

Wetland Delineation Report Beaver Lodge Loop Project

Prepared for:



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Wetland Delineation Report
Beaver Lodge Loop Project
Enbridge Energy
Mountrail, Ward, and Williams Counties, North Dakota

TABLE OF CONTENTS

TABLE OF CONTENTS	i
1.0 Introduction	1
2.0 Procedures	2
3.0 Results	3
4.0 References	8

- Appendix A** Figures
- Appendix B** USACE Wetland Determination Data Forms
- Appendix C** Representative Photographs

1.0 Introduction

This project identified and delineated the extent of wetland areas within an approximate 250-foot-wide pipeline corridor. The pipeline corridor is part of the Beaver Lodge Loop Project (BLLP) proposed by Enbridge Energy (Enbridge). The BLLP is approximately 55 miles in length and crosses through portions of Williams, Mountrail, and Ward Counties (Table 1). The BLLP is oriented west to east and begins in eastern Williams County, south of Tioga, North Dakota. The BLLP generally parallels US Highway 2 within a couple miles on the south side of the highway, and ends near Berthold, North Dakota, in western Ward County (Appendix A).

Table 1. Summary of BLLP Survey Location(s)

Sections	Township (N)	Range (W)
19-20	156	86
19-24	156	87
19-24	156	88
19-24	156	89
24-30	156	90
25-28 and 31-34	156	91
25-33, 36	156	92
31-33, 36	156	93
2-3	155	94
31-36	156	94
5	155	95
33-36	156	95

The Beaver Lodge Loop Project area is located in the Missouri Coteau Slope and Missouri Coteau regions. The western portion of the project area is located within the Missouri Coteau Slope region. This area is characterized by a level to gently rolling landscape with sparse drainage patterns and few isolated wetlands. The topography slopes towards the Missouri River.

The eastern portion of the project area is located within the Missouri Coteau region. This area is characterized by a hummocky landscape with rolling topography. Numerous wetland depressions called “potholes” are found in the region. The common agricultural crops of the area include wheat, barley, canola, and sunflowers.

Scattered depression wetlands are common along the BLLP, some of which are cultivated in dry years. Those wetlands that have been cultivated in 2010 primarily contained vegetation species such as barnyard grass (*Echinochloa crus-galli*), foxtail barley (*Hordeum jubatum*), quackgrass (*Agropyron repens*), and curled dock (*Rumex crispus*). The majority of these wetlands are shallow depression wetlands with a temporary water regime.

Wetlands with seasonal water regimes contained cattails (*Typha* spp.), reed canary grass (*Phalaris arundinacea*), and water smartweed (*Polygonum amphibium*). Many of the pothole wetlands in the native prairie areas contain fowl bluegrass (*Poa palustris*), prairie cordgrass (*Spartina pectinata*), wooly sedge (*Carex lanuginosa*), water smartweed (*Polygonum amphibium*), and whitetop (*Scolochloa festucacea*).

The wetland field delineations were conducted on August 2-6, August 31-September 1, October 6, and November 3 and 9, 2010, by biologists of McCain and Associates, Inc.

2.0 Procedures

The wetland field delineation was conducted in accordance with the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Manual). The determination of permanent or temporary impacts to, and the mitigation of impacted wetlands, is outside the scope of work for this project.

Methodologies and criteria outlined by the Manual were used to identify and delineate wetlands for this project. The Manual provides the technical criteria for determining wetlands for purposes of Section 404 of the Clean Water Act. It specifies that positive evidence of hydrophytic vegetation, hydric soils, and wetland hydrology are criteria for wetland identification and delineation. Areas meeting all three criteria were classified as wetlands.

Wetland areas were systematically evaluated by using numerous observation points to define the boundaries. The frequency of observation points was increased in transitional areas between uplands and lower areas to accurately identify wetland boundaries based on vegetation, hydrology, soils, and landscape. Boundaries were digitally recorded with a Trimble Geo XH Global Positioning System (GPS) allowing sub-meter post-processed data accuracy.

