Wetland Delineation Report

Merricourt Wind Farm to Ellendale 230 kV Transmission Line

March 2011

Prepared for:

Montana-Dakota Utilities Co.

MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.
In the Community to Serve®

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HDR

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1.0 EXECUTIVE SUMMARY

Montana-Dakota Utilities, Co. (Montana-Dakota) has proposed to construct, own, and operate an approximately 30-mile-long, 230 kilovolt (kV) transmission line from the proposed Merricourt Wind Farm Substation in McIntosh County, North Dakota to the upgraded Ellendale Substation in Dickey County. This project is referred to as the Merricourt Wind Farm to Ellendale Transmission Line Project (Project).

The Project would consist of the following three major components: (1) 230 kilovolt (kV) transmission line, (2) Ellendale Junction Substation upgrades, and (3) new Merricourt Interconnection Substation.

HDR Engineering, Inc. (HDR) conducted a wetland determination for the purpose of identifying wetland avoidance and minimization opportunities, as well as identifying any unavoidable wetland impacts that would be caused by the Project (See Table 1 and Figure 1 for general project location). An off-site review of wetlands within 500 feet of either side of the proposed 120-foot right-of-way (ROW) was conducted using GIS data to identify wetland signatures visible on 2009 and 2010 USDA FSA NAIP aerial photography. From November 1 to 9, 2010, HDR conducted an on-site wetland review within the ROW. As part of the on-site surveys, all wetland boundaries within the ROW were delineated using a sub-meter GPS unit, with the exception of areas where survey access was not obtained.

Approximately 61 acres of wetlands were identified within the ROW, representing 94 proposed wetland crossings. Of these crossings approximately 41 percent are U.S. Fish and Wildlife Service (USFWS) jurisdictional, 13 percent are United States Army Corps of Engineers (USACE) jurisdictional, and 46 percent are isolated basins. The proposed centerline crosses a cumulative 4.19 miles of wetlands. The broadest proposed crossing is approximately 1,000 feet. Based on the final alignment , all wetlands are proposed to be completely spanned by the Project and no poles are expected to fall within any jurisdictional wetlands. The proposed substation, however, will cause approximately) 0.70 acres permanent impacts to two isolated (i.e., not USACE or USFWS jurisdictional) wetland basins. Montana-Dakota submitted a letter dated February 22, 2011 to the USACE requesting a jurisdictional determination on the two wetlands located in the area of the proposed substation. Montana-Dakota received a response from the USACE stated the wetlands are isolated and not subject to jurisdiction by the USACE(Appendix E).

Temporary wetland impacts could occur during construction in the event that it is unfeasible to avoid driving construction equipment across long linear wetlands. The specific locations of possible temporary impacts have not been identified at the time of this report along the transmission line. The proposed substation, however, will cause approximately 0.70 impacts to two isolated (i.e., not USACE or USFWS jurisdictional) wetland basins. These are the same wetlands that recieved a jurisdictional determination from the USACE described in the paragraph above.

In the event that impacts (temporary or permanent) to USACE wetlands are expected to occur, it is advised that the local USACE regulator be contacted to determine if any permits or approvals will be required. USACE jurisdictional impacts would likely be covered under the authority of 2007 Nationwide Permit 12 – Utility Line Activities (USACE 2007).

On November 9, 2010 HDR conducted on-site wetland review with the USFWS Kulm Wetland Management District staff. As a result of this review, pole placements were revised to avoid USFWS wetland basins. There are no anticipated permanent impacts to USFWS wetland basins.

2.0 INTRODUCTION

Montana-Dakota has proposed to construct, own, and operate an approximately 30-mile-long, 230 kV transmission line from the upgraded Ellendale Substation in Dickey County to the proposed Merricourt Wind Farm in McIntosh County. This project is referred to as the Merricourt Wind Farm to Ellendale Project (Project).

The Project would consist of the following three major components: (1) 230 kV transmission line, (2) Ellendale Junction Substation upgrades, and (3) new Merricourt Wind Farm Substation—the Project does not include development of the Merricourt Wind Farm.

The Project is located within the prairie pothole region, and small wetland basins are frequent, especially within the west half of the project, which is located within the Missouri Coteau ecoregion (Figure 1) (Bryce et al. 1996).

Table 1 lists the counties, townships, and sections crossed by the Project. The full alignment and section numbers are shown in Figure 1.

Table 1.
Counties, Townships, and Sections within the proposed ROW

Township Name	Township	Range	Sections
Dickey County			
Ellendale	129	63	3-4; 6-10
Elm		64	1-3; 6-12
Lorraine		65	1-6; 8-12
Albertha		66	1-3
Spring Valley	130	66	4-6; 9; 16; 21; 27-28; 34
McIntosh County			
Unorganized	130	67	1-3

3.0 PURPOSE

This report is intended to be used to identify wetland avoidance and minimization opportunities, as well as to identify unavoidable wetland impacts for the Project.

Wetland delineations are required in order to determine potential regulated Project impacts and to acquire necessary local, state, and federal permits. Additionally, wetland and waterbody delineations provide information valuable in identifying avoidance and minimization strategies, as well as aid in determining appropriate construction techniques as specified in local, state, and federal permits.

USACE recognizes wetlands by the following definition: "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas" [33 CFR 328 3.b]. Wetland determinations are based on the presence of the following three indicators:

- The area must exhibit indicators of wetland hydrology
- The area must have a predominance of hydrophytic vegetation
- Hydric soils must be present

"Atypical" or "problem areas" may be missing one or more of the three parameters.

4.0 METHODS

The wetland determination was conducted using the "Routine Determination, On-site Inspection Necessary" method outlined in the *1987 Manual* (USACE 1987) and the *Great Plains Regional Supplement* (USACE 2010).

Wetlands boundaries within the ROW were collected using a sub-meter GPS. Outside of the ROW, wetlands boundaries within 500 feet of the proposed centerline have been identified using off-site GIS information and visual confirmation off-site data as part of on-site surveys.

4.1 Off-site Review (Routine Determination, On-site Inspection Necessary)

A 1,000-foot-wide corridor centered on the proposed transmission line route was evaluated for water and wetland resources using available off-site information, including Natural Resource Conservation Service (NRCS) SSURGO Soil Surveys (USDA NRCS 2010), Farm Service Agency (FSA) aerial photos (years 2003, 2006, 2009, and 2010) (USDA FSA 2003 et al.), U.S. Geological Survey (USGS) topographic maps, and USFWS National Wetland Inventory (NWI) maps (USFWS 1980). The resulting wetland boundaries created an improved GIS map of potential wetland areas within 500 feet of the proposed ROW centerline.

The GIS off-site wetland boundaries emphasized wetland signatures delineated from 2009 and 2010 aerial photos. 2009 and 2010 aerial photos were identified as the wettest years available as FSA aerial photography based on National Oceanic and Atmospheric Administration climate information for Aberdeen, South Dakota (See Appendix B for annual climate graphs). Off-site identified wetlands represent a conservative estimate of wetland boundaries in the Project area.

4.2 On-site Review (Routine Determination, On-site Inspection Necessary)

The "Routine Determination, On-site Inspection Necessary" determinations and delineations focused on all wetlands within the 120-foot-wide ROW that is centered on the proposed transmission line. All off-site wetland boundaries within the ROW were reviewed and collected with a sub-meter GPS unit, with the exception of about 2.5 miles of alignment where landowner access was not readily available. USACE wetland determination datasheets were used to document representative wetlands under USACE jurisdiction, and for representative wetlands where preliminary pole locations indicated that impacts may occur.

As part of this review, HDR surveyed potential wetland areas according to three wetland parameters; hydric soils, surface or subsurface hydrology, and hydrophytic vegetation according to*1987 Manual* (USACE 1987) and *Great Plains Regional Supplement* (USACE 2010). If all three indicators were present during the growing season, then the area was identified as wetland.

The on-site delineations were conducted from November 1 to 9, 2010 and focused on pole locations. Following on-site surveys, possible wetland impacts were communicated to engineers and pole locations have been moved to avoid permanent wetland impacts

4.2.1 Delineation Method: USACE Data Sheet Collected

USACE wetland determination datasheets were collected to document representative wetlands under USACE jurisdiction and for representative wetlands where preliminary pole locations indicated that impacts may occur. Most of the USACE jurisdictional wetlands are associated with

connections to the Elm River. Data sheets and wetland boundaries were collected according to *1987 Manual* and *Great Plains Regional Supplement* as described below.

At each plot location, a wetland and upland soil pit was dug for observation of soil and hydrology characteristics. Hydric soil characteristics were identified using methods described in the *1987 Manual* and *Interim Regional Supplement*. Hydrology was described based on primary and secondary indicators. The vegetation was analyzed for plant species dominance in a 5-foot radius from the sample pit for the herbaceous layer, in a 15-foot radius for shrub layer, and in a 30-foot radius for overstory trees. The wetland indicator status of plants was identified using the USFWS 1988 National List of Plant Species that Occur in Wetlands (Region 4).

Data points and wetland boundaries within the ROW were collected using a sub-meter GPS unit. Using GIS, an accurate delineation map was created from the GPS data and field drawings, providing a permanent record of the on-site delineation wetland boundaries for the Project. Datasheets are included as Appendix B. The exact location of the data points are shown as Figure 4 Insets.

4.2.2 Delineation Method: Verification of Surficial USACE Indicators

Since wetlands within the Project are expected to be spanned by the proposed transmission line, in order to complete this field survey in an efficient manner, it was not practical to collect USACE data sheets for every wetland within the alignment. In these instances off-site wetland boundaries were reviewed on-site according to USACE on-site methods that are readily reviewable, primarily surficial features such as vegetation and hydrology indicators. While shallow soil pits were dug as necessary to confirm surficial information, a full soil profile was generally not reviewed at these locations.

Except in the case of about 2.5 miles of alignment that was not readily accessible, the boundaries of these wetlands were delineated on-site by mapping the boundary within the ROW and collecting data using a sub-meter GPS unit. Off-site GIS information of wetlands not accessible in the field was also updated according to aerial photo interpretation, field photographs, and wetland trends observed in the field.

4.3 Precipitation History

Weather patterns in the Project area in recent history have been wetter than normal. As part of the off-site review, climate data from 2003 to 2010 was analyzed to correlate wetland signatures on aerial photography to precipitation trends (See Appendix A for 2003 to 2010 climate graphs). Precipitation data from the Aberdeen, SD weather station (located about 50 miles SE of the Project) documents that six of the last eight years have displayed precipitation level that trended above normal; 2009 and 2010, in particular, displayed above average rainfall and snowfall throughout the year (NWS 2010). In light of this data, site review of aerial photos and 2010 on-site wetland delineations likely represent conservative wetland boundaries that in most cases are larger than their historic size. This is especially apparent when reviewing USFWS NWI data, which was created in the 1970s and 1980s; NWI boundaries tend to be about 75 percent of the off-site delineated wetland sizes.

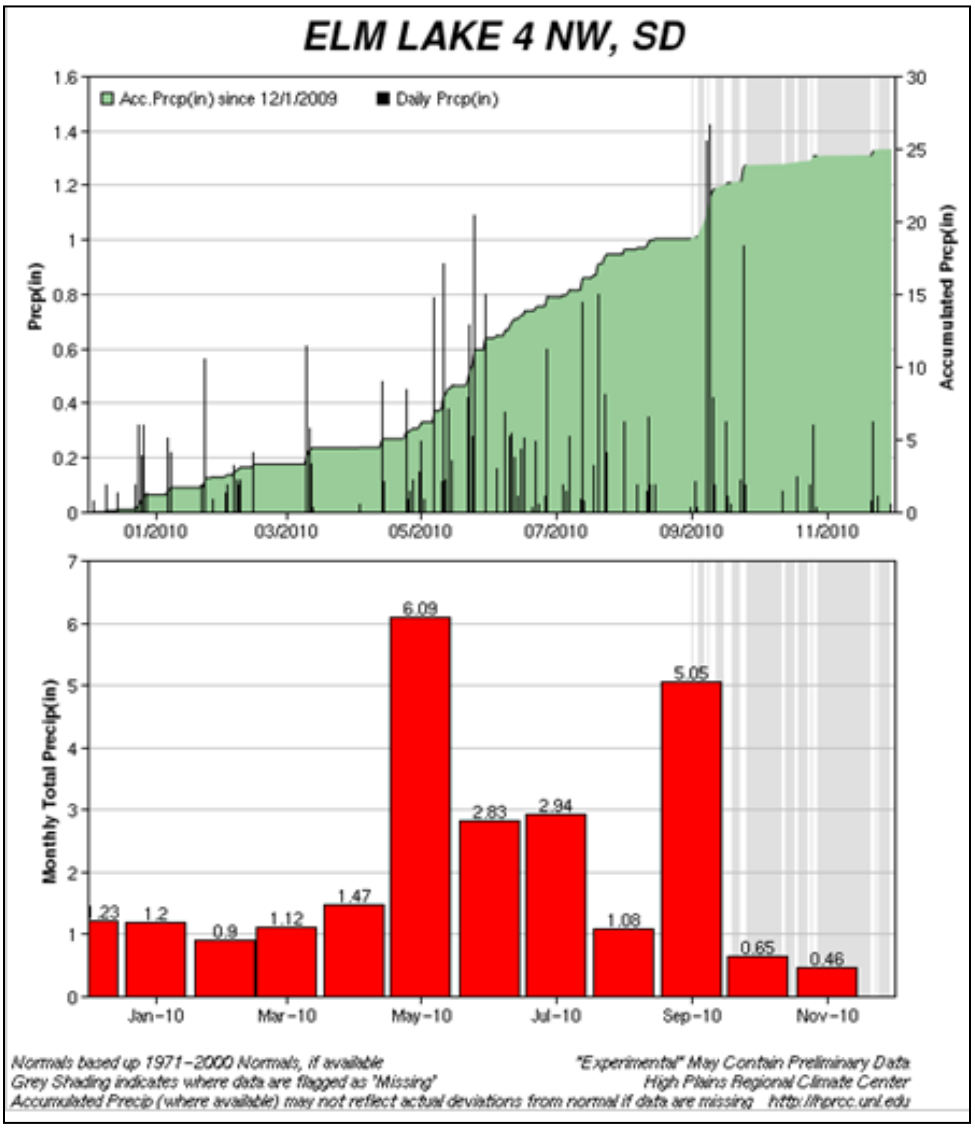
Within the Project area, total precipitation from January through November 2010 was about 25 inches, which is approximately 4 inches above normal precipitation levels. The last notable rainfall prior to the November 2010 surveys—about 1 inch of rainfall—occurred on September 23, 2010,

which is more than 30 days prior to the beginning of the surveys. There was no rainfall during the surveys.

Temperatures during the November 2010 delineation were 10-20°F above normal, ranging from approximately 35°F to 65°F.

Table 2 summarizes 2010 climate data collected near Forbes, ND, which is about six miles south of the Project (NOAA 2010).

Table 2.
Jan to Dec 2, 2010, Precipitation Data for Forbes, North Dakota (392636)



5.0 SITE DESCRIPTION

5.1 Physical Characteristics of the Study Area

The Project is located in southeastern North Dakota and crosses western Dickey County and eastern McIntosh County (Figure 1). The Project area consists mostly of tilled agricultural lands and prairie rangeland. Grasslands tend to be concentrated in the west half of the Project where the terrain is rolling and relatively rocky (Figure 2). Trees are sporadic throughout the Project and are primarily present as wooded draws, riparian areas, and windrows.

The Project is within the Elm River sub-basin of the James River basin, which is part of the Missouri River watershed (USDA NRCS 2010b). The Elm River flows in a southerly direction across the east side of the Project; the Elm River has been dammed up and forms Pheasant Lake at the proposed transmission line crossing. The Elm River is the only perennial watercourse within the Project. Intermittent streams and drainages are generally restricted to the east half of the project. Most of these drainages originate in the middle of the project, near the edge of the Missouri Coteau, and then flow east and south towards the Elm River. These eastern drainages are likely USACE jurisdictional waters. The subwatersheds in the west Project area are closed depressions, with all water being held on site including intermittent drainages. All water features in the west half of the Project appear to be isolated from waters of the United States and are not USACE jurisdictional (Figure 3).

There is about a 710 foot range of elevation within the Project. The low point is near Pheasant Lake, with elevations around 1,470 feet above mean sea level (AMSL). The high point is near the proposed Merricourt Substation, which is about 2,180 feet AMSL. The east half of the project is relatively flat, with only about a 100 foot range in elevation occurring over a distance of more than 10 miles. A sharp topographic transition occurs at the middle of the Project at the edge of the Missouri Coteau, where the elevation climbs about 400 feet AMSL within about one mile. West of this transition, the terrain is rolling, with about a 200 foot range of elevations.

All wetlands within the Project exhibit typical prairie pothole structure and hydrology. Wetlands within this eastern zone tend to have less distinct boundaries due to the relatively flat terrain; these wetlands are commonly tilled and/or adjacent to tilled fields. Surface waters in the west half of the Project are primarily a patchwork of isolated wetlands and shallow lakes within a closed depression subwatershed. These western wetlands tend to have sharply defined boundaries due to the rolling terrain. Within the Missouri Coteau, some of the wetlands and drainages originate from hill seeps (Bryce et al. 1996).

5.2 Wetland Types within ROW

5.2.1 NWI Wetlands

USFWS NWI data for the Project area is based on relatively old aerial photography that likely represents a snapshot of a drier climate than the current precipitation trends. Due to the wet weather in the Project area within the last decade and the inherent inaccuracies of using aerial photography interpretation, the NWIs within the Project consistently underestimate the size and depth of the current wetlands. NWIs within the Project are on average about 75 percent of the size of the wetlands that were delineated in the field. Therefore, for the purpose of this report, NWI data

was not considered a reliable tool for estimating wetland acreages or type. NWI data was used as a preliminary tool to pinpoint areas that may benefit from off-site and/or on-site review.

5.2.2 Verified Wetland Types

To develop an accurate picture of the current wetlands within the ROW, all ROW wetlands were field verified and assigned a Cowardin wetland classification (e.g. PEMA, PEMB, etc.) according to the wetland characteristics observed in the field (Cowardin 1979). Table 3 includes a field verified summary of all wetlands within the ROW according to their Cowardin classification. Photographs of representative wetland types within the Project are included as Appendix C-1 to C-12.

There are approximately 115 waterbody complexes located within the ROW. The majority of these waterbodies are palustrine emergent wetlands, of which most have water regimes within the Cowardin type "A" (temporarily flooded) to "F" (semipermanently flooded) range. Six of these complexes are part of an intermittent drainage, and one is a perennial river (Pheasant Lake, a dammed section of the Elm River). The locations of all wetlands and verified Cowardin classification types within the ROW are shown in Figure 4-1 to 4-20.

Shallow, temporal wetlands in the Project tend to be small and relatively numerous, whereas deeper wetlands are fewer, but larger. There are two lakes crossed by the ROW, Pheasant Lake (i.e., the Elm River) and a 30 acre unnamed lake that is located about one mile west of LSB USFWS Waterfowl Projection Area (WPA).

Table 3
Wetland Acreage in ROW

Field Verified Cowardin Type	ROW		
	Ft²	Acres	Relative % of Area of All Wetlands
Lake			
L2ABG	45,049	1.03	1.7
L2ABGh	89,577	2.06	3.4
Lake Subtotal	**134,626**	**3.09**	**5.1**
Palustrine Aquatic			
PABH	120,253	2.76	4.5
Palustrine Emergent			
PEMA	498,767	11.45	18.8
PEMB	540,824	12.42	20.3
PEMC	621,960	14.28	23.3
PEMF	439,649	10.09	16.5
PEMG	214,333	4.92	8.1
PEMH	88,814	2.04	3.4
Grand Total	**2,659,228**	**61.05**	**100**

5.3 SSURGO Soil Surveys

SSURGO County Soil Surveys were used to identify the mapped hydric soil units within the Project. These units provide information about local landscape elevations and landscape position and slopes, as well as the identification of hydric soils that indicate the potential presence of wetlands within the Project. A list of the hydric soils in the ROW is included below as Table 4 (USDA NRCS 2010).

Table 4
SSURGO Mapped Hydric Soils within ROW

Hydric SSURGO Soils	Series Description
Colvin silt loam, 0 to 1 percent slopes	The Colvin series consists of very deep, poorly and very poorly drained, moderately to slowly permeable soils formed in silt loam and silty clay loam sediments. These soils are in concave shallow swales and depressions on glacial lake plains, in outwash channels, on stream terraces and in drainageways on till plains.
Colvin silt loam, saline, 0 to 1 percent slopes	See above
Harriet loam	The Harriet series consists of very deep, poorly drained, slowly and very slowly permeable soils that formed in calcareous alluvium. These soils are on low lying flats, terraces, drainageways and bottom lands.
Parnell silty clay loam	The Parnell series consists of very deep, very poorly drained and poorly drained soils that formed in water-sorted sediments from glacial drift in depressions, swales and drainageways on glacial moraines.
Southam silt loam	The Southam series consists of very deep, very poorly drained, slowly permeable soils that formed in local alluvium from glacial drift. These soils are in basins and depressions on till plains, moraines and lake plains.
Tonka silt loam, 0 to 1 percent slopes	The Tonka series consists of very deep, poorly drained, slowly permeable soils that formed in local alluvium over till or glaciolacustrine deposits. These soils are in closed basins and depressions on till and glacial lake plains and have slopes of 0 to 1 percent.
Vallers loam, 0 to 1 percent slopes	The Vallers series consists of very deep, poorly drained soils that formed in calcareous fine-loamy till on till plains, moraines and lake plains.

6.0 RESULTS OF ROUTINE DETERMINATION, ON-SITE INSPECTION NECESSARY

As described in Section 4.2, all wetlands within the ROW were field reviewed and nearly all wetland boundaries within the ROW were collected using a sub-meter GPS unit. Ten USACE datasheets were collected at representative wetlands (Appendix B). Maps showing the data point locations for the datasheets are included as Figure 4 Insets. Wetland photographs were also taken at wetland crossings and representative photographs are included as Appendix C-1 to C-12.

All wetlands within the ROW are show on Figure 4-1 to 4-20. A detailed summary of each of these wetlands is included as Appendix D.

Table 5 summarizes the proposed wetland crossing distances, and the expected agency jurisdiction of each crossing. There are no proposed crossings greater than 1,000 feet in length, and no permanent impacts are expected due to pole locations.(Note: the proposed pole locations suggests an impact to the isolated wetland 303 (Figure Inset 4-17a). These poles were adjusted to be outside of wetland 303 as reflected in the final alignment. There are two shallow isolated wetlands (Figure 4-20) that appear to fall within the footprint of the proposed substation representing no greater than 0.070 acres of impacts to isolated wetlands.

Table 5
Summary of Proposed Centerline Wetland Crossings and Jurisdiction

Wetland Crossing Distance Range (ft)	Number*	Wetland Jurisdiction (Number)			
		None	None/ USFWS**	USFWS	USACE
1 to 250	64	33	0	21	10
251 to 500	18	7	0	10	1
501 to 750	9	3	0	5	1
751 to 1,000	3	0	2	1	0
Subtotal	**94**	**43**	**2**	**37**	**12**
Grand Total	**94**	**94**			

**The total amount of transmission line spans will be <94 as in some cases a span stretches across multiple crossings.*

***In some cases only part of a wetland is held in USFWS easement, particularly where a wetland spans multiple landowners.*

Within the wetland crossings summarized in Table 5, there are seven unique watercourses crossed and 11 total watercourse crossings (See Table 6). All crossings are at intermittent watercourses, with the exception of Pheasant Lake, which is a dammed up segment of the perennial Elm River. All watercourses appear to be waters of the U.S., except for a crossing located within wetland 369 (Figure 4-15). The wetland 369 watercourse flows north into an isolated wetland within a closed watershed. The wetland 369 watercourse, however, is held in a USFWS easement and is subject to the authority of the USFWS.

Table 6
Summary of Proposed Centerline Watercourse Crossings and Jurisdiction

Watercouse Type	Unique Watercourses Crossed (Number)*	Total Watercourse Crossings and Jurisdiction (Number)	
		USFWS	USACE
Intermittent	6	1**	9
Perennial	1	0	1
Subtotal	**7**	**1**	**10**
Grand Total	**7**	**11**	

**Perennial: Elm River (Pheasant Lake); Intermittent: Webber Gulch & 5 unnamed; all crossings are located within wetlands counted in Table 5.*

*** Located within a closed watershed with no Waters of the U.S.*

Of the approximate 30 mile proposed alignment, a cumulative length of 4.19 miles (14 percent of the alignment) comprise wetland crossings. Most (62 percent) of the crossed wetlands are shallow type PEMA, PEMB, or PEMC. About 37 percent of the crossings are open wetlands and lakes (Table 7, below and Appendix C-10).

