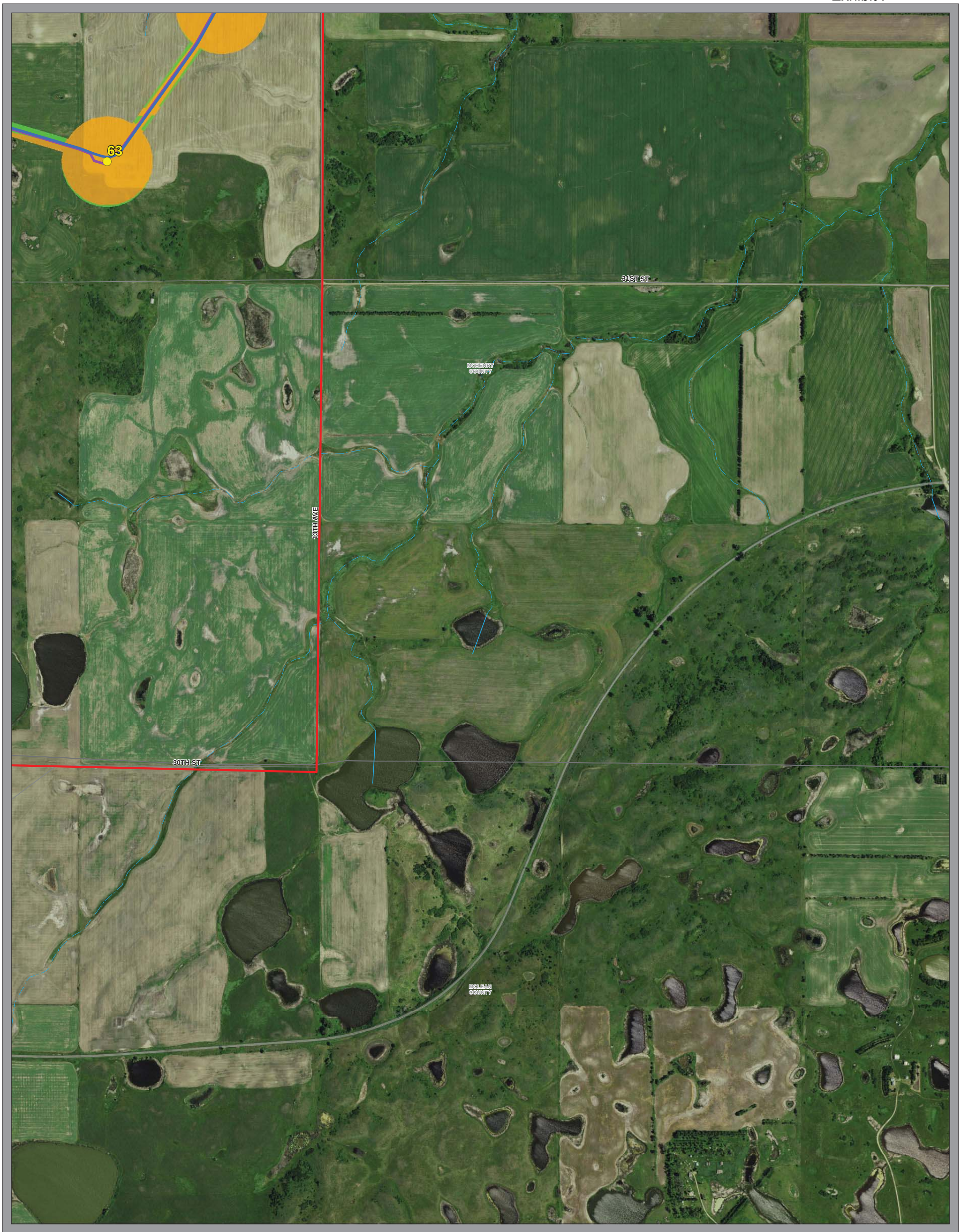
[2]2017 Wetland Surveys - Only the USACE can render an approved Jurisdictional Determination (JD). The likely non-jurisdictional reflect Tetra Tech's understanding of Jurisdictional Waters of the United States.