Wetlands were documented with a soil observation point. The Wetland Determination Data Form of the Great Plains Manual was completed for each observation point. Climatic conditions were considered typical prior to and during the evaluation.

Existing vegetation was classified using hydrophytic vegetation criteria outlined in the Manual and the *National List of Plant Species that Occur In Wetlands: 1996 National Summary* (Kartesz, 1996), and *National List of Plant Species that Occur in Wetlands: North Plains (Region 4)* (Reed, 1988). Hydric soil indicators were determined using the *Field Indicators of Hydric Soils in the United States; Guide for Identifying and Delineating Hydric Soils, Version 7.0* (USDA-NRCS, 2010).

Hydrology was determined on-site by observation of hydrologic indicators. Aerial photography was used to assist hydrologic determinations.

A review of existing resource information and the wetland field delineation were used to identify and delineate wetlands within the BLLP. No minimal size or area of wetland delineation was specified. Mountrail, Ward, and Williams Counties NAIP 2009 and 2005 aerial photographs, USDI-Fish and Wildlife Service National Wetland Inventory (USFWS, 2010), and the digital soil survey of Mountrail, Ward and Williams Counties (USDA-NRCS, 2010), were consulted prior to field investigations.

3.0 Results

A total of 191 wetland areas were identified and delineated during the field delineation. One hundred eighty two wetlands are considered isolated depression or swale wetlands, four wetlands were identified as connected to an intermittent or perennial drainage and four stream crossings were recorded along the proposed route.

A description of the delineated wetlands and documentation of the vegetation, hydrology, and hydric soils were recorded on the associated USACE Wetland Determination Data Forms (Appendix B) and are identified by site identification and observation point number (i.e. 34156095-w1). Stream crossings were recorded on Waterbody Data Sheets and are identified by site identification and observation point number (i.e. 34156095-s1). The stream crossings and delineated wetlands are summarized in Table 2.

Table 2. Wetland Identification and Characteristics (Field) Summary of Wetlands

Wetland ID	Acres	Figure	NWI	Wetland Type	Notes
32156095-s1	0.05	1	INTERMIT	CONNECTED	Unnamed tributary
32156095-w1	0.17	1	PUBFh	ISOLATED	
34156095-s1	0.27	2	INTERMIT,PABF	CONNECTED	Stream – Dry Fork Creek - Stock Dam
35156095-w1	0.20	3	PEMC	ISOLATED	
36156095-w2	0.44	3	PEMC	ISOLATED	
36156095-w3	0.05	3	PEMC	ISOLATED	
36156095-w4	0.01	3	PEMC	ISOLATED	
31156094-w1	0.01	4	PEMC	ISOLATED	
31156094-w2	0.47	4	PEMC	ISOLATED	
32156094-w1	0.18	4	PEMC	ISOLATED	
32156094-w2	0.01	5	PEMA	ISOLATED	
34156094-S1	0.55	6	PERENNIAL	CONNECTED	White Earth River
36156094-S1	0.05	8	INTERMIT	CONNECTED	Unnamed tributary
33156093-w1	0.07	9	PEMA	ISOLATED	
33156093-w2	0.18	9	PEMC	ISOLATED	
33156093-w3	2.09	10	PEMF, PEM/ABF	ISOLATED	
34156093-w1	0.43	10	PEMA	ISOLATED	
34156093-w2	0.94	10	PEMA _d	ISOLATED	
34156093-w3	0.47	10	PEMA, PEMC	ISOLATED	
35156093-w1	0.07	11	PEMA	ISOLATED	
35156093-w2	0.38	11	PEMC	ISOLATED	
36156093-w1	0.24	11	PEMC	ISOLATED	
36156093-w2	0.41	11	PEMC	ISOLATED	
30156092-w1	0.16	12	PEMC	ISOLATED	
30156092-w2	0.05	12	PEMC	ISOLATED	
30156092-w3	1.26	12	PEMC	ISOLATED	
30156092-w4	0.06	12	PEMA _d	ISOLATED	
30156092-w5	0.04	12	PEMA	ISOLATED	
30156092-w6	0.22	12	PEMA, PEMC	ISOLATED	
31156092-w1	0.31	12	PEMC	ISOLATED	
31156092-w2	0.80	12	PEMC	ISOLATED	