Table 7
Summary of Wetland Crossing Length and Types

Field Verified Cowarding Type	Cumulative Crossing Length (ft)	Cumulative Crossing Length (mi)	Relative Percent of All Wetland Crossings
Lake			
L2ABG	365	0.07	1.7
L2ABGh	739	0.14	3.3
Subtotal	**1,104**	**0.21**	**5.0**
Palustrine Aquatic			
PABH	1,026	0.19	4.5
Palustrine Emergent			
PEMA	4,074	0.77	18.4
PEMB	4,600	0.87	20.8
PEMC	5,106	0.97	23.2
PEMF	3,637	0.69	16.5
PEMG	1,864	0.35	8.4
PEMH	734	0.14	3.3
Grand Total	**22,145**	**4.19**	**100.0**

A detailed summary of wetland crossings 500 feet or greater, wetlands with USACE datasheets collected, and wetlands within the substation footprint are included as Table 8, below. A complete detailed table of all proposed wetland crossings is attached as Appendix D.

Table 8
Proposed Centerline Crossings: USACE Datasheets, >500 Foot Crossings, and Substation Footprint

Wetland ID[1]	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC[2]	Subwatershed, 12-digit HUC[2]	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) [3]	Jurisdiction	Brief Wetland Description
9	9	129	63	4-1	Yes	Dry Branch	Upper Sewer Branch	PEMB	2	28	None	Reed canary grass and smart weed; w/in fallow upland grass
13	9	129	63	4-1	Yes	Dry Branch	Upper Sewer Branch/ Lower Sewer Branch	PEMB	2	412	None	Patchy emergent vegetation; w/in fallow upland grass
25	8	129	63	4-2	Yes	Dry Branch	Upper Sewer Branch	PEMC/ intermitte nt stream	3	108 and 36	USACE	Intermittent drainage flowing SE to Sewer Branch. Dense cattails and burreed. W/in about 250 ft wide floodplain.
37	7	129	63	4-2	Yes	Dry Branch	Lower Sewer Branch	PEMC	3	190	None	Small cattail filled basin surrounded by tilled field.
41	7	129	63	4-2	Yes	Dry Branch	Lower Sewer Branch	PEMC	3	458	None	Burred and cattail filled basin surround by harvested corn field.
53	12	129	64	4-3	No	Dry Branch	Lower Sewer Branch	PEMF	4	637 and 726	USFWS	Large wetland complex with patchy open water possibly up to 2 ft deep. Wetland extends about 1 mile N and 1 mile S of proposed crossing. Wetland is about 1,600 ft wide at crossing, but 200 ft wide island in center of wetland crossing. Moderately grazed prairie surrounds wetland.

Wetland ID[1]	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC[2]	Subwatershed, 12-digit HUC[2]	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft)[3]	Jurisdiction	Brief Wetland Description
59	12	129	64	4-3	No	Dry Branch	Lower Sewer Branch	PEMB	2	789	USFWS	Sparse prairie cordgrass fringe with cattle trampling; vegetation transitions to Juncus sp., water plantain, and burreed in center. Broad upland transition. Upland is heavily grazed prairie
76	11	129	64	4-4	No	Elm Lake	Pheasant Lake	PEMB	2	73 and 520	None	Small E lobe and larger W lobe. Pigweed, cattails, and water plantain. Connected to N side of road through culvert. Surrounded by tilled field.
85	10&11	129	64	4-4	Yes	Elm Lake	Pheasant Lake	L2ABGh	5	739	USACE	Pheasant Lake; deep open water with rocky shoreline. Open residential lot on E side, and steep non-native grassland slopes on W side.
133	8	129	64	4-6	Yes	Elm Lake	Wood Lake	PEMA	1	450 and 656	USFWS	Shallow tilled basin with a PEMC pocket in the SE corner of wetland where water appears to pool. Salty soils. Culvert at W lobes forming shallow channel that terminates within wetland. No evidence of culvert at E lobe.
159	12	129	65	4-7	Yes	Elm Lake	Webber Gulch	PEMC/ intermittent stream	3	27, 67, and 130	USFWS/ USACE	Unnamed intermittent, meandering drainage, the flows south toward a series of intermittent tributaries that eventually flow into the Elm River. Full of cattails at sample point. Appears to function as a PEMC.

Wetland ID[1]	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC[2]	Subwatershed, 12-digit HUC[2]	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft)[3]	Jurisdiction	Brief Wetland Description
193	10	129	65	4-8	Yes	Elm Lake	Webber Gulch	PEMA/ intermittent stream	1	32	USACE	Intermittent drainage flowing SE to Webber Gulch. Channel is about 1 ft deep with a thin film of water at surface. Drainage has been tilled through. Salt residue at drainage edges.
310	9	130	66	4-17	No	Town of Freedonia	Closed Depression	PABH, PEMF	4, 5	563 and 995	None/ USFWS	Large open water lake/wetland complex with a road cutting through the N lobe, forming a S lake and a N deep wetland. Proposed S crossing is 563 ft and N is 995 ft. Surrounded by low quality grazed prairie uplands with steep slopes and rolling terrain. Basin N of 91st St SE is in USFWS easement.
303	4	130	66	4-17	Yes	Town of Freedonia	Closed Depression	PEMC	3	108	None	Depression cut through by a N-S section line road. Vegetation includes hardstem bulrush, water plantain, prairie cordgrass, and burreed. Upland is low quality prairie. Due to road, proposed needs to be 185 ft to span road and wetland 302 to W.
298	5	130	66	4-17	No	Town of Freedonia	Closed Depression	PEMH	5	628	None	Deep open water wetland with 20 to 30 ft wide fringe of cattails and prairie cordgrass. E upland is medium quality prairie; W upland is alfalfa hayland.

Wetland ID[1]	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC[2]	Subwatershed, 12-digit HUC[2]	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) [3]	Jurisdiction	Brief Wetland Description
294	5	130	66	4-18	No	Town of Freedonia	Closed Depression	PEMC	3	960	None/ USFWS	Broad cattail fringe with open water middle. Aerial photos and trees in wetland are evidence that wetland has expanded in size and depth since 2003. PLOTS grassland to N; tilled fields and substation to S. About N 350 of crossing is in USFWS easement.
254	1	130	67	4-19	No	Town of Freedonia	Closed Depression	PEMG	4	296 and 673	USFWS	Open water wetland with 20 to 30 ft fringe of prairie cordgrass and cattails. Steep upland slopes that have been hayed to about 4 inches. Narrowly separated from wetland complex to SE.
278	3	130	67	4-20	No	Town of Freedonia	Closed Depression	PEMB	2	Substation	None	Patchy prairie cordgrass fringe with matted down juncos in center. Eleocharis acicularis scattered throughout. Cow trampled with no surface hydrology at sampling. Upland is heavily grazed prairie dominated by kentucky bluegrass.
224	3	130	67	4-20	No	Town of Freedonia	Closed Depression	PEMA	1	substation	None	Very patchy prairie cordgrass at edges leading to matted down juncos in center; traces of curly dock. Minor cattle disturbance. Upland is heavily grazed prairie.

1 Sorted from east to west; based on numbering of preliminary pole locations, not sequential, but generally increase in number from east to west

2 Project is within the Elm-Maple River 8-digit HUC

3 Wetland crossings 500 ft wide and greater

7.0 CONCLUSIONS

This report is intended to be used to identify wetland avoidance and minimization opportunities, as well as to identify unavoidable wetland impacts for the Project.

Based on the on-site field review 61 acres of wetlands were identified within the ROW; of these wetlands, the proposed centerline includes 94 wetland crossings (Table 5). These crossings represent a cumulative centerline length of about 4.19 miles (Table 7), about 14 percent of the length of the total alignment. Twelve crossings fall under the USACE's jurisdiction and 39 within the USFWS's jurisdiction, the remainder (43 crossings) are isolated basins. Detailed information about each of the 94 proposed crossing locations is attached as Appendix D and is shown in Figure 4-1 to 4-20.

7.1 Permanent Wetland Impacts

The broadest wetland crossing is about 1,000 feet wide and no poles are expected to be placed within wetlands. The general area of the proposed substation, however, does include up two small wetland basins (wetlands 224, and 278), shown in Figure 4-20. The substation wetlands are located within a closed watershed and are isolated from waters of the U.S. The USACE was contacted to perform an approved jurisdictional determination for the wetland resources in question. Montana-Dakota received a response from the USACE stating the wetlands are isolated and not subject to jurisdiction by the Corps (Appendix E).

The wetlands are not currently held in a USFWS easement.

See Table 9, below, for a summary of possible substation wetland impacts.

Table 9
Merricourt Substation Impacts

Wetland Name	Temporary Impacts (acres)	Permanent Impacts (acres
224	0.14	0.41
278	0.52	0.29
Total	**0.66**	**0.70**

7.2 Temporary Impacts

Temporary impacts from substation construction are shown in Table 9. In some cases it may be unfeasible to completely avoid crossing wetlands with construction equipment. While dredging and/or filling is not anticipated at these temporary crossings, temporary disturbance may occur at these crossings.

Temporary impacts will be minimized by matting wetland areas were possible. There are 14 poles located in wetlands along the existing 41.6 kV alignment which will be removed to construct the new transmission line. Six of the 14 poles are located in USFWS easements. Montana-Dakota has contacted the USFWS to notify them that removal of the 41.6 kV structures will temporarily impact wetlands. The USFWS stated that temporary impacts are acceptable because existing 41.6 kV

structures would be removed from the wetlands. MDU will continue to work with the USACE and USFWS on temporary impacts as necessary.

There will be approximately four acres of temporary impacts associated with the removal of14 poles.

7.3 USACE Jurisdictional Wetlands

Ten USACE wetland delineation data forms were collected (Appendix B) at representative wetland locations, primarily within the east half of the Project. The locations of these datasheets are shown on the Figure 4 Insets.

7.4 USFWS Jurisdictional Wetlands

USFWS maintains easement and ownership of properties throughout the Project. There are 39 wetland crossings that are under the jurisdiction of the USFWS. On November 9, 2010 an on-site meeting was held with Kulm Wetland Management District staff to review these crossings. During this meeting it was indicated that USFWS's wetland jurisdiction within the existing 41.6 kV Montana-Dakota transmission line ROW (the east 17.5 miles of the alignment) is superseded by the existing Montana-Dakota utility easement. Therefore, the USFWS only maintains jurisdiction over USFWS easements held within the new proposed ROW from the proposed substation to about the intersection of ND 11 and ND 56 (Figure 4-13). Of the 39 crossings noted in Table 5, only 20 represent new USFWS crossings. Mr. Erickson commented that no wetland related authorizations are expected to be required from the USFWS if permanent impacts to USFWS wetlands within the new ROW are avoided (USFWS 2010). (Note: this does not preclude other non-wetland related approvals that may be required from USFWS).

During the November 9, 2010 meeting, Kulm Wetland Management District staff conducted an on-site review of the USFWS wetlands crossed by the proposed alignment north of the 41.6 kV double-circuit. This review focused on areas of possible impacts within the new ROW north of ND 11. As a result of this review, pole placements were revised to avoid USFWS wetland basins.

8.0 REFERENCES

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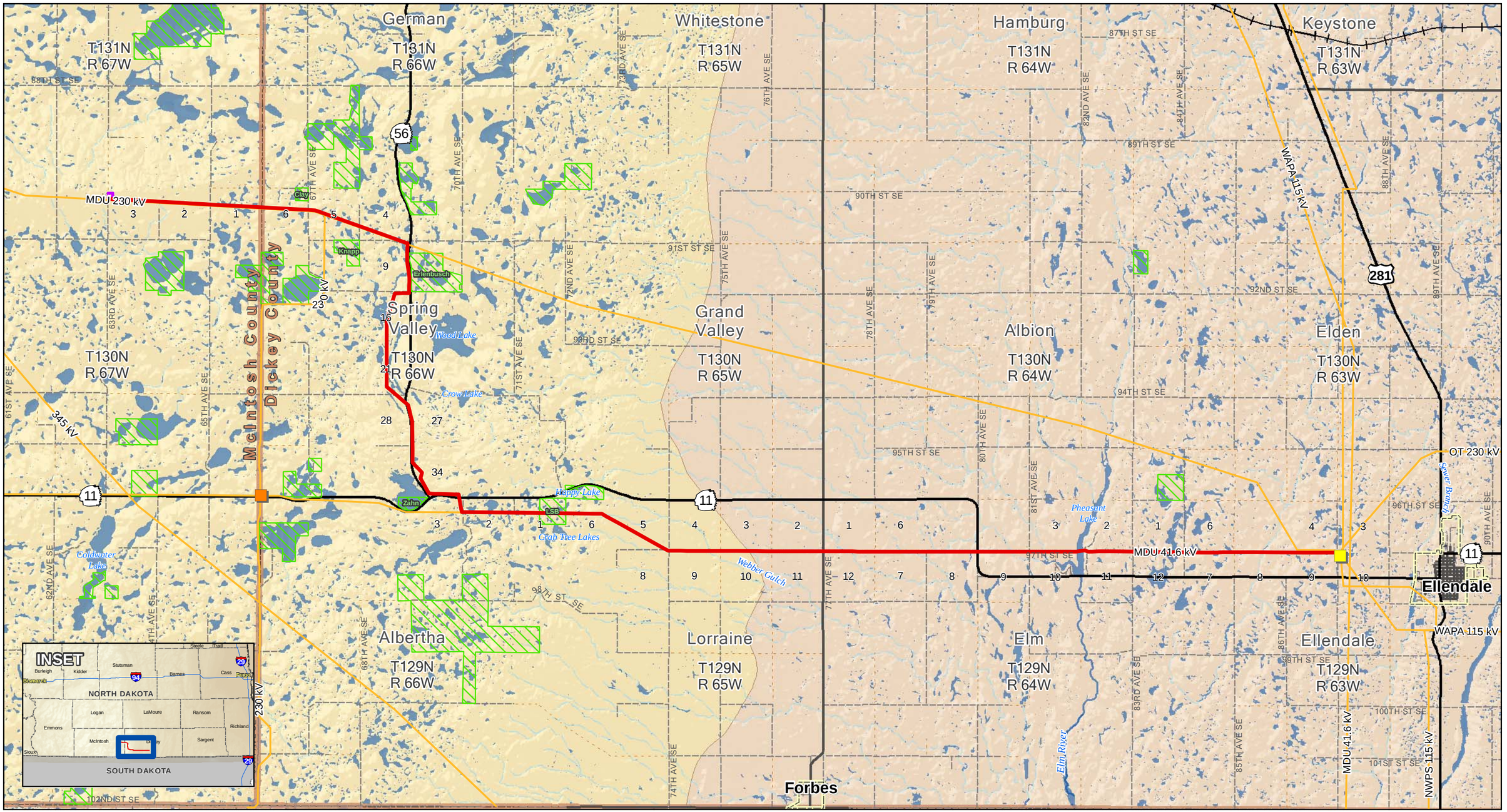
Figures



MONTANA-DAKOTA UTILITIES CO.
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- Proposed Route
- Existing Forbes Substation
- Existing MDU Ellendale Jct. Substation
- Proposed Interconnection Substation
- Existing Transmission Line
- NWI Wetland
- Intermittent
- Perennial
- Level IV Ecoregion
  - 42a Missouri Coteau
  - 46i Drift Plains
- USFWS Waterfowl Production Area
- Paved
- Graded/Drained/Gravel
- Trail/Unimproved
- County Boundary

Figure 1
Project Location
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

0 1 2 Miles

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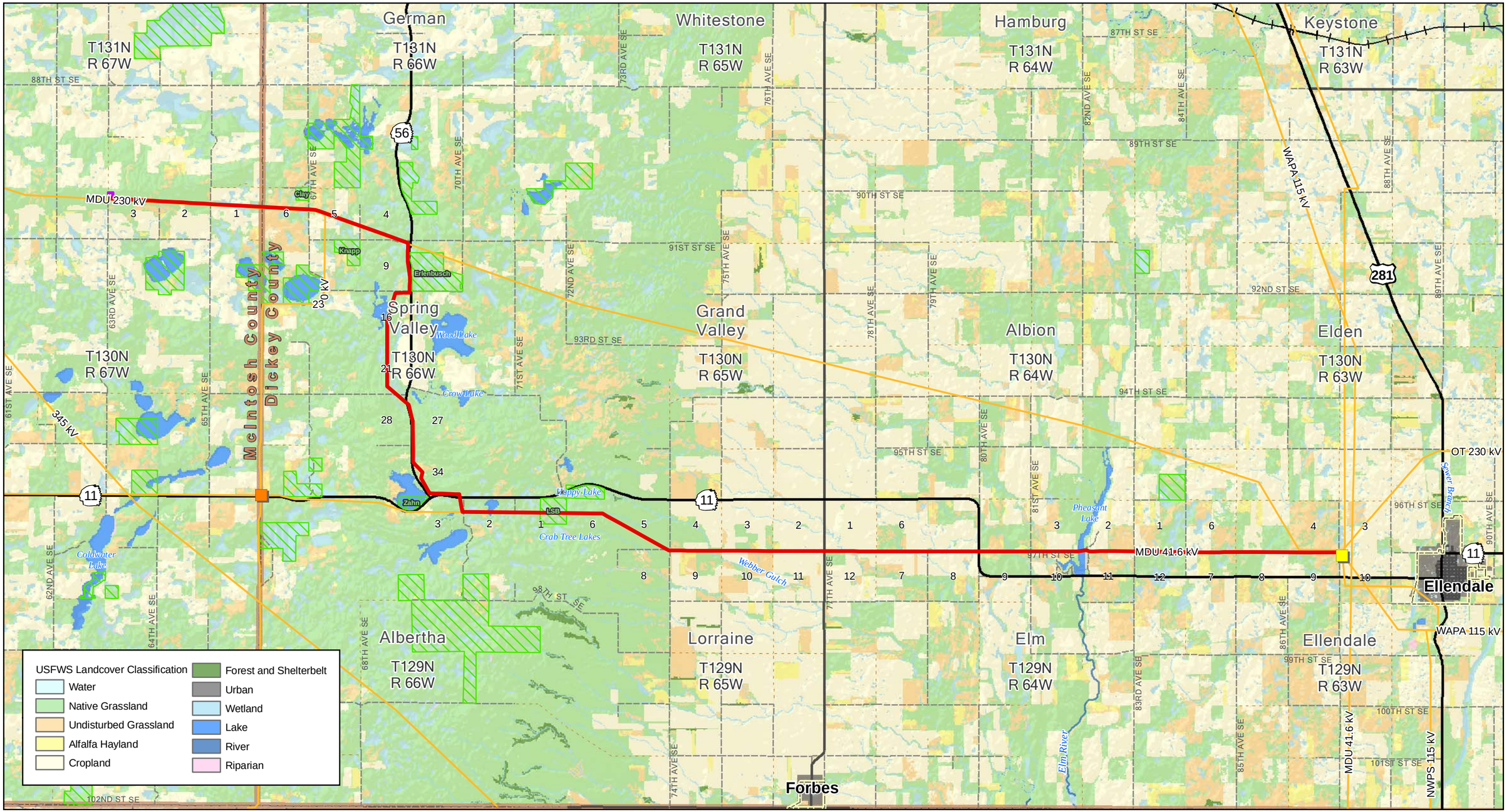

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- Proposed Route
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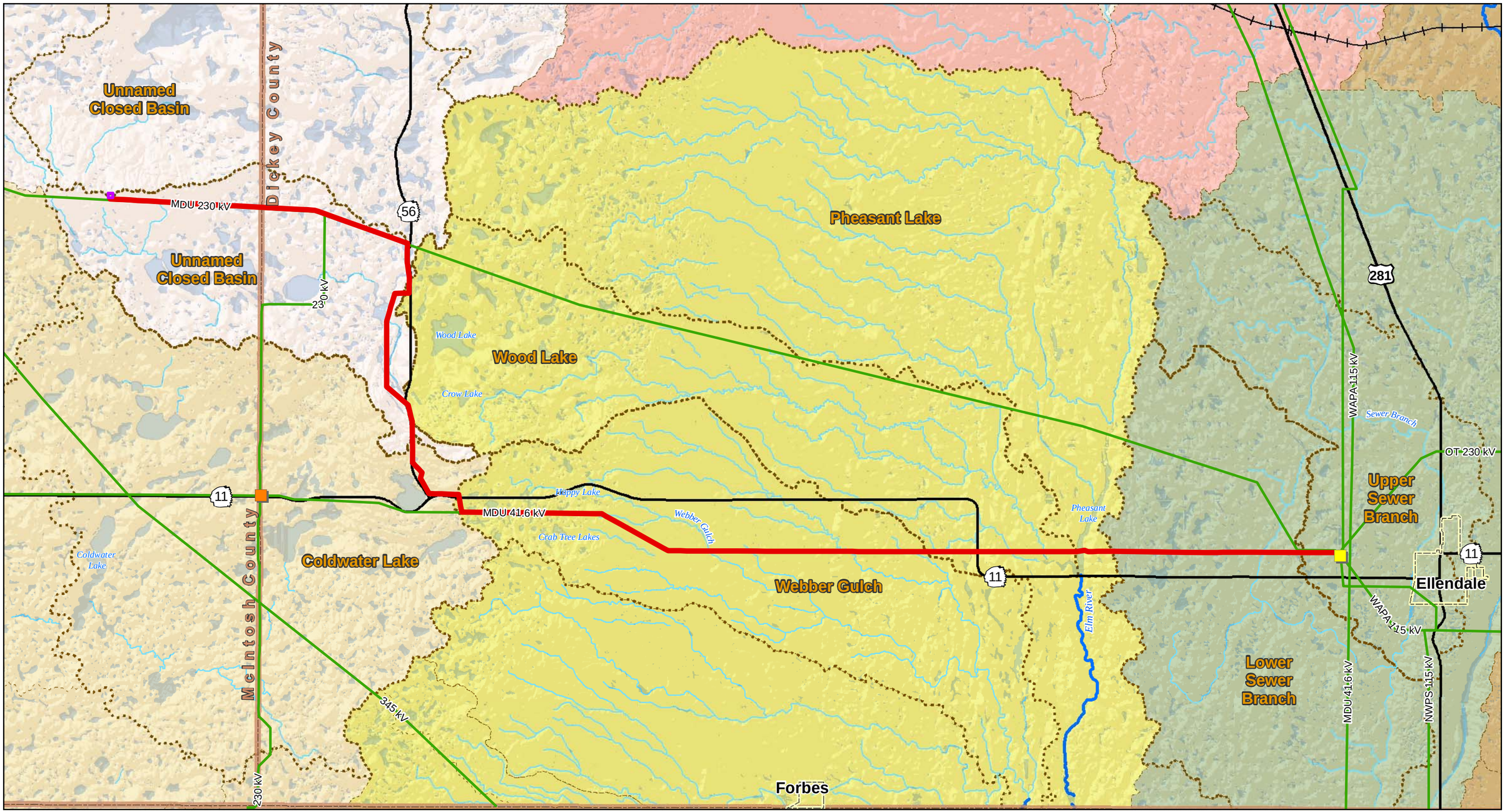
- Existing MDU Ellendale Jct. Substation
- Proposed Interconnection Substation
- Existing Transmission Line
- USFWS Waterfowl Production Area
- Intermittent
- Perennial
- Paved
- Graded/Drained/Gravel
- Trail/Unimproved
- County Boundary

Figure 2
USFWS Landcover Classification
Montana-Dakota Utilities Co.
Merricourt Wind Farm to
Ellendale Project

0 1 2 Miles



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- Proposed Route
- Existing Forbes Substation
- Existing MDU Ellendale Jct. Substation
- Proposed Interconnection Substation
- Existing Transmission Line
- 12-digit HUC Subwatershed Name

10-digit HUC Watershed
- Dry Branch
- Pheasant Lake
- Long Lake
- Maple River
- South Fork Maple River
- Town of Freedonia
- NWI Wetland
- Intermittent Watercourse
- Perennial Watercourse

Figure 3
Watersheds and Subwatersheds
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

0 1 2 Miles

N

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Ellendale Township

Dickey Co.

