

TECHNICAL MEMORANDUM

To: Public Service Commission
600 East Boulevard Avenue, #408
Bismarck, North Dakota 58505

From: Montana-Dakota Utilities Co.

Date: July 6, 2021

Re: **Public Service Commission's June 25, 2021, Request for Additional Information Regarding the Montana-Dakota Utilities 230-kV Transmission Line, Morton County, North Dakota / Case No. PU-21-151**

INTRODUCTION

On behalf of Montana-Dakota Utilities Co. (Montana-Dakota), and at the request of the North Dakota Public Service Commission (PSC), SWCA Environmental Consultants (SWCA) is providing answers to questions and responses for additional information for the proposed Mandan Reroute 230-kilovolt (kV) Transmission Line Project (project). On April 19, 2021, Montana-Dakota filed a siting application for the project. On May 19, 2021, the PSC requested additional information for the project which was filed by Montana-Dakota with the PSC on June 4, 2021, in a Technical Memorandum. On June 25, 2021, the PSC requested additional information regarding the siting application (Attachment A). This technical memorandum, submitted on July 6, 2021, provides the responses to the June 25 request for additional information.

QUESTIONS AND REQUESTS FOR ADDITIONAL INFORMATION AND RESPONSES

1. The second answer to MDU's June 23, 2021, response includes an updated project location map with associated 200-foot-wide survey area.

a. Provide the dates the surveys for cultural and natural resources were conducted for the new line segments and the existing line segment.

Class III cultural resource field surveys were conducted on October 6, 2020, for the new line segments, from proposed poles 1–7 and 10–15, as detailed in the Consolidated Corridor Certificate and Route Permit for the Mandan Transmission Reroute Project for a 230 kV Transmission Line (PU-21-151) Exhibit A (Exhibit A). Exhibit A includes the Class I and Class III cultural resource inventory report as Appendix D of the Environmental Resource Impacts Assessment for the Montana-Dakota Utilities Co. Mandan Reroute, Morton County, North Dakota (Page 12 and Figure A1 of that document). A large portion of the APE (53%) is within previously inventoried areas (PU-21-151 Exhibit A, Appendix D, pages i, 1, 12 and 16). In total, 13.55 non-overlapping acres were newly inventoried on October 6, 2020. Portions of the existing line segment, from poles 7–10, were located in previous cultural resource

inventory (PU-21-151 Exhibit A, Appendix D, pages 7 and 8, and Figure A1; see also Attachment B in this document).

Natural resource field surveys were conducted on June 29, 2021, for the new and existing line segments, encompassing the totality of the line, poles 1–15 (see Attachments C and F in this document). Additionally, an assessment of environmental impacts was submitted as part of the original application for PU-21-151 as Appendix A of the Environmental Resource Impacts Assessment for the Montana-Dakota Utilities Co. Mandan Reroute, Morton County, North Dakota.

b. Please provide a map of all surveys MDU is relying on for cultural resources.

For project mapping depicting the extent of current and previous cultural resource inventories relevant to the project, please refer to Attachment B in this document. Previous Cultural Resources Inventories are identified in the Cultural Resources Inventory Report (PU-21-151 Exhibit A, Appendix D, pages 7 and 8 and Figure A1).

c. Please provide a map of all surveys MDU is relying on for natural resources.

For project mapping identifying the extent of current conducted natural resource surveys relevant to the project, please refer to Attachment C in this document.

2. PLEASE PROVIDE MAPS SHOWING ALL EXCLUSION, AVOIDANCE, AND SELECTION CRITERIA FOR THE COMPLETE 1-MILE STUDY AREA. PLEASE INCLUDE THE ASSOCIATED GIS LAYERS

Montana-Dakota provided a list of all exclusion, avoidance, and selection criteria data located within the 1-mile study area in the June 4, 2021, Technical Memorandum in answer to the May 19, 2021, Public Service Commission, Request for Additional Information Regarding the Montana-Dakota Utilities 230-kV Transmission Line, Morton County, North Dakota / Case No. PU-21-151, Pages 4-5, Question 11, and Pages 7-9, Question 13. As some exclusion and avoidance areas are not located within the 1-mile study area they are not displayed on the maps.

Updated project maps depicting all exclusion, avoidance, and selection criteria that are located within the 1-mile study area for the project are located in Attachment D in this document. Please note that the exclusion/avoidance data pertaining to the cultural resource layers are not displayed on these maps due to the sensitive nature of the resources, but are displayed separately in Attachment C. GIS layers are provided separately.

3. PROVIDE THE FOLLOWING PROJECT CONTROLS DOCUMENTS:

a. Emergency Procedures Plan

Please refer to Attachment E in this document for the Safety and Emergency Plan.

b. Wetland Delineation Report

Please refer to Attachment F in this document for the Aquatic Resources Delineation Report.

c. Revegetation Plan

Please refer to Attachment G in this document for the Revegetation Plan. This plan was also detailed in the June 4, 2021, Technical Memorandum in answer to the May 19, 2021, Public Service Commission,

Request for Additional Information Regarding the Montana-Dakota Utilities 230-kV Transmission Line, Morton County, North Dakota / Case No. PU-21-151, Page 11, Question 16, under Reclamation/Restoration Procedures and Page 12-13, Question 19, Erosion Control Plan and Weed Management Plan.

d. Environmental Training Plan

Please refer to Attachment H in this document for the Environmental Training Plan.

e. Avian Protection Plan

Montana-Dakota maintains an internal and confidential Avian Protection Plan (APP). The APP is based on the guidance by the Avian Power Line Interaction Committee and the USFWS. This Avian Protection Plan primarily encompasses three primary reference documents: Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006), Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012), and 2005 Avian Protection Plan Guidelines (APLIC and USFWS 2005). Additional information within the document reflects current practices and best available information specific to bird interactions with power lines.

The APP is a voluntary internal corporate policy that is meant to maintain flexibility to adapt to state and federal regulations and company needs and challenges as necessary and as such remains a confidential document. For this Project, Montana-Dakota will adhere to their internal APP during construction and operation of the project. Please refer to Attachment I in this document for the Avian Protection Plan.

4. PLEASE PROVIDE A SUPPLEMENT TO THE APPLICATION ADDRESSING AVOIDANCE AREAS RELATIVE TO RURAL RESIDENCES LOCATED WITHIN 500 FEET OF THE ROUTE.

Montana-Dakota is seeking waivers from landowners with occupied residences located within 500 feet of the route. Montana-Dakota will provide to the PSC signed waivers prior to the start of construction activities associated with the project.

5. WAS THE UNANTICIPATED DISCOVERY PLAN SHARED WITH THE NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE? WAS IT APPROVED BY THEM?

The Unanticipated Discovery Plan developed (UDP) for the project was not shared with the North Dakota State Historic Preservation Office (SHPO). As this project does not constitute a federal undertaking, the UDP was developed for Montana-Dakota to provide to construction contractors and was produced as an act of due diligence.

Montana-Dakota will adhere to the UDP that has been developed for the project during construction as noted in the Environmental Training Plan (refer to Attachment H in this document).

6. THE 12TH ANSWER IN MDU'S JUNE 23, 2021, RESPONSE INDICATES THAT "[N]ATURAL RESOURCE EVALUATIONS WERE COMPLETED FOR WETLANDS, FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES, AND SPECIES MANAGED UNDER THE NORTH DAKOTA STATE WILDLIFE ACTION PLAN" AND THAT THEY WERE SUBSEQUENTLY "TRANSMITTED TO THE U.S. ARMY CORPS OF ENGINEERS (USACE), THE USFWS, AND THE NORTH DAKOTA GAME AND FISH DEPARTMENT (NDGFD). PLEASE FILE COPIES WITH THE COMMISSION OF ALL SUCH EVALUATIONS.

Project notifications providing information on the project were sent to the USACE, USFWS, and NDGFD on December 18, 2020. These notifications including a map of the project, a description of project location and anticipated impacts of the project. These documents are detailed in the Consolidated Corridor Certificate and Route Permit for the Mandan Transmission Reroute Project for a 230 kV Transmission Line (PU-21-151) Exhibit A, Appendix C.

Montana-Dakota received responses from USACE, USFWS, and NDGFD, which are included in the Consolidated Corridor Certificate and Route Permit for the Mandan Transmission Reroute Project for a 230 kV Transmission Line (PU-21-151) Exhibit A, Appendix C, and noted here for reference:

- **USACE** – Letter received from Patricia L. McQueary, State Program Manager North Dakota on December 30, 2020, which indicates the following:
 - “Utility lines are authorized under Nationwide Permit 12 provided that the utility line can be placed without any change to pre-construction contours and all other proposed construction activities and facilities are in compliance with the Nationwide’s permit conditions and 401 Water Quality Certification. On Tribal Lands, Water Quality Certification is denied for all Nationwide Permits. Applicants must work with EPA to obtain individual water quality certification. Please note the pre-construction notification requirements on page 2 of the fact sheet. If a project involves any one of the seven notification requirements, the project proponent must submit a DA application. Furthermore, a project must also be in compliance with the “Regional Conditions for Nationwide Permits within the State of North Dakota”, found on pages 18 thru 21 of the fact sheet. In the event your project(s) requires approval from the U.S. Army Corps of Engineers and cannot be authorized by Nationwide Permit(s), a Standard or Individual Permit will be required.”
 - As of 2021, Nationwide Permit 12 now relates solely to oil or natural gas pipeline activities, and this project now falls under Nationwide Permit 57 for electric utility line and telecommunications activities. The project can meet and comply with the conditions of Nationwide Permit 57, and no further correspondence with the USACE is required.
 - As noted in the June 4, 2021, Technical Memorandum filed to answer the Public Service Commission May 19, 2021, Request for Additional Information Regarding the Montana-Dakota Utilities 230-kV Transmission Line, Morton County, North Dakota / Case No. PU-21-151, Page 7, Question 13:
 - “One pole structure (Pole 11) will be placed within a potential wetland area. Impacts are anticipated to be minimal and consistent with use of USACE Nationwide Permit 12 [Nationwide 57], with self-reporting. Montana Dakota will span one waterbody, which will not be temporarily or permanently impacted. Wetlands will be avoided to the extent practicable during the construction phase

of the project. If USACE jurisdictional wetland impacts are unavoidable, then a Section 404 and 401 permit application will be submitted to the USACE and state of North Dakota, respectively. Permanent impacts to wetlands and waters will be mitigated according to regulatory requirements. Montana-Dakota will use best management practices during construction and operation of the transmission line to protect topsoil and adjacent wetland resources and to minimize soil erosion. Practices may include containing excavated material, protecting exposed soil, stabilizing restored material, and revegetating disturbed areas with native species.”

- **USFWS** – Email received from Drew Becker, Field Supervisor, who digitally signed the notification letter on December 21, 2020, states: “This Constitutes a report of the Department of the Interior prepared in accordance with the Fish and Wildlife Coordination Act (16 U. S. C. 661 et seq). We have reviewed and have NO OBJECTION to this proposed project.”
- **NDGFD** - Email received from J. D. Schumacher, Resource Biologist on February 8, 2021, states: “The North Dakota Game and Fish Department has reviewed this project for wildlife concerns. We do not believe it will have significant adverse effects on wildlife or wildlife habitat based on the information provided.”

As this project is not a Federal undertaking, or action, and no additional Federal or state agency concurrence is anticipated in support of the project.

7. FOR EACH EXCLUSION AND AVOIDANCE CRITERIA, PLEASE PROVIDE A TABLE WITH THE FOLLOWING:

- a. For the study area, the desktop analysis, or the other analysis, that was performed along with the source data.***

Please see Tables 1 and 2 below. For data sources please see Attachment J.

- b. For the survey area, the date the survey(s) was conducted, the width of the survey(s), whether the survey(s) was conducted across the entire corridor depicted on the updated project map to the June 23, 2021, response, and the survey location on the same updated map.***

Please see maps provided in Attachments B, C, and D.

Table 1. NDAC 69-06-08-02 Transmission Facility corridor and Route Exclusion Criteria Analysis Source Data and Survey Data.

| NDAC 69-06-08-02 Exclusion Criteria | 1-Mile Study Area | Survey Area |
|---|---|--|
| <p>a. Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; monuments; and wilderness areas.</p> | <p>Class I and Class III Cultural Resource Inventory</p> | <p>Class III Cultural Resource Inventory was conducted on October 6, 2020, within the 200-foot-wide survey area, excluding the portions of the project located within previous survey.</p> |
| | <ul style="list-style-type: none"> • U.S. Fish and Wildlife Service (USFWS) designated critical habitat (USFWS 2020a) • USFWS waterfowl production areas (USFWS 2020b) • USFWS interests (USFWS 2020c) • National Grasslands (North Dakota Game and Fish Department [NDGFD] 2019) • Current and historical aerial imagery (North Dakota GIS Hub Data Portal 2020) • State parks (North Dakota Parks and Recreation Department 2019) • National parks (NDGFD 2017) • Private Land Open to Sportsmen (PLOTS) (NDGFD 2020a) • North Dakota wildlife management areas (NDGFD 2020b) • Conservation easements (National Conservation Easement Database 2020) | |
| | <p>Protected areas (U.S. Geological Survey 2020)</p> | |
| <p>b. Designated or registered state: parks; historic sites; monuments; historical markers; archaeological sites; and nature preserves.</p> | <p>Class I and Class III Cultural Resource Inventory</p> | <p>Class III Cultural Resource Inventory was conducted on October 6, 2020, within the 200-foot-wide survey area, excluding the portions of the project located within previous survey.</p> |
| <p>c. County parks and recreational areas; municipal parks; and parks owned or administered by other governmental subdivisions.</p> | <ul style="list-style-type: none"> • Current and historical aerial imagery (North Dakota GIS Hub Data Portal 2020) • State parks (North Dakota Parks and Recreation Department 2019) • National parks (NDGFD 2017) | |
| <p>d. Areas critical to the life stages of threatened or endangered animal or plant species.</p> | <ul style="list-style-type: none"> • U.S. Fish and Wildlife Service (USFWS) designated critical habitat (USFWS 2020a) • USFWS waterfowl production areas (USFWS 2020b) • USFWS interests (USFWS 2020c) | |

| NDAC 69-06-08-02 Exclusion Criteria | 1-Mile Study Area | Survey Area |
|---|--|-------------|
| | <ul style="list-style-type: none"> • National Grasslands (North Dakota Game and Fish Department [NDGFD] 2019) • North Dakota wildlife management areas (NDGFD 2020b) • Conservation easements (National Conservation Easement Database 2020) | |
| <p>e. Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged.</p> | <ul style="list-style-type: none"> • U.S. Fish and Wildlife Service (USFWS) designated critical habitat (USFWS 2020a) • USFWS waterfowl production areas (USFWS 2020b) • USFWS interests (USFWS 2020c) • National Grasslands (North Dakota Game and Fish Department [NDGFD] 2019) • North Dakota wildlife management areas (NDGFD 2020b) • Conservation easements (National Conservation Easement Database 2020) | |
| <p>f. Areas within 1,200 feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility.</p> | N/A | |
| <p>g. Areas within 30 feet on either side of a direct line between ICBM launch or launch control facility.</p> | N/A | |

Table 2. NDAC 69-06-08-02 Avoidance Criteria Analysis Source Data and Survey Data.

| NDAC 69-06-08-02 Avoidance Criteria | 1-Mile Study Area | Survey Area |
|--|--|---|
| <p>a. Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands.</p> <p>Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands.</p> | <p>Class I and Class III Cultural Resource Inventory</p> | <p>Class III Cultural Resource Inventory was conducted on October 6, 2020, within the 200-foot-wide survey area, excluding the portions of the project located within previous survey.</p> |
| <p>b. Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands.</p> | <ul style="list-style-type: none"> • U.S. Fish and Wildlife Service (USFWS) designated critical habitat (USFWS 2020a) • USFWS waterfowl production areas (USFWS 2020b) • USFWS interests (USFWS 2020c) • National Grasslands (North Dakota Game and Fish Department [NDGFD] 2019) • Current and historical aerial imagery (North Dakota GIS Hub Data Portal 2020) • State parks (North Dakota Parks and Recreation Department 2019) • National parks (NDGFD 2017) • Private Land Open to Sportsmen (PLOTS) (NDGFD 2020a) • North Dakota wildlife management areas (NDGFD 2020b) • Conservation easements (National Conservation Easement Database 2020) • Protected areas (U.S. Geological Survey 2020) | <ul style="list-style-type: none"> • U.S. Fish and Wildlife Service (USFWS) designated critical habitat (USFWS 2020a) • USFWS waterfowl production areas (USFWS 2020b) • USFWS interests (USFWS 2020c) • National Grasslands (North Dakota Game and Fish Department [NDGFD] 2019) • State parks (North Dakota Parks and Recreation Department 2019) • National parks (NDGFD 2017) • Private Land Open to Sportsmen (PLOTS) (NDGFD 2020a) • North Dakota wildlife management areas (NDGFD 2020b) • Conservation easements (National Conservation Easement Database 2020) • Protected areas (U.S. Geological Survey 2020) |

| NDAC 69-06-08-02 Avoidance Criteria | 1-Mile Study Area | Survey Area |
|--|--|--|
| c. Historical resources which are not specifically designated as exclusion or avoidance areas. | <p>A search was conducted on September 9, 2020, of relevant record holdings at the State Historical Society of North Dakota including archaeological and historical sites, cultural resource heritage forms, and resources listed in the National Register of Historic Places.</p> <ul style="list-style-type: none"> • Current and historical aerial imagery (North Dakota GIS Hub Data Portal 2020) | <p>Class III cultural resource inventory was conducted on October 6, 2020, within the 200-foot-wide survey area, excluding the portions of the project located within previous survey.</p> |
| d. Areas that are geologically unstable. | <p>One area shown as a historic landslide is displayed on the Avoidance/Exclusion Map (Attachment D1). The area is not within the survey area or the project corridor.</p> <ul style="list-style-type: none"> • Protected areas (U.S. Geological Survey 2020) | <p>No historic landslides or other geologically unstable areas are present within the survey area or project corridor.</p> <ul style="list-style-type: none"> • Protected areas (U.S. Geological Survey 2020) |
| e. Within five hundred feet of a residence, school, or place of business. | <ul style="list-style-type: none"> • Current and historical aerial imagery (North Dakota GIS Hub Data Portal 2020) | |
| f. Reservoirs and municipal water supplies | <ul style="list-style-type: none"> • Water wells (North Dakota State Water Commission 2020) • Current and historical aerial imagery (North Dakota GIS Hub Data Portal 2020) | |
| g. Water sources for organized rural water districts. | <ul style="list-style-type: none"> • Water wells (North Dakota State Water Commission 2020) • Current and historical aerial imagery (North Dakota GIS Hub Data Portal 2020) | |
| h. Irrigated land. This criterion shall not apply to an underground transmission facility. | <p>Landowner and field visits conducted by MDU</p> | |
| i. Areas of recreational significance which are not designated as exclusion areas | <p>N/A</p> | |

8. PSC APPLICATION CERTIFICATION AND ROUTE PERMIT COMPLETION CHECKLIST

- a. It would also be helpful for the structure of the application and an orderly hearing to have a table showing all the filing requirements for a corridor certificate and route permit along with the document and section that addresses each requirement.*

Please see Table 3 for the Consolidated Corridor Certificate and Route Permit for the Mandan Transmission Reroute Project for a 230 kV Transmission Line (PU-21-151) Certificate and Route Permit Completion Checklist.