Wetland ID	Acres	Figure	NWI	Wetland Type	Notes
36156093-w3	0.48	12	PEMC	ISOLATED	
36156093-w4	0.17	12	PEMC	ISOLATED	
28156092-w1	4.05	13	L2ABG	ISOLATED	
28156092-w1Alt	0.39	13	L2ABG	ISOLATED	Reroute
28156092-w2	4.97	13	L2ABG	ISOLATED	
29156092-w1	2.06	13	PEMC	ISOLATED	
29156092-w2	0.21	13	PEMC	ISOLATED	
29156092-w3	0.03	13	PEMC	ISOLATED	
27156092-w2	0.08	14	PEMC	ISOLATED	
27156092-w3	0.05	14	PEMA	ISOLATED	
27156092-w4	0.02	14	PEMA	ISOLATED	
27156092-w5	0.31	14	PEMAAd	ISOLATED	
27156092-w6	0.32	14	PEMcd	ISOLATED	
26156092-w1	0.55	15	PEMC	ISOLATED	
26156092-w2	0.02	15	PEMC	ISOLATED	
26156092-w3	0.26	15	PEMC	ISOLATED	
27156092-w1	0.80	15	PEMAAd	ISOLATED	
25156092-w1	0.28	16	PEM/ABF	ISOLATED	
25156092-w10	0.26	16	PEMA	ISOLATED	Additional Survey (110910)
25156092-w11	2.04	16	PEMC	CONNECTED	Additional Survey (110910)
25156092-w12	0.18	16	PEMA	ISOLATED	Additional Survey (110910)
25156092-w2	0.05	16	PEMC	ISOLATED	
25156092-w3	0.15	16	PEM/ABF	ISOLATED	
31156091-w1	0.39	16	PEMC	ISOLATED	
36156092-w1	0.21	16	PEMC	ISOLATED	
33156091-w5	0.19	17	PEMA	CONNECTED	Unnamed tributary to Little Knife River/Stanley Reservoir
27156091-w2	21.39	18	PEM/ABFh	CONNECTED	Little Knife River/Stanley Reservoir
27156091-w3	0.31	18	PEMA	ISOLATED	
28156091-w1	1.47	18	PEMC	CONNECTED	Unnamed tributary to Little Knife River/Stanley Reservoir
33156091-w1	0.56	18	PEMC	ISOLATED	
33156091-w2	0.34	18	PEMC	ISOLATED	
33156091-w3	0.71	18	PEMC	ISOLATED	
33156091-w4	0.16	18	PEMC	ISOLATED	
26156091-w2	0.11	19	PEMA	ISOLATED	
26156091-w3	0.02	19	PEMA	ISOLATED	
26156091-w4	0.03	19	PEMA	ISOLATED	
26156091-w5	0.35	19	PEMC	ISOLATED	
27156091-w1	1.53	19	PEM/ABFh	CONNECTED	Little Knife River/Stanley Reservoir