T129N
R 63W

87TH AVE SE

1476 FT

Fig 4-1a

Fig 4-1b

PEMA

PEMB

PEMC

17

13

9

10

3

1

2010 FSA Aerial Photography

Figure 4 - 01

MONTANA-DAKOTA UTILITIES CO.
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Map Overview
McIntosh Co.
Dickey Co.
281
0 1.5 3 6 Miles
Ellendale

- Proposed Pole Locations
- Proposed Interconnection Substation
- Proposed 120 Ft ROW
- Wetland Delineation Figure Inset
- Existing Transmission Line
- HUC 12-Digit Subwatershed Boundary
- General Limit of Area of Off-site Wetland Review

Wetland Review
- On-site Delineated
- Offsite Review/Field Verified
- On-site Delineated Drainage

Wetland Jurisdiction
- USFWS
- USFWS and USACE
- USACE*
- Isolated
- USFWS WPA or WDA
- County Boundary
- USGS Mapped Intermittent Drainage

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

0 500 1,000 Feet

*Expected USACE jurisdiction and does not represent an official USACE Approved JD

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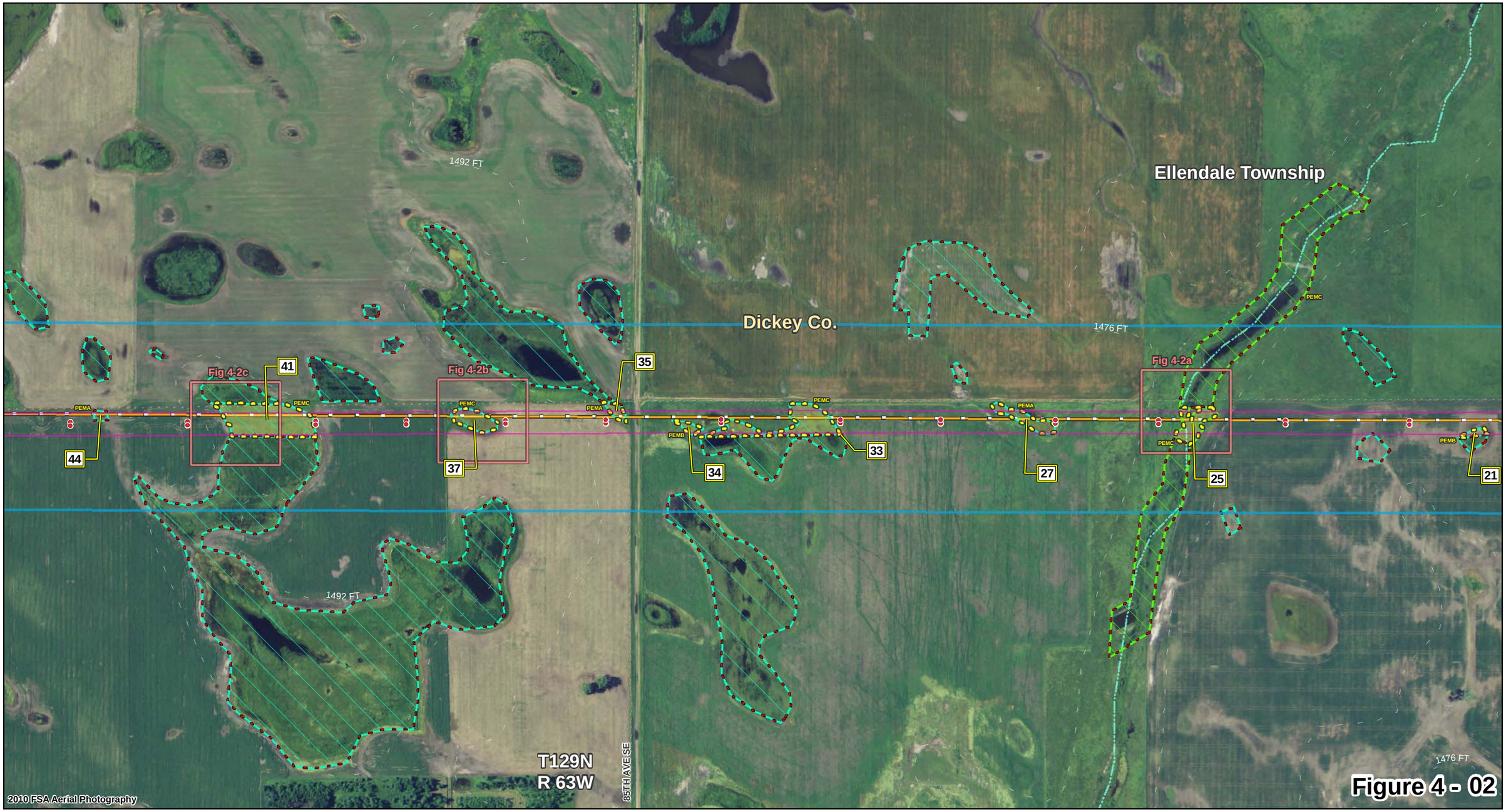

Figure 4 - 02

MONTANA-DAKOTA UTILITIES CO.
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- Proposed Pole Locations
- Proposed Interconnection Substation
- Proposed 120 Ft ROW
- Wetland Delineation Figure Inset
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- HUC 12-Digit Subwatershed Boundary
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Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

N 0 500 1,000 Feet

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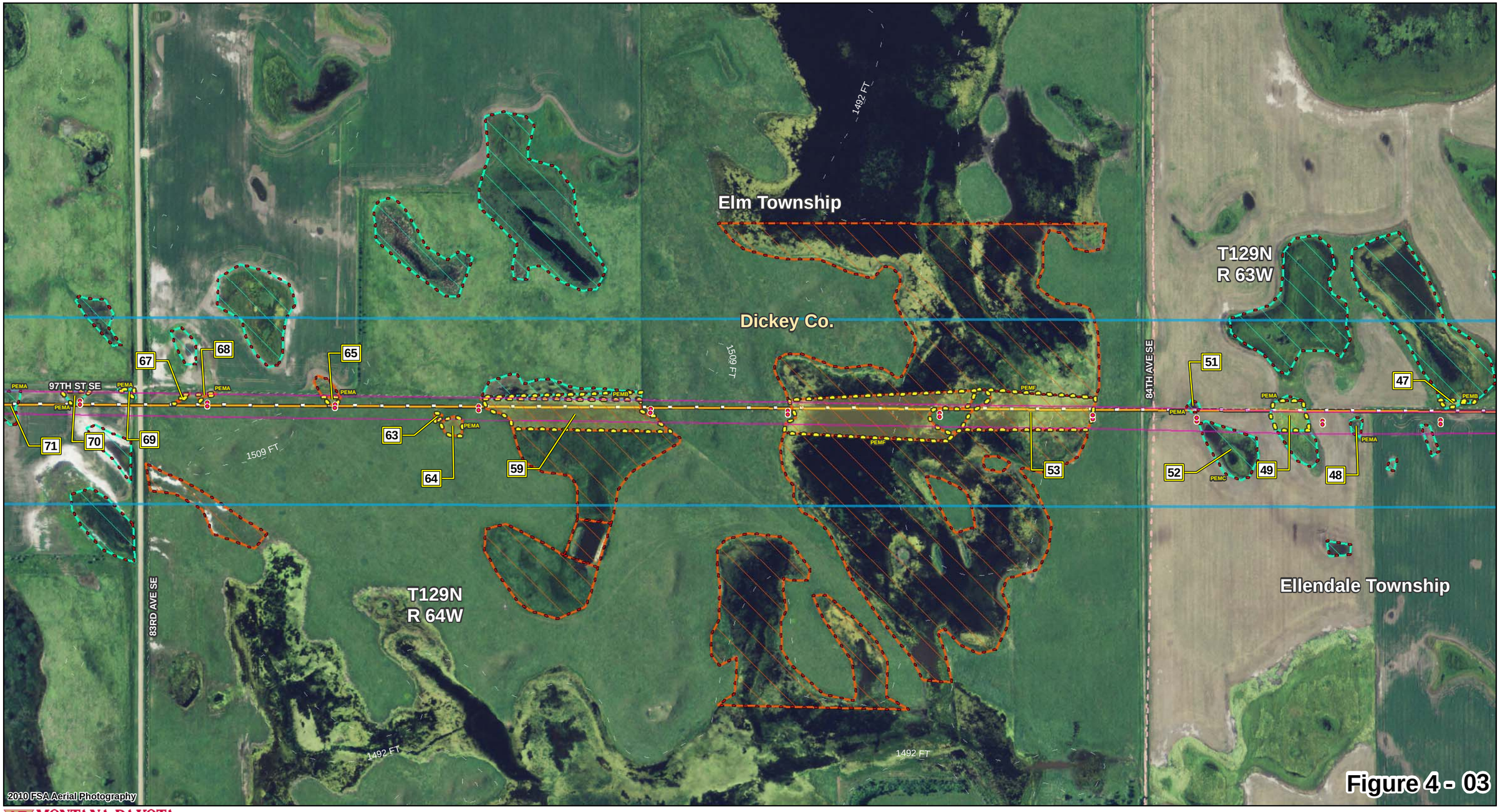

Figure 4 - 03

MONTANA-DAKOTA UTILITIES CO.
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- Proposed Pole Locations
- Proposed Interconnection Substation
- Proposed 120 Ft ROW
- Wetland Delineation Figure Inset
- Existing Transmission Line
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Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

N 0 500 1,000 Feet

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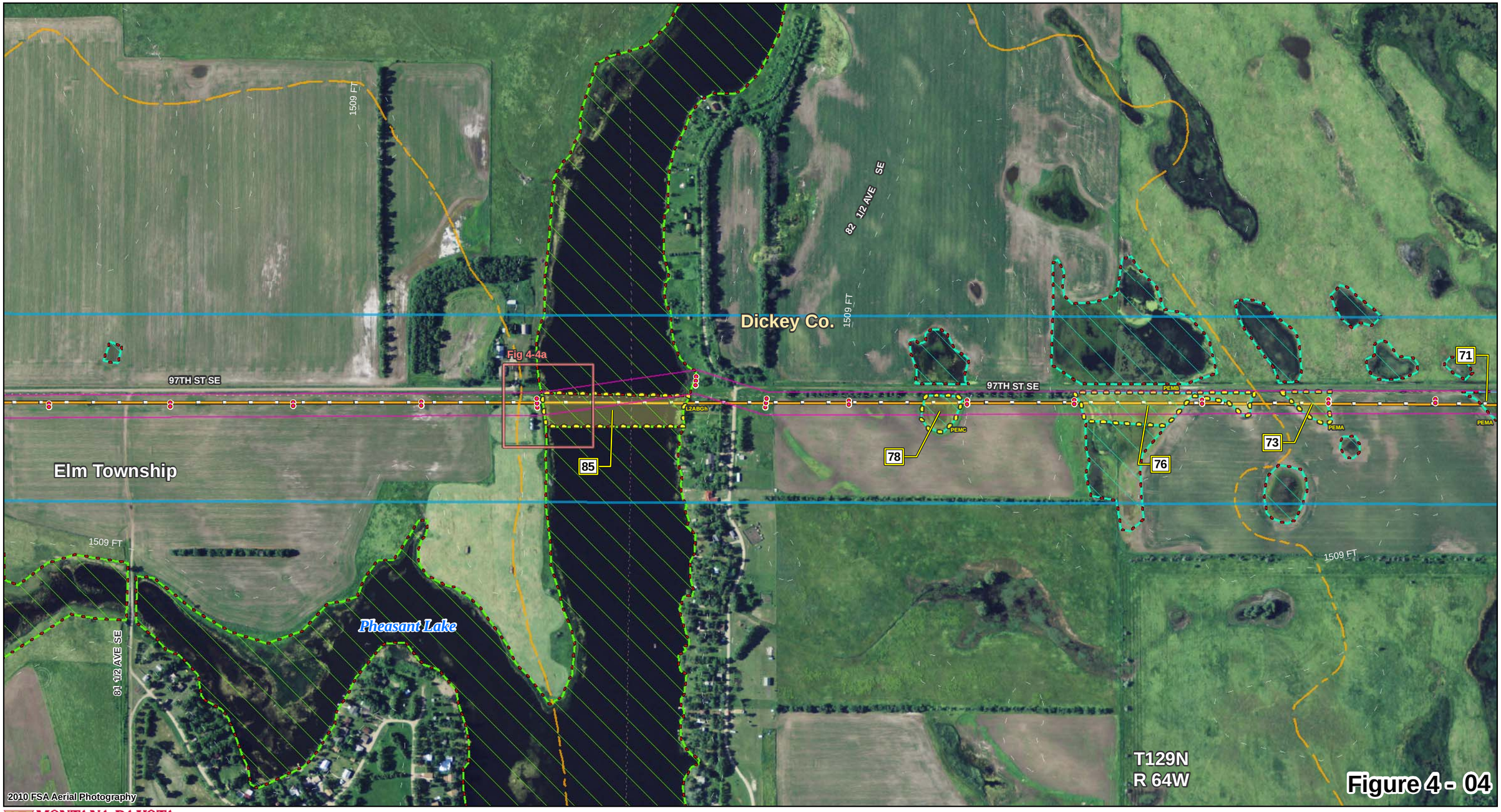

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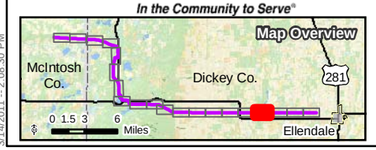

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Montana-Dakota Utilities Co.
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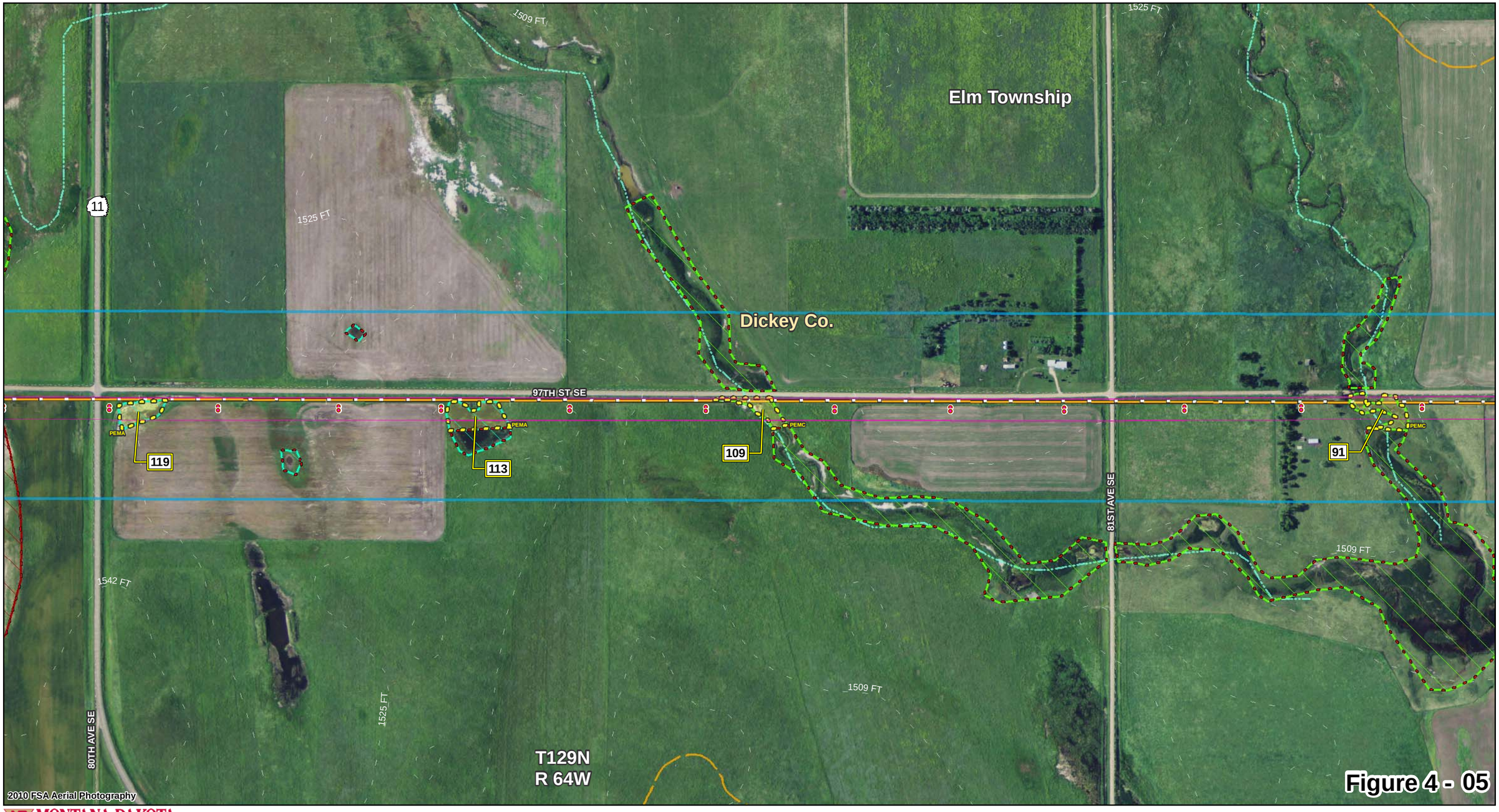

Figure 4 - 05

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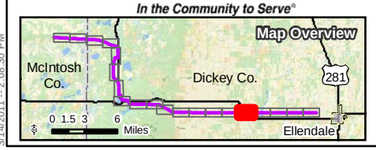

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Merricourt Wind Farm to Ellendale Project

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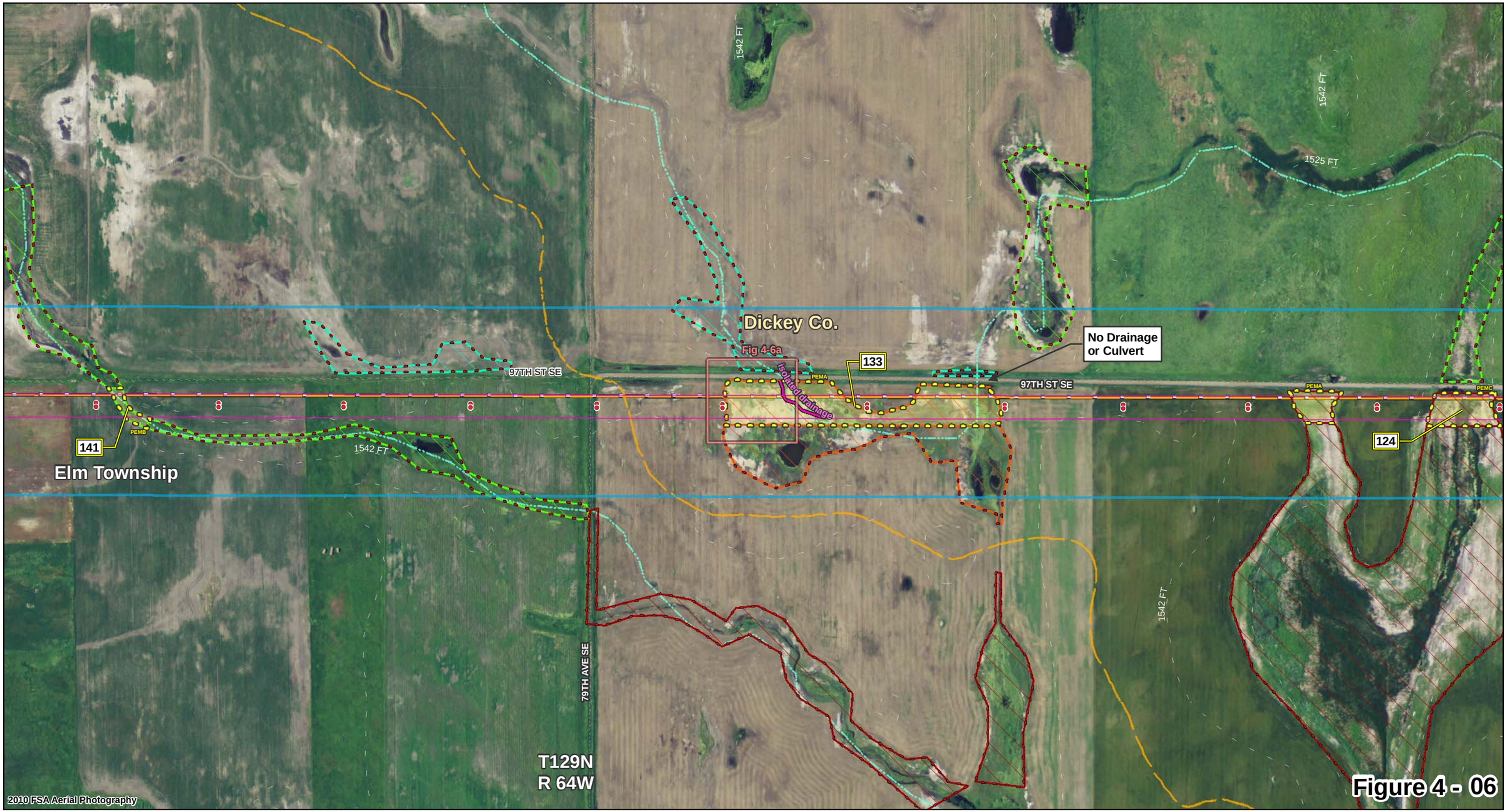

Figure 4 - 06

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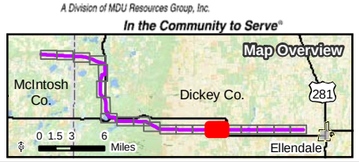

- Proposed Pole Locations
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- Proposed 120 Ft ROW
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Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

0 500 1,000 Feet

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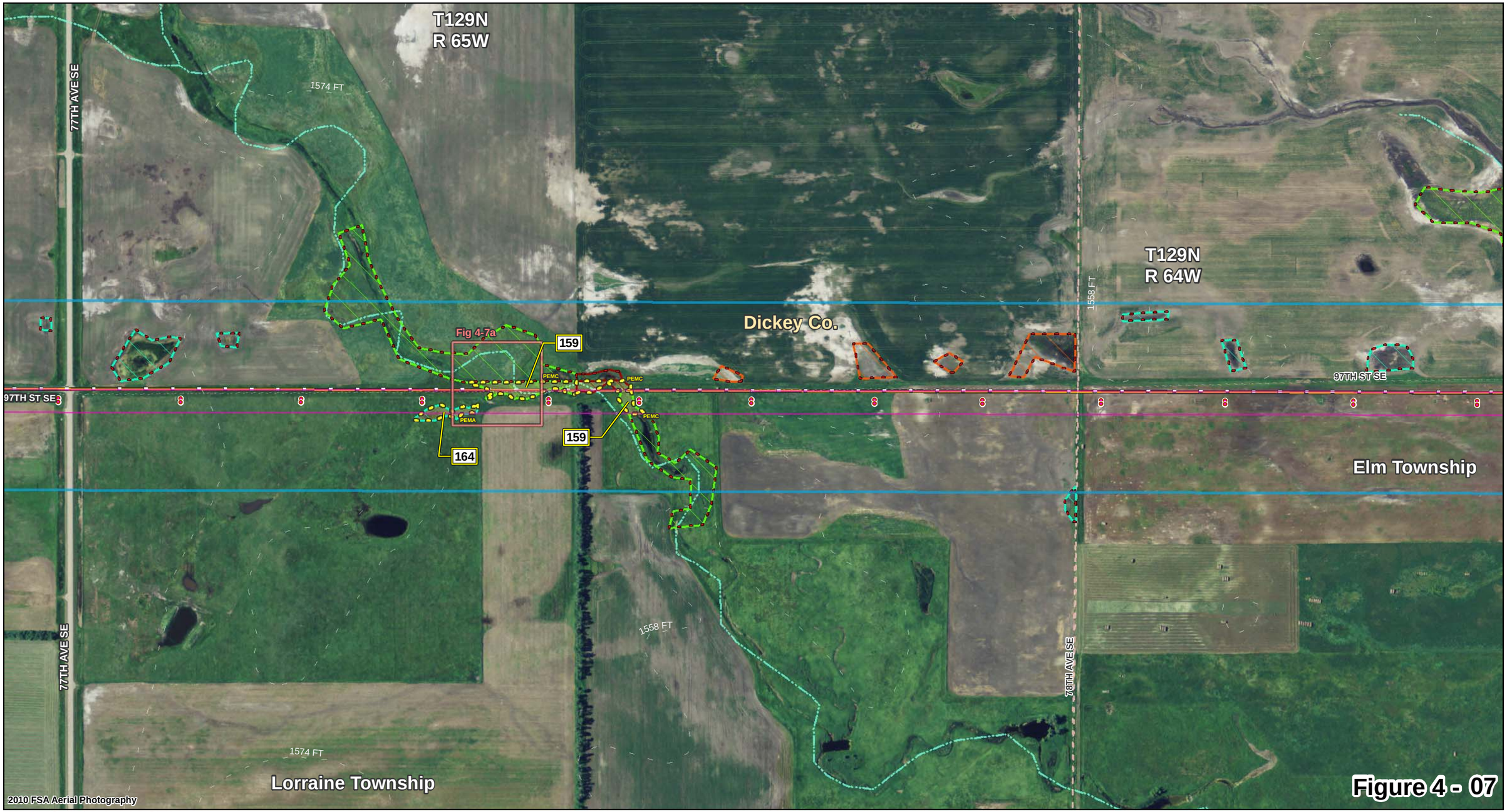

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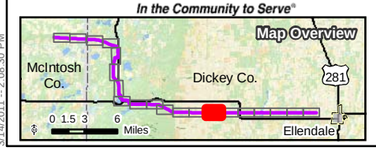

- Proposed Pole Locations
- Proposed Interconnection Substation
- Proposed 120 Ft ROW
- Wetland Delineation Figure Inset
- Existing Transmission Line
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- County Boundary
- USGS Mapped Intermittent Drainage

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

N 0 500 1,000 Feet

Figure 4 - 07

*Expected USACE jurisdiction and does not represent an official USACE Approved JD

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Lorraine Township

Dickey Co.

76TH AVE SE

97TH ST SE

1607 FT

1624 FT

1591 FT

Fig 4-8a

191

193

185

181

175

174

PEMA

PEMB

T129N
R 65W

2010 FSA Aerial Photography

Figure 4 - 08

MONTANA-DAKOTA UTILITIES CO.
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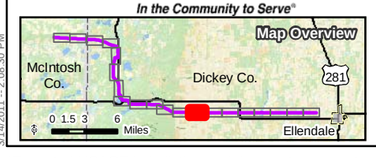

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- USFWS
- USFWS and USACE
- USACE*
- Isolated
- USFWS WPA or WDA
- County Boundary
- USGS Mapped Intermittent Drainage

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to
Ellendale Project

N 0 500 1,000 Feet

*Expected USACE jurisdiction and does not represent an official USACE Approved JD

Map Document: (\\mspe-gis-file\GISProj\MDU\140114\map_docs\Wetland_Report\Fig4_MWFE_DetailedWetlands.mxd)
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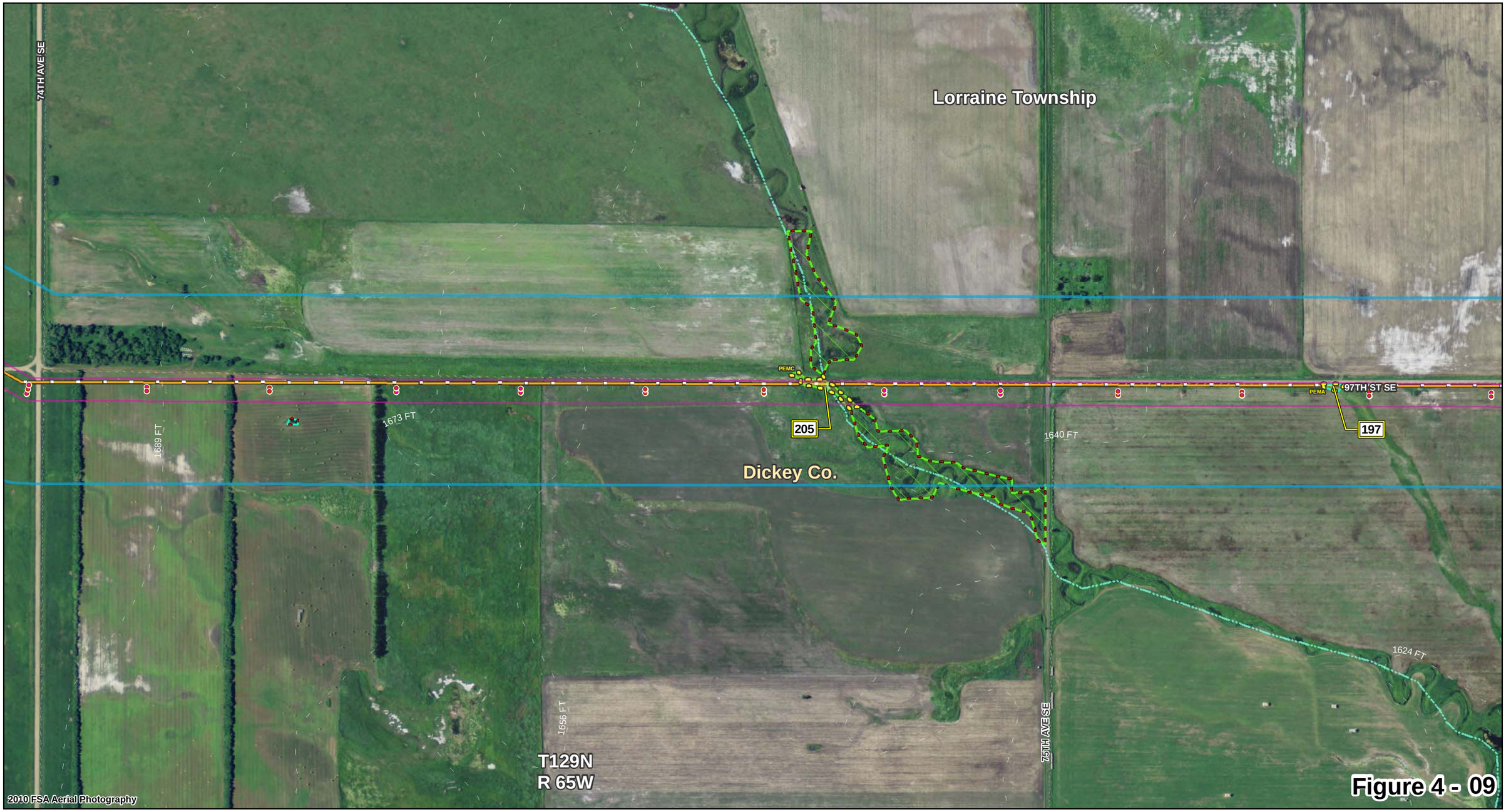
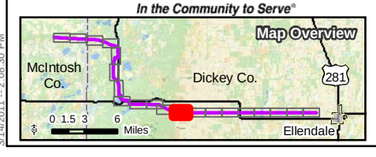


MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.
In the Community to Serve®



- Proposed Pole Locations
- Proposed Interconnection Substation
- Proposed 120 Ft ROW
- Wetland Delineation Figure Inset
- Existing Transmission Line
- HUC 12-Digit Subwatershed Boundary
- General Limit of Area of Off-site Wetland Review

Wetland Review
- On-site Delineated
- Offsite Review/Field Verified
- On-site Delineated Drainage

Wetland Jurisdiction
- USFWS
- USFWS and USACE
- USACE*
- Isolated
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Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

0 500 1,000 Feet

*Expected USACE jurisdiction and does not represent an official USACE Approved JD

Map Document: (\\mspe-gis-file\GIS\Proj\MDU\14011\4\map_docs\Wetland_Report\Fig4_MWFE_DetailedWetlands.mxd)
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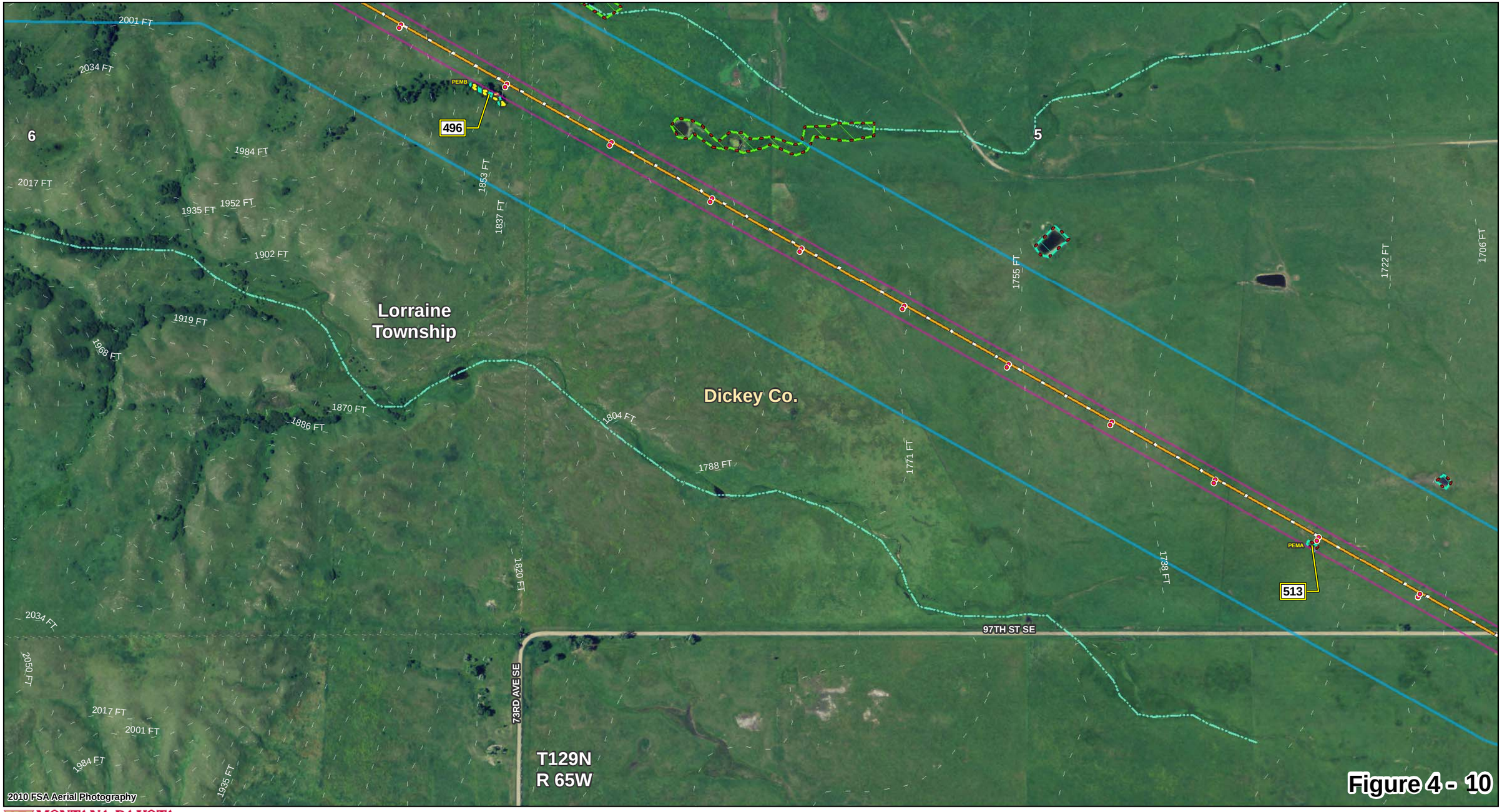

MONTANA-DAKOTA UTILITIES CO.
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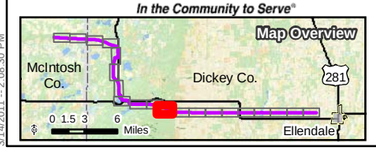
In the Community to Serve®



- Proposed Pole Locations
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Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

0 500 1,000 Feet

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Map Document: (\\mtsgvfe-gis-file\GISProj\MDU\140114\map_docs\Wetland_Report\Fig4_MWFE_DetailedWetlands.mxd)
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T130N
R 66W

Spring Valley Township

Happy Lake

T130N
R 65W

LSB WPA

Grand Valley Township

Lorraine Township

Albertha Township

LSB WPA

Dickey Co.

T129N
R 66W

T129N
R 65W

6

Crab Tree Lakes

2010 FSA Aerial Photography

Figure 4 - 11

MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.
In the Community to Serve®

Map Overview
McIntosh Co.
Dickey Co.
281
0 1.5 3 6
Miles
Ellendale

- Proposed Pole Locations
- Proposed Interconnection Substation
- Proposed 120 Ft ROW
- Wetland Delineation Figure Inset
- Existing Transmission Line
- HUC 12-Digit Subwatershed Boundary
- General Limit of Area of Off-site Wetland Review

Wetland Review
- On-site Delineated
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- On-site Delineated Drainage

Wetland Jurisdiction
- USFWS
- USFWS and USACE
- USACE*
- Isolated
- USFWS WPA or WDA
- County Boundary
- USGS Mapped Intermittent Drainage

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

N
0 500 1,000 Feet

*Expected USACE jurisdiction and does not represent an official USACE Approved JD

Map Document: (\\mspe-gis-file\GISProj\MDU\14011\4\map_docs\Wetland_Report\Fig4_MWFE_DetailedWetlands.mxd)
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T130N
R 66W

Spring Valley Township

11

2066 FT
2099 FT
2083 FT
2050 FT

LSB
WPA

71ST AVE SE

PEMG
PEMC
PEMB
PEMF
L2ABG

429
446
449
455
458
459
460
461
462
470
428

2083 FT
2099 FT
2066 FT
2034 FT
2050 FT

Dickey Co.

2

Albertha Township

70TH AVE SE

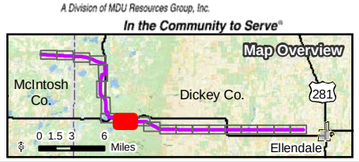
T129N
R 66W

1

2010 FSA Aerial Photography

Figure 4 - 12

MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.
In the Community to Serve®



- Proposed Pole Locations
- Proposed Interconnection Substation
- Proposed 120 Ft ROW
- Wetland Delineation Figure Inset
- Existing Transmission Line
- HUC 12-Digit Subwatershed Boundary
- General Limit of Area of Off-site Wetland Review

Wetland Review
- On-site Delineated
- Offsite Review/Field Verified
- On-site Delineated Drainage

Wetland Jurisdiction
- USFWS
- USFWS and USACE
- USACE*
- Isolated

- USFWS WPA or WDA
- County Boundary
- USGS Mapped Intermittent Drainage

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to
Ellendale Project

N
0 500 1,000 Feet

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Map Document: (\\mspe-gis-file\GISProj\MDU\14011\map_docs\Wetland_Report\Fig4_MWFE_DetailedWetlands.mxd)
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T130N
R 66W

Spring Valley Township

Dickey Co.

Albertha Township

T129N
R 66W

Zahn WPA

2099 FT

2148 FT

2132 FT

2116 FT

2083 FT

2066 FT

56

11

418

420

422

436

441

442

428

427

PEMB

PEMC

PEMA

PEMF

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Figure 4 - 13

MONTANA-DAKOTA UTILITIES CO.
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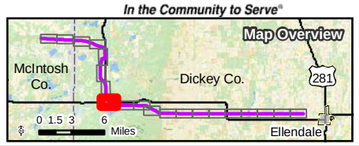
In the Community to Serve®



- Proposed Pole Locations
- Proposed Interconnection Substation
- Proposed 120 Ft ROW
- Wetland Delineation Figure Inset
- Existing Transmission Line
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Wetland Review
- On-site Delineated
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Wetland Jurisdiction
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- USFWS and USACE
- USACE*
- Isolated
- USFWS WPA or WDA
- County Boundary
- USGS Mapped Intermittent Drainage

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

N 0 500 1,000 Feet

*Expected USACE jurisdiction and does not represent an official USACE Approved JD

Map Document: (\\mtsgvfe-gis-file\GISProj\MDU\14011\4\map_docs\Wetland_Report\Fig4_MWFE_DetailedWetlands.mxd)
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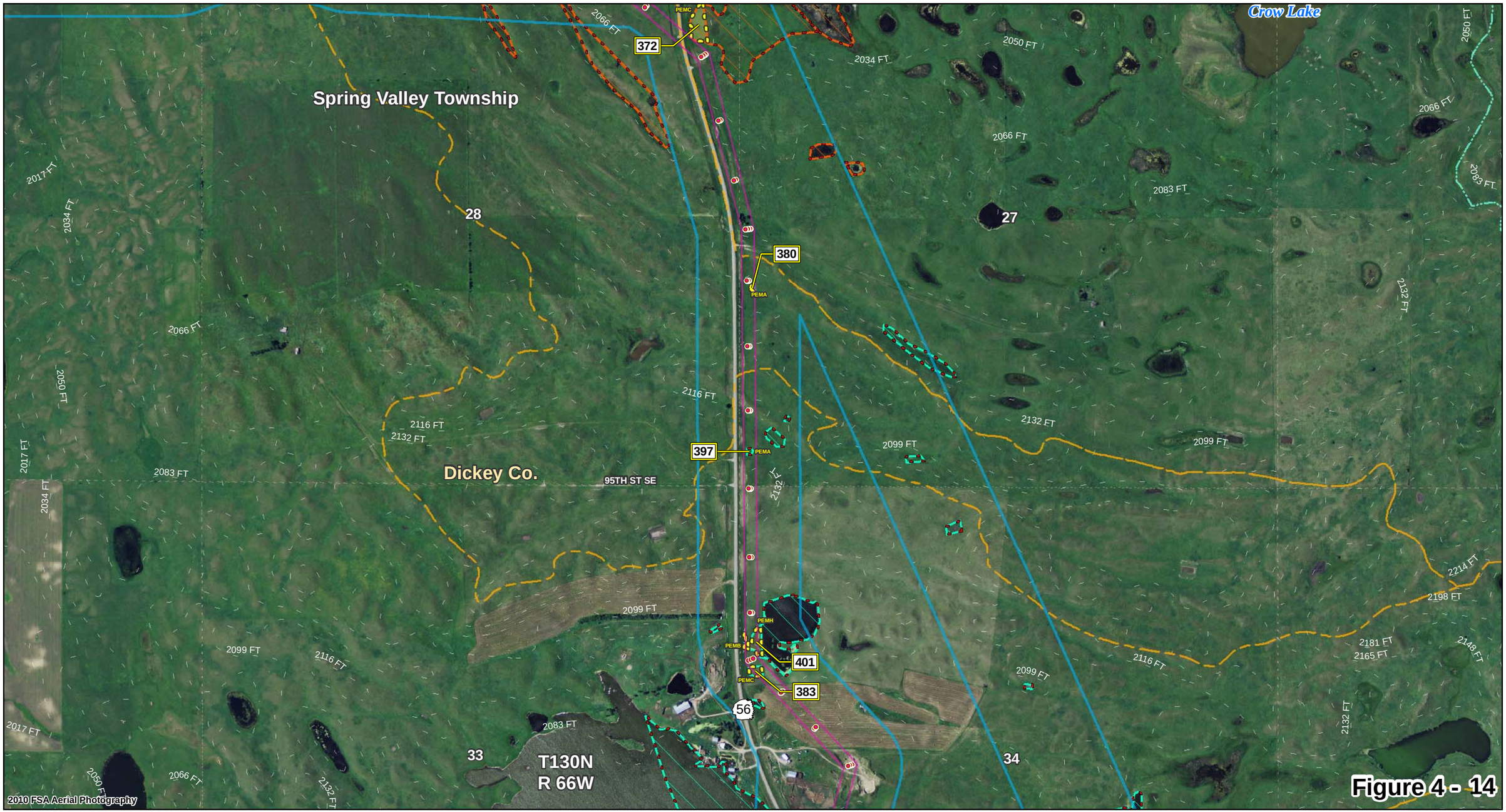

Figure 4 - 14

MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.
In the Community to Serve®

- Proposed Pole Locations
- Proposed Interconnection Substation
- Proposed 120 Ft ROW
- Wetland Delineation Figure Inset
- Existing Transmission Line
- HUC 12-Digit Subwatershed Boundary
- General Limit of Area of Off-site Wetland Review

Wetland Review
- On-site Delineated
- Offsite Review/Field Verified
- On-site Delineated Drainage

Wetland Jurisdiction
- USFWS
- USFWS and USACE
- USACE*
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- USFWS WPA or WDA
- County Boundary
- USGS Mapped Intermittent Drainage

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

N 0 500 1,000 Feet

*Expected USACE jurisdiction and does not represent an official USACE Approved JD

Map Document: (\\mspe-gis-file\GISProj\MDU\14011\map_docs\Wetland_ReportFig4_MWFE_DetailedWetlands.mxd)
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Spring Valley Township

Dickey Co.

Wood Lake

T130N
R 66W

T130N
R 66W

94TH ST SE

94TH ST SE

20

21

22

56

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Figure 4 - 15

Crow, LLC

MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.
In the Community to Serve®

Map Overview
McIntosh Co.
Dickey Co.
281
0 1.5 3 6 Miles
Ellendale

- Proposed Pole Locations
- Proposed Interconnection Substation
- Proposed 120 Ft ROW
- Wetland Delineation Figure Inset
- Existing Transmission Line
- HUC 12-Digit Subwatershed Boundary
- General Limit of Area of Off-site Wetland Review

Wetland Review
- On-site Delineated
- Offsite Review/Field Verified
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Wetland Jurisdiction
- USFWS
- USFWS and USACE
- USACE*
- Isolated
- USFWS WPA or WDA
- County Boundary
- USGS Mapped Intermittent Drainage

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

N 0 500 1,000 Feet

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Map Document: (\\mspe-gis-file\GIS\Proj\MDU\140114\map_docs\Wetland_Report\Fig4_MWFE_DetailedWetlands.mxd)
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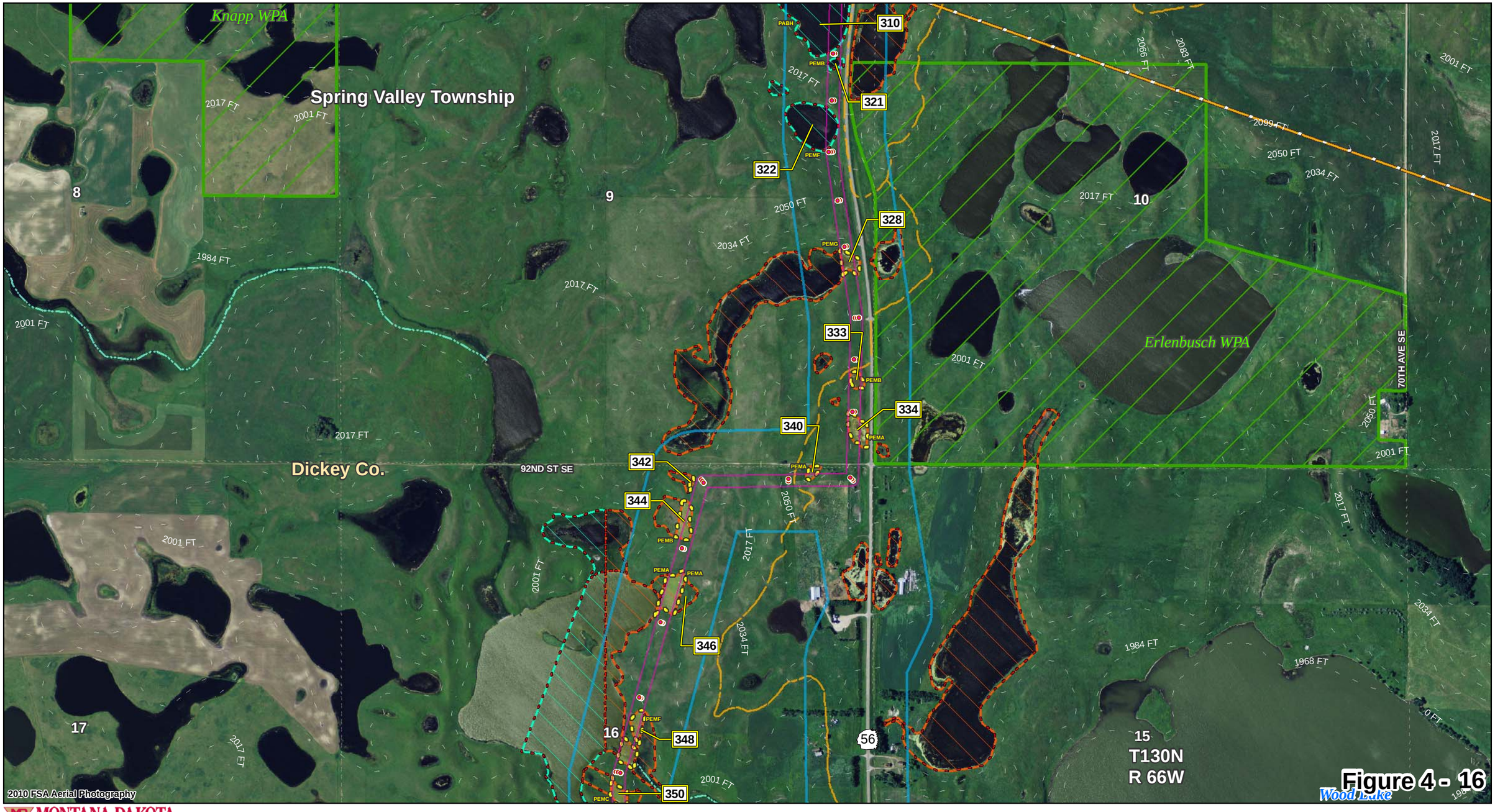
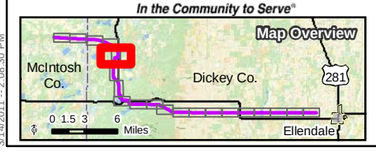


MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.
In the Community to Serve®



- Proposed Pole Locations
- Proposed Interconnection Substation
- Proposed 120 Ft ROW
- Wetland Delineation Figure Inset
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Wetland Review
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- On-site Delineated Drainage

Wetland Jurisdiction
- USFWS
- USFWS and USACE
- USACE*
- Isolated
- USFWS WPA or WDA
- County Boundary
- USGS Mapped Intermittent Drainage

Figure 4 - 16

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

0 500 1,000 Feet

Wood Lake

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*Expected USACE jurisdiction and does not represent an official USACE Approved JD

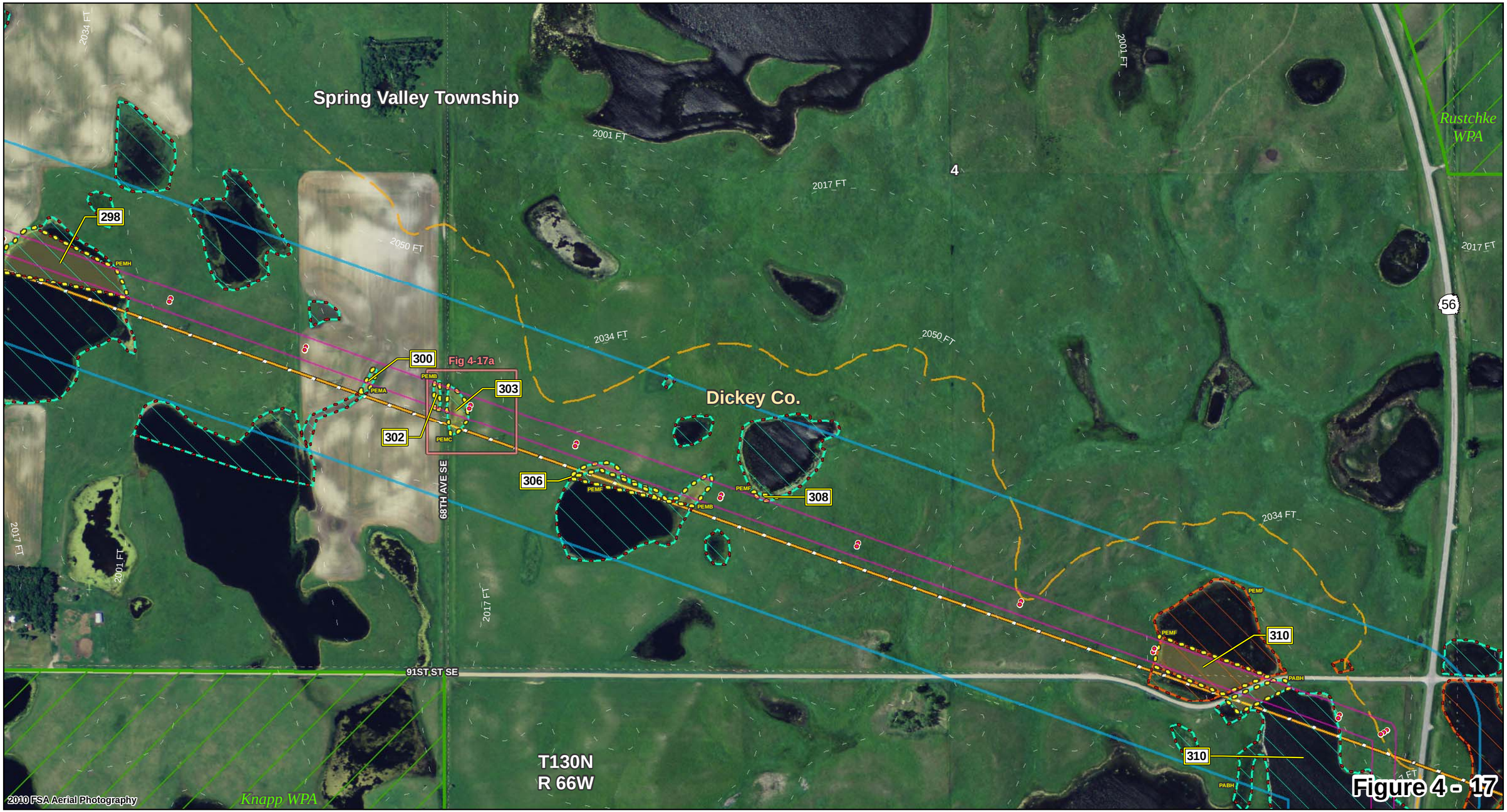

Figure 4 - 17

MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.
In the Community to Serve®

- Proposed Pole Locations
- Proposed Interconnection Substation
- Proposed 120 Ft ROW
- Wetland Delineation Figure Inset
- Existing Transmission Line
- HUC 12-Digit Subwatershed Boundary
- General Limit of Area of Off-site Wetland Review

Wetland Review
- On-site Delineated
- Offsite Review/Field Verified
- On-site Delineated Drainage

Wetland Jurisdiction
- USFWS
- USFWS and USACE
- USACE*
- Isolated

- USFWS WPA or WDA
- County Boundary
- USGS Mapped Intermittent Drainage

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

N
0 500 1,000 Feet

*Expected USACE jurisdiction and does not represent an official USACE Approved JD

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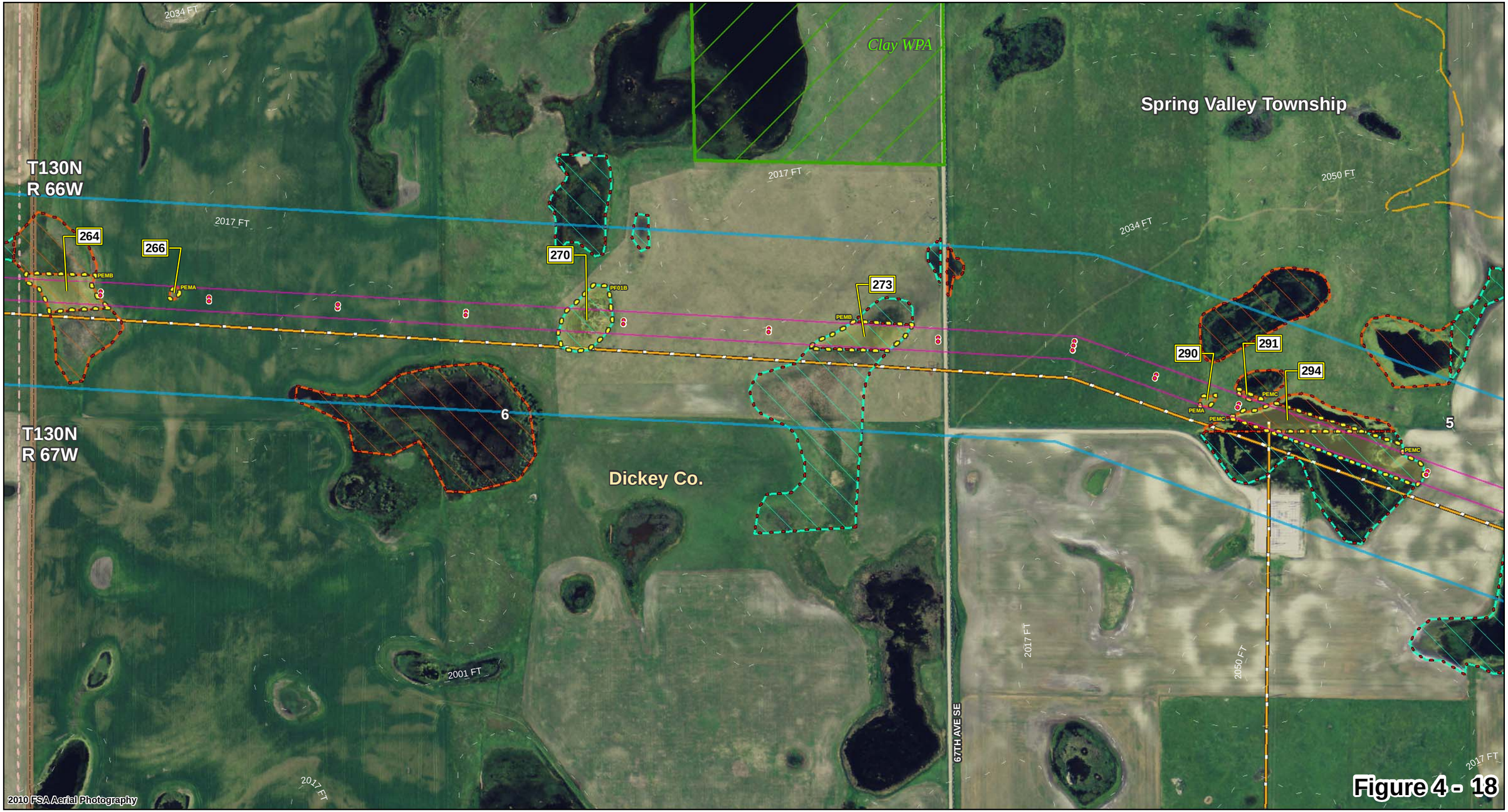

MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.
In the Community to Serve®

- Proposed Pole Locations
- Proposed Interconnection Substation
- Proposed 120 Ft ROW
- Wetland Delineation Figure Inset
- Existing Transmission Line
- HUC 12-Digit Subwatershed Boundary
- General Limit of Area of Off-site Wetland Review

Wetland Review
- On-site Delineated
- Offsite Review/Field Verified
- On-site Delineated Drainage

Wetland Jurisdiction
- USFWS
- USFWS and USACE
- USACE*
- Isolated
- USFWS WPA or WDA
- County Boundary
- USGS Mapped Intermittent Drainage

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

0 500 1,000 Feet

*Expected USACE jurisdiction and does not represent an official USACE Approved JD

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Figure 4 - 19

MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.
In the Community to Serve®

- Proposed Pole Locations
- Proposed Interconnection Substation
- Proposed 120 Ft ROW
- Wetland Delineation Figure Inset
- Existing Transmission Line
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Wetland Review
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Wetland Jurisdiction
- USFWS
- USFWS and USACE
- USACE*
- Isolated
- USFWS WPA or WDA
- County Boundary
- USGS Mapped Intermittent Drainage

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

0 500 1,000 Feet

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T131N
R 67W

Unorganized
Territory
Township

2165 FT

2263 FT

2230 FT

2198 FT

2165 FT

2132 FT

PEMC

281

PEMA

224

278

PEMB

McIntosh Co.

2099 FT

63RD AVE SE

2066 FT

3

2034 FT

64TH AVE SE

T130N
R 67W

Unorganized
Territory
Township

2165 FT

2010 FSA Aerial Photography

Figure 4 - 20

MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.
In the Community to Serve®

- Proposed Pole Locations
- Proposed Interconnection Substation
- Proposed 120 Ft ROW
- Wetland Delineation Figure Inset
- Existing Transmission Line
- HUC 12-Digit Subwatershed Boundary
- General Limit of Area of Off-site Wetland Review

Wetland Review
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- Offsite Review/Field Verified
- On-site Delineated Drainage

Wetland Jurisdiction
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- USFWS and USACE
- USACE*
- Isolated
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- County Boundary
- USGS Mapped Intermittent Drainage

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to
Ellendale Project

N
0 500 1,000 Feet

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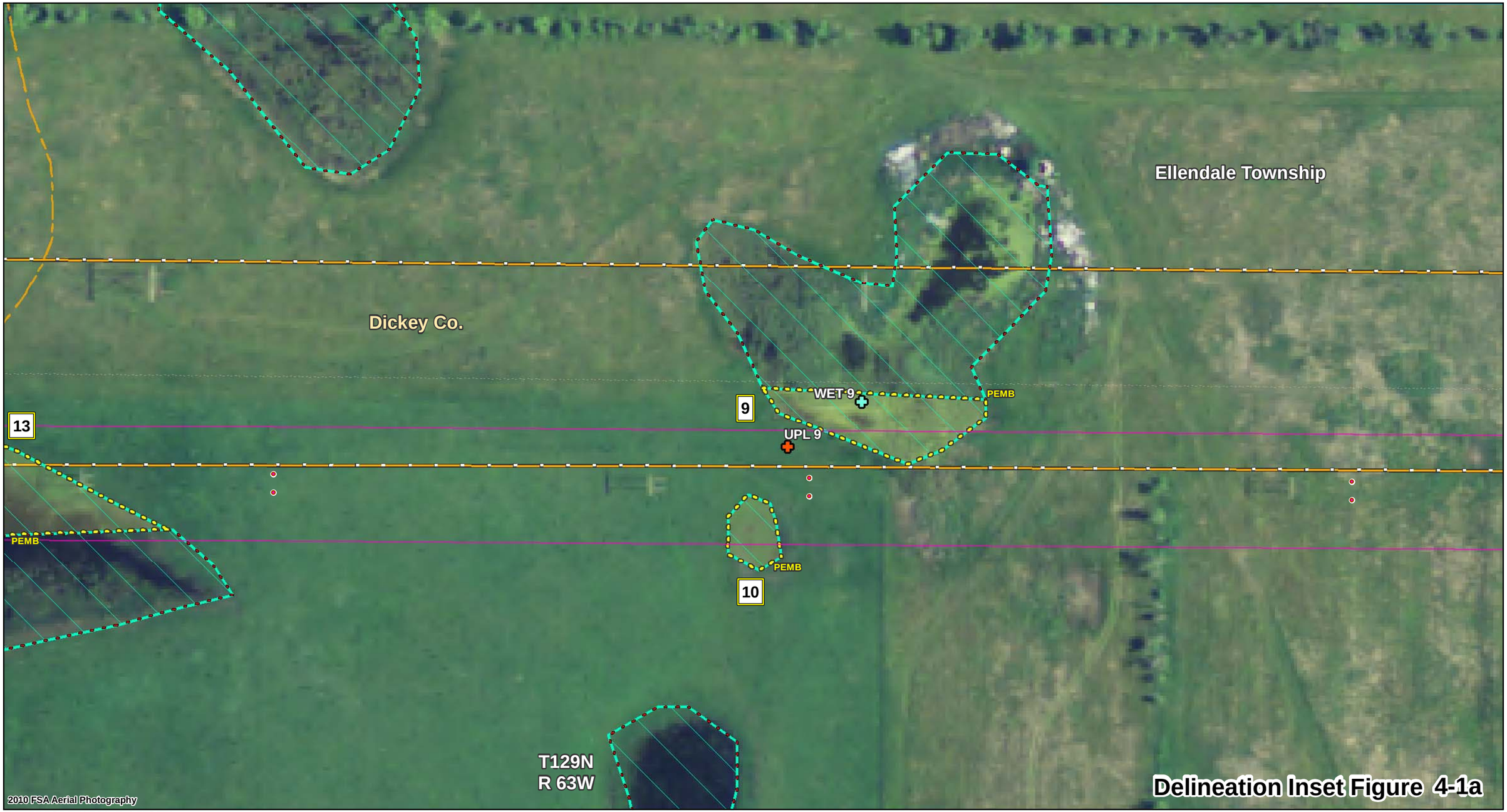
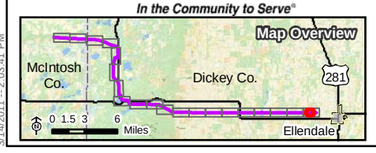
Delineation Inset Figures



Delineation Inset Figure 4-1a

MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.
In the Community to Serve®



- Proposed Pole Locations
- Proposed 120 Foot ROW
- Proposed Interconnection Substation
- Existing Transmission Line
- HUC 12-Digit Subwatershed Boundary
- General Limit of Area of Off-site Wetland Review

Wetland Review
- On-site Delineated
- Offsite Review/Field Verified
- On-site Delineated Drainage

Wetland Jurisdiction
- USFWS
- USFWS and USACE
- USACE*
- Isolated

- Upland Data Point
- Wetland Data Point
- USFWS WPA or WDA

USGS Mapped Watercourse
- Intermittent Drainage

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to
Ellendale Project

N

0 100 200 Feet

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13

PEMB

WET13

Ellendale Township

1476 FT

Dickey Co.

UPL 13

2010 FSA Aerial Photography

T129N

R

Delineation Inset Figure 4-1b

MONTANA-DAKOTA UTILITIES CO.
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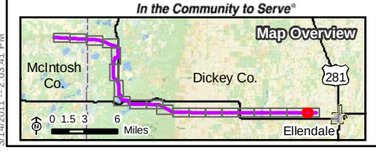
In the Community to Serve®



- Proposed Pole Locations
- Proposed 120 Foot ROW
- Proposed Interconnection Substation
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Wetland Review
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Wetland Jurisdiction
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- USACE*
- Isolated

- Upland Data Point
- Wetland Data Point
- USFWS WPA or WDA

USGS Mapped Watercourse
- Intermittent Drainage

N

0 100 200 Feet

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to
Ellendale Project

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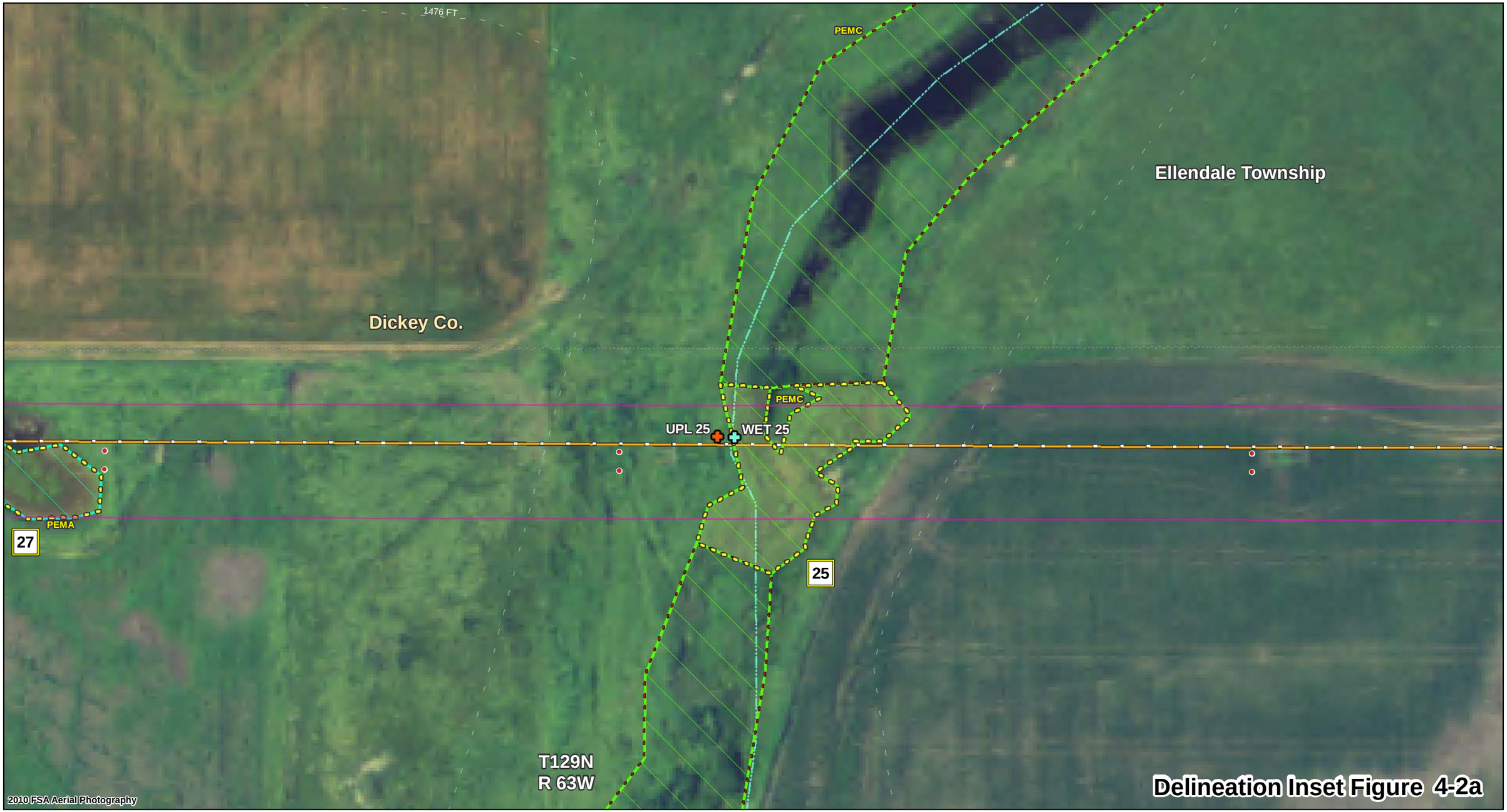

MONTANA-DAKOTA UTILITIES CO.
A Division of MDU Resources Group, Inc.
In the Community to Serve®

- Proposed Pole Locations
- Proposed 120 Foot ROW
- Proposed Interconnection Substation
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- Isolated

- Upland Data Point
- Wetland Data Point
- USFWS WPA or WDA

USGS Mapped Watercourse
- Intermittent Drainage

N

0 100 200 Feet

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to
Ellendale Project

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Map Document: (\\mspe-gis-file\GISPro\MDU\14014\map_docs\Wetland_Report\Fig4_MWFE_DetailedWetlands_Insets.mxd)
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1492 FT

Dickey Co.

37

PEMC

UPL 37

WET 37

35

PEMA

Ellendale Township

85TH AVE SE

T129N
R 63W

2010 FSA Aerial Photography

Delineation Inset Figure 4-2b

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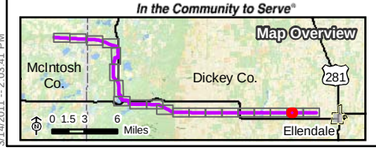

- Proposed Pole Locations
- Proposed 120 Foot ROW
- Proposed Interconnection Substation
- Existing Transmission Line
- HUC 12-Digit Subwatershed Boundary
- General Limit of Area of Off-site Wetland Review

Wetland Review
- On-site Delineated
- Offsite Review/Field Verified
- On-site Delineated Drainage

Wetland Jurisdiction
- USFWS
- USFWS and USACE
- USACE*
- Isolated

- Upland Data Point
- Wetland Data Point
- USFWS WPA or WDA

USGS Mapped Watercourse
- Intermittent Drainage

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to
Ellendale Project

N

0 100 200 Feet

*Expected USACE jurisdiction and does not represent an official USACE Approved JD

Map Document: (\\mtsp\e-gis-file\GISProj\MDU\140114\map_docs\Wetland_ReportFig4_MWFE_DetailedWetlands_Insets.mxd)
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Montana-Dakota Utilities Co.
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Ellendale Project

N

0 100 200 Feet

Map Document: (\\mspe-gis-file\GISProj\MDU\L14011\map_docs\Wetland_Report\Fig4_MWFE_DetailedWetlands_Insets.mxd)
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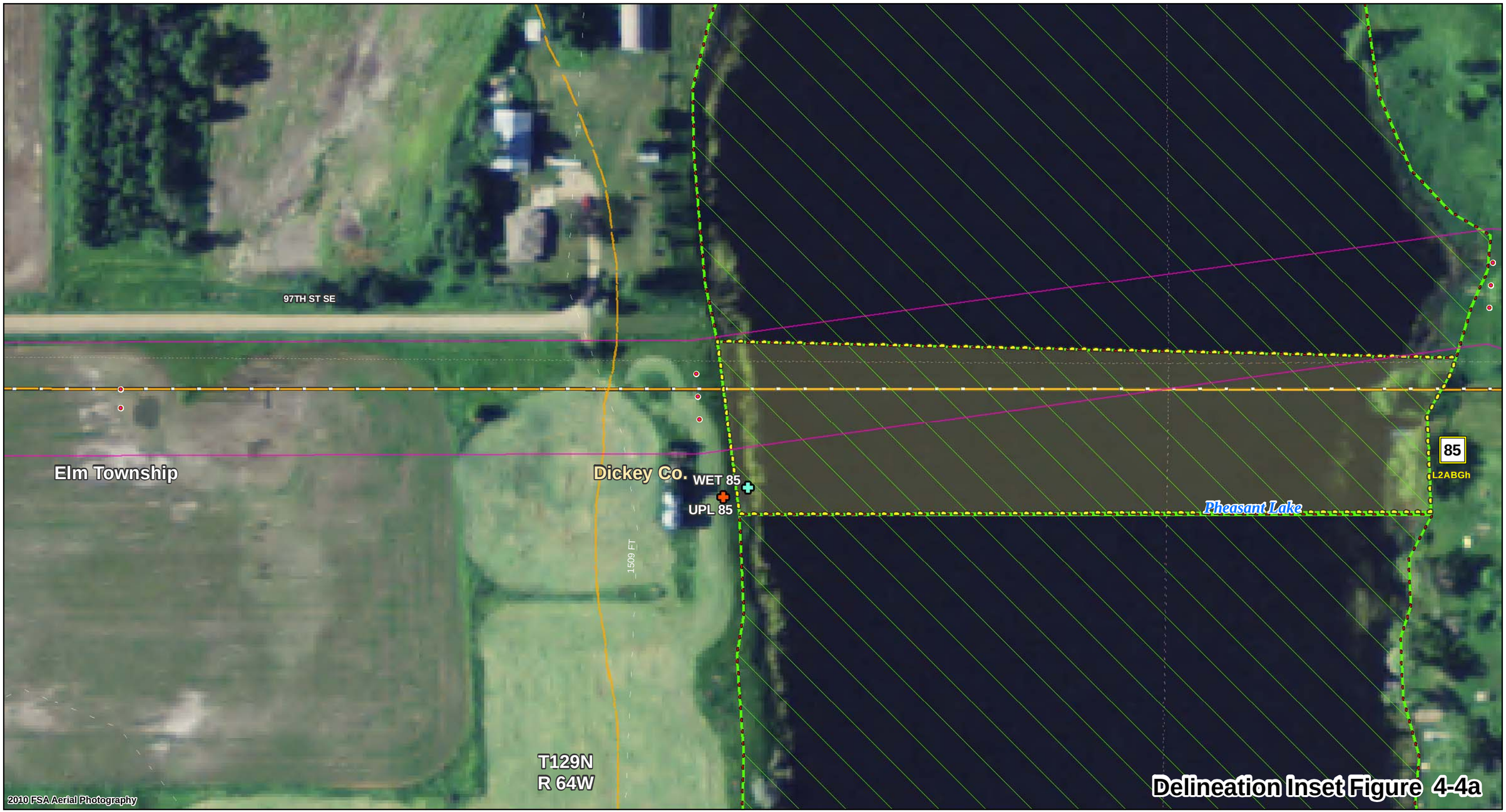

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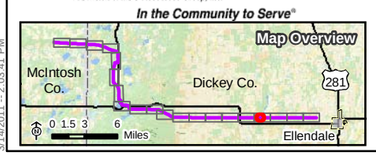

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Elm Township

97TH ST SE

133

PEMA

Dickey Co.

Isolated drainage

WET133

UPL 133

1542 FT

T129N
R 64W

2010 FSA Aerial Photography

Delineation Inset Figure 4-6a

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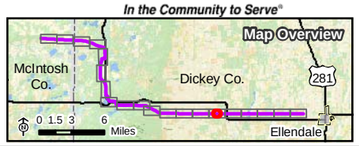

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USGS Mapped Watercourse
- Intermittent Drainage

N

0 100 200 Feet

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to
Ellendale Project

*Expected USACE jurisdiction and does not represent an official USACE Approved JD

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- Intermittent Drainage

N

0 100 200 Feet

Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to Ellendale Project

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Map Document: (\\mspe-gis-file\GISProj\MDU\14011\map_docs\Wetland_Report\Fig4_MWFE_DetailedWetlands_Insets.mxd)
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Lorraine Township

193

191

PEMA

97TH ST SE

WET193

UPL 193

PEMA

Dickey Co.

1624 FT

T129N
R 65W

2010 FSA Aerial Photography

Delineation Inset Figure 4-8a

MONTANA-DAKOTA UTILITIES CO.
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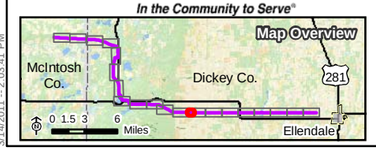

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Wetland On-site Delineation and Off-site Review
Montana-Dakota Utilities Co.
Merricourt Wind Farm to
Ellendale Project

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0 100 200 Feet

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Map Document: (\\mtsp\e-gis-file\GISProj\MDU\140114\map_docs\Wetland_Report\Fig4_MWFE_DetailedWetlands_Insets.mxd)
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Spring Valley Township

68TH AVE SE

300

PEMA

PEMB

PEMC

302

303

WET303

UPL 303

2017 FT

Dickey Co.

2034 FT

306

PEMB

PEMF

2001 FT

T130N
R 66W

2010 FSA Aerial Photography

Delineation Inset Figure 4-17a

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Montana-Dakota Utilities Co.
Merricourt Wind Farm to
Ellendale Project

N

0 100 200 Feet

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Map Document: (\\mpls-gis-file\GISPro\MDU\14011\4\map_docs\Wetland_ReportFig4_MWFE_DetailedWetlands_Insets.mxd)
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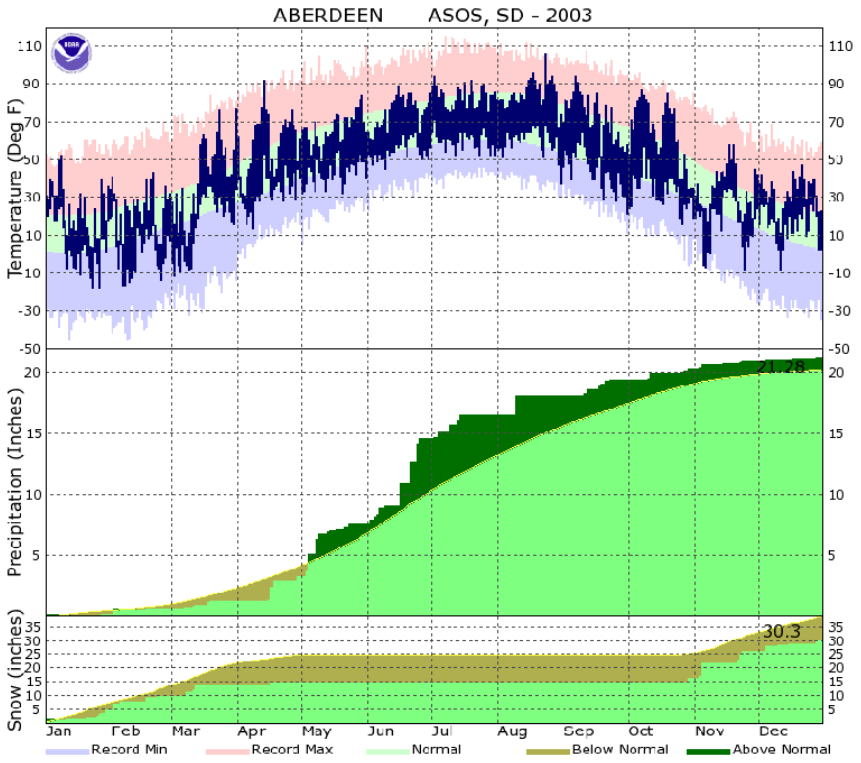
Appendix A

Annual Aberdeen, SD, Climate Data, 2003 to 2010



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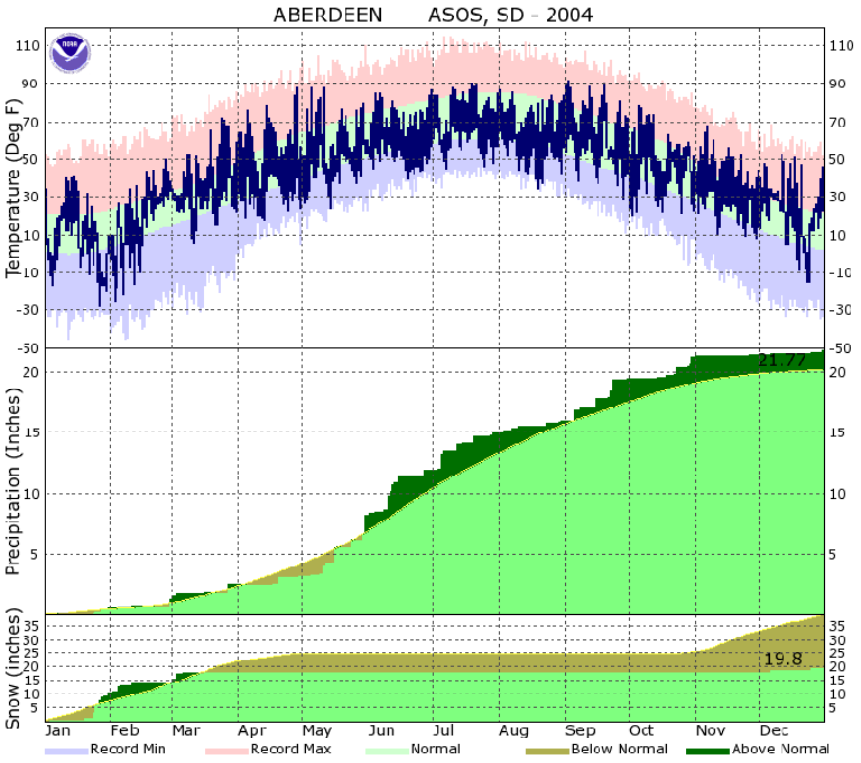

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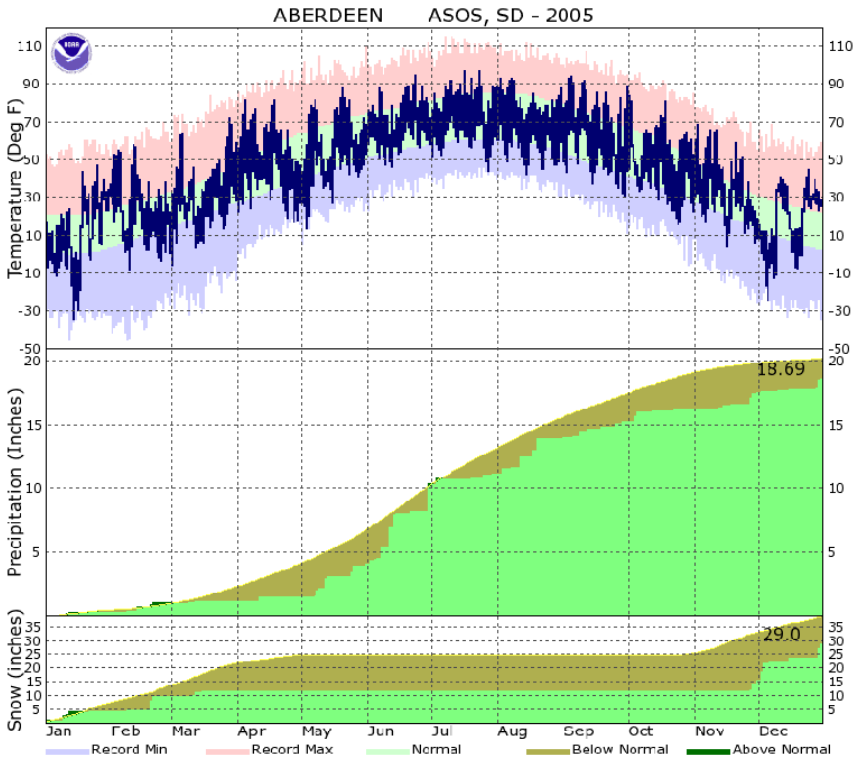

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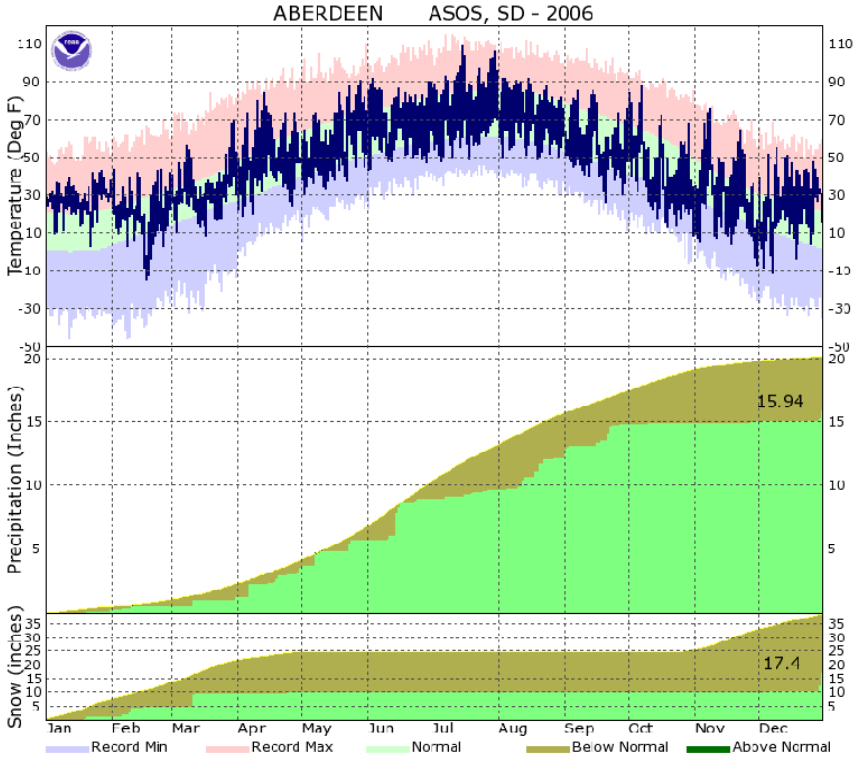

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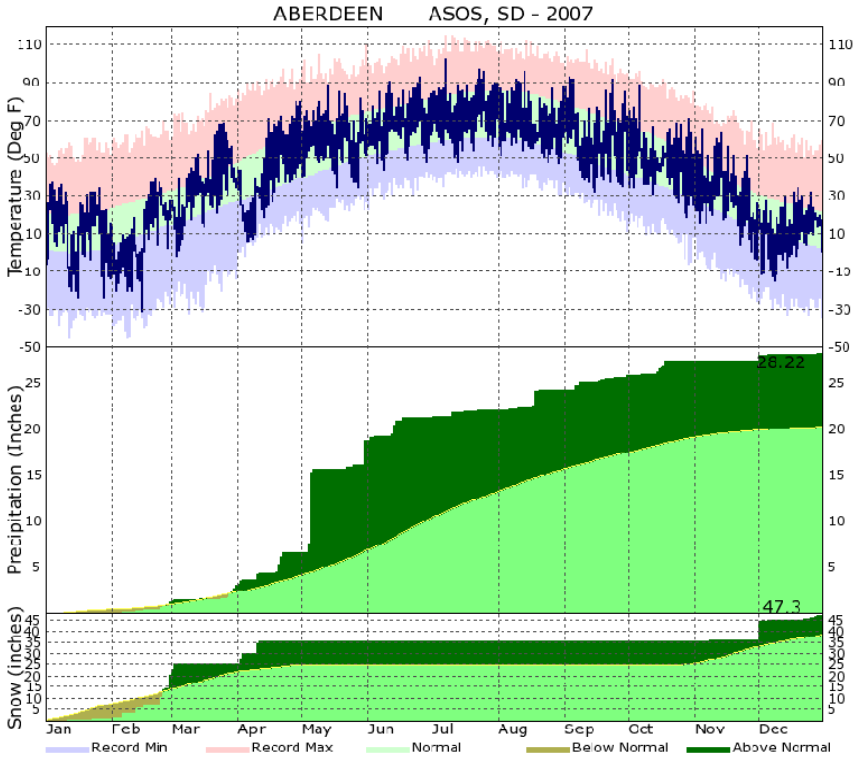

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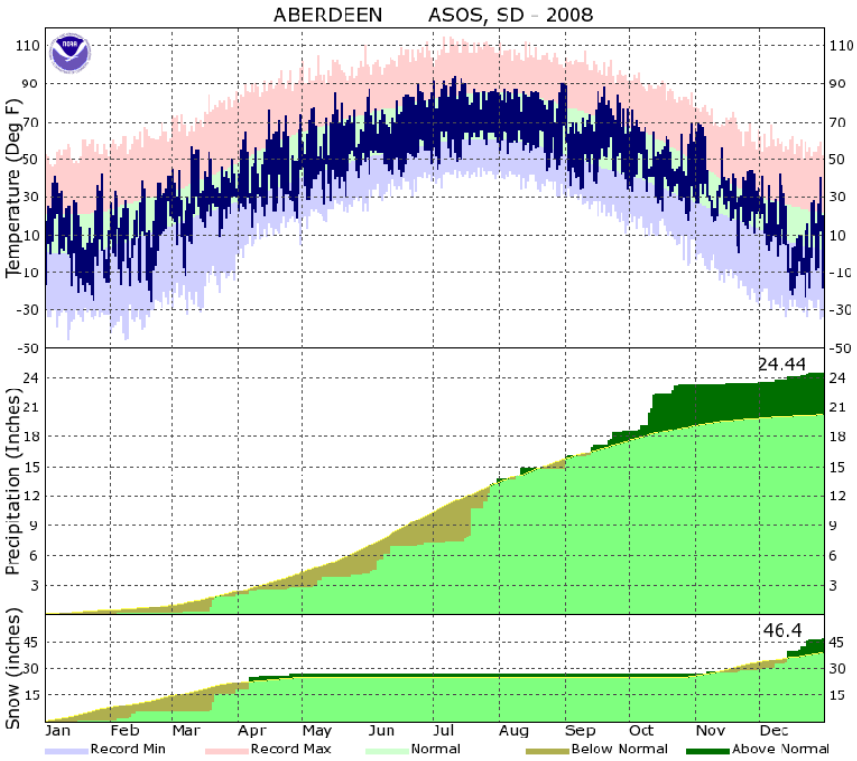

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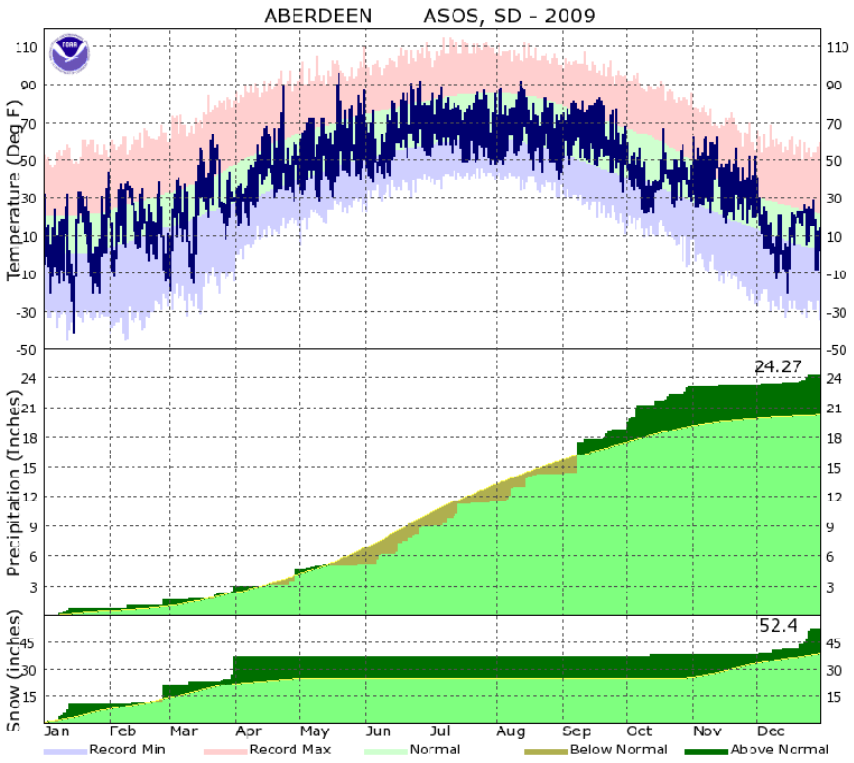

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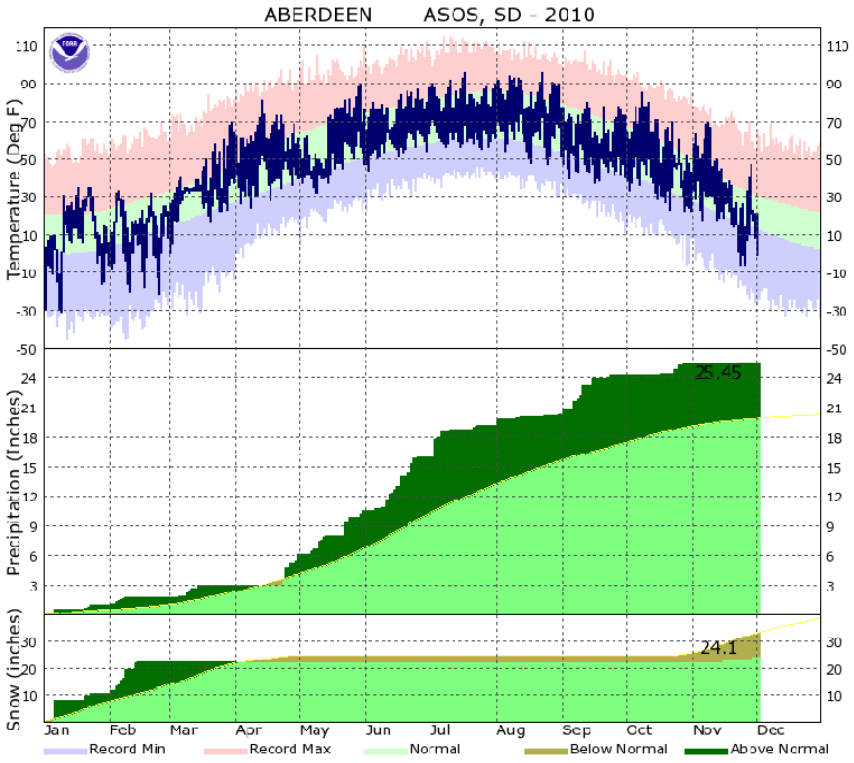

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Appendix B

Wetland Determination Data Sheets

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/2/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: WET 9

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 9 T 129N R 63W

Landform (hillslope, terrace, etc.): Top of Slope Local Relief (concave, convex, none): Concave Slope(%) 1

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Swenoda-Barnes complex. 0 to 3 percent 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 ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No**

Remarks:
Phalaris arundinacea dominated wetland basin with other scattered vegetation. Functions as a PEMB.

VEGETATION– Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Phalaris arundinacea L.	45	Y	FACW+
Polygonum amphibium L.	20	Y	OBL
Sparganium eurycarpum Engelm. ex Gray	5	N	OBL
Total Cover	70		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:	Multiply by:	
OBL species	25	x 1 =	25
FACW species	45	x 2 =	90
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	70 (A)		115 (B)

Prevalence Index = B/A= 1.64

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0 [1]

___ 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.

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WET 9

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 to 12	/		10YR 4/6	2	C	PL	CLAY LOAM	
0 to 12	10YR 3 / 1	93	10YR 6/2	5	C	M	CLAY LOAM	
12 to 20	2.5Y 4 / 1	90	10YR 5/6	10	C	M	SILTY CLAY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	>20	

Wetland Hydrology Present? Yes X No ____

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

Remarks:
Dried aquatic vegetation on wetland surface.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/2/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: UPL 9

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 9 T 129N R 63W

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): None Slope(%) 2

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Swenoda-Barnes complex. 0 to 3 percent NWI Classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Poa pratensis L.	80	Y	FACU
Cirsium flodmanii (Rydb.) Arthur	5	N	FAC
Phalaris arundinacea L.	5	N	FACW+
Setaria glauca (L.) Beauv.	5	N	NI
Total Cover	95		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	5	x 3 =	15
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals:	90 (A)		345 (B)

Prevalence Index = B/A= 3.83

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0 [1]

____ 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.

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

Fallow grassland.

SOIL

Sampling Point: UPL 9

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 to 12	10YR 3 / 1	100					SILT LOAM	
12 to 24	2.5Y 6 / 3	100					SILT	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	>24	

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

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

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/2/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: WET 13

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 9 T 129N R 63W

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

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Barnes-Cresbard loams, 3 to 6 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 ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No**

Remarks:
Shallow wetland basin functioning as PEMB. Vegetation is patchy Sparganium eurycarpum, Carex atherodes, Phalaris arundinacea, and Spartina pectinata.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Sparganium eurycarpum Engelm. ex Gray	40	Y	OBL
Carex atherodes Spreng.	20	Y	OBL
Spartina pectinata Link	10	N	FACW
Total Cover	70		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:	Multiply by:	
OBL species	60	x 1 =	60
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	70 (A)		80 (B)

Prevalence Index = B/A= 1.14

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0 [1]

___ 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.

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WET 13

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 to 12	10YR 3 / 1	99	10YR 3/4	1	C	M	SILT LOAM	
12 to 24	/		10YR 5/6	10	C	M	SILTY CLAY LOAM	
12 to 24	2.5Y 4 / 2	70	10YR 3/1	20		M	SILTY CLAY LOAM	horizon A-B transition

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	>24	

Wetland Hydrology Present? Yes X No ____

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

Remarks:
Evidence of saturation viisble on 2003, 2006, 2009, and 2010 FSA aerial photos.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/2/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: UPL 13

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 9 T 129N R 63W

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): None Slope(%) 2

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Barnes-Cresbard loams, 3 to 6 percent slopes NWI Classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:
Fallow grassland.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Poa pratensis L.	85	Y	FACU
Andropogon gerardii Vitman	5	N	FAC-
Asclepias syriaca L.	5	N	NI
Cirsium flodmanii (Rydb.) Arthur	5	N	FAC
Total Cover	100		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals:	95 (A)		370 (B)

Prevalence Index = B/A= 3.89

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0 [1]

____ 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.

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPL 13

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 to 8	10YR 2 / 1	100					SILT LOAM	
8 to 24	2.5Y 5 / 3	100					SILTY CLAY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	>24	

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

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

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/2/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: WET 25

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 8 T 129N R 63W

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

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Colvin silt loam, 0 to 1 percent slopes NWI Classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No**

Remarks:
Intermittent meandering drainage flowing southeast to Sewer Branch. Appears to function as a PEMC.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Sparganium eurycarpum Engelm. ex Gray	90	Y	OBL
Typha angustifolia L.	10	N	OBL
Total Cover	100		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:	Multiply by:	
OBL species	100	x 1 =	100
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		100 (B)

Prevalence Index = B/A= 1.00

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0 [1]

___ 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.

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)
Dense vegetation within stream channel

SOIL

Sampling Point: WET 25

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 to 12	10YR 2/1	90	10YR 3/6	10	C	M	CLAY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	0	

Wetland Hydrology Present? Yes X No ____

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

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/2/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: UPL 25

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 8 T 129N R 63W

Landform (hillslope, terrace, etc.): Terrace Local Relief (concave, convex, none): None Slope(%) 2

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Colvin silt loam, 0 to 1 percent slopes NWI Classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:
Floodplain adjacent to intermittent drainange flowing south to Sewer Branch.

VEGETATION– Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Poa pratensis L.	50	Y	FACU
Bromus inermis Leyss.	20	Y	FACU*
Cirsium arvense (L.) Scop.	5	N	FACU
Total Cover	75		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals:	75 (A)		300 (B)

Prevalence Index = B/A= 4.00

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0 [1]

____ 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.

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPL 25

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 to 26	10YR 2 / 1	100					SILTY CLAY LOAM	
26 to 30	2.5Y 4 / 1	100					SILTY CLAY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	>30	

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

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

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/2/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: WET 37

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 7 T 129N R 63W

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

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Clontarf fine sandy loam, 0 to 6 percent slopes NWI Classification: PEMA

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

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

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

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No**

Remarks:
Functions as a PEMC.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Typha angustifolia L.	100	Y	OBL
Total Cover	100		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		100 (B)

Prevalence Index = B/A= 1.00

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0 [1]

___ 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.

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WET 37

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 to 18	10YR 2 / 1	98	10YR 3/6	2	C	M	SILT LOAM	
18 to 26	10YR 4 / 2	98	10YR 3/6	2	C	M	SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	18	

Wetland Hydrology Present? Yes X No ____

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

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/2/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: UPL 37

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 7 T 129N R 63W

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

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Clontarf fine sandy loam, 0 to 6 percent slopes NWI Classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Poa pratensis L.	50	Y	FACU
Bromus inermis Leyss.	20	Y	FACU*
Sonchus arvensis L.	10	N	FAC
Total Cover	80		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals:	80 (A)		310 (B)

Prevalence Index = B/A= 3.88

Hydrophytic Vegetation Indicators:

____ Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0 [1]

____ 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.

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPL 37

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 to 26	10YR 3/1	100					SILT LOAM	
26 to 30	10YR 3/2	100					SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	>30	

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/3/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: WET 41

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 7 T 129N R 63W

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%) 2

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Parnell silty clay loam 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 ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No**

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Sparganium eurycarpum Engelm. ex Gray	60	N	OBL
Alisma subcordatum Raf.	40	Y	OBL
Total Cover	100		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		100 (B)

Prevalence Index = B/A= 1.00

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0 [1]

___ 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.

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WET 41

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 to 6	10YR 2/ 1	100					CLAY LOAM	
6 to 14	10YR 4/ 2	90	10YR 4/6	10	C	M	CLAY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	12	

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

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

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/3/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: UPL 41

Investigators: Aaron Diehl Jason Isbaniony Section, Township, Range S 7 T 129N R 63W

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): None Slope(%) 2

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Parnell silty clay loam NWI Classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:
Tilled, harvested corn field adjacent to wetland.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Zea mays	50	Y	NI
Total Cover	50		
Vine Stratum			

% Bare Ground in Herb Stratum 50

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 0 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A= 0.00

Hydrophytic Vegetation Indicators:

- Rapid Test for Hydrophytic Vegetation
- Dominance Test > 50%
- X Prevalence Index ≤ 3.0 [1]
- 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.

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPL 41

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 to 20	10YR 2/ 1	100						
20 to 24	10YR 4/ 2	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No _____	Depth (inches):	--	
Water Table Present?	Yes X	No _____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches):	>24	

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

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

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/3/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: WET 85

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 10 T 129N R 64W

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

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Water NWI Classification: L2ABGh

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

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

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

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

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

Remarks:
Datapoint collected along the west, wind-swept, side of Pheasant Lake.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum			
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 0 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A= 0.00

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

X Prevalence Index ≤ 3.0 [1]

____ 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.

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

100 percent open water as data point is along the west wind-swept side of Pheasant Lake. Opposite (east) shoreline has a 15 foot wide Typha angustifolia fringe.

SOIL

Sampling Point: WET 85

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 to 6	10YR 2/ 1	100					GRAVELLY MUCK	rocky lake bottom

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	6	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	--	

Wetland Hydrology Present? Yes X No ____

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

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/3/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: UPL 85

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 10 T 129N R 64W

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): None Slope(%) 20

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Crantford-Vang loams, 0 to 2 percent slopes NWI Classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:
Steep hillslope forming the west boundary of Pheasant Lake.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum (Plot size: 30)			
Symphoricarpos occidentalis Hook.	20	Y	NI
Total Cover	20		
Herb Stratum (Plot size: 5)			
Bromus inermis Leyss.	80	Y	FACU*
Poa pratensis L.	15	N	FACU
Sonchus arvensis L.	5	N	FAC
Total Cover	100		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals:	100 (A)		395 (B)

Prevalence Index = B/A= 3.95

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0 [1]

____ 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.

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPL 85

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 to 12	10YR 3/ 1	100					SILTY CLAY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	>12	

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

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

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line | City/County: Dickey | Sampling Date: 11/9/2010

Applicant/Owner: Montana-Dakota Utilities Co. | State: ND | Sampling Point: WET 133

Investigators: Aaron Diehl Jason Isbanioly | Section, Township, Range S 8 T 129N R 64W

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

Subregion (LRR): LRR F | Lat: | Long: | Datum:

Soil Map Unit Name: Svea-Cresbard loams, 0 to 3 percent slopes | NWI Classification: None

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 X, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

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

SUMMARY OF FINDINGS - Attach a 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:
Tilled wetland within a periodically flooded ag field that is 95% bare ground with scattered Kochia scoparis and Hordeum jubatum. Hydrology is from culvert to NE which forms a 1 foot deep channel than fades southeast into field. Evidence of salt crust thoughout wetland. Basin appears to be isolated as there is about a 250 foot separation from the nearest wetland, located to the southeast. Most of wetland is PEMA, but water appears to pool in SE corner of wetland, which forms a PEMC.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Hordeum jubatum L.	5	N	FACW
Kochia scoparia (L.) Schrad.	5	N	FACU
Total Cover	10		
Vine Stratum			

% Bare Ground in Herb Stratum 90

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 0 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	10 (A)		30 (B)

Prevalence Index = B/A= 3.00

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- ____ Dominance Test > 50%
- X Prevalence Index ≤ 3.0 [1]
- ____ 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.

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)
Disturbed tilled ag field.

SOIL

Sampling Point: WET 133

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 to 8	10YR 2/ 1	100					CLAY LOAM	
8 to 16	2.5Y 4/ 2	50					CLAY	tilled matrix
8 to 16	10YR 2/ 1	50					CLAY LOAM	tilled matrix
16 to 30	2.5Y 4/ 2	100					SANDY CLAY	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:
Floodplane area, hydrology appears to be associated with a drainages that periodically floods into tilled field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	>30	

Wetland Hydrology Present? Yes X No ____

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

Remarks:
Soil damp at 14 inches, but not saturated. Hydrology appears to originate from intermittent draingage the appears to dead end and pool, especially in the SE corner of the wetland.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/9/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: UPL 133

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 8 T 129N R 64W

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

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Edgeley loam, 0 to 2 percent slopes NWI Classification: None

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 X, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

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

SUMMARY OF FINDINGS - Attach a 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:
Tilled upland planted to winter wheat. Noticable upland slope begins at wetland boudary.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Triticum aestivum L.	60	Y	NI
Total Cover	60		
Vine Stratum			

% Bare Ground in Herb Stratum 40

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 0 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A= 0.00

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- ____ Dominance Test > 50%
- X Prevalence Index ≤ 3.0 [1]
- ____ 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.

Hydrophytic Vegetation Present? **Yes** **No X**

Remarks: (Include photo numbers here or on a separate sheet.)
Winter wheat field in early stages of growth.

SOIL

Sampling Point: UPL 133

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 to 18	10YR 3/ 1	100					SANDY CLAY LOAM	tilled matrix
18 to 24	2.5Y 5/ 3	100					SILTY CLAY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	>24	

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

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

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/4/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: WET 159

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 1 T 129N R 65W

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

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: La Prairie loam, channeled, 0 to 15 percent slopes NWI Classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No**

Remarks:
Intermittent, meandering drainage, the flows south toward a series of intermittent tributaries that eventually flow into the Elm River. Choked with Typha angustifolia at sample point. Appears to function as a PEMC.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Typha angustifolia L.	70	Y	OBL
Spartina pectinata Link	30	Y	FACW
Total Cover	100		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:	Multiply by:	
OBL species	70	x 1 =	70
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		130 (B)

Prevalence Index = B/A= 1.30

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0 [1]

___ 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.

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)
Data point collected at wetland edge.

SOIL

Sampling Point: WET 159

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 to 6	10YR 2/ 1	98	10YR 3/4	2	C	PL	CLAY LOAM	
6 to 12	10YR 2/ 1	50					CLAY LOAM	stratified matrix
6 to 12	2.5Y 4/ 1	50					CLAY LOAM	stratified matrix
12 to 16	2.5Y 4/ 1	15					SANDY CLAY	stratified matrix
12 to 16	2.5Y 4/ 2	80	10YR 3/6	5	C	M	SANDY CLAY	stratified matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☑ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:
Stratified riverine formed matrix.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	14	

Wetland Hydrology Present? Yes X No ____

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

Remarks:
Sample point taken within well defined channel that is 4 feet deep and 15 feet across.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/4/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: UPL 159

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 1 T 129N R 65W

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

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: La Prairie loam, channeled, 0 to 15 percent slopes NWI Classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:
Datapoint take a banks of intermittent stream, located 5 feet from the wetland, but about 4 feet higher in elevation than the wetland.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Poa pratensis L.	50	Y	FACU
Bromus inermis Leyss.	40	Y	FACU*
Melilotus officinalis (L.) Lam.	5	N	FACU
Glycyrrhiza lepidota Pursh	2	N	FACU
Total Cover	97		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	97	x 4 =	388
UPL species	0	x 5 =	0
Column Totals:	97 (A)		388 (B)

Prevalence Index = B/A= 4.00

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0 [1]

____ 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.

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPL 159

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 to 8	10YR 2/ 1	100					LOAM	
8 to 20	10YR 2/ 1	100					CLAY LOAM	
20 to 24	10YR 2/ 1	80	10YR 5/1	20		M	SANDY CLAY	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	>24	

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/4/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: WET 193

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 10 T 129N R 65W

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

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: NA NWI Classification: None

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 X, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

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

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No**

Remarks:
Tilled intermittent drainage, about 4 feet wide, that flows south-southeast into a series of intermittent tributaries that generally head southeast, eventually reaching the Elm River.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Distichlis spicata (L.) Greene	20	Y	FACW
Aster brachyactis	15	Y	FACW
Total Cover	35		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	35 (A)		70 (B)

Prevalence Index = B/A= 2.00

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0 [1]

___ 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.

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse patchy vegetation growing along wetland channel.

SOIL

Sampling Point: WET 193

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 to 8	2.5Y 2.5/ 1	95	2.5Y 4/1	5	D	M	GRAVELLY CLAY	stratified matrix
8 to 20	/		10YR 4/6	5	C	M	GRAVELLY CLAY	stratified matrix
8 to 20	2.5YR 2.5/ 1	50	2.5Y 4/1	40	D	M	GRAVELLY CLAY	stratified matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☑ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	0	

Wetland Hydrology Present? Yes X No ____

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

Remarks:

Patches of standing water to 1 inch within wetland channel. Noticable salt crust along wetland edges.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/4/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: UPL 193

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 10 T 129N R 65W

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): None Slope(%) 2

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: NA NWI Classification: None

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 X, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

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

SUMMARY OF FINDINGS - Attach a 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:
Tilled field with no vegetation. Appears to occasionally flood from adjacent intermittent drainage.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum			
Vine Stratum			

% Bare Ground in Herb Stratum 100

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 0 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A= 0.00

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- ____ Dominance Test > 50%
- X Prevalence Index ≤ 3.0 [1]
- ____ 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.

Hydrophytic Vegetation Present? **Yes** ____ **No X**

Remarks: (Include photo numbers here or on a separate sheet.)
Tilled field with no vegetation.

SOIL

Sampling Point: UPL 193

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 to 2	2.5Y 2.5/ 1	98	10YR	2	3	6	CLAY	
2 to 26	2.5Y 2.5/ 1	100					CLAY	
26 to 30	2.5Y 4/ 1	100					CLAY	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:
Top 2 inches of soil shows evidence of short-term ponding.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	>30	

Wetland Hydrology Present? Yes ____ No X

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

Remarks:
Area appears to function as an area that occasionally floods from adjacent intermittent drainage.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/5/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: WET 303

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 4 T 130N R 66W

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

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Zahl-Williams loams, 6 to 25 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 ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No**

Remarks:
PEMC basin that has been intersected by a N-S oriented section line two-track road.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Alisma subcordatum Raf.	30	Y	OBL
Scirpus acutus Muhl. ex Bigelow	20	Y	OBL
Spartina pectinata Link	20	Y	FACW
Sparganium eurycarpum Engelm. ex Gray		N	OBL
Total Cover	70		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:	Multiply by:	
OBL species	50	x 1 =	50
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	70 (A)		90 (B)

Prevalence Index = B/A= 1.29

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0 [1]

___ 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.

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WET 303

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 to 6	10YR 2/ 1	98	10YR 3/6	20	C	PL	CLAY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches):	--	
Water Table Present?	Yes X	No	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches):	>6	

Wetland Hydrology Present? Yes X No

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

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/5/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: UPL 303

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 4 T 130N R 66W

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): None Slope(%) 3

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Zahl-Williams loams, 6 to 25 percent slopes NWI Classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:
Lightly grazed grassland.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Bromus inermis Leyss.	70	Y	FACU*
Poa pratensis L.	20	Y	FACU
Solidago rigida L.	5	N	FACU
Total Cover	95		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals:	95 (A)		380 (B)

Prevalence Index = B/A= 4.00

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0 [1]

____ 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.

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPL 303

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 to 12	10YR 3/ 1	100					CLAY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	>12	

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

Appendix C

Representative Wetland Photographs

Representative photo of the east Project area: looking east from Coteau

PEMA type wetland in east Project area: Wet 185 looking NW

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Appendix C-1
Merricourt Wind Farm to Ellendale
230 kV Transmission Line
Dickey and McIntosh County, North Dakota

Tilled PEMA type wetland in east Project area: Wet 133 looking E

PEMB type wetland in east Project area: Wet 9 looking W

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Appendix C-2
Merricourt Wind Farm to Ellendale
230 kV Transmission Line
Dickey and McIntosh County, North Dakota

PEMC type wetland in east Project area: Wet 78 looking S

PEMF type wetland in east Project area: Wet 53 looking W

Pheasant Lake crossing: Wet 85 looking E

Intermittent drainage to Elm River: Wet 91 looking E

Tilled intermittent drainage in east Project area: Wet 193 looking S

Cow trampled seep at Missouri Coteau transition: Wet 496 looking NW

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Appendix C-5
Merricourt Wind Farm to Ellendale
230 kV Transmission Line
Dickey and McIntosh County, North Dakota

Representative photo of the west Project area: looking N in LSB WPA

PEMA type wetland in west Project area: Wet 342 looking W

PEMB type wetland in west Project area: Wet 471 looking S

PEMC type wetland in west Project area: Wet 355

PEMF type wetland in west Project area: Wet 322 looking W

PEMG type wetland in west Project area: Wet 254 looking E

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Appendix C-8
Merricourt Wind Farm to Ellendale
230 kV Transmission Line
Dickey and McIntosh County, North Dakota

PEMH type wetland in west Project area: Wet 401 looking NE

L2AGB type “lake” in west Project area: Wet 449 looking E

Intermittent stream in west Project area in: Wet 439 looking NE

PFO1B type wetland in west Project area: Wet 270 looking SE

PEMB type wetland near new substation: Wet 278 looking NW

PEMA type wetland near new substation: Wet 224 looking NE

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Appendix C-11
Merricourt Wind Farm to Ellendale
230 kV Transmission Line
Dickey and McIntosh County, North Dakota

PEMC type wetland near new substation: Wet 281 looking N

Proposed 1,000 ft span paralleling existing line: Wet 310 looking SE

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Appendix C-12
Merricourt Wind Farm to Ellendale
230 kV Transmission Line
Dickey and McIntosh County, North Dakota

Appendix D

Summary of All Wetlands Crossed by Proposed Centerline

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
1	9	129	63	4-1	No	Dry Branch	Upper Sewer Branch	PEMB	2	111	None	Reed canary grass; w/in fallow upland grass
3	9	129	63	4-1	No	Dry Branch	Upper Sewer Branch	PEMC	3	136 and 244	None	Cattails; patches of open water; two lobes; w/in fallow upland grass
9	9	129	63	4-1	Yes	Dry Branch	Upper Sewer Branch	PEMB	2	28	None	Reed canary grass and smart weed; w/in fallow upland grass
13	9	129	63	4-1	Yes	Dry Branch	Upper Sewer Branch/ Lower Sewer Branch	PEMB	2	412	None	Patchy emergent vegetation; w/in fallow upland grass
17	8	129	63	4-1	No	Dry Branch	Lower Sewer Branch	PEMA	1	63	None	Dominated by disturbance species, including curly dock; w/in harvested corn field.
25	8	129	63	4-2	Yes	Dry Branch	Upper Sewer Branch	PEMC/ intermitte nt stream	3	108 and 36	USACE	Intermittent drainage flowing SE to Sewer Branch. Dense cattails and burreed. W/in about 250 ft wide floodplain.
27	8	129	63	4-2	No	Dry Branch	Lower Sewer Branch	PEMA	1	101	None	Located 600 ft W of USACE jurisdiction drainage, but no surficial hydrologic connection. Tilled up to wetland edges.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
33	8	129	63	4-2	No	Dry Branch	Lower Sewer Branch	PEMC	3	205	None	Patchy shallow open water with a stock pond excavated in the W corner. Crossing is at E lobe, with W lobe adjacent to proposed alignment.
35	7	129	63	4-2	No	Dry Branch	Lower Sewer Branch	PEMA	1	59	None	SE lobe of shallow basin surrounded by tilled field.
37	7	129	63	4-2	Yes	Dry Branch	Lower Sewer Branch	PEMC	3	190	None	Small cattail filled basin surrounded by tilled field.
41	7	129	63	4-2	Yes	Dry Branch	Lower Sewer Branch	PEMC	3	458	None	Burred and cattail filled basin surround by harvested corn field.
44	7	129	63	4-2	No	Dry Branch	Lower Sewer Branch	PEMA	1	72	None	Small disturbed basin surrounded by tilled field.
49	7	129	63	4-3	No	Dry Branch	Lower Sewer Branch	PEMA	1	186	None	Farmed wetland basin; tilled through.
53	12	129	64	4-3	No	Dry Branch	Lower Sewer Branch	PEMF	4	637 and 726	USFWS	Large wetland complex with patchy open water possibly up to 2 ft deep. Wetland extends about 1 mile N and 1 mile S of proposed crossing. Wetland is about 1,600 ft wide at crossing, but 200 ft wide island in center of wetland crossing. Moderately grazed prairie surrounds wetland.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
59	12	129	64	4-3	No	Dry Branch	Lower Sewer Branch	PEMB	2	789	USFWS	Sparse prairie cordgrass fringe with cattle trampling; vegetation transitions to Juncus sp., water plantain, and burreed in center. Broad upland transition. Upland is heavily grazed prairie
71	11	129	64	4-4	No	Dry Branch	Lower Sewer Branch	PEMA	1	108	None	Shallow basin adjacent to harvested corn field.
73	11	129	64	4-4	No	Dry Branch	Lower Sewer Branch	PEMA	1	145	None	Shallow pigweed dominated basin that is partially tilled through.
76	11	129	64	4-4	No	Elm Lake	Pheasant Lake	PEMB	2	73 and 520	None	Small E lobe and larger W lobe. Pigweed, cattails, and water plantain. Connected to N side of road through culvert. Surrounded by tilled field.
78	11	129	64	4-4	No	Elm Lake	Pheasant Lake	PEMC	2	191	None	Small, but relatively deep basin, with cattails and open water, likely several inches deep. Surrounded by tilled field.
85	10&11	129	64	4-4	Yes	Elm Lake	Pheasant Lake	L2ABGh	5	739	USACE	Pheasant Lake; deep open water with rocky shoreline. Open residential lot on E side, and steep non-native grassland slopes on W side.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
91	10	129	64	4-5	No	Elm Lake	Wood Lake	PEMC/ intermitte nt stream	3	270	USACE	Unnamed intermittent tributary flowing into W lobe of Pheasant lake. Channel filled with cattails. Within an approximately 450 ft wide floodplain dominated by snowberry..
109	9	129	64	4-5	No	Elm Lake	Wood Lake	PEMC/ intermitte nt stream	3	130	USACE	Unnamed intermittent tributary flowing into W lobe of Pheasant lake. About 8 inches deep and 12 ft across. Patchy prairie cordgrass at fringe. W/in about a 300 to 400 ft wide floodplain.
113	9	129	64	4-5	No	Elm Lake	Wood Lake	PEMA	1	88 and 106	None	Shallow, cow trampled basin surrounded by heavy grazed prairie. Proposed line crosses two N lobes of wetland.
119	9	129	64	4-5	No	Elm Lake	Wood Lake	PEMA	1	223	None	Shallow, tilled through basin.
124	8	129	64	4-6	No	Elm Lake	Wood Lake	PEMA, PEMC	1, 3	218 and 305	USFWS/ USACE	Shallow tilled basin with deeper PEMC center. Culvert to N side of road. Proposed line crosses W wetland lobe and slightly larger E lobe. Extends about 1.5 miles S where wetland appears to connect with an intermittent drainage that flows SE toward Elm Lake in SD.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
133	8	129	64	4-6	Yes	Elm Lake	Wood Lake	PEMA	1	450 and 656	USFWS	Shallow tilled basin with a PEMC pocket in the SE corner of wetland where water appears to pool. Salty soils. Culvert at W lobes forming shallow channel that terminates within wetland. No evidence of culvert at E lobe.
141	7	129	64	4-6	No	Elm Lake	Webber Gulch	PEMB/ intermitte nt stream	2	56	USACE	Tilled through unnamed intermittent stream within corn field. Some pockets of cattails near section line road.
159	12	129	65	4-7	Yes	Elm Lake	Webber Gulch	PEMC/ intermitte nt stream	3	27, 67, and 130	USFWS/ USACE	Unnamed intermittent, meandering drainage, the flows south toward a series of intermittent tributaries that eventually flow into the Elm River. Full of cattails at sample point. Appears to function as a PEMC.
174	11	129	65	4-8	No	Elm Lake	Webber Gulch	PEMB	2	22	USFWS	Single black willow and small patches of water plantain and sedges in low spot where culvert empties adjacent to road.
181	11	129	65	4-8	No	Elm Lake	Webber Gulch	PEMA	1	179	None	Seasonally flooded corn field with mostly bare soil. Cattails in ditch.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
185	11	129	65	4-8	No	Elm Lake	Webber Gulch	PEMA	1	205	None	Seasonally flooded corn field with cattails in deepest point near road.
191	10	129	65	4-8	No	Elm Lake	Webber Gulch	PEMA/ intermitte nt stream	1	34	USACE	Intermittent drainage flowing SE to Webber Gulch. Drainage is about 1 to 2 ft deep and partially tilled through.
193	10	129	65	4-8	Yes	Elm Lake	Webber Gulch	PEMA/ intermitte nt stream	1	32	USACE	Intermittent drainage flowing SE to Webber Gulch. Channel is about 1 ft deep with a thin film of water at surface. Drainage has been tilled through. Salt residue at drainage edges.
205	9	129	65	4-9	No	Elm Lake	Webber Gulch	PEMC/ intermitte nt stream	3	55	USACE	Webber Gulch; double 24 in culverts under road. No standing water, but cattails and prairie cordgrass. Widely scattered black willow and cottonwood. Upland edges smooth bromes leading to tilled winter wheat.
478	1	129	66	4-11	No	Elm Lake	Webber Gulch	PEMA, PEMF	1, 3	155	USFWS	W/in LSB WPA. Shallow, cow trampled NE lobe connected to open water wetland used as natural stock pond.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
471	1	129	66	4-11	No	Elm Lake	Webber Gulch	PEMB, PEMF	2, 3	411	USFWS	W/in LSB WPA. Shallow W and S lobes dominated by prairie cordgrass. Connect to small wetland basin to S and larger wetland to NE. Overall wetland is cattails that have been trimmed by muskrat activity. Adjacent upland is low to moderate quality prairie.
469	1	129	66	4-11	No	Elm Lake	Webber Gulch	PEMB	2	53	USFWS	W/in LSB WPA. Shallow basin dominated by water smartweed and Canada bluejoint. Moderate quality prairie upland.
470	1	129	66	4-11	No	Elm Lake	Webber Gulch	PEMF	4	219	USFWS	W/in LSB WPA. Open water with narrow cattail fringe and a 5 to 10 ft zone of prairie cordgrass. Upland is moderate quality prairie.
462	1	129	66	4-12	No	Elm Lake	Webber Gulch	PEMF	3	323	USFWS	W/in USFWS grassland easement. Open water with cow trampled edges. Narrow upland separates adjacent wetland to the NE by about 35 ft. Upland is heavily pastured prairie.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
460	1	129	66	4-12	No	Elm Lake	Webber Gulch	PEMB, PEMC	2. 3	269	USFWS	W/in USFWS grassland easement. Cattail dominated with shallower cow trampled edges. Section road forms W boundary Upland is heavily pastured.
459	2	129	66	4-12	No	Elm Lake	Webber Gulch	PEMB	2	27	USFWS	W/in USFWS grassland easement. Section road forms E boundary. Continuation of wetland to E.
458	2	129	66	4-12	No	Elm Lake	Webber Gulch	PEMG	4	423	USFWS	W/in USFWS grassland easement. About 2,000 ft (N-S) long open water wetland with numerous lobes and depths. At crossing, separated from adjacent wetland to W by about a 90 ft wide strip of upland. Located within relatively steep, rolling terrain.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
455	2	129	66	4-12	No	Elm Lake	Webber Gulch	PEMC, PEMG	3, 4	470	USFWS	W/in USFWS grassland easement. Open water wetland with shallower E lobe and deeper W lobe. Connected to N and S to large open water wetland/lake complex. Separated from adjacent wetland to E by about a 90 ft wide strip of land. Located within relatively steep, rolling grassland terrain.
449	2	129	66	4-12	No	Elm Lake	Webber Gulch	L2ABG	5	365	None	Large, shallow open water lake/wetland complex located w/in steep rolling grassland terrain. Proposed crossing is near narrowest point of complex. Rocky shoreline.
446	2	129	66	4-12	No	Elm Lake	Webber Gulch	PEMB	2	48	None	Small, shallow basin surrounded by rolling upland dominated by smooth brome.
429	2	129	66	4-12	No	Elm Lake	Webber Gulch	PEMC	3	121	None	Open water with Canada blue joint, prairie cordgrass and baltic rush fringe. Connected to wetland 428 by S lobe.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
428	2	129	66	4-13	No	Elm Lake	Webber Gulch	PEMF	3	164	None	Cattails fringed open water with a lobe of prairie cordgrass that extends NW ending at a road ditch. Connected to wetland 429 by S lobe.
441	2	129	66	4-13	No	Elm Lake	Webber Gulch	PEMA	1	75	None	Shallow wetland basin surrounded by grazed prairie.
436	34	130	66	4-13	No	Long Lake	Coldwater Lake	PEMB	2	210	None	Small, shallow basin with Canada bluejoint and some cattle disturbance. Surrounded by rolling upland dominated by medium quality grazed prairie.
383	34	130	66	4-14	No	Long Lake	Coldwater Lake	PEMC	3	56	None	Small, shallow open water basin within cow trampled edges. Upland is heavily grazed low quality prairie.
401	34	130	66	4-14	No	Long Lake	Coldwater Lake	PEMB, PEMH	2, 4	105	None	Proposed line crosses a shallow, cow trampled lobe abutting ND Hwy 56 on W side. Connected to deep open water wetland to E that has four small upland islands, suggesting possible historic excavation w/in wetland. Upland is heavily grazed low quality prairie.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
397	27	130	66	4-14	No	Long Lake	Coldwater Lake	PEMA	1	66	None	Small, shallow basin within grazed medium quality prairie.
407	28	130	66	4-15	No	Town of Freedonia	Closed Depression	PEMA	1	50	USFWS	Shallow basin within heavily grazed prairie.
369	21	130	66	4-15	No	Town of Freedonia	Closed Depression	PEMC/ intermitte nt stream	3	45	USFWS	Stream channel with flowing water to 4 inches deep an 10 ft across. Possibly spring fed; not mapped by USGS data. Located w/in seep upland prairie slopes.
364	21	130	66	4-15	No	Town of Freedonia	Closed Depression	PEMA	1	105	USFWS	Shallow lobe of wetland complex that is associated with intermittent stream that flows NW toward a series of wetlands and lakes.
359	21	130	66	4-15	No	Town of Freedonia	Closed Depression	PEMA	1	38	USFWS	Shallow lobe of wetland complex that is associated with intermittent stream that flows NW toward a series of wetlands and lakes.
355	16	130	66	4-15	No	Town of Freedonia	Closed Depression	PEMC	3	250	USFWS	Prairie cordgrass and cattails fringe with open water and muskrat lodges in center. Steep upland slopes with mixed smooth brome and prairie grass upland.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
350	16	130	66	4-15	No	Town of Freedonia	Closed Depression	PEMC	3	232	USFWS	Shallow lobes of lake to E. Intermittent stream from SE empties into lake within the southern lobe.
348	16	130	66	4-16	No	Town of Freedonia	Closed Depression	PEMF	4	188 and 200	USFWS	Cattail dominated lobe of lake to W.
346	16	130	66	4-16	No	Town of Freedonia	Closed Depression	PEMA	1	331	USFWS	Seep into large lake to W. Patchy hydrology, but vegetation includes prairie cordgrass and sedges.
344	16	130	66	4-16	No	Town of Freedonia	Closed Depression	PEMB	2	130	USFWS	Small wetland basin with prairie cordgrass and sedges. Standing water and cattails in center. Medium quality prairie upland.
334	9	130	66	4-16	No	Elm Lake	Wood Lake	PEMA	1	258	USFWS	Shallow, cow trampled basin surrounded by heavy grazed prairie.
333	9	130	66	4-16	No	Elm Lake	Wood Lake	PEMB	2	168	USFWS	Shallow, cow trampled basin with pocket of cattails along ND Hwy 56. Surrounded by heavy grazed prairie.
328	9	130	66	4-16	No	Town of Freedonia	Closed Depression	PEMG	4	167	USFWS	E lobe of a deep open water wetland the extends to the SW. Bulrush and prairie cordgrass fringe. Surrounded by heavy grazed prairie.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
322	9	130	66	4-16	No	Town of Freedonia	Closed Depression	PEMF	4	269	None	Open water basin surrounded by low quality prairie.
321	9	130	66	4-16	No	Town of Freedonia	Closed Depression	PEMB	2	103	None	Small open water basin surrounded by low quality prairie.
310	9	130	66	4-16, 4-17	No	Town of Freedonia	Closed Depression	PABH, PEMF	4, 5	563 and 995	None/ USFWS	Large open water lake/wetland complex with a road cutting through the N lobe, forming a S lake and a N deep wetland. Proposed S crossing is 563 ft and N is 995 ft. Surrounded by low quality grazed prairie uplands with steep slopes and rolling terrain. Basin N of 91st St SE is in USFWS easement.
306	4	130	66	4-17	No	Town of Freedonia	Closed Depression	PEMB, PEMF	2, 3	89	None	Proposed line crossed a shallow prairie cordgrass dominated lobe connected to a deeper W basin. Upland is heavy grazed prairie on fairly steep rolling slopes.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
303	4	130	66	4-17	Yes	Town of Freedonia	Closed Depression	PEMC	3	108	None	Depression cut through by a N-S section line road. Vegetation includes hardstem bulrush, water plantain, prairie cordgrass, and burreed. Upland is low quality prairie. Due to road, proposed needs to be 185 ft to span road and wetland 302 to W.
302	5	130	66	4-17	No	Town of Freedonia	Closed Depression	PEMB	2	37	None	Ditch with cattails and single black willow. Due to road, proposed needs to be 185 ft to span road and wetland 303 to E.
300	5	130	66	4-17	No	Town of Freedonia	Closed Depression	PEMA	1	35	None	Tilled wetland lobe with foxtail, and remnants of cattails and water plantain. Connects to a larger open water wetland to S.
298	5	130	66	4-17	No	Town of Freedonia	Closed Depression	PEMH	5	628	None	Deep open water wetland with 20 to 30 ft wide fringe of cattails and prairie cordgrass. E upland is medium quality prairie; W upland is alfalfa hayland.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
294	5	130	66	4-18	No	Town of Freedonia	Closed Depression	PEMC	3	960	None/ USFWS	Broad cattail fringe with open water middle. Aerial photos and trees in wetland are evidence that wetland has expanded in size and depth since 2003. PLOTS grassland to N; tilled fields and substation to S. About N 350 of crossing is in USFWS easement.
290	5	130	66	4-18	No	Town of Freedonia	Closed Depression	PEMA	1	35	USFWS	Dominated by smooth brome, but basin has been identified by USFWS on exhibit As.
273	6	130	66	4-18	No	Town of Freedonia	Closed Depression	PEMB	2	377	None	Dominated by prairie cordgrass, sedges, baltic rush; thin layer of sphagnum in deeper areas. Dense sandbar willow sprouts along fringe. 1 to 2 inches of water in deeper zones. Upland has been planted some native grasses.
270	6	130	66	4-18	No	Town of Freedonia	Closed Depression	PEMC	8	264	None	Emergent wetland; cottonwood and black willow in center, surrounded by a 20 ft wide fringe of sandbar willow. Herbs are dominated by reed canary grass. Upland is planted grassland.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
266	6	130	66	4-18	No	Town of Freedonia	Closed Depression	PEMA	1	34	USFWS	Farmed shallow wetland basin.
264	6	130	66	4-18	No	Town of Freedonia	Closed Depression	PEMB	2	295	USFWS	Diverse, slightly saline wetland with fringe of baltic rush, Canada bluejoint, and prairie cordgrass, with slough sedge and cattails in center. 2 to 3 inches of standing water in deepest zones. W upland is low quality prairie that has been hayed; E upland has been tilled. Connected to wetlands 260 and 262.
262	1	130	67	4-19	No	Town of Freedonia	Closed Depression	PEMB	2	132	None	Diverse, slightly saline wetland with fringe of baltic rush, Canada bluejoint, and prairie cordgrass, with slough sedge and cattails in center. 2 to 3 inches of standing water in deepest zones. Upland is low quality prairie that has been hayed. Connected to wetlands 260, and 264.
260	1	130	67	4-19	No	Town of Freedonia	Closed Depression	PEMC	3	180	USFWS	Cattails and prairie cordgrass that has been tilled to edges of wetland. Connected to wetlands 262 and 264.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
258	1	130	67	4-19	No	Town of Freedonia	Closed Depression	PEMA	1	74	USFWS	Shallow tilled through basin with disturbance vegetation such as pigweed, yellow foxtail, and quackgrass.
254	1	130	67	4-19	No	Town of Freedonia	Closed Depression	PEMG	4	296 and 673	USFWS	Open water wetland with 20 to 30 ft fringe of prairie cordgrass and cattails. Steep upland slopes that have been hayed to about 4 inches. Narrowly separated from wetland complex to SE.
250	1	130	67	4-19	No	Town of Freedonia	Closed Depression	PEMB	2	170	USFWS	Prairie cordgrass and cattails in center. Separated from wetland 249 by road. Appears to drain into a large lake to the SE. Upland is hayed pasture.
249	2	130	67	4-19	No	Town of Freedonia	Closed Depression	PEMB	2	230	None	Wetland complex that appears to be seasonally hayed, Vegetation includes prairie cordgrass, cattails, and Phragmites australis. Upland is heavily grazed prairie.

Wetland ID1	Sec	T	R	Figure Page	USACE Datasheet Collected	Watershed, 10-digit HUC2	Subwatershed, 12-digit HUC2	Cowardin Class	Circular 39	Wetland Crossing Length at ROW Centerline (ft) 3	Jurisdiction	Brief Wetland Description
278	3	130	67	4-20	No	Town of Freedonia	Closed Depression	PEMB	2	substation	None	Patchy prairie cordgrass fringe with matted down juncos in center. Eleocharis acicularis scattered throughout. Cow trampled with no surface hydrology at sampling. Upland is heavily grazed prairie dominated by kentucky bluegrass.
224	3	130	67	4-20	No	Town of Freedonia	Closed Depression	PEMA	1	substation	None	Very patchy prairie cordgrass at edges leading to matted down juncos in center; traces of curly dock. Minor cattle disturbance. Upland is heavily grazed prairie.

1 Sorted from east to west; based on numbering of preliminary pole locations, not sequential, but generally increase in number from east to west

2 Project is within the Elm-Maple River 8-digit HUC

3 Wetland crossings 500 ft wide and greater

Appendix E

United States Army Corps of Engineers Substation Wetland Determination

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640

North Dakota Regulatory Office [NWO-2010-1163-BIS]

HDR Engineering, Inc.
ATTN: Ms. Kelly Garvey
701 Xenia Avenue South
Minneapolis, MN 55416-3636

Dear Ms. Garvey:

We have reviewed your request, on behalf of Montana-Dakota Utilities, Co., requesting an approved jurisdictional determination (JD) for two wetland areas associated with the Merricourt Wind Farm to Ellendale 230 kV Transmission Line - Merricourt Interconnection Substation. The project is located in Section 3, Township 130 North, Range 67 West, McIntosh County, North Dakota.

An approved JD was completed for these two wetlands on January 31, 2011 and they were determined to be isolated waters, not subject to jurisdiction by the U.S. Army Corps of Engineers. The JD is available on the website https://www.nwo.usace.army.mil/html/od-rnd/ndhome.htm. If you are not in agreement with the JD, you may request an administrative appeal under Corps of Engineers regulations found at 33 CFR 331. The Request for Appeal must be received within 60 days from the date of this correspondence. If you would like more information on the jurisdictional appeal process, contact this office. **It is not necessary to submit a Request for Appeal if you do not object to the JD.** The JD will be valid for a period of five (5) years.

The Omaha District, North Dakota Regulatory Office is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete our Customer Service Survey found on our website at http://per2.nwp.usace.army.mil/survey.html. If you do not have internet access, you may call and request a paper copy of the survey that you can complete and return to us by mail or fax.

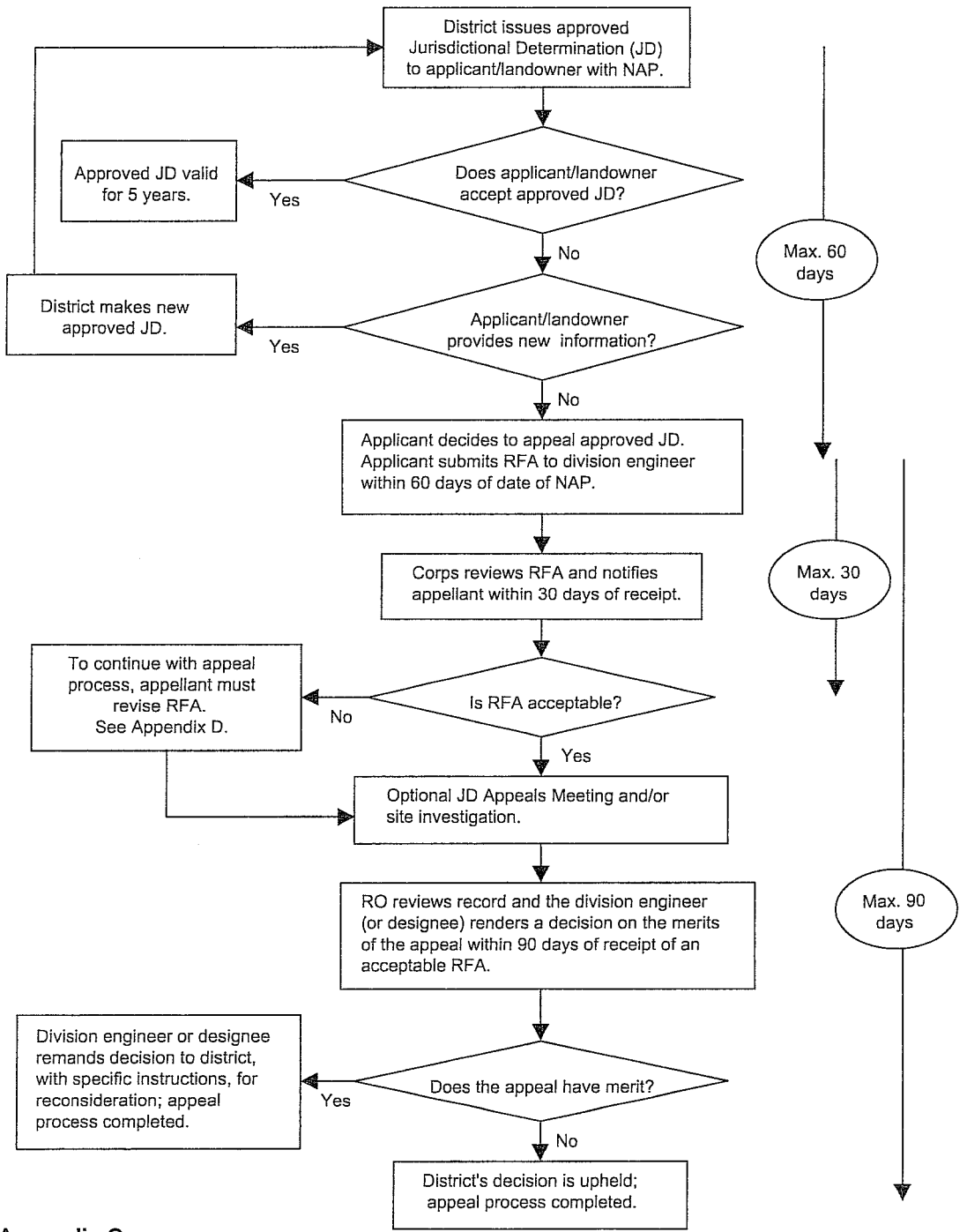
Should you have any questions regarding this determination, please contact Ms. Patsy Crooke of this office by letter or telephone (701) 255-0015 and reference project number NWO-2010-1163-BIS.

Sincerely,

Daniel E. Cimarosti
Regulatory Program Manager
North Dakota

Enclosure

Administrative Appeal Process for Approved Jurisdictional Determinations



Appendix C

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: **Montana-Dakota Utilities/HDR, Inc.**	File Number: NWO-2010-1163-BIS	Date: 28 Feb 2011

Attached is:		See Section below
	A. INITIAL PROFFERED PERMIT (Standard Permit or Letter of Permission)	A
	B. PROFFERED PERMIT (Standard Permit or Letter of Permission)	B
	C. PERMIT DENIAL	C
XX	D. APPROVED JURISDICTIONAL DETERMINATION	D
	E. PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding a modification, reconsideration, or administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or request modification of the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the District Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- REQUEST MODIFICATION: If you object to the permit (LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the District Engineer. Your objections must be received by the District Engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the District Engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the District Engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the District Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer (address on page 2). This form must be received by the Division Engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer (address on page 2). This form must be received by the Division Engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept the approved JD, appeal the approved JD, or submit new information and request reconsideration of the approved JD.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer (address on page 2). This form must be received by the Division Engineer within 60 days of the date of this notice.
- RECONSIDERATION BASED ON NEW INFORMATION: You may submit new information to the District Engineer for reconsideration of an approved JD. You must submit the information within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II –Fill out this section and return this form to the appropriate office only if submitting a request for modification or reconsideration to the District Engineer, or if submitting a request for Administrative Appeal to the Division Engineer. All such submittals must be made within 60 days of the date of this notice.

Submit the following requests to the District Engineer

A. Modification of an INITIAL PROFFERED PERMIT (Item A).
D. Reconsideration of an APPROVED JURISDICTIONAL DETERMINATION based on NEW INFORMATION (Item D RECONSIDERATION).

Submit the following requests to the Division Engineer

B. Administrative Appeal of a PROFFERED PERMIT (Item B).
C. Administrative Appeal of a PERMIT DENIAL (Item C).
D. Administrative Appeal of an APPROVED JURISDICTIONAL DETERMINATION (Item D APPEAL) (for reasons other than reconsideration of an approved JD based on new information).

(Note: Preliminary Jurisdictional Determinations (Item E) are not appealable. If you have concerns regarding a preliminary Jurisdictional Determination, you can request an approved Jurisdictional Determination).

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

SUBMITTAL OF NEW OR ADDITIONAL INFORMATION: The District Engineer may accept and consider new information if you request a modification to an initial proffered permit (Part A), or a reconsideration of an approved JD (Part D). An administrative appeal to the Division Engineer is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the administrative record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: DISTRICT ENGINEER Attn: Daniel E. Cimarosti 1513 South 12th Street Bismarck, North Dakota 58504 Telephone: (701) 255-0015 (Use this address for submittals to the District Engineer)	If you wish to submit an appeal or have questions regarding the appeal process you may contact: US Army Corps of Engineers, Northwestern Division Attn: David Gesl, Appeal Review Officer PO Box 2870 Portland, OR 97208-2870 Telephone: (503) 808-3825

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

February 22, 2011

Ms. Patsy Crook
U.S. Army Corps of Engineers
North Dakota Regulatory Office
1513 South 12th Street
Bismarck, North Dakota 58504-6640

Re: USACE Project Number: MDU- NOW-2010-1163-BIS
Merricourt Wind Farm to Ellendale 230 kV Transmission Line; Merricourt Interconnection Substation, Juridictional Determination.

Dear Ms. Crook:

HDR, Inc., is submitting the attached information, on behalf of Montana-Dakota Utilities, Co. (Montana-Dakota), requesting Approved Jurisdictional Determinations (JDs) for two wetland areas associated with the above referenced project.

Montana-Dakota has proposed to construct, own, and operate an approximately 30-mile-long, 230 kilovolt (kV) transmission line from the proposed Merricourt Wind Farm Substation in McIntosh County, North Dakota, to the city of Ellendale in Dickey County, North Dakota (Figure 1). This project is referred to as the Merricourt Wind Farm to Ellendale Transmission Line Project (Project). The Project would consist of the following three major components: (1) 230 kV transmission line, (2) Ellendale Junction Substation upgrades, and (3) new Merricourt Interconnection Substation. The wetland areas the JD is being requested for are located near the proposed Merricourt Interconnection Substation (Figure 2).

In November 2010, HDR performed a routine wetland determination and delineation of the Project area resulting in the identification of multiple wetland resources. At this time, Montana-Dakota is requesting an Approved Jurisdictional Determination for only two of the wetland resources (Table 1). The remaining wetland resources identified in the route will not be impacted because wetlands will be spanned and transmission line structures will be placed in upland areas. As mentioned above, the wetland areas lie within the boundaries of the proposed new Merricourt Interconnection Substation. Although design plans for the proposed substation are yet to be developed, the possibility exists that the referenced wetland areas may be impacted by the project. Therefore, Montana-Dakota is requesting a JD of the resources in order to better identify permitting requirements, possible avoidance of the wetland areas, and any potential mitigation that may be required.

HDR Engineering, Inc.
701 Xenia Avenue South
Minneapolis, MN 55416-3636
Phone (763) 591-5400
Fax (763) 591-5413
www.hdrinc.com

Table 1: Wetland Information

Wetland ID	Sec, Twn, Rng	Cowardian Classification	Wetland Description
278	3-130N-67W	PEMB	Patchy prairie cordgrass fringe with matted down juncos in center. *Eleocharis acicularis* scattered throughout. Cow trampled with no surface hydrology at sampling. Upland is heavily grazed prairie dominated by Kentucky bluegrass.
224	3-130N-67W	PEMA	Very patchy prairie cordgrass at edges leading to matted down juncos in center; traces of curly dock. Minor cattle disturbance. Upland is heavily grazed prairie.

Based upon review of the wetlands in accordance with the U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook, HDR believes the wetland resources in question meet the definition of isolated waters. The wetland areas consist of shallow, closed (no inlet or outlet) depressional features surrounded by grazed upland grasses. There is no visible (direct or indirect) connection to a Water of the U.S. The resources do not meet any of the conditions that would create a significant nexus with any type of water of the U.S.

Enclosed you will find the following: Project Location Map (Figure 1), Delineated Wetland Features Map (Figure 2), Routine Wetland Determination Data forms, and ground-level site photography. Due to the large number of wetland resources identified within the Project area, wetland determination data forms were not collected at every wetland. The wetland data form included in this submittal was collected at a similar, representative wetland within the Project Area. If you have any questions, please contact Kelly Garvey at 763-591-5453.

Sincerely,
HDR Engineering, Inc.

Kelly Garvey

Kelly Garvey
Project Manager

Cc: Henry Ford, Montana-Dakota Utilities
Abbie Krebsbach, Montana-Dakota Utilities

Enclosures: Project Location Map
Delineated Wetland Features Map
Routine Wetland Determination Data forms
Ground-level site photography

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/5/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: WET 303

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 4 T 130N R 66W

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

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Zahl-Williams loams, 6 to 25 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 ____, Hydrology ____, significantly disturbed? Are "Normal Circumstances" present? Yes X No

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

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

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No**

Remarks:
PEMC basin that has been intersected by a N-S oriented section line two-track road.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Alisma subcordatum Raf.	30	Y	OBL
Scirpus acutus Muhl. ex Bigelow	20	Y	OBL
Spartina pectinata Link	20	Y	FACW
Sparganium eurycarpum Engelm. ex Gray		N	OBL
Total Cover	70		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	50	x 1 =	50
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	70 (A)		90 (B)

Prevalence Index = B/A = 1.29

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

X Dominance Test > 50%

X Prevalence Index ≤ 3.0 [1]

___ 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.

Hydrophytic Vegetation Present? **Yes X No**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WET 303

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 to 6	10YR 2/ 1	98	10YR 3/6	20	C	PL	CLAY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches):	--	
Water Table Present?	Yes X	No	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches):	>6	

Wetland Hydrology Present? Yes X No

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

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project Site: MWFE 230kV Transmission Line City/County: Dickey Sampling Date: 11/5/2010

Applicant/Owner: Montana-Dakota Utilities Co. State: ND Sampling Point: UPL 303

Investigators: Aaron Diehl Jason Isbanioly Section, Township, Range S 4 T 130N R 66W

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): None Slope(%) 3

Subregion (LRR): LRR F Lat: Long: Datum:

Soil Map Unit Name: Zahl-Williams loams, 6 to 25 percent slopes NWI Classification: None

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

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

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

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

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:
Lightly grazed grassland.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 5)			
Bromus inermis Leyss.	70	Y	FACU*
Poa pratensis L.	20	Y	FACU
Solidago rigida L.	5	N	FACU
Total Cover	95		
Vine Stratum			

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals:	95 (A)		380 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

____ Dominance Test > 50%

____ Prevalence Index ≤ 3.0 [1]

____ 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.

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UPL 303

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 to 12	10YR 3/ 1	100					CLAY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) LRR F
- ☐ 1 cm Muck (A9) LRRF 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)
- ☐ 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)
- ☐ 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 observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 Fauna (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres along 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 Imag.(C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	--	
Water Table Present?	Yes X	No ____	Depth (inches):	--	
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	>12	

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

PEMB type wetland near new substation: Wet 278 looking NW

PEMA type wetland near new substation: Wet 224 looking NE

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