Table 3. Certificate and Route Permit Completion Checklist

| State Authority | Description | Section |
|---|---|--|
| NDCC 49-22-08 /NDAC 49-22-08.1 | Description of Application Requirements | |
| a. | A description of the size and type of facility | Section IV, Page 4, Description Bullet |
| b. | A summary of any studies which have been made of the environmental impact of the facility. | Section IV, Page 4, Studies Bullet |
| c. | A statement explaining the need for the facility. | Section IV, Page 4, Need Bullet |
| d. | An identification of the location of the preferred site for any electric energy conversion facility. | Section IV, Pages 4-5, Location & Merits Bullet |
| e. | An identification of the location of the preferred corridor for any electric transmission facility | Section IV, Pages 4-5, Location & Merits Bullet |
| f. | A description of the merits and detriments of any location identified and a comprehensive analysis with supporting data showing the reasons why the preferred location is best suited for the facility. | Section IV, Pages 4-5, Location & Merits Bullet |
| g. | A description of mitigative measures that will be taken to minimize all foreseen adverse impacts resulting from the location, construction, and operation of the proposed facility. | June 4, 2021, Technical Memorandum Pages 3-11; Attachment E (Unanticipated Discovery Plan); July 6, 2021, Attachment E (Safety and Emergency Plan) |

| State Authority | Description | Section |
|----------------------------|--|--|
| h. | An evaluation of the proposed site or corridor with regard to the applicable considerations set out in section 49-22-09 and the criteria established pursuant to section 49-22-05.1. | Section IV, Page 5, Corridor Bullet |
| NDCC 69-06-04-01-02 | Description of Application Requirements | |
| a. (1) | The type of energy conversion facility proposed | Sections I-IV, Pages 1-5, |
| a. (2) | The gross design capacity | Sections I-IV, Pages 1-5, |
| a. (3) | The net design capacity; | Sections I-IV, Pages 1-5, |
| a. (4) | The estimated thermal efficiency of the energy conversion process and the assumptions upon which the estimate is based; | Sections I-IV, Pages 1-5, |
| a. (5) | The number of acres that the proposed facility will occupy; and | Sections I-IV, Pages 1-5, |
| a. (6) | The anticipated time schedule for: (a) Obtaining the certificate of site compatibility; (b) Completing land acquisition; (c) Starting construction; (d) Completing construction; (e) Testing operations; (f) Commencing commercial production; and (g) Beginning any expansions or additions | Section V, Pages 5-6 |
| b. | Copies of any evaluative studies or assessments of the environmental impact of the proposed facility submitted to any federal, regional, state, or local agency | Exhibit A; June 4, 2021, Technical Memorandum; June 25, 2021 |
| c. | An analysis of the need for the proposed facility based on present and projected demand for the product or products to be produced by the proposed facility, including the most recent system studies supporting the analysis of the need | Section IV, Page 5, Need Bullet |
| d. | A description of any feasible alternative methods of serving the need. | Section IV, Page 5, Alternatives Bullet |
| e. | A study area that includes the proposed facility site, of sufficient size to enable the commission to evaluate the factors addressed in North Dakota Century Code section 49-22-09. | Appendix A |
| f. | A discussion of the utility's policies and commitments to limit the environmental impact of its facilities, including copies of board resolutions and management directives. | June 4, 2021, Technical Memorandum, Question 15, Pages 9-10 |

| State Authority | Description | Section |
|----------------------------------|--|--|
| g. | A map identifying the criteria that provides the basis for the specific location of the proposed facility within the study area. | June 4, 2021, Technical Memorandum |
| h. | A discussion of the criteria evaluated within the study area, including exclusion areas, avoidance areas, selection criteria, policy criteria, design and construction limitations, and economic considerations. | June 4, 2021, Technical Memorandum |
| i. | A discussion of the mitigative measures that the applicant will take to minimize adverse impacts which result from the location, construction, and operation of the proposed facility. | June 4, 2021, Technical Memorandum, Question 16, Pages 10-11 |
| j. | The qualifications of each person involved in the facility site location study. | Section VII, Pages 6-7, Qualifications |
| k. | A map of the study area showing the location of the proposed facility and the criteria evaluated. | June 25, 2021, PSC Request, Attachment D |
| l. | An eight and one-half-inch by eleven-inch black and white map suitable for newspaper publication depicting the site area. | June 4, 2021, Technical Memorandum, Page 3, Question 4, Attachment B |
| m. | A discussion of present and future natural resource development in the area. | June 4, 2021, Technical Memorandum, Page 12, Question 18 |
| n. | Map and GIS requirements. The applicant shall provide information that is complete, current, presented clearly and concisely, and supported by appropriate references to technical and other written material available to the commission. | June 4, 2021, Technical Memorandum, Pages 2 and 3, Questions 2 and 3 |
| NDAC 69-06-05-01(2)(a)(7) | Description of Application Requirements | Section |
| a. | The width of the ROW | June 4, 2021, Technical Memorandum, Page 3, Question 5 |
| b. | The approximate length of facility | June 4, 2021, Technical Memorandum, Page 3, Question 5 |
| c. | The estimated span length | June 4, 2021, Technical Memorandum, Page 3, Question 5 |

| State Authority | Description | Section |
|-------------------------|--|---|
| d. | The anticipated type of structure for electric facilities | June 4, 2021, Technical Memorandum, Page 3, Question 5 |
| e. | The voltage of electric facilities | June 4, 2021, Technical Memorandum, Page 3, Question 5 |
| f. | The requirement and the general location of any associated facilities | June 4, 2021, Technical Memorandum, Page 3, Question 5 |
| g. | The estimated distance between surface structures for pipeline facilities | June 4, 2021, Technical Memorandum, Page 3, Question 5 |
| h. | The pipe size for pipeline facilities | June 4, 2021, Technical Memorandum, Page 3, Question 5 |
| i. | The maximum design operating pressure and temperature for pipeline facilities | June 4, 2021, Technical Memorandum, Page 3, Question 5 |
| j. | The maximum design flow rate for pipeline facilities | June 4, 2021, Technical Memorandum, Page 3, Question 5 |
| k. | The number and general location of compressor or pumping stations. | June 4, 2021, Technical Memorandum, Page 3, Question 5 |
| NDAC 69-06-06-02 | Waiver of Procedures and Time Schedules | Section |
| a. | A description of the type of facility addressed in the application, including the purpose and the technology to be employed. | Section III, Pages 2 and 3, Background |
| b. | A description of the products to be produced or transmitted by the proposed facility. | Section III, Pages 2 and 3, Background |
| c. | The capacity and design of the proposed facility | Section III, Pages 2 and 3, Background |
| d. | The location of the proposed facility and a map showing the location of the proposed facility | Appendix A; June 4, 2021, PSC Request, Page 2, Question 2 |
| e. | A description of the general area to be served by the facility. | Section III, Pages 2 and 3, Background; Section IV, Page 4, Need Bullet |

| State Authority | Description | Section |
|-------------------------|---|---|
| f. | The anticipated time schedule for major events. | Section IV, Page 5, Timing Bullet |
| g. | Any plans for future expansion of the proposed facility. | Section IV, Pages 3–5 |
| h. | The need for the proposed facility based on the present and projected demand for the product or products to be produced by the proposed facility, including the most recent system studies supporting the analysis of the need. | Section IV, Pages 3-5 |
| i. | Any reasonable alternative methods of serving the need. | Section IV, Page 5, Need Bullet |
| j. | Justification for any deviations from the applicant's most recent ten-year plan that the proposed facility may present. | Section IV, Page 4, Need Bullet |
| k. | The estimated total cost of construction of the facility. | Section IV, Page 5, Cost Bullet |
| l. | Any specific provisions of law that the applicant requests the commission waive or modify, with a separate justification for each provision. | Section V, Pages 5 and 6, Waiver Procedures and Schedules |
| m. | The factual basis demonstrating that the proposed facility is of such length, design, location, or purpose that it will produce minimal adverse effects. | Appendix A |
| n. | The nature of the emergency justifying immediate authority, if the application is based on an emergency situation. | N/A |
| NDAC 69-06-08-02 | Description of Application Requirements | Section |
| 1. (a.-g.) | Exclusion Areas | See Question 7, Table 1 above (July 6, 2021 Technical Memorandum) |
| 2. (a.-i.) | Avoidance Areas | See Question 7, Table 2 above (July 6, 2021 Technical Memorandum) |
| 3. (a.-b.) | Selection Criteria | June 4, 2021, Technical Memorandum, Pages 7–9, Question 13 |
| 4. (a.-j.) | Policy Criteria | June 4, 2021, Technical Memorandum, Page 9, Question 14 |

ATTACHMENT A
PSC Request for Information



Public Service Commission State of North Dakota

COMMISSIONERS

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June 25, 2021

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Re: Case No. PU-21-151
Montana-Dakota Utilities Co.
230 kV Transmission Line - Morton County
Siting Application

The Public Service Commission Staff is reviewing Montana-Dakota Utilities Company's (MDU) application. Staff is requesting that the company reply with answers to the following questions and responses for additional information:

1. The second answer to MDU's June 23, 2021 response includes an updated project location map with the associated 200-foot wide survey area.
 - a. Provide the dates the field surveys for cultural and natural resources were conducted for the new line segments and the existing line segment.
 - b. Please provide a map of all surveys MDU is relying on for cultural resources.
 - c. Please provide a map of all surveys MDU is relying on for natural resources.
2. Please provide maps showing all exclusion, avoidance, and selection criteria for the complete 1-mile study area. Please include the associated GIS layers.
3. Provide the following project control documents:
 - a. Emergency Procedures Plan
 - b. Wetland Delineation report
 - c. Revegetation Plan
 - d. Environmental training plan
 - e. Avian protection plan

4. Please provide a supplement to the application addressing avoidance areas relative to rural residences located within 500 feet of the route.
5. Was the Unanticipated Discovery Plan shared with the ND State Historic Preservation Office? Was it approved by them?
6. The twelfth answer in MDU's June 23, 2021 response indicates that "[n]atural resource evaluations were completed for wetlands, federally listed threatened and endangered species, and species managed under the North Dakota State Wildlife Action Plan" and that they were subsequently "transmitted to the U.S. Army Corps of Engineers (USACE), the USFWS, and the North Dakota Game and Fish Department (NDGFD)". Please file copies with the Commission of all such evaluations.
7. For each exclusion and avoidance criteria, please provide a table with the following:
 - a. For the study area, the desktop analysis, or other analysis, that was performed along with the source(s) of the data.
 - b. For the survey area, the date the survey(s) was conducted, the width of the survey(s), whether the survey(s) was conducted across the entire corridor depicted on the updated project map to the June 23, 2021 response, and the survey location on the same updated map.

It would also be helpful for the structure of the application and an orderly hearing to have a table showing all the filing requirements for a corridor certificate and route permit along with the document and section that addresses each requirement.

Please let me know whether you have questions.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Adam Renfandt', with a long horizontal flourish extending to the right.

Adam Renfandt
Analyst

ATTACHMENT B

Cultural Resource Survey Mapping

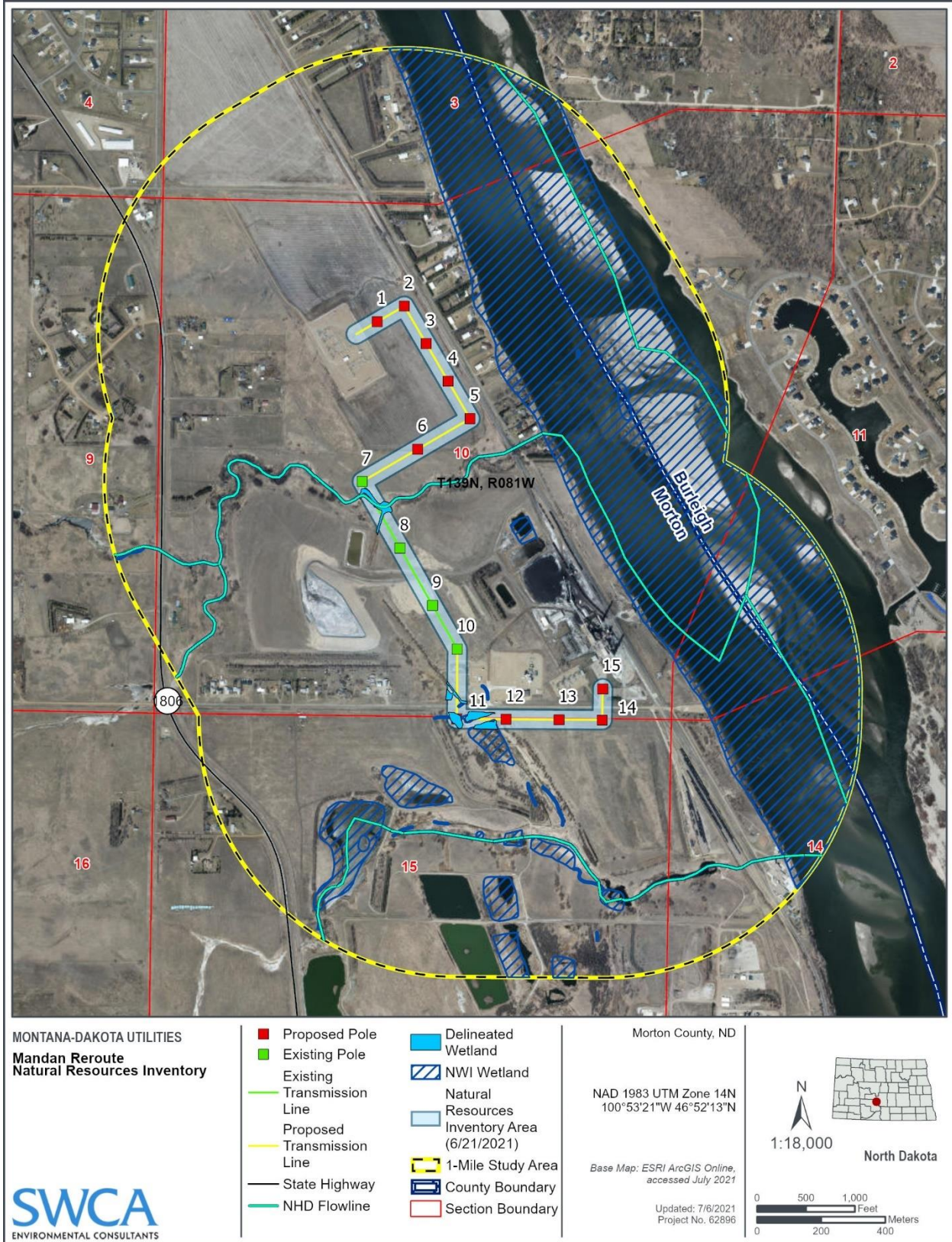
CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE

REDACTED

CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE

ATTACHMENT C

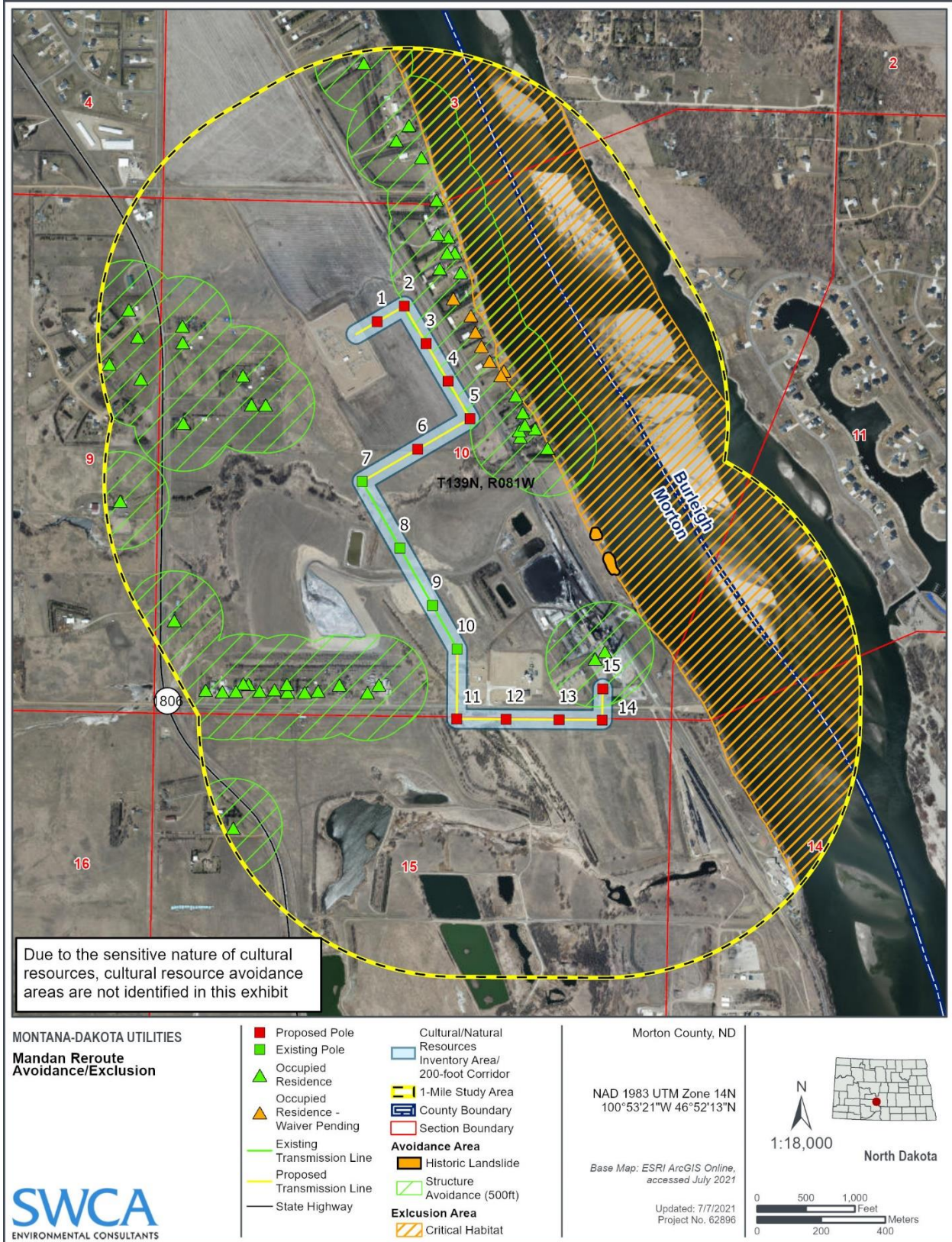
Natural Resource Survey Mapping



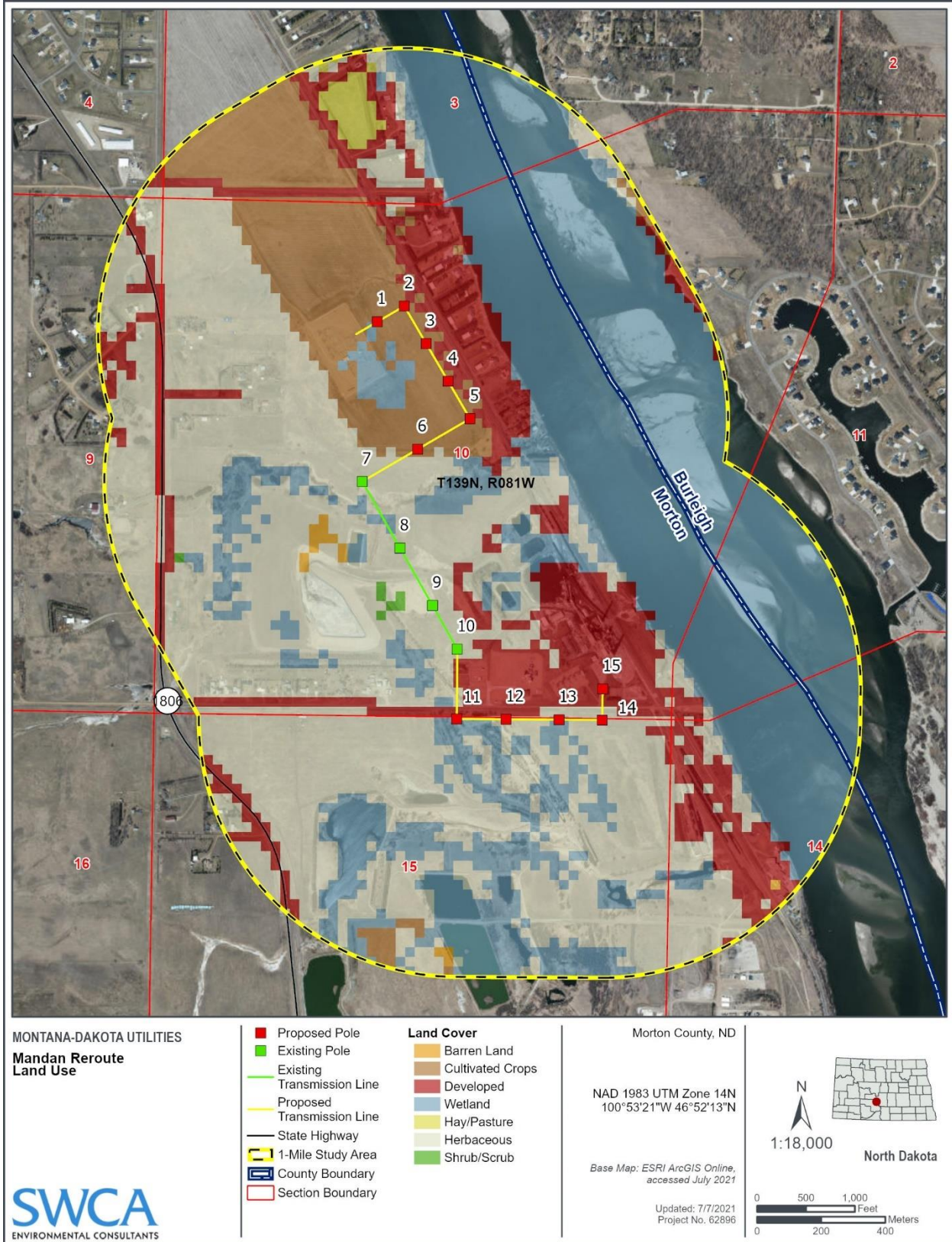
Attachment C. Mandan Reroute Natural Resources Inventory.

ATTACHMENT D

Avoidance, Exclusion, and Siting Criteria Mapping



Attachment D1. Mandan Reroute Avoidance/Exclusion Map 1 of 6 showing avoidance and exclusion areas including occupied residences with 500 feet of the route.



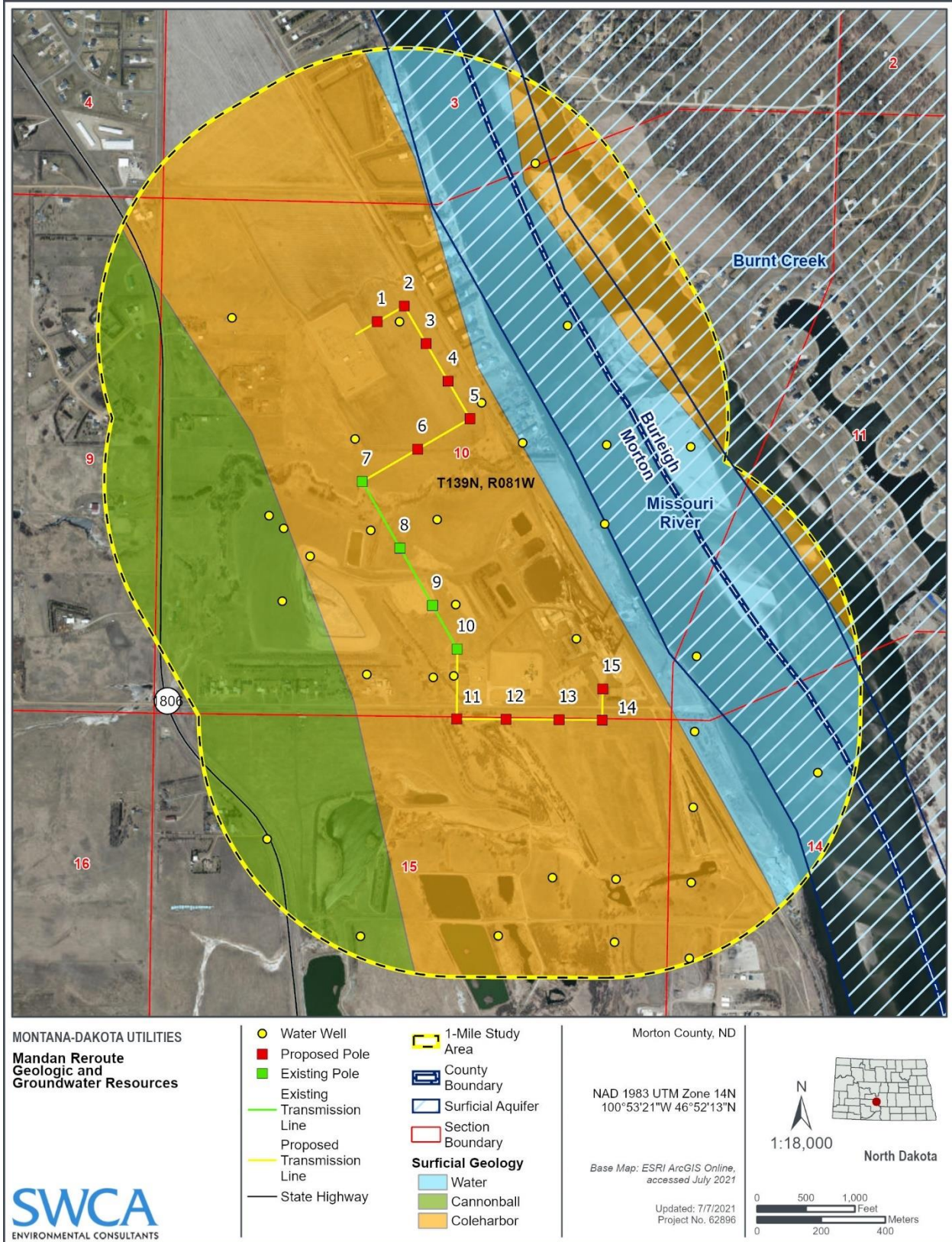
Attachment D2. Mandan Reroute Avoidance/Exclusion Map 2 of 6 showing land use / land cover.



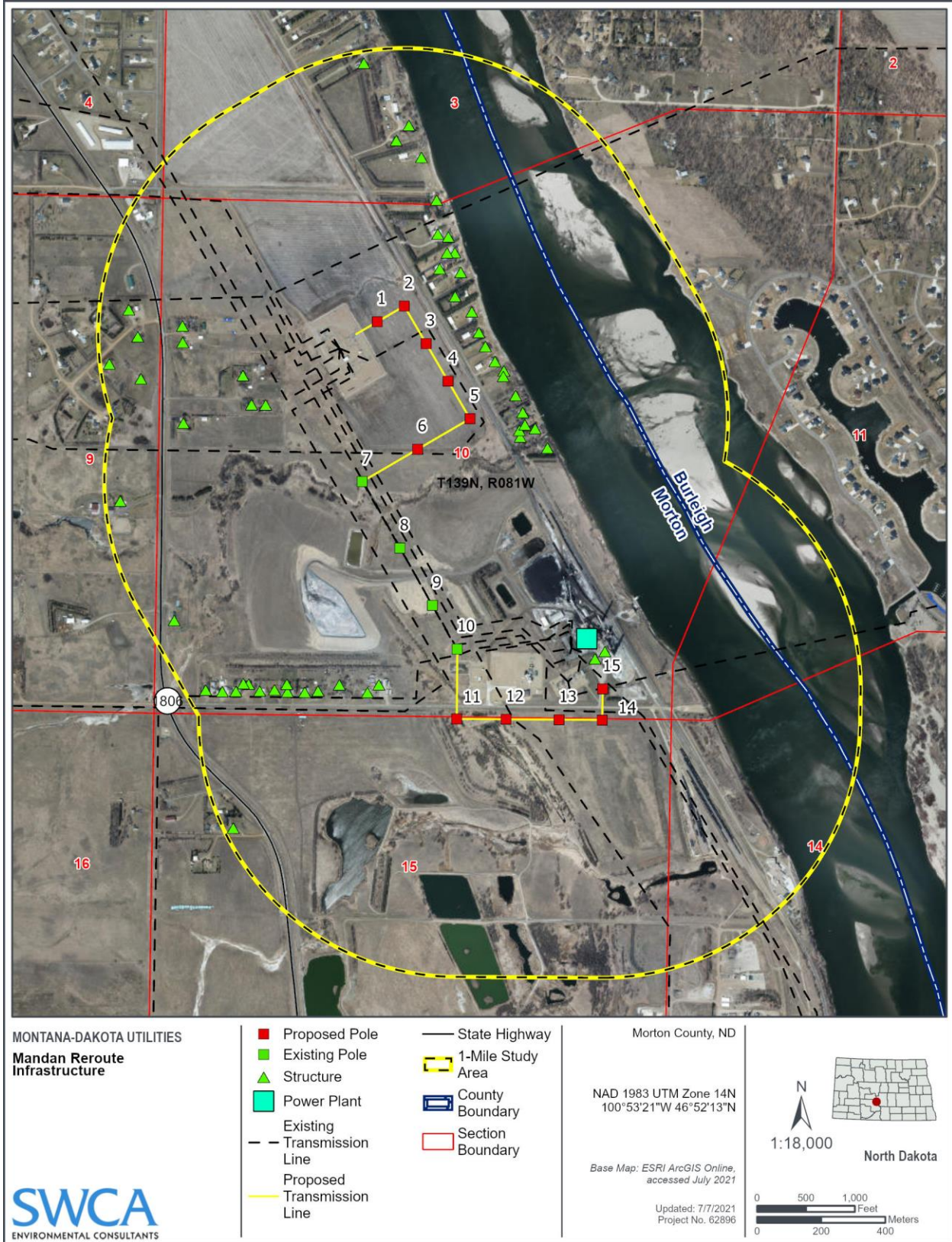
Attachment D3. Mandan Reroute Avoidance/Exclusion Map 3 of 6 showing surface waters and wetlands.



Attachment D4. Mandan Reroute Avoidance/Exclusion Map 4 of 6 showing prime and unique farmland.



Attachment D5. Mandan Reroute Avoidance/Exclusion Map 5 of 6 showing geologic and groundwater resources.



Attachment D6. Mandan Reroute Avoidance/Exclusion Map 6 of 6 showing infrastructure.

ATTACHMENT E

Safety and Emergency Plan


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CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE

ATTACHMENT F

Aquatic Resources Delineation Report



Aquatic Resources Delineation Report for the Heskett to Ellendale Reconduction Project Mandan Reroute, Morton County, North Dakota

JULY 2021

PREPARED FOR

Montana-Dakota Utilities Co.

PREPARED BY

SWCA Environmental Consultants

**AQUATIC RESOURCES DELINEATION REPORT
FOR THE HESKETT TO ELLENDALE RECONDUCTION
PROJECT MANDAN REROUTE,
MORTON COUNTY, NORTH DAKOTA**

Prepared for

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SWCA Project No. 62896

July 2021

EXECUTIVE SUMMARY

SWCA Environmental Consultants (SWCA) was contracted by Montana-Dakota Utilities Co. (Montana-Dakota), to conduct an aquatic resources delineation for the Heskett to Ellendale Reconduction Project Mandan Reroute (Project) in Morton County, North Dakota. SWCA surveyed land within the Project area boundary provided by Montana-Dakota). The purpose of the delineation was to determine whether any aquatic resources (wetlands or waterbodies with ordinary high-water marks [OHWMs]) within the Project area could potentially qualify as waters of the U.S. (WOTUS) under Section 404 of the Clean Water Act and to delineate their boundaries to determine the need for permitting in coordination with the U.S. Army Corps of Engineers (USACE).

The aquatic resources delineation was completed in accordance with the *Corps of Engineers Wetland Delineation Manual* (USACE 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region, Version 2.0* (USACE 2010), and the North Dakota Regulatory Office *Minimum Standards for Acceptance of Aquatic Resources Delineation Reports* (USACE 2019). *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual* (Lichvar and McColley 2008) was used as a reference for delineating aquatic resources with OHWMs.

SWCA delineated five wetlands within the Project area totaling 1.989 acres. No waterbodies (streams) with OHWMs were delineated within the Project area. These five wetlands are likely WOTUS as defined under the Navigable Waters Protection Rule in 33 Code of Federal Regulations Part 328.3.

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1 INTRODUCTION

Montana-Dakota Utilities Co. (Montana-Dakota), contracted SWCA Environmental Consultants (SWCA) to conduct an aquatic resources delineation (delineation) for the Mandan Reroute Project (Project) in Morton County, North Dakota. The Project area encompasses approximately 35.71 acres of right-of-way (ROW) for the proposed transmission line Mandan reroute for the Heskett to Ellendale Reconduction Project. SWCA identified and delineated aquatic resources within the Project area boundary provided by Montana-Dakota to make a determination recommendation if they would qualify as waters of the U.S. (WOTUS). If aquatic resources are determined to be WOTUS, they would be subject to permitting requirements of the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA) for unavoidable Project-related impacts.

The Project area is an existing 1.44-mile-long, 200-foot-wide utility ROW located in Sections 10 and 15, Township (T) 139 North (N), Range (R) 81 West (W), Morton County, North Dakota. The Project area overview and a U.S. Geological Survey (USGS) Topographical map are provided as Figures A-1 and A-2 in Appendix A. The approximate center of the Project is located at 46.868418 degrees latitude and -100.891710 degrees longitude.

1.1 Regulatory Background

Pursuant to Section 404 of the CWA, the USACE regulates the discharge of dredge and/or fill material into WOTUS. Section 404 requires that any entity proposing an activity that would result in unavoidable discharges of such materials into a WOTUS must obtain permit coverage from the USACE, depending on the level of discharges.