Wetland ID	Acres	Figure	NWI	Wetland Type	Notes
25156091-w1	0.17	20	PEMA	ISOLATED	
26156091-w1	0.30	20	PEMC	ISOLATED	
29156090-w1	0.23	21	PEMC	ISOLATED	
29156090-w2	0.13	21	PEMC	ISOLATED	
29156090-w3	0.16	21	PEMC	ISOLATED	
28156090-w1	1.77	22	PEMC	ISOLATED	
28156090-w2	0.64	22	PEMC	ISOLATED	
28156090-w3	0.33	22	PEMC	ISOLATED	
28156090-w4	0.20	22	PEMC	ISOLATED	
28156090-w5	0.28	22	PEMC	ISOLATED	
26156090-w3	0.43	23	PEMC	ISOLATED	
19156089-w11	3.85	24	PABF	ISOLATED	
24156090-w1	0.79	24	PEMC	ISOLATED	
24156090-w2	0.99	24	PEMcd	ISOLATED	
25156090-w1	0.31	24	PEMC	ISOLATED	
26156090-w1	0.29	24	PEMC	ISOLATED	
26156090-w2	0.76	24	PEMC	ISOLATED	
19156089-w1	1.48	25	PEMC	ISOLATED	
19156089-w10	0.05	25	PEMC	ISOLATED	
19156089-w2	0.12	25	PEMC	ISOLATED	
19156089-w3	1.52	25	PEM/ABF	ISOLATED	Avoided by Reroute
19156089-w3 Alt	0.04	25	PEM/ABF	ISOLATED	Reroute
19156089-w4	0.18	25	PEMC	ISOLATED	Reroute
19156089-w5	0.19	25	PEMA	ISOLATED	Reroute
19156089-w6	0.28	25	PEMC	ISOLATED	Avoided by Reroute
19156089-w7	0.22	25	PEMC	ISOLATED	Reroute
19156089-w8	0.13	25	PEMC	ISOLATED	Avoided by Reroute
19156089-w9	0.25	25	PEMC	ISOLATED	
20156089-w4	0.03	25	PEMF	ISOLATED	
20156089-w5	0.65	25	PEMF	ISOLATED	
20156089-w1	0.23	26	PEMC	ISOLATED	
20156089-w2	0.26	26	PEM/ABF	ISOLATED	
20156089-w3	0.65	26	PEM/ABF	ISOLATED	
21156089-w1	0.04	26	PEMC	ISOLATED	
21156089-w10	0.27	26	PEMC	ISOLATED	
21156089-w11	0.29	26	PEMC	ISOLATED	
21156089-w12	0.26	26	PEMC	ISOLATED	
21156089-w13	0.06	26	PEMC	ISOLATED	
21156089-w2	0.12	26	PEMC	ISOLATED	

Wetland ID	Acres	Figure	NWI	Wetland Type	Notes
21156089-w3	0.44	26	PEMC	ISOLATED	
21156089-w4	0.14	26	PEMC	ISOLATED	
21156089-w5	0.39	26	PEMC	ISOLATED	
21156089-w6	0.06	26	PEMA	ISOLATED	
21156089-w7	0.16	26	PEMC	ISOLATED	
21156089-w8	0.02	26	PEMC	ISOLATED	
21156089-w9	0.36	26	PEMC	ISOLATED	
22156089-w3	0.37	26	PEMC	ISOLATED	
22156089-w4	0.08	26	PEMC	ISOLATED	
22156089-w1	0.02	27	PEMA	ISOLATED	
22156089-w2	0.04	27	PEMA	ISOLATED	
23156089-w1	0.64	27	PEMC	ISOLATED	
23156089-w2	0.10	27	PEMC	ISOLATED	
23156089-w3	0.03	27	PEMC	ISOLATED	
23156089-w4	0.10	27	PEMC	ISOLATED	
23156089-w5	0.04	27	PEMC	ISOLATED	
23156089-w6	0.27	27	PEMC	ISOLATED	
23156089-w7	0.90	27	PEMC	ISOLATED	
24156089-w1	0.05	28	PEMA	ISOLATED	
19156088-w1	0.15	29	PEMC	ISOLATED	
19156088-w2	0.40	29	PEMC	ISOLATED	
19156088-w3	1.10	29	PEMC	ISOLATED	
19156088-w4	0.08	29	PEMA	ISOLATED	
20156088-w1	1.06	29	PEMC	ISOLATED	
20156088-w2	0.15	29	PEMC	ISOLATED	
20156088-w3	0.27	29	PEMC	ISOLATED	
21156088-w1	1.17	30	PEMC	ISOLATED	
21156088-w2	0.23	30	PEMC	ISOLATED	
21156088-w3	2.57	30	PEMC	ISOLATED	
21156088-w4	0.91	30	PEMC	ISOLATED	
22156088-w1	3.23	31	PEMCd	ISOLATED	
23156088-w2	1.96	31	L2ABG	ISOLATED	
23156088-w1	1.57	32	L2ABG	ISOLATED	
24156088-w1	0.33	32	PEMC	ISOLATED	
24156088-w2	1.10	32	PEMC	ISOLATED	
24156088-w3	0.06	32	PEMC	ISOLATED	
24156088-w4	0.66	32	PEMCd	ISOLATED	
24156088-w5	0.10	32	PEMC	ISOLATED	
24156088-w6	0.65	32	PEMF	ISOLATED	
24156088-w7	0.14	32	PEMC	ISOLATED	
24156088-w8	0.54	32	L2ABG	ISOLATED	
24156088-w9	0.50	32	L2ABG	ISOLATED	
19156087-w1	0.67	33	PEMA	ISOLATED	
19156087-w2	0.67	33	PEMF	ISOLATED	
19156087-w3	1.32	33	PEMC	ISOLATED	
19156087-w4	1.03	33	PEMC	ISOLATED	

Wetland ID	Acres	Figure	NWI	Wetland Type	Notes
19156087-w5	0.02	33	PEMC	ISOLATED	
19156087-w6	0.26	33	PEMCd	ISOLATED	
19156087-w7	0.64	33	PEM/ABF	ISOLATED	
19156087-w8	0.93	33	PEMC	ISOLATED	
20156087-w4	0.54	33	PEMC	ISOLATED	
20156087-w5	0.04	33	PEMA	ISOLATED	
20156087-w1	2.33	34	PEM/ABF	ISOLATED	
20156087-w2	0.71	34	PABF	ISOLATED	
20156087-w3	0.12	34	PABF	ISOLATED	
21156087-w1	0.01	34	PEMFd	ISOLATED	
21156087-w2	0.70	34	PEMFd	ISOLATED	
21156087-w3	1.45	34	PEM/ABF	ISOLATED	
22156087-w1	0.82	35	PABF	ISOLATED	
23156087-w3	3.75	35	L2ABG	ISOLATED	
23156087-w4	0.04	35	PEMA	ISOLATED	
23156087-w1	2.65	36	PEM/ABF, PEMCd	ISOLATED	
23156087-w2	1.12	36	PEMC	ISOLATED	
24156087-w10	0.09	36	PEMA	ISOLATED	
24156087-w11	0.12	36	PEMA	ISOLATED	
24156087-w2	3.00	36	PEMF	ISOLATED	
24156087-w3	0.07	36	PEMA	ISOLATED	Additional Survey (110910) - Extended Delineation
24156087-w4	0.17	36	PEMA	ISOLATED	
24156087-w5	0.21	36	PEMA	ISOLATED	
24156087-w6	0.19	36	PEMC	ISOLATED	
24156087-w7	0.11	36	PEMC	ISOLATED	
24156087-w8	0.17	36	PEMC	ISOLATED	
24156087-w9	0.25	36	PEMA	ISOLATED	
19156086-w1	0.08	37	PEMA	ISOLATED	
19156086-w2	0.31	37	PEMC	ISOLATED	
19156086-w3	1.02	37	PEMC	ISOLATED	
19156086-w4	0.63	37	PEMF	ISOLATED	
20156086-w2	0.08	37	PEMA	ISOLATED	
20156086-w3	0.07	37	PEMA	ISOLATED	
20156086-w4	0.03	37	PEMA	ISOLATED	
20156086-w5	0.25	37	PEMC	ISOLATED	
24156087-w1	0.13	37	PEMC	ISOLATED	
20156086-w1	0.32	38	PEMC	ISOLATED	

Total	Total
Wetlands	Acres
191	125.35

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