TETRA TECH



P:\5563_New_Frontier_Wind\GIS\Layouts\Wetlands\Wetland_Survey_6k_sheets.mxd Source: BTS, ESRI, NREL, FCC, DOD, and Ventyx Last Modified: 11/16/2017

Exhibit F



NEW FRONTIER WIND ENERGY PROJECT

Figure 2: Project Detail Map Sheet:10

0 500 1,000 1,500 Feet

Scale is 1:6,000 when printed at 22x34"

- Proposed Turbine
- Project Area
- Access Road
- Collector Line
- Switchyard/O&M Leased Parcel

***Project layout dated October 17, 2017*

- Previously Un-surveyed Area
- Previous Survey within Current Layout Buffers

Hydrology

- Perennial Stream
- Intermittent Stream
- Canal Ditch

Wetland Determination[1]

- USACE Jurisdictional
- USACE Non-Jurisdictional

[1]Wetland Determinations – USACE approved jurisdictional determinations on February 2012, re-verified December 2016.

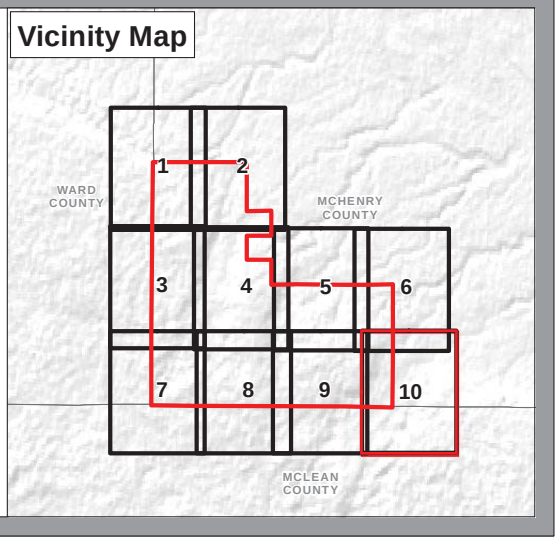
2017 Wetland Surveys[2]

- Wetland (plot point)
- Upland (plot point)
- Wetland – Likely Non-Jurisdictional

[2]2017 Wetland Surveys - Only the USACE can render an approved Jurisdictional Determination (JD). The likely non-jurisdictional reflect Tetra Tech's understanding of Jurisdictional Waters of the United States.

TETRA TECH

Vicinity Map



P:\5563_New_Frontier_Wind\GIS\Layouts\Wetlands\Wetland_Survey_6k_sheets.mxd Source: BTS, ESRI, NREL, FCC, DOD, and Ventyx Last Modified: 11/16/2017

NEW FRONTIER WIND ENERGY PROJECT

Figure 2: Project Detail Map Sheet:11

0 500 1,000 1,500 Feet

Scale is 1:6,000 when printed at 22x34"

- Proposed Turbine
- Project Area
- Access Road
- Collector Line
- Switchyard/O&M Leased Parcel

***Project layout dated October 17, 2017*

- Previously Un-surveyed Area
- Previous Survey within Current Layout Buffers

Hydrology

- Perennial Stream
- Intermittent Stream
- Canal Ditch

Wetland Determination[1]

- USACE Jurisdictional
- USACE Non-Jurisdictional

[1]Wetland Determinations – USACE approved jurisdictional determinations on February 2012, re-verified December 2016.

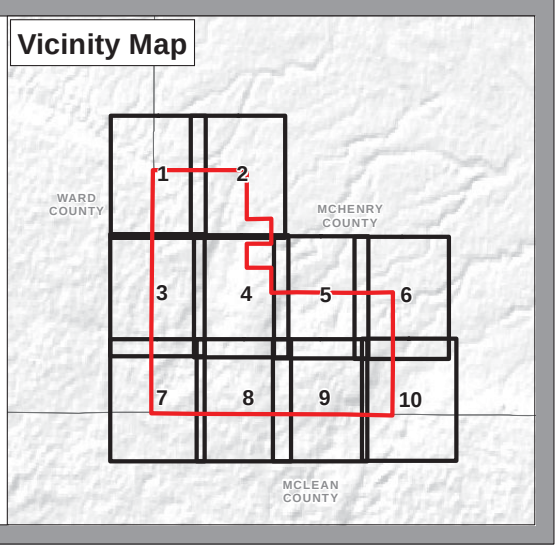
2017 Wetland Surveys[2]

- Wetland (plot point)
- Upland (plot point)
- Wetland – Likely Non-Jurisdictional

[2]2017 Wetland Surveys - Only the USACE can render an approved Jurisdictional Determination (JD). The likely non-jurisdictional reflect Tetra Tech's understanding of Jurisdictional Waters of the United States.

TETRA TECH

Vicinity Map



P:\5563_New_Frontier_Wind\GIS\Layouts\Wetlands\Wetland_Survey_6k_sheets.mxd Source: BTS, ESRI, NREL, FCC, DOD, and Ventyx Last Modified: 11/16/2017

Attachment 1:
Wetland Determination Data Forms

This page intentionally left blank.