Designation as a WOTUS applies to the jurisdictional limits of USACE authority under the CWA and typically includes traditional navigable waters, interstate waters, and wetlands adjacent to streams; impoundments, tributaries, and wetlands adjacent to those waters; and territorial seas. Most rivers, creeks, streams, arroyos, lakes, special aquatic sites, and their tributaries are typically designated as WOTUS. Wetlands are the most common special aquatic site and are defined as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (USACE 1987:9). To be classified as a wetland under federal definition, an area must meet the following three criteria under normal circumstances: 1) have a predominance of hydrophytic vegetation, 2) contain soils that are characteristic of frequent saturation (i.e., hydric soils), and 3) have the presence of hydrology showing regular inundation or saturation (USACE 1987). The ordinary high-water mark (OHWM) is a defining element for identifying the lateral limits of waterbodies lacking adjacent wetlands and typically represents the outer limits of potential USACE jurisdiction. However, under the Navigable Water Protection Rule (NWPR), wetlands that meet the three criteria described above, and streams with OHWMs, must now meet additional criteria to be classified as WOTUS to receive protection under the CWA Section 404 Program.

1.1.1 Navigable Water Protection Rule

Under the NWPR, effective as of June 22, 2020, WOTUS are now defined as 1) territorial seas and Traditional Navigable Waters (TNWs); 2) perennial and intermittent tributaries that contribute surface water flow to Category 1 waters in a typical year; 3) certain lakes, ponds, and impoundments of jurisdictional waters; and 4) wetlands adjacent to other jurisdictional waters. Under the NWPR, all ephemeral streams (e.g., arroyos) and ditches that are not TNWs, that are not tributaries, or that are not constructed in adjacent wetlands (subject to certain limitations), as well as artificially irrigated areas that

would revert to upland if artificial irrigation ceases, are categorically excluded from being considered WOTUS and therefore are not federally protected under the CWA. Section 404 permits for dredge or fill activities would not be necessary for impacts to such drainage features. However, the NWPR is currently being challenged by a series of lawsuits. The future status of the NWPR is unknown while litigation is pending, and ephemeral waters, and intermittent and perennial surface waters that do not contribute flow to a TNW in a typical year (and their adjacent wetlands), may reenter jurisdiction under the CWA, depending on the outcome of the litigation.

SWCA conducted the aquatic resources delineation to provide supporting documentation to assist the USACE in determining jurisdiction and to support CWA Section 404 permitting. However, the USACE has final and legal authority in determining the presence of WOTUS and the extent of their jurisdictional boundaries.

2 METHODS

SWCA identified and delineated aquatic resources within the Project area (as described in Section 1) using a combination of desktop review and field surveys. The Project area is illustrated in Figure A-1 in Appendix A.

2.1 Desktop Review

Prior to conducting field surveys, SWCA completed a desktop review of the Project area. The desktop review included examining existing data from USGS topographic quadrangle maps, the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) database, the USGS National Hydrography Dataset (NHD), the Natural Resources Conservation Service (NRCS) Web Soil Survey, and historic and current aerial photographs of the Project area. The NWI is a USFWS database that identifies and categorizes wetland areas based primarily on aerial imagery interpretation (USFWS 2020). Maintained by the USGS, the NHD identifies surface water systems in the United States, including lakes, streams, rivers, and canals (USGS 2020). SWCA used NRCS soil survey data (NRCS 2020) to review area soils. This desktop review identified locations of potential aquatic resources for investigation and confirmation during the field surveys.

2.2 Field Surveys

SWCA wetland biologists conducted pedestrian delineations for aquatic resources on June 29, 2021. The field delineations were conducted to verify the results of the desktop review and to delineate all aquatic resources in the Project area that are potential WOTUS.

SWCA conducted the delineations in accordance with the *Corps of Engineers Wetland Delineation Manual* (the Manual) (USACE 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region, Version 2.0* (the Supplement) (USACE 2010), and the North Dakota Regulatory Office *Minimum Standards for Acceptance of Aquatic Resources Delineation Reports* (USACE 2019). The biologists used *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual* (Lichvar and McColley 2008) as a reference for delineating aquatic resources with OHWMs.

A global positioning system (GPS) unit with submeter accuracy was used in the field to map the spatial extent of features, geographically reference datapoints, and delineate boundaries during the field surveys. Geographic information systems (GIS) software was used in the office to analyze the delineated features,

calculate areas, and generate report maps. Please note that all data recorded using the GPS unit and displayed in the maps are for review purposes only and do not represent a professional civil survey; however, the recorded accuracy was less than 1 meter.

2.2.1 Wetlands

All potential wetlands encountered during the field surveys were investigated to determine if a wetland (possessing all three characteristics) was present. If potential wetland characteristics were observed in an area (such as hydrophytic vegetation or wetland hydrology), the wetland biologists established a datapoint(s) to determine the wetland status of the area. Additionally, the wetland biologists assessed all NWI polygons mapped within the Project area to determine if any of them met USACE wetland criteria. Representative photographs and/or datapoints were also established in upland areas to document the presence or lack of wetland criteria and to further refine the wetland boundary.

In the areas surveyed, wetland boundaries were delineated where all three fundamental characteristics of hydrophytic vegetation, hydric soils, and wetland hydrology were present. Wetlands that satisfy all three criteria may be subject to regulation by the USACE under Section 404 of the CWA.

The plant species identified, their percent cover, and their indicator status according to the USACE (2020) were used to indicate the presence of hydrophytic vegetation. To determine if hydric soils were present, SWCA's biologists extracted a soil profile to a sufficient depth (generally 20 inches) to document the presence or absence of all applicable hydric soil indicators. Inundation, saturation, and other physical indicators suggesting the presence of water were used to determine wetland hydrology at each site.

Wetlands were classified using the Cowardin classification system (Cowardin et al. 1979). The five principal systems are marine, estuarine, riverine, lacustrine, and palustrine. The Project area features riverine and palustrine systems.

The riverine system includes all wetlands and deep-water habitats contained within a channel except those wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens or that have habitats with ocean-derived salinities exceeding 0.5 part per thousand (‰) (Cowardin et al. 1979).

The palustrine system includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens and all such wetlands that exist in tidal areas where salinity resulting from ocean-derived salts is below 0.5‰ (Cowardin et al. 1979). The palustrine system also includes wetlands lacking such vegetation but exhibiting the following four characteristics: 1) area less than 8 hectares (20 acres); 2) a lack of active wave-formed or bedrock shoreline features; 3) water depth in the deepest part of the basin less than 2 meters at low water; and 4) salinity from ocean-derived salts of less than 0.5‰.

In certain situations, normal seasonal or annual variation in environmental conditions can lead to the development of "problem areas" in which wetland vegetation, hydric soils, or wetland hydrology may not be readily identifiable. These problem areas may require additional investigation to determine the presence or absence of wetland indicators. In other situations, recent human activities or natural events can create "atypical situations" in which positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation are absent or unreliable. As with problem areas, these situations may require additional investigation to determine if a wetland is present.

SWCA recorded data on USACE Great Plains regional wetland determination datasheets to verify the presence and extent of wetlands (Appendix B). Details recorded at each datapoint consisted of vegetation within prescribed sampling plots, soil characteristics, and hydrology information. The biologists took overview photographs of the sample area and detailed photographs of vegetation, soils, and hydrology at each datapoint (Appendix C). Datapoints that exhibited positive indicators of hydrophytic vegetation,

hydric soils, and wetland hydrology were classified as wetlands. Datapoints that did not contain wetland indicators for all three criteria were classified as uplands.

2.2.1.1 VEGETATION

At each datapoint, SWCA recorded the binomial scientific name and absolute percent ground cover of all vascular plants within prescribed plot sizes for each vegetative stratum. The Supplement (USACE 2010) defines the tree stratum as a woody-stemmed plant with a trunk diameter at breast height (DBH) of equal to or greater than 3 inches, regardless of height; the sapling and shrub stratum as consisting of woody-stemmed plants with a trunk DBH of less than 3 inches, regardless of height; the herbaceous stratum as including all non-woody-stemmed plants, regardless of height; and the woody vine stratum as including all woody-stemmed vines, regardless of diameter. Typical plot size was a 30-foot radius for the tree stratum, a 15-foot radius for the sapling and shrub stratum, a 5-foot radius for the herbaceous stratum, and a 30-foot radius for the woody vine stratum. However, in some instances, the biologists changed plot sizes to conform to the actual wetland size or shape. The wetland indicator status of each plant species was determined using the *2018 National Wetland Plant List* (USACE 2020), which divides plant species into five categories that reflect the range of estimated probabilities of a species existing in a wetland versus an upland. The five categories of wetland indicator statuses are as follows.

- Obligate (OBL): almost always occurs in wetlands
- Facultative wetland (FACW): usually occurs in wetlands, but may occur in non-wetlands
- Facultative (FAC): occurs in wetlands or non-wetlands
- Facultative upland (FACU): usually occurs in non-wetlands, but may occur in wetlands
- Upland (UPL): almost never occurs in wetlands

Any plant community with greater than 50% dominant hydrophytes (OBL, FACW, and FAC) across all strata was determined to meet the USACE criteria of a hydrophytic community. In cases where disturbance had created problematic hydrophytic vegetation, visual observations of other hydrophytic vegetation indicators and site conditions, such as livestock grazing or presence of human-made features, were evaluated to clarify wetland boundaries.

2.2.1.2 SOILS

Hydric soil determinations were made according to criteria listed in the Manual (USACE 1987), the Supplement (USACE 2010), and *Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils, Version 8.2* (U.S. Department of Agriculture 2018). The wetland biologists excavated soil pits to a depth of at least 20 inches and described each soil profile by horizon. Each horizon was evaluated for soil color; thickness; color, abundance, and contrast of redoximorphic features (mottles); and soil texture. Munsell soil color charts were used to determine the color of the soil matrix and redoximorphic features. The “feel” or “ribbon” test was used to determine soil texture. The soil profile was studied for the hydric soil indicators listed in the Manual (USACE 1987) and the Supplement (USACE 2010). If the soil profile displayed at least one primary or two secondary hydric soil indicators, a positive hydric soil determination was made.

Some soils that meet the hydric soil definition may not exhibit any indicators. These problematic hydric soils may lack indicators because of the color of the parent material from which the soils develop, because site conditions may inhibit the development of redoximorphic features, or because not enough time has passed to develop hydric soil indicators (USACE 2010). A map of hydric soils identified from the NRCS Web Soil Survey (2020) is located as Figure A-3 in Appendix A. For areas with problematic soils, hydric

soil conditions were assumed when there was a dominant hydrophytic plant community and the area exhibited wetland hydrology indicators, as listed in the Supplement (USACE 2010).

2.2.1.3 HYDROLOGY

Wetland hydrology was primarily determined in the field using the hydrology indicators detailed in the Manual (USACE 1987) and the Supplement (USACE 2010). To determine whether wetland hydrology was present at a datapoint, the SWCA biologists considered the frequency and duration of inundation; used visual observation of saturation in the upper 12 inches of the soil profile; and used the presence of other primary wetland hydrology indicators, such as oxidized root channels, water-stained leaves, surface soil cracks, water marks (nonriverine), sediment deposits (nonriverine), or the presence of biotic crusts. Secondary indicators used to determine wetland hydrology consisted of drainage patterns, the presence of a dry-season water table, or saturation visible on aerial imagery. If the area contained one or more primary hydrology indicator or two or more secondary hydrology indicators, a positive hydrology determination was made.

2.2.2 Waterbodies

The lateral extent of surface water features (i.e., ponds, creeks, streams, lakes) was identified by the presence of an OHWM. Common identifiable indicators of an OHWM include physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas. The OHWM typically represents the potential limits of USACE jurisdiction, unless there is a wetland adjacent to the waterbody (Lichvar and McColley 2008). Please note that the USACE has full discretion in determining the jurisdictional status of referenced wetlands and waterbodies.

The NHD is a digital vector dataset referred to by SWCA biologists in the field to confirm or disprove the existence of features such as lakes, ponds, streams, rivers, canals, dams, and stream gages (USGS 2011). NHD flowlines are features that contain flow direction and form a network (USGS 2011). In the field, SWCA can confirm or disprove NHD flowlines based on the presence of streams, OHWMs, hydrophytic vegetation, wetland hydrology, and hydric soils. A desktop analysis is then performed to determine if the confirmed waterbodies show significant nexus to waters as described in Definition of Waters of the United States (Title 33 Code of Federal Regulations Part 328.3 [a] [1]–[3]).

SWCA classified streams as perennial, intermittent, or ephemeral based on field observations. During a typical year, a perennial stream contains flowing water year-round and the water table is located above the streambed. Groundwater is the primary water source for stream flow, while precipitation runoff is supplemental. Additionally, the USGS topographic maps were used as reference.

An intermittent stream has flowing water for only portions of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

3 RESULTS

The Project area is entirely within the Rolling Soft Shale Plain Major Land Resource Area (MLRA) 54 (NRCS 2006). This area is in the Missouri Plateau, Glaciated and Missouri Plateau, Unglaciated portions of the Great Plains Province of the Interior Plains. MLRA 54 is mostly unglaciated, and the topography is characterized as a moderately dissected rolling plain with some buttes and hills. Broad floodplains and adjacent terraces occur along most of the major drainages.

The average annual precipitation in these areas is 18.36 inches (355–455 millimeters). The average annual temperature is 38 to 46 degrees Fahrenheit (3 to 8 degrees Celsius). The freeze-free period ranges from 130 to 165 days (NRCS 2006). About half of the precipitation in MLRA 54 occurs as snow in the winter, with rainfall typically occurring as high-intensity, convective thunderstorms during the growing season.

The Project area crosses two stream features (Rock Haven Creek and an unnamed feature) that are tributaries to the Missouri River, a TNW. SWCA delineated five distinct wetlands in the Project area. SWCA did verify one NHD watercourse (Rock Haven Creek) within the Project Area, however, SWCA classified this feature as a wetland due to the lack of an OHWM. There are no open waterbodies with OHWMs in the Project area. The Project area, the delineated aquatic features, and the datapoint locations are illustrated in Figure A-4 in Appendix A; datapoint datasheets are provided in Appendix B; the photographs are provided in Appendix C; the USACE Antecedent Precipitation tool is provide in Appendix D, and directions to the Project area are in Appendix E. Feature identification numbers in this report were kept the same as the field-assigned feature identification numbers to maintain accurate tracking of data.

3.1 Wetlands

The wetlands delineated during the field surveys, their corresponding acreage, and the datapoint(s) associated with the delineated wetlands are summarized in Table 1. The USACE Antecedent Precipitation Tool results indicate that June 29, 2021—the date of the field visit to the Project area—was during the dry season, the drought index was “moderate drought,” and “drier than normal” antecedent precipitation conditions occurred in the 90 days prior to the database query date for the Project vicinity (Appendix D).

Some of these wetlands extend beyond the Project area boundary; only the acreages within the Project area boundary are summarized in Table 1. The wetland feature identification number listed in Table 1 corresponds to the wetland feature identification number shown on the maps in Appendix A.

Table 1. Acreage and Associated Datapoints of Wetlands Delineated in the Project Area

| Wetland ID | Wetland Acreage (acres) | Wetland Datapoint | Upland Datapoint |
|--------------|-------------------------|-------------------|------------------|
| WET01 | 0.269 | DP01 | DP02 |
| WET02 | 0.662 | DP03 | DP04 |
| WET03 | 0.330 | DP05 | DP06 |
| WET04 | 0.388 | DP09 | DP08 |
| WET05 | 0.340 | DP07 | DP08 |
| Total | 1.989 | | |

Additional datapoint information associated with the datasheets in Appendix B is provided in Table 2, including location and soil map unit.

Table 2. Additional Datapoint Information

| Datapoint Number | Latitude | Longitude | Section | Township, Range | NWI Polygon | Soil Map Unit |
|------------------|----------|------------|---------|-----------------|-------------|---|
| DP01 | 46.87056 | -100.89339 | 10 | T139N, R081W | None | E4139A; Korchea-Fluvaquents complex, channeled, 0 to 2 percent slopes, frequently flooded |
| DP02 | 46.87056 | -100.89329 | 10 | T139N, R081W | None | E4139A; Korchea-Fluvaquents complex, channeled, 0 to 2 percent slopes, frequently flooded |
| DP03 | 46.86507 | -100.88980 | 10 | T139N, R081W | None | E4999; Water |
| DP04 | 46.86506 | -100.88992 | 10 | T139N, R081W | None | E4999; Water |
| DP05 | 46.86445 | -100.88968 | 15 | T139N, R081W | None | E4999; Water |
| DP06 | 46.86449 | -100.88962 | 15 | T139N, R081W | PEM1c | E4999; Water |
| DP07 | 46.86428 | -100.88888 | 15 | T139N, R081W | PABFx | E4999; Water |
| DP08 | 46.86440 | -100.88904 | 15 | T139N, R081W | None | E4999; Water |
| DP09 | 46.86447 | -100.88911 | 15 | T139N, R081W | None | E4999; Water |

3.1.1 Wetland Vegetation

All of the delineated wetlands are dominated by emergent vegetation. Dominant emergent vegetation includes smooth broome (*Bromus inermis*), common reed (*Phragmites australis*), narrow-leaf cat-tail (*Typha angustifolia*). Vegetation species recorded in the field are detailed on the wetland datapoint datasheets provided in Appendix B.

3.1.2 Wetland Soils

Wetland datapoint hydric soil indicators observed included Depleted Below Dark Surface (A11), Depleted Matrix (F3), and Redox Dark Surface (F6). Soil profiles recorded in the field are detailed on the wetland datapoint datasheets provided in Appendix B.

3.1.3 Wetland Hydrology

The primary wetland hydrology indicators observed were Surface Water (A1), High Water Table (A2), Saturation (A3), Iron Deposit (B5), and Hydrogen Sulfide Odor (C1). Secondary indicators were Geomorphic Position (D2), Drainage Patterns (B10), and FAC-Neutral Test (D5). Wetland hydrology indicators recorded in the field are detailed on the wetland datapoint datasheets provided in Appendix B.

3.2 Waterbodies

No waterbodies were identified during the field investigation.

4 CONCLUSIONS

- SWCA recorded five wetlands within the Project area, totaling 1.989 acres. Refer to Figure A-2 for a depiction of the wetland boundaries within the Project area.
- SWCA did not identify any non-wetland waterbodies (streams) with OHWMs within the Project area. One mapped NHD was identified and delineated as a wetland due to no identifiable OHWM within the Project area.
- Based on the desktop review and field investigations—and the current definition of WOTUS under the NWPR—the five wetland features in the analysis area meet the criteria of WOTUS. These features meet the criteria for WOTUS since they are adjacent to a jurisdictional tributary or connected to a perennial or intermittent stream that contributes flow in a typical year to a Category 1 water (i.e., the nearest TNW located along the Missouri River 0.35 mile downstream of the Rock Haven Creek crossing).
- However, the five wetland features crossing the Project area would likely be considered WOTUS and subject to CWA regulations under the pre-NWPR WOTUS definition because the wetlands meet all three wetland criteria and are adjacent or hydrologically connected to features that show indicators of OHWMs.
- SWCA conducted this aquatic resource delineation to provide supporting documentation to assist the USACE in determining jurisdiction and to support CWA Section 404 permitting. However, the USACE has final and legal authority in determining the presence/absence of WOTUS and the extent of any jurisdictional boundaries in the Project area.

5 LITERATURE CITED

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APPENDIX A

Maps



Figure A-1. Project location map.

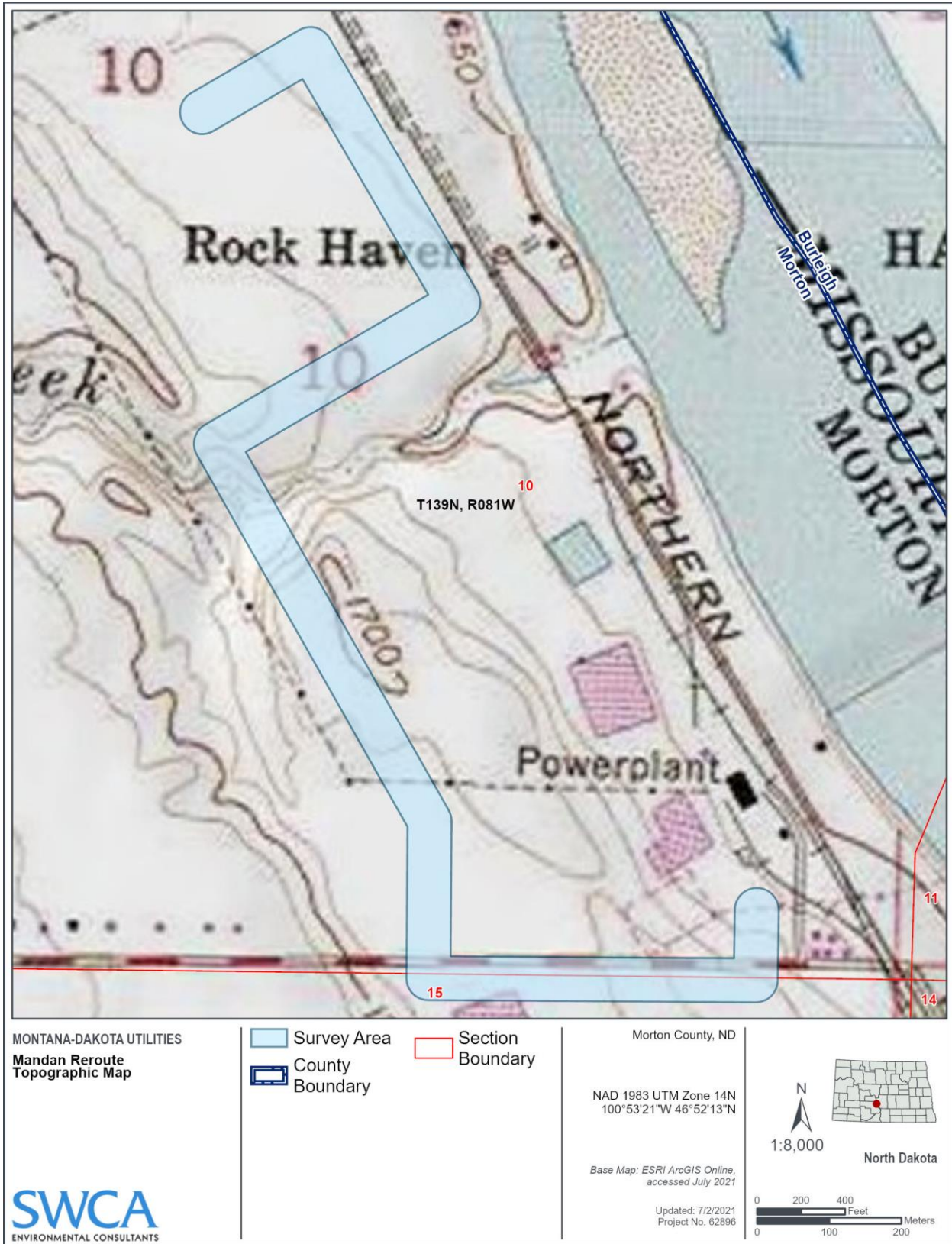


Figure A-2. USGS topographical map of the Project area.



Figure A-3. NRCS Web Soil Survey map of hydric soils in the Project area.

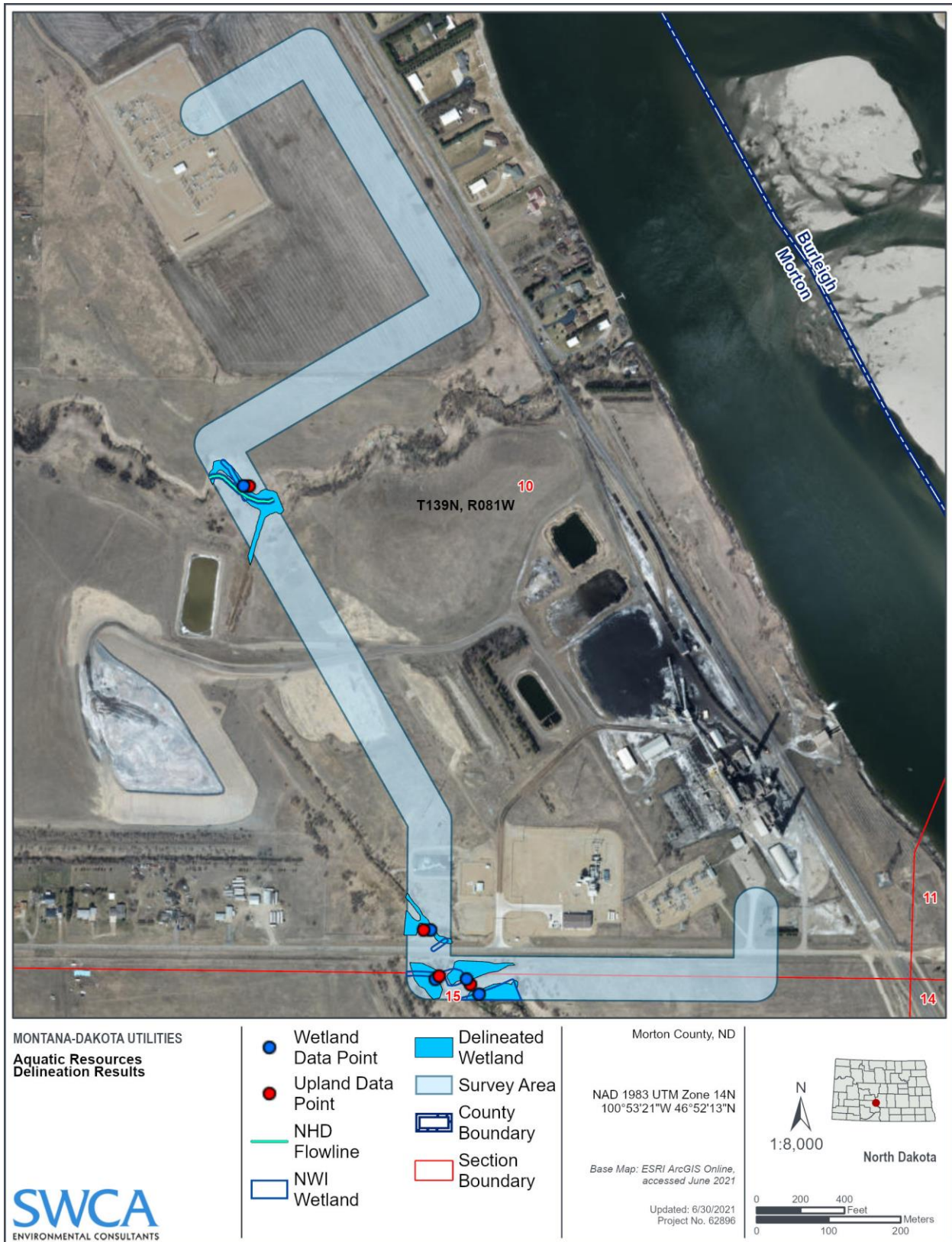


Figure A-4. Aquatic resources delineation results in the Project area.

APPENDIX B

Datapoint Datasheets

WETLAND DETERMINATION DATA FORM — Great Plains Region

Project/Site: Heskett to Ellendale Reconducton Project City/County: Morton County Sampling Date: 06/29/2021
 Applicant/Owner: Montant-Dakota Utilities Co. State: ND Sampling Point: DP01
 Investigator(s): Cole Reagan Section, Township, Range: Sec. 10 T139N R81W
 Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): <5%
 Subregion (LRR): LRR F Lat: 46.87056 Long: -100.89339 Datum: _____
 Soil Map Unit Name: E4139A - Korchea-Fluvaquents complex, channeled, 0 to 2 percent slopes, frequently flooded NWI classification: No

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | |
|--|--|
| Hydrophytic Vegetation Present? Yes: <input checked="" type="checkbox"/> No: _____ Hydric Soil Present? Yes: <input checked="" type="checkbox"/> No: _____ Wetland Hydrology Present? Yes: <input checked="" type="checkbox"/> No: _____ | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ |
| Remarks: PEMC wetland. No evidence of an OHWM. | |

VEGETATION - Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------|-------------------|------------------|---|-------------------|--|--------------|--|-------------|-----------|-------|-----------|--------------|----------|-------|----------|-------------|----------|-------|----------|--------------|----------|-------|----------|-------------|----------|-------|----------|----------------|---------------|--|---------------|-------------------------|--|--|-------------|
| Tree Stratum: (Plot size: <u>30</u>) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: (excluding FAC-): <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Domant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum: (Plot size: <u>15</u>) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">Total % Cover of:</td> <td align="center" colspan="2">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td align="center"><u>80</u></td> <td>x 1 =</td> <td align="center"><u>80</u></td> </tr> <tr> <td>FACW species</td> <td align="center"><u>0</u></td> <td>x 2 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>FAC species</td> <td align="center"><u>0</u></td> <td>x 3 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>FACU species</td> <td align="center"><u>0</u></td> <td>x 4 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>UPL species</td> <td align="center"><u>0</u></td> <td>x 5 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td align="center"><u>80</u> (A)</td> <td></td> <td align="center"><u>80</u> (B)</td> </tr> <tr> <td align="right" colspan="2">Prevalence Index = B/A=</td> <td></td> <td align="center"><u>1.00</u></td> </tr> </table> | Total % Cover of: | | Multiply by: | | OBL species | <u>80</u> | x 1 = | <u>80</u> | FACW species | <u>0</u> | x 2 = | <u>0</u> | FAC species | <u>0</u> | x 3 = | <u>0</u> | FACU species | <u>0</u> | x 4 = | <u>0</u> | UPL species | <u>0</u> | x 5 = | <u>0</u> | Column Totals: | <u>80</u> (A) | | <u>80</u> (B) | Prevalence Index = B/A= | | | <u>1.00</u> |
| Total % Cover of: | | Multiply by: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OBL species | <u>80</u> | x 1 = | <u>80</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACW species | <u>0</u> | x 2 = | <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FAC species | <u>0</u> | x 3 = | <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACU species | <u>0</u> | x 4 = | <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPL species | <u>0</u> | x 5 = | <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Totals: | <u>80</u> (A) | | <u>80</u> (B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A= | | | <u>1.00</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Herb Stratum: (Plot size: <u>5</u>) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u><i>Typha angustifolia</i></u> | <u>80</u> | <u>Y</u> | <u>OBL</u> | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 80 =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Woody Vine Stratum: (Plot size: <u>30</u>) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bare Ground in Herb Stratum <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Remarks: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SOIL

Sampling Point: DP01

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6 | 10YR 2/1 | 100 | | 0 | | | Clay Loam | |
| 6-24 | 10YR 5/2 | 98 | 10YR 4/6 | 2 | C | M | Clay | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

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

| | | |
|---|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input checked="" type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) | |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) | |

Indicators for Problematic Hydric Soils³:

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Clay

Depth (inches): 6

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary indicators (minimum of one required: check all that apply)

| | |
|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input checked="" type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |

Secondary indicators (minimum of two required)

| |
|---|
| <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| (where tilled) |
| <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

Surface Water Present? Yes No Depth (inches): 12

Water Table Present? Yes No Depth (inches): 0

Saturation Present? Yes No Depth (inches): 0
(includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks:

WETLAND DETERMINATION DATA FORM — Great Plains Region

Project/Site: Heskett to Ellendale Recondution Project City/County: Morton County Sampling Date: 06/29/2021
 Applicant/Owner: Montant-Dakota Utilities Co. State: ND Sampling Point: DP02
 Investigator(s): Cole Reagan Section, Township, Range: Sec. 10 T139N R81W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): <5%
 Subregion (LRR): LRR F Lat: 46.87056 Long: -100.89329 Datum: _____
 Soil Map Unit Name: E4139A - Korchea-Fluvaquents complex, channeled, 0 to 2 percent slopes, frequently flooded NWI classification: No

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | | |
|---------------------------------|------------|--------------|--|-----------------------|
| Hydrophytic Vegetation Present? | Yes: _____ | No: <u>X</u> | Is the Sampled Area within a Wetland? | |
| Hydric Soil Present? | Yes: _____ | No: <u>X</u> | | Yes _____ No <u>X</u> |
| Wetland Hydrology Present? | Yes: _____ | No: <u>X</u> | | |
| Remarks: | | | | |

VEGETATION - Use scientific names of plants.

| <p><u>Tree Stratum:</u> (Plot size: <u>30</u>)</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;"></th> <th style="width:10%;">Absolute % Cover</th> <th style="width:10%;">Dominant Species?</th> <th style="width:10%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">0 =Total Cover</td></tr> </tbody> </table> <p><u>Sapling/Shrub Stratum:</u> (Plot size: <u>15</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">0 =Total Cover</td></tr> </tbody> </table> <p><u>Herb Stratum:</u> (Plot size: <u>5</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. <u>Bromus inermis</u></td><td style="text-align: center;">80</td><td style="text-align: center;">Y</td><td style="text-align: center;">UPL</td></tr> <tr><td>2. <u>Cirsium arvense</u></td><td style="text-align: center;">5</td><td style="text-align: center;">N</td><td style="text-align: center;">FACU</td></tr> <tr><td>3. <u>Euphorbia esula</u></td><td style="text-align: center;">5</td><td style="text-align: center;">N</td><td style="text-align: center;">UPL</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>6. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>7. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>8. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>9. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>10. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">90 =Total Cover</td></tr> </tbody> </table> <p><u>Woody Vine Stratum:</u> (Plot size: <u>30</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">0 =Total Cover</td></tr> </tbody> </table> <p>% Bare Ground in Herb Stratum <u>0</u></p> | | Absolute % Cover | Dominant Species? | Indicator Status | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | 0 =Total Cover | | | | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | 5. _____ | _____ | _____ | _____ | 0 =Total Cover | | | | 1. <u>Bromus inermis</u> | 80 | Y | UPL | 2. <u>Cirsium arvense</u> | 5 | N | FACU | 3. <u>Euphorbia esula</u> | 5 | N | UPL | 4. _____ | _____ | _____ | _____ | 5. _____ | _____ | _____ | _____ | 6. _____ | _____ | _____ | _____ | 7. _____ | _____ | _____ | _____ | 8. _____ | _____ | _____ | _____ | 9. _____ | _____ | _____ | _____ | 10. _____ | _____ | _____ | _____ | 90 =Total Cover | | | | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | 0 =Total Cover | | | | <p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: (excluding FAC-): <u>0</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>1</u> (B)</p> <p>Percent of Domant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)</p> <p>Prevalence Index worksheet:</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;">Total % Cover of:</th> <th style="width:10%;"></th> <th style="width:10%;">Multiply by:</th> <th style="width:10%;"></th> <th style="width:10%;"></th> </tr> </thead> <tbody> <tr><td>OBL species</td><td style="text-align: center;">0</td><td>x 1 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>FACW species</td><td style="text-align: center;">0</td><td>x 2 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>FAC species</td><td style="text-align: center;">0</td><td>x 3 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>FACU species</td><td style="text-align: center;">5</td><td>x 4 =</td><td style="text-align: center;">20</td><td></td></tr> <tr><td>UPL species</td><td style="text-align: center;">85</td><td>x 5 =</td><td style="text-align: center;">425</td><td></td></tr> <tr><td>Column Totals:</td><td style="text-align: center;">90</td><td>(A)</td><td style="text-align: center;">445</td><td>(B)</td></tr> <tr><td colspan="3">Prevalence Index = B/A=</td><td style="text-align: center;">4.94</td><td></td></tr> </tbody> </table> <p>Hydrophytic Vegetation Indicators:</p> <p>____ 1 - Rapid test for Hydrophytic Vegetation</p> <p>____ 2 - Dominance Test is >50%</p> <p>____ 3 - Prevalence Index is ≤3.0¹</p> <p>____ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p>____ Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p>Hydrophytic Vegetation Present? Yes _____ No <u>X</u></p> | 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 | 5 | x 4 = | 20 | | UPL species | 85 | x 5 = | 425 | | Column Totals: | 90 | (A) | 445 | (B) | Prevalence Index = B/A= | | | 4.94 | |
|---|------------------|-------------------|-------------------|------------------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------------|--|--|--|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------------|--|--|--|--------------------------|----|---|-----|---------------------------|---|---|------|---------------------------|---|---|-----|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|-----------|-------|-------|-------|-----------------|--|--|--|----------|-------|-------|-------|----------|-------|-------|-------|----------------|--|--|--|--|-------------------|--|--------------|--|--|-------------|---|-------|---|--|--------------|---|-------|---|--|-------------|---|-------|---|--|--------------|---|-------|----|--|-------------|----|-------|-----|--|----------------|----|-----|-----|-----|-------------------------|--|--|------|--|
| | Absolute % Cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Bromus inermis</u> | 80 | Y | UPL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Cirsium arvense</u> | 5 | N | FACU | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. <u>Euphorbia esula</u> | 5 | N | UPL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 90 =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | 5 | x 4 = | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPL species | 85 | x 5 = | 425 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Totals: | 90 | (A) | 445 | (B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A= | | | 4.94 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Remarks: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SOIL

Sampling Point: DP02

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-16 | 10YR 4/3 | 100 | | 0 | | | Sandy Loam | |
| 16-24 | 10YR 4/4 | 0 | | 0 | | | Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

| | | |
|--|--|---|
| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) | | Indicators for Problematic Hydric Soils³: |
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | (LRR H outside of MLRA 72 & 73) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) | ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) | |

| | |
|--|---|
| Restrictive Layer (if present): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes ___ No <u>X</u> |
|--|---|

Remarks:

HYDROLOGY

| | |
|---|---|
| Wetland Hydrology Indicators: | |
| <u>Primary indicators (minimum of one required: check all that apply)</u> | <u>Secondary indicators (minimum of two required)</u> |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Drainage Patterns (B10) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Crayfish Burrows (C8) | (where tilled) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> FAC-Neutral Test (D5) | |

| | |
|---|---|
| Field Observations: Surface Water Present? Yes ___ No <u>X</u> Depth (inches): _____ Water Table Present? Yes ___ No <u>X</u> Depth (inches): _____ Saturation Present? Yes ___ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes ___ No <u>X</u> |
|---|---|

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

Remarks: No wetland hydrology present

WETLAND DETERMINATION DATA FORM — Great Plains Region

Project/Site: Heskett to Ellendale Reconducton Project City/County: Morton County Sampling Date: 06/29/2021

Applicant/Owner: Montant-Dakota Utilities Co. State: ND Sampling Point: DP03

Investigator(s): Cole Reagan Section, Township, Range: Sec. 10 T139N R81W

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

Subregion (LRR): LRR F Lat: 46.865066 Long: -100.889792 Datum: _____

Soil Map Unit Name: E4999 - Water NWI classification: No

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

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

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

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

| | | | | | |
|--|--|-----------|--|---|----------|
| Hydrophytic Vegetation Present? | Yes: <input checked="" type="checkbox"/> | No: _____ | Is the Sampled Area within a Wetland? | | |
| Hydric Soil Present? | Yes: <input checked="" type="checkbox"/> | No: _____ | | Yes <input checked="" type="checkbox"/> | No _____ |
| Wetland Hydrology Present? | Yes: <input checked="" type="checkbox"/> | No: _____ | | | |
| Remarks: <u>Drainage way north of 38th St.</u> | | | | | |

VEGETATION - Use scientific names of plants.

| <p><u>Tree Stratum:</u> (Plot size: <u>30</u>)</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;"></th> <th style="width:15%;">Absolute % Cover</th> <th style="width:15%;">Dominant Species?</th> <th style="width:15%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p><u>Sapling/Shrub Stratum:</u> (Plot size: <u>15</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p><u>Herb Stratum:</u> (Plot size: <u>5</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. <u>Phragmites australis</u></td><td style="text-align: center;">98</td><td style="text-align: center;">Y</td><td style="text-align: center;">FACW</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>6. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>7. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>8. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>9. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>10. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p><u>Woody Vine Stratum:</u> (Plot size: <u>30</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p>% Bare Ground in Herb Stratum <u>0</u></p> | | Absolute % Cover | Dominant Species? | Indicator Status | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | 5. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | 1. <u>Phragmites australis</u> | 98 | Y | FACW | 2. _____ | _____ | _____ | _____ | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | 5. _____ | _____ | _____ | _____ | 6. _____ | _____ | _____ | _____ | 7. _____ | _____ | _____ | _____ | 8. _____ | _____ | _____ | _____ | 9. _____ | _____ | _____ | _____ | 10. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | <p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: (excluding FAC-): <u>1</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>1</u> (B)</p> <p>Percent of Domant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)</p> <p>Prevalence Index worksheet:</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;">Total % Cover of:</th> <th style="width:10%;"></th> <th style="width:10%;">Multiply by:</th> <th style="width:10%;"></th> <th style="width:10%;"></th> </tr> </thead> <tbody> <tr><td>OBL species</td><td style="text-align: center;">0</td><td>x 1 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>FACW species</td><td style="text-align: center;">98</td><td>x 2 =</td><td style="text-align: center;">196</td><td></td></tr> <tr><td>FAC species</td><td style="text-align: center;">0</td><td>x 3 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>FACU species</td><td style="text-align: center;">0</td><td>x 4 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>UPL species</td><td style="text-align: center;">0</td><td>x 5 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>Column Totals:</td><td style="text-align: center;">98</td><td>(A)</td><td style="text-align: center;">196</td><td>(B)</td></tr> <tr><td colspan="2">Prevalence Index = B/A=</td><td></td><td style="text-align: center;">2.00</td><td></td></tr> </tbody> </table> <p>Hydrophytic Vegetation Indicators:</p> <p><input type="checkbox"/> 1 - Rapid test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> 2 - Dominance Test is >50%</p> <p><input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0¹</p> <p><input type="checkbox"/> 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____</p> | Total % Cover of: | | Multiply by: | | | OBL species | 0 | x 1 = | 0 | | FACW species | 98 | x 2 = | 196 | | FAC species | 0 | x 3 = | 0 | | FACU species | 0 | x 4 = | 0 | | UPL species | 0 | x 5 = | 0 | | Column Totals: | 98 | (A) | 196 | (B) | Prevalence Index = B/A= | | | 2.00 | |
|--|------------------|-------------------|-------------------|------------------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|--------------------|--|--|--|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|--------------------|--|--|--|--------------------------------|----|---|------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|-----------|-------|-------|-------|--------------------|--|--|--|----------|-------|-------|-------|----------|-------|-------|-------|--------------------|--|--|--|---|-------------------|--|--------------|--|--|-------------|---|-------|---|--|--------------|----|-------|-----|--|-------------|---|-------|---|--|--------------|---|-------|---|--|-------------|---|-------|---|--|----------------|----|-----|-----|-----|-------------------------|--|--|------|--|
| | Absolute % Cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Phragmites australis</u> | 98 | Y | FACW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total % Cover of: | | Multiply by: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OBL species | 0 | x 1 = | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACW species | 98 | x 2 = | 196 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FAC species | 0 | x 3 = | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACU species | 0 | x 4 = | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPL species | 0 | x 5 = | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Totals: | 98 | (A) | 196 | (B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A= | | | 2.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Remarks: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SOIL

Sampling Point: DP03

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|----------------|---|-------------------|------------------|-----------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-10 | 10YR 2/1 | 98 | 10YR 4/4 | 2 | C | M | Clay Loam | |
| 10-24 | 10YR 4/2 | 98 | 10YR 4/6 | 2 | C | M | Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

| | | |
|--|---|---|
| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) | | Indicators for Problematic Hydric Soils³: |
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> (LRR H outside of MLRA 72 & 73) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) | ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | <input type="checkbox"/> (MLRA 72 & 73 of LRR H) | |

| | |
|--|---|
| Restrictive Layer (if present): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|--|---|

Remarks:

HYDROLOGY

| | |
|---|---|
| Wetland Hydrology Indicators: | |
| Primary indicators (minimum of one required: check all that apply) | Secondary indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> (where tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|---|---|
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12</u> (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---|---|

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

Remarks:

WETLAND DETERMINATION DATA FORM — Great Plains Region

Project/Site: Heskett to Ellendale Reconducton Project City/County: Morton County Sampling Date: 06/29/2021

Applicant/Owner: Montant-Dakota Utilities Co. State: ND Sampling Point: DP04

Investigator(s): Cole Reagan Section, Township, Range: Sec. 10 T139N R81W

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

Subregion (LRR): LRR F Lat: 46.865064 Long: -100.889919 Datum: _____

Soil Map Unit Name: E4999 - Water NWI classification: No

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

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

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

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

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

VEGETATION - Use scientific names of plants.

| <p><u>Tree Stratum:</u> (Plot size: <u>30</u>)</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;"></th> <th style="width:10%;">Absolute % Cover</th> <th style="width:10%;">Dominant Species?</th> <th style="width:10%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p><u>Sapling/Shrub Stratum:</u> (Plot size: <u>15</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p><u>Herb Stratum:</u> (Plot size: <u>5</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. <u><i>Elymus lanceolatus</i></u></td><td style="text-align: center;">90</td><td style="text-align: center;">Y</td><td style="text-align: center;">FACU</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>6. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>7. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>8. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>9. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>10. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p><u>Woody Vine Stratum:</u> (Plot size: <u>30</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p>% Bare Ground in Herb Stratum <u>0</u></p> | | Absolute % Cover | Dominant Species? | Indicator Status | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | 5. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | 1. <u><i>Elymus lanceolatus</i></u> | 90 | Y | FACU | 2. _____ | _____ | _____ | _____ | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | 5. _____ | _____ | _____ | _____ | 6. _____ | _____ | _____ | _____ | 7. _____ | _____ | _____ | _____ | 8. _____ | _____ | _____ | _____ | 9. _____ | _____ | _____ | _____ | 10. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | <p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: (excluding FAC-): <u>0</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>1</u> (B)</p> <p>Percent of Domant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)</p> <p>Prevalence Index worksheet:</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;">Total % Cover of:</th> <th style="width:10%;"></th> <th style="width:10%;">Multiply by:</th> <th style="width:10%;"></th> <th style="width:10%;"></th> </tr> </thead> <tbody> <tr><td>OBL species</td><td style="text-align: center;">0</td><td>x 1 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>FACW species</td><td style="text-align: center;">0</td><td>x 2 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>FAC species</td><td style="text-align: center;">0</td><td>x 3 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>FACU species</td><td style="text-align: center;">90</td><td>x 4 =</td><td style="text-align: center;">360</td><td></td></tr> <tr><td>UPL species</td><td style="text-align: center;">0</td><td>x 5 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>Column Totals:</td><td style="text-align: center;">90</td><td>(A)</td><td style="text-align: center;">360</td><td>(B)</td></tr> <tr><td colspan="2">Prevalence Index = B/A=</td><td></td><td style="text-align: center;">4.00</td><td></td></tr> </tbody> </table> <p>Hydrophytic Vegetation Indicators:</p> <p>____ 1 - Rapid test for Hydrophytic Vegetation</p> <p>____ 2 - Dominance Test is >50%</p> <p>____ 3 - Prevalence Index is ≤3.0¹</p> <p>____ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p>____ Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p>Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> | 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 | 90 | x 4 = | 360 | | UPL species | 0 | x 5 = | 0 | | Column Totals: | 90 | (A) | 360 | (B) | Prevalence Index = B/A= | | | 4.00 | |
|---|------------------|-------------------|-------------------|------------------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|--------------------|--|--|--|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|--------------------|--|--|--|-------------------------------------|----|---|------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|-----------|-------|-------|-------|--------------------|--|--|--|----------|-------|-------|-------|----------|-------|-------|-------|--------------------|--|--|--|--|-------------------|--|--------------|--|--|-------------|---|-------|---|--|--------------|---|-------|---|--|-------------|---|-------|---|--|--------------|----|-------|-----|--|-------------|---|-------|---|--|----------------|----|-----|-----|-----|-------------------------|--|--|------|--|
| | Absolute % Cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u><i>Elymus lanceolatus</i></u> | 90 | Y | FACU | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | 90 | x 4 = | 360 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPL species | 0 | x 5 = | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Totals: | 90 | (A) | 360 | (B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A= | | | 4.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Remarks: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SOIL

Sampling Point: DP04

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-24 | 10YR 3/3 | 100 | | 0 | | | Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

| | | |
|--|--|--|
| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) | | Indicators for Problematic Hydric Soils³: |
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) | |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

| | |
|--|---|
| Restrictive Layer (if present): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes ___ No <u>X</u> |
|--|---|

Remarks:

HYDROLOGY

| | |
|---|---|
| Wetland Hydrology Indicators: | |
| <u>Primary indicators (minimum of one required: check all that apply)</u> | <u>Secondary indicators (minimum of two required)</u> |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Drainage Patterns (B10) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Crayfish Burrows (C8) | (where tilled) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> FAC-Neutral Test (D5) | |

| | |
|---|---|
| Field Observations: Surface Water Present? Yes ___ No <u>X</u> Depth (inches): _____ Water Table Present? Yes ___ No <u>X</u> Depth (inches): _____ Saturation Present? Yes ___ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes ___ No <u>X</u> |
|---|---|

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

Remarks: No wetland hydrology indicators present

WETLAND DETERMINATION DATA FORM — Great Plains Region

Project/Site: Heskett to Ellendale Reconducton Project City/County: Morton County Sampling Date: 06/29/2021

Applicant/Owner: Montant-Dakota Utilities Co. State: ND Sampling Point: DP05

Investigator(s): Cole Reagan Section, Township, Range: Sec. 15 T139N R81W

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

Subregion (LRR): LRR F Lat: 46.864452 Long: -100.889683 Datum: _____

Soil Map Unit Name: E4999 - Water NWI classification: No

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

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

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

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

| | | | | | |
|--|--|-----------|--|---|----------|
| Hydrophytic Vegetation Present? | Yes: <input checked="" type="checkbox"/> | No: _____ | Is the Sampled Area within a Wetland? | Yes <input checked="" type="checkbox"/> | No _____ |
| Hydric Soil Present? | Yes: <input checked="" type="checkbox"/> | No: _____ | | | |
| Wetland Hydrology Present? | Yes: <input checked="" type="checkbox"/> | No: _____ | | | |
| Remarks: PEMC depressional wetland south of 38th St. | | | | | |

VEGETATION - Use scientific names of plants.

| <u>Tree Stratum:</u> (Plot size: <u>30</u>) | Absolute % Cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------------------|-------------------|------------------|--|------------|-------------------|--|--------------|--|-------------|----------|-------|--|----------|--------------|-----------|-------|--|------------|-------------|----------|-------|--|----------|--------------|----------|-------|--|----------|-------------|----------|-------|--|----------|----------------|-----------|-----|--|----------------|--|-------------------------|--|--|-------------|
| 1. _____ | _____ | _____ | _____ | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: (excluding FAC-): <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Domant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <u>0</u> | =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Sapling/Shrub Stratum:</u> (Plot size: <u>15</u>) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;"></td> <td style="width:20%;">Total % Cover of:</td> <td style="width:20%;"></td> <td style="width:20%;">Multiply by:</td> <td style="width:20%;"></td> </tr> <tr> <td>OBL species</td> <td align="center"><u>0</u></td> <td align="center">x 1 =</td> <td></td> <td align="center"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td align="center"><u>98</u></td> <td align="center">x 2 =</td> <td></td> <td align="center"><u>196</u></td> </tr> <tr> <td>FAC species</td> <td align="center"><u>0</u></td> <td align="center">x 3 =</td> <td></td> <td align="center"><u>0</u></td> </tr> <tr> <td>FACU species</td> <td align="center"><u>0</u></td> <td align="center">x 4 =</td> <td></td> <td align="center"><u>0</u></td> </tr> <tr> <td>UPL species</td> <td align="center"><u>0</u></td> <td align="center">x 5 =</td> <td></td> <td align="center"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td align="center"><u>98</u></td> <td align="center">(A)</td> <td></td> <td align="center"><u>196</u> (B)</td> </tr> <tr> <td></td> <td align="center" colspan="2">Prevalence Index = B/A=</td> <td></td> <td align="center"><u>2.00</u></td> </tr> </table> | | Total % Cover of: | | Multiply by: | | OBL species | <u>0</u> | x 1 = | | <u>0</u> | FACW species | <u>98</u> | x 2 = | | <u>196</u> | FAC species | <u>0</u> | x 3 = | | <u>0</u> | FACU species | <u>0</u> | x 4 = | | <u>0</u> | UPL species | <u>0</u> | x 5 = | | <u>0</u> | Column Totals: | <u>98</u> | (A) | | <u>196</u> (B) | | Prevalence Index = B/A= | | | <u>2.00</u> |
| | Total % Cover of: | | Multiply by: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OBL species | <u>0</u> | x 1 = | | | <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACW species | <u>98</u> | x 2 = | | | <u>196</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FAC species | <u>0</u> | x 3 = | | | <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACU species | <u>0</u> | x 4 = | | <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPL species | <u>0</u> | x 5 = | | <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Totals: | <u>98</u> | (A) | | <u>196</u> (B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Prevalence Index = B/A= | | | <u>2.00</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <u>0</u> | =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Herb Stratum:</u> (Plot size: <u>5</u>) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Phragmites australis</u> | <u>98</u> | <u>Y</u> | <u>FACW</u> | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <u>98</u> | =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Woody Vine Stratum:</u> (Plot size: <u>30</u>) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <u>0</u> | =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bare Ground in Herb Stratum <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Remarks: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SOIL

Sampling Point: DP05

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|----------------|---|-------------------|------------------|-----------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-10 | 10YR 2/1 | 98 | 10YR 4/4 | 2 | C | M | Clay Loam | |
| 10-24 | 10YR 4/2 | 98 | 10YR 4/6 | 2 | C | M | Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

| | | |
|--|---|---|
| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) | | Indicators for Problematic Hydric Soils³: |
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> (LRR H outside of MLRA 72 & 73) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) | ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) | |

| | |
|--|---|
| Restrictive Layer (if present): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|--|---|

Remarks:

HYDROLOGY

| | |
|---|---|
| Wetland Hydrology Indicators: | |
| Primary indicators (minimum of one required: check all that apply) | Secondary indicators (minimum of two required) |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |
| <input type="checkbox"/> _____ | <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |

| | |
|---|---|
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12</u> (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---|---|

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

Remarks:

WETLAND DETERMINATION DATA FORM — Great Plains Region

Project/Site: Heskett to Ellendale Reconducton Project City/County: Morton County Sampling Date: 06/29/2021

Applicant/Owner: Montant-Dakota Utilities Co. State: ND Sampling Point: DP06

Investigator(s): Cole Reagan Section, Township, Range: Sec. 15 T139N R81W

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

Subregion (LRR): LRR F Lat: 46.864494 Long: -100.889615 Datum: _____

Soil Map Unit Name: E4999 - Water NWI classification: PEM1C

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

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

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

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

| | | | | | |
|---------------------------------|------------|--------------|--|-----------|-------------|
| Hydrophytic Vegetation Present? | Yes: _____ | No: <u>X</u> | Is the Sampled Area within a Wetland? | | |
| Hydric Soil Present? | Yes: _____ | No: <u>X</u> | | Yes _____ | No <u>X</u> |
| Wetland Hydrology Present? | Yes: _____ | No: <u>X</u> | | | |
| Remarks: | | | | | |

VEGETATION - Use scientific names of plants.

| <p><u>Tree Stratum:</u> (Plot size: <u>30</u>)</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;"></th> <th style="width:15%;">Absolute % Cover</th> <th style="width:15%;">Dominant Species?</th> <th style="width:15%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p><u>Sapling/Shrub Stratum:</u> (Plot size: <u>15</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p><u>Herb Stratum:</u> (Plot size: <u>5</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. <u>Bromus inermis</u></td><td style="text-align: center;">80</td><td style="text-align: center;">Y</td><td style="text-align: center;">UPL</td></tr> <tr><td>2. <u>Cirsium arvense</u></td><td style="text-align: center;">5</td><td style="text-align: center;">N</td><td style="text-align: center;">FACU</td></tr> <tr><td>3. <u>Euphorbia esula</u></td><td style="text-align: center;">5</td><td style="text-align: center;">N</td><td style="text-align: center;">UPL</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>6. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>7. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>8. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>9. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>10. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p><u>Woody Vine Stratum:</u> (Plot size: <u>30</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p>% Bare Ground in Herb Stratum <u>0</u></p> | | Absolute % Cover | Dominant Species? | Indicator Status | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | 5. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | 1. <u>Bromus inermis</u> | 80 | Y | UPL | 2. <u>Cirsium arvense</u> | 5 | N | FACU | 3. <u>Euphorbia esula</u> | 5 | N | UPL | 4. _____ | _____ | _____ | _____ | 5. _____ | _____ | _____ | _____ | 6. _____ | _____ | _____ | _____ | 7. _____ | _____ | _____ | _____ | 8. _____ | _____ | _____ | _____ | 9. _____ | _____ | _____ | _____ | 10. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | <p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: (excluding FAC-): <u>0</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>1</u> (B)</p> <p>Percent of Domant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)</p> <p>Prevalence Index worksheet:</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;">Total % Cover of:</th> <th style="width:10%;"></th> <th style="width:10%;">Multiply by:</th> <th style="width:10%;"></th> <th style="width:10%;"></th> </tr> </thead> <tbody> <tr><td>OBL species</td><td style="text-align: center;">0</td><td>x 1 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>FACW species</td><td style="text-align: center;">0</td><td>x 2 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>FAC species</td><td style="text-align: center;">0</td><td>x 3 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>FACU species</td><td style="text-align: center;">5</td><td>x 4 =</td><td style="text-align: center;">20</td><td></td></tr> <tr><td>UPL species</td><td style="text-align: center;">85</td><td>x 5 =</td><td style="text-align: center;">425</td><td></td></tr> <tr><td>Column Totals:</td><td style="text-align: center;">90</td><td>(A)</td><td style="text-align: center;">445</td><td>(B)</td></tr> <tr><td colspan="3">Prevalence Index = B/A=</td><td style="text-align: center;">4.94</td><td></td></tr> </tbody> </table> <p>Hydrophytic Vegetation Indicators:</p> <p>____ 1 - Rapid test for Hydrophytic Vegetation</p> <p>____ 2 - Dominance Test is >50%</p> <p>____ 3 - Prevalence Index is ≤3.0¹</p> <p>____ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p>____ Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p>Hydrophytic Vegetation Present? Yes _____ No <u>X</u></p> | 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 | 5 | x 4 = | 20 | | UPL species | 85 | x 5 = | 425 | | Column Totals: | 90 | (A) | 445 | (B) | Prevalence Index = B/A= | | | 4.94 | |
|--|------------------|-------------------|-------------------|------------------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|--------------------|--|--|--|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|--------------------|--|--|--|--------------------------|----|---|-----|---------------------------|---|---|------|---------------------------|---|---|-----|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|-----------|-------|-------|-------|--------------------|--|--|--|----------|-------|-------|-------|----------|-------|-------|-------|--------------------|--|--|--|--|-------------------|--|--------------|--|--|-------------|---|-------|---|--|--------------|---|-------|---|--|-------------|---|-------|---|--|--------------|---|-------|----|--|-------------|----|-------|-----|--|----------------|----|-----|-----|-----|-------------------------|--|--|------|--|
| | Absolute % Cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Bromus inermis</u> | 80 | Y | UPL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Cirsium arvense</u> | 5 | N | FACU | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. <u>Euphorbia esula</u> | 5 | N | UPL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | 5 | x 4 = | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPL species | 85 | x 5 = | 425 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Totals: | 90 | (A) | 445 | (B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A= | | | 4.94 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Remarks: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SOIL

Sampling Point: DP06

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-16 | 10YR 4/3 | 100 | | 0 | | | Sandy Loam | |
| 16-24 | 10YR 4/4 | 0 | | 0 | | | Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

| | | |
|--|--|---|
| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) | | Indicators for Problematic Hydric Soils³: |
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | (LRR H outside of MLRA 72 & 73) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) | ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) | |

| | |
|--|---|
| Restrictive Layer (if present): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes ___ No <u>X</u> |
|--|---|

Remarks:

HYDROLOGY

| | |
|---|---|
| Wetland Hydrology Indicators: | |
| <u>Primary indicators (minimum of one required: check all that apply)</u> | <u>Secondary indicators (minimum of two required)</u> |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Drainage Patterns (B10) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled) |
| <input type="checkbox"/> Crayfish Burrows (C8) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) | <input type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|---|---|
| Field Observations: Surface Water Present? Yes ___ No <u>X</u> Depth (inches): _____ Water Table Present? Yes ___ No <u>X</u> Depth (inches): _____ Saturation Present? Yes ___ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes ___ No <u>X</u> |
|---|---|

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

Remarks: No wetland hydrology present

WETLAND DETERMINATION DATA FORM — Great Plains Region

Project/Site: Heskett to Ellendale Reconducton Project City/County: Morton County Sampling Date: 06/29/2021
 Applicant/Owner: Montant-Dakota Utilities Co. State: ND Sampling Point: DP07
 Investigator(s): Cole Reagan Section, Township, Range: Sec. 15 T139N R81W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): <5%
 Subregion (LRR): LRR F Lat: 46.864279 Long: -100.888881 Datum: _____
 Soil Map Unit Name: E4999 - Water NWI classification: PABFx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | |
|--|--|
| Hydrophytic Vegetation Present? Yes: <input checked="" type="checkbox"/> No: _____ Hydric Soil Present? Yes: <input checked="" type="checkbox"/> No: _____ Wetland Hydrology Present? Yes: <input checked="" type="checkbox"/> No: _____ | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ |
| Remarks: PEMC depression wetland with a culvert that drains south | |

VEGETATION - Use scientific names of plants.

| <p><u>Tree Stratum:</u> (Plot size: <u>30</u>)</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;"></th> <th style="width:15%;">Absolute % Cover</th> <th style="width:15%;">Dominant Species?</th> <th style="width:15%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p><u>Sapling/Shrub Stratum:</u> (Plot size: <u>15</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p><u>Herb Stratum:</u> (Plot size: <u>5</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. <u><i>Typha angustifolia</i></u></td><td style="text-align: center;">60</td><td style="text-align: center;">Y</td><td style="text-align: center;">OBL</td></tr> <tr><td>2. <u><i>Phragmites australis</i></u></td><td style="text-align: center;">30</td><td style="text-align: center;">Y</td><td style="text-align: center;">FACW</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>6. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>7. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>8. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>9. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>10. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p><u>Woody Vine Stratum:</u> (Plot size: <u>30</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p>% Bare Ground in Herb Stratum <u>0</u></p> | | Absolute % Cover | Dominant Species? | Indicator Status | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | 5. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | 1. <u><i>Typha angustifolia</i></u> | 60 | Y | OBL | 2. <u><i>Phragmites australis</i></u> | 30 | Y | FACW | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | 5. _____ | _____ | _____ | _____ | 6. _____ | _____ | _____ | _____ | 7. _____ | _____ | _____ | _____ | 8. _____ | _____ | _____ | _____ | 9. _____ | _____ | _____ | _____ | 10. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | <p>Dominance Test worksheet:</p> Number of Dominant Species That Are OBL, FACW, or FAC: (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Domant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B) |
|---|--|-------------------|-------------------|------------------|----------|-------|-------------|-------|----------|-------|-------|--------------|----------|-------|-------|-------|-------------|-------|-------|-------|--------------------|--------------|---|-------|----------|-------|-------------|-------|----------|-------|-------|----------------|----------|-------|-------|-------|-------------------------|-------|-------|-------|----------|-------|-------|-------|--------------------|--|--|--|-------------------------------------|----|---|-----|---------------------------------------|----|---|------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|-----------|-------|-------|-------|--------------------|--|--|--|----------|-------|-------|-------|----------|-------|-------|-------|--------------------|--|--|--|---|
| | Absolute % Cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u><i>Typha angustifolia</i></u> | 60 | Y | OBL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u><i>Phragmites australis</i></u> | 30 | Y | FACW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <p>Prevalence Index worksheet:</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;">Total % Cover of:</th> <th style="width:10%;"></th> <th style="width:10%;">Multiply by:</th> <th style="width:10%;"></th> <th style="width:10%;"></th> </tr> </thead> <tbody> <tr><td>OBL species</td><td style="text-align: center;">60</td><td>x 1 =</td><td style="text-align: center;">60</td><td></td></tr> <tr><td>FACW species</td><td style="text-align: center;">30</td><td>x 2 =</td><td style="text-align: center;">60</td><td></td></tr> <tr><td>FAC species</td><td style="text-align: center;">0</td><td>x 3 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>FACU species</td><td style="text-align: center;">0</td><td>x 4 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>UPL species</td><td style="text-align: center;">0</td><td>x 5 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>Column Totals:</td><td style="text-align: center;">90</td><td>(A)</td><td style="text-align: center;">120</td><td>(B)</td></tr> <tr><td colspan="2">Prevalence Index = B/A=</td><td></td><td style="text-align: center;">1.33</td><td></td></tr> </tbody> </table> | Total % Cover of: | | Multiply by: | | | OBL species | 60 | x 1 = | 60 | | 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: | 90 | (A) | 120 | (B) | Prevalence Index = B/A= | | | 1.33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total % Cover of: | | Multiply by: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OBL species | 60 | x 1 = | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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: | 90 | (A) | 120 | (B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A= | | | 1.33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <p>Hydrophytic Vegetation Indicators:</p> _____ 1 - Rapid test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Remarks: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

WETLAND DETERMINATION DATA FORM — Great Plains Region

Project/Site: Heskett to Ellendale Reconducton Project City/County: Morton County Sampling Date: 06/29/2021

Applicant/Owner: Montant-Dakota Utilities Co. State: ND Sampling Point: DP08

Investigator(s): Cole Reagan Section, Township, Range: Sec. 15 T139N R81W

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

Subregion (LRR): LRR F Lat: 46.864397 Long: -100.889042 Datum: _____

Soil Map Unit Name: E4999 - Water NWI classification: No

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

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

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

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

| | | | | | |
|---------------------------------|------------|--------------|--|-----------|-------------|
| Hydrophytic Vegetation Present? | Yes: _____ | No: <u>X</u> | Is the Sampled Area within a Wetland? | | |
| Hydric Soil Present? | Yes: _____ | No: <u>X</u> | | Yes _____ | No <u>X</u> |
| Wetland Hydrology Present? | Yes: _____ | No: <u>X</u> | | | |
| Remarks: | | | | | |

VEGETATION - Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------|-------------------------|------------------|---|-------------------|--|--------------|--|--|-------------|----------|-------|----------|--|--------------|----------|-------|----------|--|-------------|----------|-------|----------|--|--------------|----------|-------|-----------|--|-------------|-----------|-------|------------|--|----------------|-----------|-----|------------|-----|--|--|-------------------------|-------------|--|
| Tree Stratum: (Plot size: 30) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Domant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <u>0</u> | =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum: (Plot size: 15) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:10%;"></td> <td style="width:10%;">Multiply by:</td> <td style="width:10%;"></td> <td style="width:10%;"></td> </tr> <tr> <td>OBL species</td> <td align="center"><u>0</u></td> <td>x 1 =</td> <td align="center"><u>0</u></td> <td></td> </tr> <tr> <td>FACW species</td> <td align="center"><u>0</u></td> <td>x 2 =</td> <td align="center"><u>0</u></td> <td></td> </tr> <tr> <td>FAC species</td> <td align="center"><u>0</u></td> <td>x 3 =</td> <td align="center"><u>0</u></td> <td></td> </tr> <tr> <td>FACU species</td> <td align="center"><u>5</u></td> <td>x 4 =</td> <td align="center"><u>20</u></td> <td></td> </tr> <tr> <td>UPL species</td> <td align="center"><u>85</u></td> <td>x 5 =</td> <td align="center"><u>425</u></td> <td></td> </tr> <tr> <td>Column Totals:</td> <td align="center"><u>90</u></td> <td>(A)</td> <td align="center"><u>445</u></td> <td>(B)</td> </tr> <tr> <td></td> <td></td> <td>Prevalence Index = B/A=</td> <td align="center"><u>4.94</u></td> <td></td> </tr> </table> | Total % Cover of: | | Multiply by: | | | OBL species | <u>0</u> | x 1 = | <u>0</u> | | FACW species | <u>0</u> | x 2 = | <u>0</u> | | FAC species | <u>0</u> | x 3 = | <u>0</u> | | FACU species | <u>5</u> | x 4 = | <u>20</u> | | UPL species | <u>85</u> | x 5 = | <u>425</u> | | Column Totals: | <u>90</u> | (A) | <u>445</u> | (B) | | | Prevalence Index = B/A= | <u>4.94</u> | |
| Total % Cover of: | | Multiply by: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OBL species | <u>0</u> | x 1 = | <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACW species | <u>0</u> | x 2 = | <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FAC species | <u>0</u> | x 3 = | <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACU species | <u>5</u> | x 4 = | <u>20</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPL species | <u>85</u> | x 5 = | <u>425</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Totals: | <u>90</u> | (A) | <u>445</u> | (B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Prevalence Index = B/A= | <u>4.94</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <u>0</u> | =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Herb Stratum: (Plot size: 5) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Bromus inermis</u> | <u>80</u> | <u>Y</u> | <u>UPL</u> | Hydrophytic Vegetation Indicators: _____ 1 - Rapid test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Cirsium arvense</u> | <u>5</u> | <u>N</u> | <u>FACU</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. <u>Euphorbia esula</u> | <u>5</u> | <u>N</u> | <u>UPL</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <u>90</u> | =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Woody Vine Stratum: (Plot size: 30) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes _____ No <u>X</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <u>0</u> | =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bare Ground in Herb Stratum <u>0</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Remarks: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SOIL

Sampling Point: DP08

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-16 | 10YR 4/3 | 100 | | 0 | | | Sandy Loam | |
| 16-24 | 10YR 4/4 | 0 | | 0 | | | Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

| | | |
|--|--|---|
| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) | | Indicators for Problematic Hydric Soils³: |
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | (LRR H outside of MLRA 72 & 73) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) | ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) | |

| | |
|--|---|
| Restrictive Layer (if present): Type: _____ Depth (inches): _____ | Hydric Soil Present? Yes ___ No <u>X</u> |
|--|---|

Remarks:

HYDROLOGY

| | |
|---|---|
| Wetland Hydrology Indicators: | |
| <u>Primary indicators (minimum of one required: check all that apply)</u> | <u>Secondary indicators (minimum of two required)</u> |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Drainage Patterns (B10) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Crayfish Burrows (C8) | (where tilled) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> FAC-Neutral Test (D5) | |

| | |
|---|---|
| Field Observations: Surface Water Present? Yes ___ No <u>X</u> Depth (inches): _____ Water Table Present? Yes ___ No <u>X</u> Depth (inches): _____ Saturation Present? Yes ___ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes ___ No <u>X</u> |
|---|---|

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

Remarks: No wetland hydrology present

WETLAND DETERMINATION DATA FORM — Great Plains Region

Project/Site: Heskett to Ellendale Reconducton Project City/County: Morton County Sampling Date: 06/29/2021

Applicant/Owner: Montant-Dakota Utilities Co. State: ND Sampling Point: DP09

Investigator(s): Cole Reagan Section, Township, Range: Sec. 15 T139N R81W

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

Subregion (LRR): LRR F Lat: 46.864465 Long: -100.889116 Datum: _____

Soil Map Unit Name: E4999 - Water NWI classification: No

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

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

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

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

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

VEGETATION - Use scientific names of plants.

| <p><u>Tree Stratum:</u> (Plot size: <u>30</u>)</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;"></th> <th style="width:10%;">Absolute % Cover</th> <th style="width:10%;">Dominant Species?</th> <th style="width:10%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p><u>Sapling/Shrub Stratum:</u> (Plot size: <u>15</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p><u>Herb Stratum:</u> (Plot size: <u>5</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. <u><i>Typha angustifolia</i></u></td><td style="text-align: center;">80</td><td style="text-align: center;">Y</td><td style="text-align: center;">OBL</td></tr> <tr><td>2. <u><i>Phragmites australis</i></u></td><td style="text-align: center;">10</td><td style="text-align: center;">N</td><td style="text-align: center;">FACW</td></tr> <tr><td>3. <u><i>Lemna minor</i></u></td><td style="text-align: center;">2</td><td style="text-align: center;">N</td><td style="text-align: center;">OBL</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>6. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>7. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>8. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>9. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>10. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p><u>Woody Vine Stratum:</u> (Plot size: <u>30</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ =Total Cover</td></tr> </tbody> </table> <p>% Bare Ground in Herb Stratum <u>0</u></p> | | Absolute % Cover | Dominant Species? | Indicator Status | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | 5. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | 1. <u><i>Typha angustifolia</i></u> | 80 | Y | OBL | 2. <u><i>Phragmites australis</i></u> | 10 | N | FACW | 3. <u><i>Lemna minor</i></u> | 2 | N | OBL | 4. _____ | _____ | _____ | _____ | 5. _____ | _____ | _____ | _____ | 6. _____ | _____ | _____ | _____ | 7. _____ | _____ | _____ | _____ | 8. _____ | _____ | _____ | _____ | 9. _____ | _____ | _____ | _____ | 10. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | _____ =Total Cover | | | | <p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: (excluding FAC-): <u>1</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>1</u> (B)</p> <p>Percent of Domant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)</p> <p>Prevalence Index worksheet:</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;">Total % Cover of:</th> <th style="width:10%;"></th> <th style="width:10%;">Multiply by:</th> <th style="width:10%;"></th> <th style="width:10%;"></th> </tr> </thead> <tbody> <tr><td>OBL species</td><td style="text-align: center;">82</td><td>x 1 =</td><td style="text-align: center;">82</td><td></td></tr> <tr><td>FACW species</td><td style="text-align: center;">10</td><td>x 2 =</td><td style="text-align: center;">20</td><td></td></tr> <tr><td>FAC species</td><td style="text-align: center;">0</td><td>x 3 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>FACU species</td><td style="text-align: center;">0</td><td>x 4 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>UPL species</td><td style="text-align: center;">0</td><td>x 5 =</td><td style="text-align: center;">0</td><td></td></tr> <tr><td>Column Totals:</td><td style="text-align: center;">92</td><td>(A)</td><td style="text-align: center;">102</td><td>(B)</td></tr> <tr><td colspan="2">Prevalence Index = B/A=</td><td></td><td style="text-align: center;">1.11</td><td></td></tr> </tbody> </table> <p>Hydrophytic Vegetation Indicators:</p> <p><input type="checkbox"/> 1 - Rapid test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> 2 - Dominance Test is >50%</p> <p><input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0¹</p> <p><input type="checkbox"/> 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____</p> | Total % Cover of: | | Multiply by: | | | OBL species | 82 | x 1 = | 82 | | 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: | 92 | (A) | 102 | (B) | Prevalence Index = B/A= | | | 1.11 | |
|---|------------------|-------------------|-------------------|------------------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|--------------------|--|--|--|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|--------------------|--|--|--|-------------------------------------|----|---|-----|---------------------------------------|----|---|------|------------------------------|---|---|-----|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|----------|-------|-------|-------|-----------|-------|-------|-------|--------------------|--|--|--|----------|-------|-------|-------|----------|-------|-------|-------|--------------------|--|--|--|--|-------------------|--|--------------|--|--|-------------|----|-------|----|--|--------------|----|-------|----|--|-------------|---|-------|---|--|--------------|---|-------|---|--|-------------|---|-------|---|--|----------------|----|-----|-----|-----|-------------------------|--|--|------|--|
| | Absolute % Cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u><i>Typha angustifolia</i></u> | 80 | Y | OBL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u><i>Phragmites australis</i></u> | 10 | N | FACW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. <u><i>Lemna minor</i></u> | 2 | N | OBL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| _____ =Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total % Cover of: | | Multiply by: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OBL species | 82 | x 1 = | 82 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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: | 92 | (A) | 102 | (B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A= | | | 1.11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Remarks: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SOIL

Sampling Point: DP09

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6 | 10YR 2/1 | 100 | | 0 | | | Clay Loam | |
| 6-24 | 10YR 5/2 | 98 | 10YR 4/6 | 2 | C | M | Clay | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

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

| | | |
|---|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input checked="" type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) | |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) | |

Indicators for Problematic Hydric Soils³:

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Clay

Depth (inches): 6

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary indicators (minimum of one required: check all that apply)

| | |
|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input checked="" type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |

Secondary indicators (minimum of two required)

| |
|---|
| <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled) |
| <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

Surface Water Present? Yes No Depth (inches): 12

Water Table Present? Yes No Depth (inches): 0

Saturation Present? Yes No Depth (inches): 0
(includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks:

APPENDIX C

Photograph Log



Figure C-1. Overview of wetland WET01, from DP01 facing north. Photograph taken June 29, 2021.



Figure C-2. Soil profile of DP01. Photograph taken June 29, 2021.



Figure C-3. Overview of wetland WET02, from DP03 facing east. Photograph taken June 29, 2021.



Figure C-4. Soil profile of DP03. Photograph taken June 29, 2021.



Figure C-5. Overview of wetland WET03 facing west. Photograph taken June 29, 2021.



Figure C-6. Overview of wetland WET04 facing east. Photograph taken June 29, 2021.

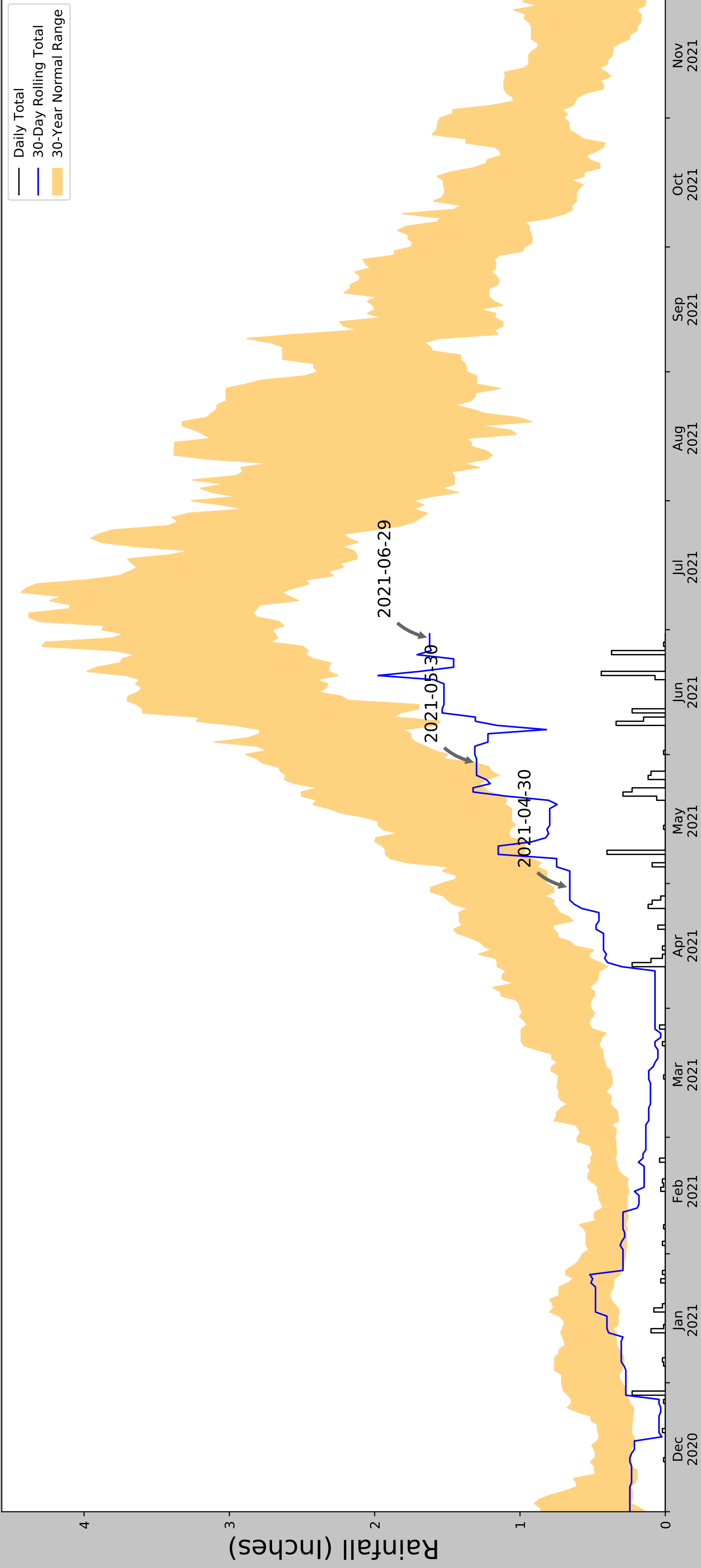


Figure C-7. Overview of wetland WET05 facing east. Photograph taken June 29, 2021.

APPENDIX D

USACE Antecedent Precipitation Tool

Antecedent Precipitation vs Normal Range based on NOAA's Daily Historical Climatology Network



| | |
|----------------------------------|----------------------------|
| Coordinates | 46.868418, -100.891710 |
| Observation Date | 2021-06-29 |
| Elevation (ft) | 1694.14 |
| Drought Index (PDSI) | Moderate drought (2021-05) |
| WebWIMP H ₂ O Balance | Dry Season |

| | | | | | | | |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|-----------------------|
| 30 Days Ending | 30 th %ile (in) | 70 th %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product |
| 2021-06-29 | 2.668898 | 3.803937 | 1.622047 | Dry | 1 | 3 | 3 |
| 2021-05-30 | 1.305906 | 2.775591 | 1.299213 | Dry | 1 | 2 | 2 |
| 2021-04-30 | 0.769291 | 1.615354 | 0.65748 | Dry | 1 | 1 | 1 |
| Result | | | | | | | Drier than Normal - 6 |

| | | | | | | | |
|----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| Weather Station Name | Coordinates | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
| BISMARCK | 46.7708, -100.7603 | 1658.137 | 9.17 | 36.003 | 4.457 | 11353 | 90 |



Figure and tables made by the
Antecedent Precipitation Tool
 Version 1.0

Written by Jason Deters
 U.S. Army Corps of Engineers

APPENDIX E

Direction to Project Location



A 514 E Thayer Ave
Bismarck, ND 58501

B Mandan
North Dakota 58554

I-94 W

10.9 miles, 17 min

I-94 W and ND-1806 N

9.7 miles, 18 min

A 514 E Thayer Ave

1. Head west on E Rosser Ave toward N 5th St

1.0 mi

2. Continue straight onto I-94BL W/W Main Ave

1.0 mi

3. Take the ramp to **I-94**

0.3 mi

4. Merge onto **I-194 W**

0.5 mi

5. Take the exit on the **left** onto **I-94 W** toward **Billings**

2.1 mi

6. Take exit **153** toward **ND-1806**

0.4 mi

7. Turn **right** onto **Mandan Ave**

0.3 mi

8. **Mandan Ave** turns slightly **left** and becomes **Old Red Trail**

0.7 mi

9. Turn **right** onto **ND-1806 N**

1.6 mi

10. Turn **right** onto **38th St**

0.9 mi

BMandan

Attachment G
Revegetation Plan

The plans noted below were detailed in the **Public Service Commission June 4, 2021, Request for Additional Information Technical Memorandum for the Montana-Dakota Utilities 230-kV Transmission Line, Morton County, North Dakota / Case No. PU-21-151**, Page 11, Question 16, under Reclamation/Restoration Procedures and Page 12-13, Question 19, Erosion Control Plan and Weed Management Plan.

Reclamation/Restoration Procedures

During construction, crews will attempt to limit ground disturbance wherever possible and will employ appropriate erosion control measures. Disturbed areas will be restored to their pre-construction condition to the maximum extent practicable and as negotiated with the landowner. Post-construction reclamation activities include removing and disposing of debris, dismantling all temporary facilities (including laydown areas), leveling or filling tire ruts, and reseeding areas disturbed by construction activities with vegetation similar to that which was removed.

Erosion control measures will be implemented as necessary to minimize runoff during construction. Specific measures will be determined once a field review is made to determine any areas of concern. Erosion control measures such as silt fencing, straw wattle, mulching, seeding, or mesh fabric overlay will be installed as appropriate. Access routes to structure locations will be reviewed prior to the mobilization of equipment so that erosion can be avoided or minimized. Construction crews exercise caution when equipment is within 50 feet of streams and rivers and will not drive equipment through streams or rivers that the transmission line crosses.

Erosion Control Plan

The following commonly used erosion controls and practices will be implemented, as appropriate.

- Grade or extend terraces across slopes to prevent stormwater from flowing into the construction area and plant open areas with native grasses or low-growing plants soon after work is completed.
- Place energy-dissipating material, such as riprap, check dams, straw bales, wattles, and/or gabions, at stormwater outfalls to slow water runoff, thereby minimizing erosion and preventing entrained sediments from entering waterways.
- Prevent erosion damage by using geotextiles or energy-dissipating devices such as check dams, gabions, or riprap along stream courses or their banks that are impacted by the construction.
- Protect culverts with inlet controls to prevent suspended particles from entering stormwater drainages.
- Maintain gravel entrance/exit pads at each construction site entrance/exit location to provide a buffer to reduce the amount of mud and soil transported on vehicle tires from the site to paved public roadways.
- Immediately implement temporary or permanent erosion protection and stabilization (e.g., cover crop or mulching) for all exposed soil surface areas where activities have been completed or temporarily stopped.

Weed Management

Disturbance resulting in the loss of vegetation is anticipated to be minimal for the project, and typically limited to access roads within the route and workspace surrounding pole structures. The workspace will not be prepared prior to construction, meaning topsoil will not be removed. Montana-Dakota will limit ground surface disturbance during construction. Temporary best management practices implemented

during and after construction, such as fiber rolls or mulch, will be weed free. After construction, Montana-Dakota will use a weed-free regionally specific seed mixture for revegetation in non-agricultural areas. Agricultural fields will be decompacted and returned to their pre-construction agriculture use. During operation, Montana-Dakota will employ standard monitoring and maintenance procedures to limit the spread of noxious weeds.

Attachment H
Environmental Training Plan

Environmental Training Plan for Montana-Dakota 230 kV Heskett Reroute

The Environmental Training Plan addresses construction and operation aspects of the Montana-Dakota 230 kV Heskett Reroute. Given the limited scope of the project, contractors will only be trained in areas that are pertinent to normal construction practices involved with installing a very limited amount of transmission line poles. No earth clearing activities are anticipated, and work will primarily take place on a previously industrialized site owned by Montana-Dakota.

1. Avian Training – Ongoing Operation of the Line (*Montana-Dakota Employees only*)

Training on regulatory oversight, bird identification (e.g., eagle vs. non-eagle), avian incident reporting requirements, nest management, and options for both new construction standards and retrofitting existing structures will be provided to employees and contractors on an as-needed basis by the Environmental Department, Distribution Standards Committee, Electric Transmission Department, and Training and Safety Coordinators. The Environmental Department provides guidance on how this training program is structured.

Instruction and training for both new construction standards and retrofitting existing structures (e.g., device or material installation on existing lines) to minimize potential bird interactions should be up to date and coordinated between the product manufacturers and the Distribution Standards Committee and Electric Transmission Department, providing personnel training where appropriate and on an as-needed basis. Training opportunities on avian electrocution, collision, and nesting issues are available through annual workshops and short courses provided by APLIC1 and EEI2 throughout the U.S. in addition to specific consultants that have this expertise and may offer qualified training.

Montana-Dakota has developed the following training materials:

- Avian identification document and PowerPoint presentation, outlining avian interaction management strategies relative to Montana-Dakota's electric system.
- Instructional flow diagrams to communicate processes easily and efficiently to company personnel, specific to injured and dead bird reporting and nest management (see Section 7 of Avian Protection Plan, Avian Reporting System).

Supplemental training or materials should be provided when there are substantive changes in regulations, permit conditions, or internal procedures.

2. Aquatic Resources – Construction (*Contractor only*)

The contractor will be provided a map (or shapefiles upon request) of delineated aquatic resource areas within the project corridor. Contractor will be instructed to maintain a 50' buffer from those areas whenever possible. Contractor will use construction matting when working in saturated areas within aquatic resource areas if avoidance is not attainable.

3. Cultural Resources – Construction (*Contractor only*)

The contractor will be provided a copy of the Unanticipated Discovery Plan (See Attachment E in the Public Service Commission June 4, 2021, Request for Additional Information Technical Memorandum for the Montana-Dakota Utilities 230-kV Transmission Line, Morton County, North Dakota / Case No. PU-21-151). Contractor will review and understand the aspects of the plan prior to beginning construction activities.

4. Storm Water and Dust Control – Construction (*Contractor only*)

The construction activities involve very little ground disturbance (10 pole structures). A Storm Water Pollution Prevention Plan was not prepared due to the limited amount of soil disturbance. Montana-Dakota will instruct the contractor to provide water for dust control as needed and revegetate any areas of disturbance that were previously vegetated.

ATTACHMENT I

AVIAN PROTECTION PLAN

CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE

REDACTED

CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE

ATTACHMENT J
TABLES 1 AND 2 DATA SOURCES

DATA SOURCES FOR TABLES 1 AND 2

- National Conservation Easement Database. 2020. Conservation Easements. Available at: <https://www.conservationaleasement.us/>. Accessed October 2020.
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- . 2020b. Wildlife Management Areas. Available at: <https://gishubdata.nd.gov/dataset/wildlife-management-areas>. Accessed October 2020.
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