Exhibit F

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: New Frontier City/County: McHenry Sampling Date: 10/18/17

Applicant/Owner: Capital Power State: ND Sampling Point: W-A12-UP1

Investigator(s): C. Ansari, K. Brimacombe Section, Township, Range: Sec. 19, T151N, R80W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope (%): 5

Subregion (LRR): Northern Great Plains (F) Lat: 47.890628 Long: -100.958628 Datum: WGS 84

Soil Map Unit Name: Zahl-Max-Bowbells loams, 6 to 35 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation X, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____ No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks: Plot paired with wetland plot W-A12-WT1.
Vegetation recently plowed.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Bromus inermus	40	Y	FACU
2. Spartina pectinata	60	Y	FACW
3. Cirsium arvense	2	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	102 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

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)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: W-A12-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-19	10YR 2/1	100					Silt Clay	many fine roots
19-20	10YR 3/2	99	10YR 5/8	1	C	M	Silt Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 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 (TF12)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

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 (minimum of two 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:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ **No** X

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

Remarks:

Exhibit F

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: New Frontier City/County: McHenry Sampling Date: 10/18/17

Applicant/Owner: Capital Power State: ND Sampling Point: W-A12-WT1

Investigator(s): C. Ansari, K. Brimacombe Section, Township, Range: Sec. 19, T151N, R80W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): Northern Great Plains (F) Lat: 47.890542 Long: -100.958616 Datum: WGS 84

Soil Map Unit Name: Zahl-Max-Bowbells loams, 6 to 35 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Typha latifolia	50	Y	OBL
2. Spartina pectinata	30	Y	FACW
3. Cirsium arvense	2	N	FACU
4. Ambrosia psilostachya	2	N	FACU
5. Rorippa sp?	5	N	
6.			
7.			
8.			
9.			
10.			
	89	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 11

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 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: W-A12-WT

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100					Silt Clay	
8-16	10YR 2/1	98	2.5YR 3/6	2	C	M/PL	Silt Clay	
16-20	10YR 3/2	95	2.5YR 3/6	5	C	M/PL	Silt Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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**)
- X 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)
- X 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[3]:

- ___ 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 (TF12)
- ___ Other (Explain in Remarks)

[3]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** X **No** _____

Remarks:

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)
- X Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two 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)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

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

Remarks:

Exhibit F

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: New Frontier City/County: McHenry Sampling Date: 10/19/17

Applicant/Owner: Capital Power State: ND Sampling Point: W-A13-UP1

Investigator(s): C. Ansari, K. Brimacombe Section, Township, Range: Sec. 29, T151N, R80W

Landform (hillslope, terrace, etc.): Rolling Hills Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): Northern Great Plains (F) Lat: 47.873427 Long: -100.942755 Datum: WGS 84

Soil Map Unit Name: Williams-Zahl-Zahill complex, 6 to 9 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____ No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks: Plot paired with wetland W-A13-WT1.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Cirsium arvense	20	Y	FACU
2. Bromus inermus	70	Y	FACU
3. Poa pratensis	20	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	110	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: W-A13-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-10	10YR 3/1	100					Silt Loam	
10-18	10YR 4/3	100					Silt Clay	
18-20	10YR 3/2	80	10YR 5/2	20	D	M	Silt Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 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 (TF12)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

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 (minimum of two 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:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ **No** X

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

Remarks:

Exhibit F

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: New Frontier City/County: McHenry Sampling Date: 10/18/17

Applicant/Owner: Capital Power State: ND Sampling Point: W-A13-WT1

Investigator(s): C. Ansari, K. Brimacombe Section, Township, Range: Sec. 29, T151N, R80W

Landform (hillslope, terrace, etc.): Rolling Hills Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): Northern Great Plains (F) Lat: 47.873471 Long: -100.942760 Datum: WGS 84

Soil Map Unit Name: Williams-Zahl-Zahill complex, 6 to 9 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks: Wetland located in a roadside ditch eventually draining into a larger wetland complex through a culvert under the adjacent road.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Alopecurus arundinaceus	45	Y	FACW
2. Spartina pectinata	45	Y	FACW
3. Juncus balticus	5	N	FACW
4. Melilotus officinalis	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

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 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: W-A13-WT

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	90	2.5YR 4/6	10	C	M	Silt Clay	
8-18	10YR 4/1	90	10YR 6/8	10	C	M	Silt Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- X Depleted Matrix (F3)
- X 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[3]:

- ___ 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 (TF12)
- ___ Other (Explain in Remarks)

[3]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** X **No** _____

Remarks:

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 (minimum of two 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)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

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

Remarks:

Exhibit F

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: New Frontier City/County: McHenry Sampling Date: 10/20/17

Applicant/Owner: Capital Power State: ND Sampling Point: W-A15-UP1

Investigator(s): C. Ansari, K. Brimacombe Section, Township, Range: Sec. 2, T152N, R80W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): Northern Great Plains (F) Lat: 47.856357 Long: -100.889365 Datum: WGS 84

Soil Map Unit Name: Williams-Zahl-Zahill complex, 6 to 9 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation X, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____ No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks: Upland plot paired with W-A15-WT1.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5')			
1. Poa pratensis	20	Y	FACU
2. Elymus repens	15	N	FACU
3. Bromus inermis	40	Y	UPL
4. Trifolium repens	15	N	FACU
5. Melilotus officinalis	10	N	FACU
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Vegetation mowed at time of sampling.

SOIL

Sampling Point: W-A15-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/3	100					Silt Loam	
6-18	10YR 3/2	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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[3]:

- ___ 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 (TF12)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

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 (minimum of two 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:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ **No** X

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

Remarks:

Exhibit F

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: New Frontier City/County: McHenry Sampling Date: 10/19/17

Applicant/Owner: Capital Power State: ND Sampling Point: W-A15-WT1

Investigator(s): C. Ansari, K. Brimacombe Section, Township, Range: Sec. 34, T151N, R80W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0.5

Subregion (LRR): Northern Great Plains (F) Lat: 47.856422 Long: -100.889488 Datum: WGS 84

Soil Map Unit Name: Williams-Zahl-Zahill complex, 6 to 9 percent slopes NWI classification: PEMC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks: Wetland extends between 2 NWI mapped wetlands. Wetland is in a closed basin with no visible outflow.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5')			
1. Rumex crispus	25	Y	FAC
2. Hordeum jubatum	40	Y	FACW
3. Carex sp?	15	N	
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 20

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 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: W-A15-WT

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/1	98	2.5YR 3/6	2	C	M	Silt Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- X 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[3]:

- ___ 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 (TF12)
- ___ Other (Explain in Remarks)

[3]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** X **No** _____

Remarks:

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 (minimum of two 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)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

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

Remarks:

Exhibit F

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: New Frontier City/County: McHenry Sampling Date: 10/20/17

Applicant/Owner: Capital Power State: ND Sampling Point: W-A16-UP1

Investigator(s): C. Ansari, K. Brimacombe Section, Township, Range: Sec. 2, T152N, R80W

Landform (hillslope, terrace, etc.): valley floor Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): Northern Great Plains (F) Lat: 48.021468 Long: -100.883954 Datum: WGS 84

Soil Map Unit Name: Williams-Zahl-Zahill complex, 6 to 9 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation X, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: Upland plot paired with W-A16-WT1.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5')			
1. Poa pratensis	60	Y	FACU
2. Elymus repens	40	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Vegetation mowed at time of sampling.

SOIL

Sampling Point: W-A16-UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/1	98	2.5YR 4/6	5	C	M/PL	Silt Clay	
8-18	10YR 4/1	95	2.5YR 5/8	5	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- X Depleted Matrix (F3)
- X 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[3]:

- ___ 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 (TF12)
- ___ Other (Explain in Remarks)

[3]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** X **No** _____

Remarks:

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)
- X Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two 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:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

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

Remarks:

Exhibit F

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: New Frontier City/County: McHenry Sampling Date: 10/20/17

Applicant/Owner: Capital Power State: ND Sampling Point: W-A16-WT1

Investigator(s): C. Ansari, K. Brimacombe Section, Township, Range: Sec. 2, T152N, R80W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): Northern Great Plains (F) Lat: 48.021469 Long: -100.884006 Datum: WGS 84

Soil Map Unit Name: Williams-Zahl-Zahill complex, 6 to 9 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks: Wetland mapped during a previous field survey. Feature follows a drainage ditch between two industrial facilities.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5')			
1. Typha latifolia	50	Y	OBL
2. Rumex triangulivalvis	25	Y	FACW
3. Rumex crispus	5	N	FAC
4. Elymus repens	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 15

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 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: W-A16-WT

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/1	95	2.5YR 4/6	5	C	M/PL	Silt Clay	
9-19	10YR 4/1	95	2.5YR 5/8	5	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- X Depleted Matrix (F3)
- X 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[3]:

- ___ 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 (TF12)
- ___ Other (Explain in Remarks)

[3]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** X **No** _____

Remarks:

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)
- X Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two 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)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

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

Remarks: