



North Dakota Public Service Commission Consolidated Application

Certificate of Corridor Compatibility and Route Permit

Little Muddy Creek Pipeline & Epping Station Project

Prepared for:

Meadowlark Midstream Company, LLC &

Epping Transmission Company, LLC

Prepared by:

E3 Environmental, L.L.C.

October 2014



E3 ENVIRONMENTAL
Enhancing Execution with Experience



North Dakota Public Service Commission

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INTRODUCTION

Meadowlark Midstream Company, LLC (MMC) and Epping Transmission Company, LLC (ETC) are wholly owned subsidiaries of Summit Midstream Partners, LLC (Summit). Summit, through its subsidiaries, owns and operates crude oil and gas assets throughout North Dakota. Jointly MMC and ETC are proposing the Little Muddy Creek Pipeline and Epping Station Project (Project.) The Project will include the expansion of the existing Epping Station (ES), which is currently operated by MMC, and the construction of the Little Muddy Creek Pipeline (Pipeline), which will be constructed and operated by ETC. The Pipeline would be approximately 14 miles in length and would transport crude oil from MMC's ES, located near the city of Epping in Williams County, to North Dakota Pipeline Company LLC's Little Muddy Creek Station (LMCS), which is located approximately 10 miles northwest of Epping in Williams County.

Prior to commencement of this Project, approximately 10 miles of the proposed 14-mile transmission line will be operated as a gathering pipeline. The gathering pipeline is needed to fulfill existing commitments with area producers. The gathering pipeline gathers crude oil directly from the wellhead and delivers it to the ES. This Project would involve modifications to the 10-mile gathering pipeline. Modifications would include the reversal of the direction of the flow and the connection of the gathering pipeline to the newly constructed transmission pipeline. The new transmission pipeline would be approximately 4-miles in length and would connect the modified and reversed gathering pipeline to the LMCS.

The proposed Project will also include the construction of one additional above ground tank at the existing ES. This tank will provide surge protection for, storage associated with, and general support for, the proposed Pipeline. Currently there is one existing aboveground tank at the ES which is used for storage for the gathering lines.

MMC/ETC jointly submit to the North Dakota Public Service Commission (PSC) a single consolidated application for a Certificate of Corridor Compatibility and Route Permit for the Project.

The application provides the information required by:

- North Dakota Century Code, Energy Conversion and Transmission Facility Siting Act, Chapter 49-22-08; and
- North Dakota Administrative Code, Article 69-06-05, Transmission Facility Permit.

SECTION 1: DESCRIPTION

1.1 TYPE AND SIZE OF FACILITY

1.1.1 TYPE

The proposed Project would result in a new crude oil transmission pipeline, comprised of both converted gathering lines and new construction, and expansion of the existing ES. The steel pipeline will meet U.S. Department of Transportation (DOT) regulations, specifically the design criteria outlined in 49 CFR 195.100, constructed per 49 CFR 195.200 operated and maintained per 49 CFR 195.400. The new tank will be constructed to meet DOT regulations and API 650 Standards.

1.1.2 SIZE

The Project pipeline specifications are detailed below:

- 10-inch Nominal Diameter Steel Pipe.
- API 5L ERW/FBE. ARO pipe.
- Wall Thickness of 0.365 inch.
- Pipeline casings installed at State and US Highway crossings and Railroad crossings.
- Maximum Operating Pressure: 1,480 pounds per square inch (psi).
- Normal Operating Pressure: 500 psi.
- Maximum Throughput: 100,000 barrels per day (bpd).
- Normal Throughput: 50,000 bpd.
- Maximum Operating Temperature: 180 degrees Fahrenheit.

1.1.3 LENGTH

The proposed Project is approximately 14 miles in length.

1.2 PURPOSE OF FACILITY

The purpose of the Project is to transport crude oil from the ES northwest to the LMCS. From the LMCS the crude will be transported through North Dakota Pipeline Company LLC's North Dakota Pipeline System for further distribution throughout the United States.

1.3 LOCATION

The Project will be located in Williams County, North Dakota. The Project would result in a transmission pipeline originating at the ES in Williams County, approximately 1-mile south of Epping, ND. From the ES the pipeline will extend in a northwest direction to its terminus at the existing LMCS, located 10 miles northwest of Epping, ND. Please refer to the project maps provided in Appendix B.

1.4 ABOVEGROUND FACILITIES

The proposed Project will include the construction of one (1) additional above ground tank with 55,000 barrels of storage capacity. The addition of this tank will bring the total storage capacity at the ES to approximately 75,000 barrels. The additional storage is required to support the transmission line. Additionally, the transmission line will include four (4) block valves, one at each the terminus and two additional mainline block valves. These aboveground appurtenances will be designed to and installed at locations that will meet DOT regulations. The valves will be actuated, fail-safe, automated and controlled by both the local actuation and by a 24-hour Control Center located in the City of The Woodlands, Texas. Please see Appendix A for engineering documents and Appendix B for the location of these facilities.

The ES storage tanks specifications are detailed below:

- One 105.5-foot diameter storage tank with 55,000-barrel capacity to support the new crude oil transmission pipeline to LMCS.

The existing storage tank is, and the new storage tank would be located within an earthen berm with adequate capacity to satisfy applicable regulations.

1.5 PROJECT SCHEDULE

1.5.1 CERTIFICATE OF CORRIDOR COMPATIBILITY

MMC/ETC are seeking a Certificate of Corridor Compatibility in or before January 2015.

1.5.2 ROUTE PERMIT

MMC/ETC are seeking a Route Permit in or before January 2015.

1.5.3 CONSTRUCTION SCHEDULE

MMC/ETC have scheduled construction activities to commence as early as the first quarter of 2015. The construction activities would take approximately 4-6 months to complete. Commissioning and restoration activities will commence immediately after construction is complete.

SECTION 2: STUDIES

2.1 CORRIDOR

MMC/ETC selected the proposed corridor based upon several criteria designed to conform to the PSC's siting requirements and to avoid and minimize socioeconomic and environmental impacts, while maximizing the benefits to local resource developers in the Williston Basin. The location of existing infrastructure was also considered during the selection process.

MMC/ETC's process of selecting a corridor to site a route between two fixed assets was influenced by the opportunity to collocate with other utility corridors. Agencies and the public at large generally prefer the collocation of utilities within an existing corridor.

The proposed corridor is a one-mile wide area centered upon a proposed pipeline alignment which was selected utilizing web-based mapping tools (*e.g.*, one-half mile on either side of the proposed alignment) (Corridor). The Corridor is illustrated on the maps located in Appendix B.

A comprehensive desktop analysis of the Corridor included consultations with the federal and state agencies identified below. Summarized in Section 2.2 are the results of this environmental analysis.

- U.S. Fish and Wildlife Service (USFWS)
- North Dakota Game and Fish Department (NDGFD)
- North Dakota Parks and Recreation-Natural Heritage Program (NDPRD)
- North Dakota State Lands Department (NDSLDD)
- North Dakota State Historic Preservation Office (NDSHPO)
- North Dakota Department of Health (NDDoH)

On May 20, 2014, agency consultations were distributed. E3 sent out an amendment to these consultations on July 1, 2014. The purpose of this amendment was to clarify typographical errors contained in the original consultation. Below these corrections are summarized. Records of consultation with the agencies listed below is contained in Appendix C.

- The pipeline will originate at the ES not the Colt Rail Terminal as indicated on the consultation map;
- The ES is approximately 1-mile south of Epping, North Dakota not 10-miles; and
- The Little Muddy Creek pipeline endpoint will tie-in to the North Dakota Pipeline Company, LLC's LMCS, not existing MMC assets.

2.2 ENVIRONMENTAL DESKTOP ANALYSIS

2.2.1 WILDLIFE INVENTORY

Approximately 160 wildlife species are residents or seasonal visitors to the greater Missouri River ecosystem, and hundreds of native fish species live in the river and its tributaries, including the Knife River. Some of these animal species include fur-bearing mammals (*e.g.* beaver, muskrat, moose, and mule deer), bird and waterfowl species (*e.g.*, mallard, Canada goose, sharp-tailed grouse and golden eagles).

MMC/ETC engaged federal and state agencies in consultations to identify potential occurrences of sensitive species or their critical habitats. Refer to Appendix C for complete record of agency consultations.

2.2.2 WETLAND AND WATERBODIES ANALYSIS

To evaluate the location and extent of mapped wetlands and waterbodies within the Corridor a desktop analysis of aerial photography, National Hydrography Data set (NHD) and National Wetland Inventory (NWI) maps was completed. Desktop analysis identified approximately nine (9) individual streams and approximately 141 NWI features within the Corridor. MMC/ETC commissioned field studies to augment the desktop analysis. The field study results are discussed in the Route Permit Application.

2.2.3 TREE/SAPLING/SHRUB ANALYSIS

Desktop analysis of aerial photography was used to evaluate the location and extent of woody vegetation within the Corridor. The density of the woody cover is generally sparse, and typically appeared in association with banks or incised drainage channels, cultivated windrow features or farmsteads. MMC/ETC commissioned additional studies of the proposed route to inventory woody vegetation, study avoidance measures and inventory proposed impacts for mitigation. The results of these studies are included in Appendix D and proposed mitigation is detailed in Section 5: Mitigative Measures of the Route Permit application.

2.3 AGENCY CONSULTATIONS

2.3.1 U.S. FISH AND WILDLIFE SERVICE

The USFWS administers several programs designed to identify and protect special status plant and animal species and critical habitats. Additionally, the USFWS utilizes conservation programs such as Waterfowl Production Areas and wetland and grassland easements to identify and manage high quality wildlife habitat.

2.3.1.1 FEDERALLY PROTECTED SPECIES REVIEW

The USFWS identifies and maintains a list of species and critical habitats that have been afforded protection by the Endangered Species Act (ESA). The ESA provides a program for the conservation of threatened and endangered plants and animals and their critical habitats.

E3 reviewed USFWS published data and identified the following listed species and the potential for the species to occur within the Corridor.

- Whooping crane (*Grus americana*) – Endangered
- Interior least tern (*Sternula antillarum*) – Endangered
- Pallid sturgeon (*Scaphirhynchus albus*) – Endangered
- Gray wolf (*Canis lupus*) – Endangered
- Piping plover (*Charadrius melodus*) – Threatened

E3 reviewed available information describing life history, critical habitats and conservation measures associated with each species, to assess the potential effects of the Project on these resources. The results of the assessment are provided below:

Whooping crane: The Aransas-Wood Buffalo Population of Whooping Cranes engages in semi-annual migration through North Dakota. This flock breeds in the Wood Buffalo National Park in Alberta and Northwest Territories, Canada, and winters in the Aransas National Wildlife Refuge in Texas. This species has been closely studied and monitored in recent years due to its small, fragile population. North Dakota provides migratory habitat for the species, providing roosting and feeding opportunities during migration. During migration, the species is most closely associated with larger wetland complexes for roosting habitat, typically using adjacent uplands to forage. Desktop screening identified potential foraging and roosting habitat for the whooping crane within the Corridor.

Interior least tern: The interior population(s) of the least tern have historically been associated with large river systems for breeding and migratory habitats. Breeding birds are known to breed in colonies, utilizing sandbar habitat common to larger rivers. Regionally the Missouri River is known to host remnant breeding populations of terns. The Project is approximately 12 miles north/northwest of the Missouri River and Lake Sakakewea; and therefore, is anticipated to have no effect on the species.

Pallid sturgeon: The pallid sturgeon preferred habitat includes the benthic environment associated with swift waters of large turbid, free-flowing rivers with braided channels, dynamic flow patterns, periodic flooding of terrestrial habitats and requiring extensive microhabitat diversity. Portions of the Missouri River are thought to provide the required habitat for the pallid sturgeon though much of the habitat has been compromised due to channelization, installation of impoundments and altered flow regimes. The Project is approximately 12 miles north/northwest of the Missouri River and Lake Sakakewea, and therefore, is anticipated to have no effect on the species.

Gray wolf: The gray wolf uses a variety of habitats that support a large prey base including montane and low-elevation forests, grasslands and desert scrub. The Corridor generally lacks forested habitat and is a great distance from the known Minnesota and Manitoba populations. The Corridor does not provide suitable habitat or host known populations of the gray wolf, and as such, the proposed Project will have no effect on the gray wolf.

Piping plover: The piping plover is associated with shorelines along small alkaline lakes, large reservoir beaches, river islands and adjacent sand pits. Breeding birds select wide beaches with highly clumped vegetation covering less than 25 percent of the area. The piping plover's current breeding range on the Northern Great Plains extends south along major prairie rivers including the Yellowstone and Missouri, and in alkali wetlands including those in northeastern Montana and North Dakota. No records of piping plovers or its critical habitat were documented by the USFWS to occur within the Corridor. The Project is approximately 12 miles north/northwest of the Missouri River and Lake Sakakewea, and therefore will have no effect on the species.

2.3.1.2 MIGRATORY BIRD TREATY ACT

On May 20, 2014, E3, on behalf of MMC/ETC, initiated consultation with the USFWS with respect to several topics that fall under the purview of the USFWS including the Migratory Bird Treaty Act (MBTA). The USFWS responded on August 11, 2014, via letter, identifying the management of MBTA compliance as a concern. The USFWS concerns correspond with the regional timing associated with annual phenology of migratory species. In North Dakota, it is generally acknowledged MBTA species of concern may be present and active in North Dakota from February 1 through July 15 annually. Currently the proposed Project construction scheduled to commence in the first quarter of 2015 and be complete in early 2015. If construction were to take place during this interval, MBTA mitigation may be required. MMC/ETC will continue to consult with agencies as necessary regarding this subject and shall develop MBTA mitigation as appropriate.

2.3.1.3 BALD AND GOLDEN EAGLES PROTECTION ACT

The Bald and Golden Eagle Act (BGEA) prohibits anyone without a permit from taking a bald or golden eagle including their parts, nests or eggs. The BGEA defines "take" as to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. The BGEA also addresses impacts resulting from human-induced alterations occurring around previously used nesting sites.

On May 20, 2014, E3, on behalf of MMC/ETC, initiated BGEA consultations with the USFWS seeking confirmation of presence or absence of known nesting locations for either eagle species within the Corridor. The USFWS responded via letter on August 11, 2014, recommending that the Project avoid wetland and grassland easements by coordinating with the Crosby Wetland Management District (see Appendix C for complete record of this consultation). The USFWS indicated that the proposed project area has potential suitable roosting and feeding habitat for the Whooping Crane. The USFWS recommends that if a Whooping Crane is sighted within a mile of the Project that project activities cease within one mile of that part of the project and the USFWS is contacted. The USFWS also stated that if Sprague's pipit habitat is located within the proposed project area that the steps taken to avoid and minimize disturbance to this habitat should be documented and shared with the USFWS. Please see Appendix C for a record of this consultation.

2.3.1.4 U.S. FISH AND WILDLIFE SERVICE MANAGED LANDS

The USFWS administers National Wildlife Refuges and Waterfowl Production Areas as well as wetland and grassland easements throughout North Dakota. No USFWS managed areas were identified within the Corridor based upon a review of information available in the public domain, including U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps, USGS PAD-US dataset, and the USFWS Information, Planning, and Conservation System (IPaC).

2.3.2 NORTH DAKOTA GAME AND FISH DEPARTMENT

The NDGFD exercises oversight and management of the state's game species. On May 20, 2014, E3 initiated consultations with NDGFD and requested confirmation regarding the presence or the absence of both state-managed lands and wildlife concerns within the proposed Corridor.

E3 reviewed the NDGFD's map service applications on May 22, 2014 to identify the presence or absence of NDGFD managed Private Land Open to Sportsmen (PLOTS) lands within the corridor. Review of this database confirmed the presence of NDGFD PLOTS lands within the Corridor.

On June 10th, 2014, the NDGFD responded via letter stating that the Project should not affect wetlands provided steps are taken to protect them; the Project cannot have alterations to drainage patterns and no above ground appurtenances should be placed in wetlands. Additionally, the NDGFD stated that the Project should not have significant adverse effects on wildlife or wildlife habitat. On July 10, 2014, E3 submitted an amendment consultation to the NDGFD and on August 7, 2014, the NDGFD responded via email stating that they have no additional concerns based on the amendment consultation. Refer to appendix C for a copy of this correspondence.

2.3.3 NORTH DAKOTA PARKS AND RECREATION DEPARTMENT

The NDPRD Natural Resource Division's scope of authority and expertise covers recreation and biological resources (in particular, rare species and ecological communities). The NDPRD also maintains a database comprised of the location and recorded occurrences of plant and animal species of special concern. The NDPRD authority includes management of state park lands and Land and Water Conservation Funded recreation projects.

On May 20, 2014, E3 initiated consultations with NDPRD seeking confirmation regarding the presence or the absence of managed lands, ecological resources, rare species or their critical habitats within the Corridor.

On June 2, 2014, the NDPRD responded via letter stating that the Project does not affect NDPRD managed state park lands or Land and Water Conservation Fund recreation projects under NDPRD coordination. Additionally, no documented occurrences of plants, animals of special concern or other significant ecological communities were documented within or adjacent to the Project area. The NDPRD recommended that the Project be accomplished with minimal impacts and that all efforts be made to ensure

that critical habitats or rare species are not disturbed. The NDPRD also recommends that all disturbed areas be restored with species native to the project area. On July 10, 2014, E3 submitted an amendment consultation to the NDPRD; agency response is pending. Refer to Appendix C for a complete record of this consultation.

2.3.4 NORTH DAKOTA STATE LANDS DEPARTMENT

The NDSL D is in charge of managing surface acres and mineral interests held in trust for various schools and institutions. Based on review of publically available information, thirteen (13) state trust lands are within the Corridor.

On May 20, 2014, E3 initiated consultations with the NDSL D requesting comments regarding the presence of school trust lands within the Corridor; the NDSL D responded on May 21, 2014 confirming the presence of school trust lands within the Corridor. On July 10, 2014, E3 submitted an amendment consultation to the NDSL D, again the agency confirmed the presence of school lands within the Corridor. See Appendix C for a copy of this correspondence. MMC's/ETC's land department will coordinate with the NDSL D to obtain the necessary easements to construct and operate the Project.

On May 20, 2014, E3 initiated consultations with the NDSL D requesting comments regarding the presence or absence of state mineral trust lands within the Corridor; the NDSL D responded on May 22, 2014 confirming the presence of mineral trust lands within the Corridor. On July 10, 2014, E3 submitted an amendment consultation to the NDSL D; agency response is pending. See Appendix C for a copy of this correspondence.

2.3.5 NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE

The NDSHPO is responsible for managing the historic and archaeological resources of the state; as such, the NDSHPO maintains records of all previously recorded cultural resources within the state. E3 commissioned SWCA Environmental Consultants to conduct a Class I inventory of the Corridor. The Class I effort was completed on April 22, 2014 and identified 42 previously recorded cultural resources that were identified within the Corridor. The results of this Class I effort are documented in Appendix E. To augment this Class I effort, SWCA conducted a Class III field investigation. The details of this effort can be found in Appendix E and in the Route Permit.

2.3.6 NORTH DAKOTA DEPARTMENT OF HEALTH

The North Dakota Department of Health (NDDoH) administers regulatory programs governing certain water quality issues including construction stormwater runoff and other discharges. MMC/ETC is currently in the process of preparing permit application materials to acquire the requisite NDDoH approval with respect to these issues.

2.3.6.1 NDDOH POLLUTION DISCHARGE ELIMINATION SYSTEM

The North Dakota Pollution Discharge Elimination System (ND PDES) is the regulatory program that regulates water discharges such as construction stormwater, site dewatering, and hydrostatic discharge permits. MMC/ETC will procure the following ND PDES permits from the NDDoH as described below

Construction Stormwater: MMC/ETC will be seeking coverage under NDR10-0000 *Authorization to Discharge Under the North Dakota Pollutant Discharge Elimination System* general permit for construction activities. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared and maintained on-site for the duration of the Project. MMC/ETC will properly implement the SWPPP, which will be designed to manage run-off and trench dewatering discharges in a manner that will minimize exposure to chemicals, waste, and petroleum products, as well as describing erosion control measures designed to minimize off-site transfer of sediments.

Hydrostatic test water discharges: MMC/ETC will be seeking coverage under NDG07-0000 *Authorization to Discharge Under the North Dakota Pollutant Discharge Elimination* general permit for various temporary discharges including both construction site dewatering and hydrostatic test water discharges.

SECTION 3: NEED FOR FACILITY

3.1 ANALYSIS OF NEED BASED ON PRESENT AND PROJECTED DEMAND, INCLUDING SYSTEM STUDIES

The development of hydrocarbon production in the Williston Basin has increased significantly in recent years due to advancements in deep horizontal directional drilling techniques and subsequent oil extraction in the Bakken and Three Forks shale formations. The total recoverable amount of Bakken Shale and Three Forks oil reserves are subject to interpretation and speculation. Studies conducted by the North Dakota Department of Mineral Resources and the USGS in 2010 estimated mean undiscovered volumes of 3.65 billion barrels of recoverable crude oil reserves may be available in North Dakota's deep shale formations. From March of 2007 to March of 2013, oil production in North Dakota has surged by 564 percent. In March of 2007, North Dakota produced 118,000 bpd. That figure has increased to 783,000 bpd in March of 2013. In 2007, North Dakota accounted for roughly 2.5 percent of all the oil produced in the United States. In 2013, North Dakota accounted for roughly 11 percent of all the oil produced in the country.

A major constraint in transporting hydrocarbons from North Dakota to distribution centers and eventual end users in the United States is the lack of pipeline capacity. To relieve the pipeline constraints, several projects have been planned to address the growing volumes of crude oil, natural gas and natural gas liquids. However, pipeline capacity is not expected to keep pace with production, leaving incremental volumes to find alternative transportation methods, primarily rail or other surface transportation alternatives.

Construction of the proposed Project will provide firm, reliable service for 50,000 bpd and provide a critical link between the ES and the LMCS. From the LMCS, the crude would be transported through North Dakota Pipeline Company LLC's North Dakota Pipeline System to Clearbrook, MN for further distribution to market hubs and centers throughout the United States.

SECTION 4: CORRIDOR LOCATION AND CRITERIA EVALUATION

The information presented in this section was developed to demonstrate conformation with the Commission's siting criteria for transmission facilities. MMC/ETC has conducted a thorough inventory of the Corridor and evaluated the resources within it to assess the compatibility of the Project with the PSC's siting criteria. The following sections identify and discuss the presence or absence of siting criteria within the Corridor. Where siting criteria are identified, the location of each is shown on the maps in Appendix B as appropriate.

4.1 CORRIDOR LOCATION

MMC/ETC has identified a preferred Corridor, which is a one-mile-wide area centered upon a preferred pipeline alignment. The selection of the proposed Corridor was a multi-disciplinary effort that included socioeconomic, environmental, logistics, engineering and financial considerations. The Corridor described in this application provides MMC/ETC with the opportunity to utilize existing and planned assets, minimizes landowner impacts, and minimizes environmental impacts.

MMC/ETC have initiated agency consultations, and conducted a desktop analysis of the Corridor. These efforts were augmented by site visits, including natural and cultural resource field surveys. These results are discussed in detail in the Route Permit application.

4.2 FACTORS TO BE CONSIDERED IN EVALUATING APPLICATIONS AND DESIGNATION OF CORRIDORS AND ROUTES (NDCC 49-22-09)

4.2.1 FEASIBLE ALTERNATIVES TO THE PROPOSED CORRIDOR OR ROUTE

The Project will deliver an average of 50,000 bpd of crude oil from the ES to the LMCS. From the LMCS the crude would be transported through North Dakota Pipeline Company LLC's North Dakota Pipeline System for further distribution to market hubs/centers throughout the United States. MMC/ETC identified and evaluated several project alternatives; however, none of these alternatives effectively satisfied the Project objective. These alternatives included:

- No Action Alternative;
- Trucking Alternative; and
- Rail Alternative.

4.2.1.1 NO ACTION ALTERNATIVE:

This alternative would leave the region constrained by limited transport capacity for safe and reliable transmission of crude oil products to markets. Overall, regional oil and gas production would continue to be constrained by the limited volume of product that could be shipped utilizing existing infrastructure. No action could result in curtailment of crude oil production. For these reasons, MMC/ETC rejected a *No Action Alternative*.

4.2.1.2 TRUCKING ALTERNATIVE:

This alternative was reviewed and eliminated due to the volume of crude oil to be transported. The normal daily throughput of the proposed Project would be approximately 50,000 barrels or 2,100,000 gallons of crude oil. The average load for a truck carrying crude oil is approximately 178 barrels (7,500 gallons) per truck. Thus, it will require 280 trucks per day, an average of 11.7 trucks every hour for 24 hours a day to transport the volume of product the pipeline would transport to the LMCS. This level of truck activity is not logistically feasible; it would cause an unacceptable amount of heavy vehicle traffic for the area's residents as well additional wear and tear on the infrastructure. Disruption in the trucking capacity due to seasonal load restrictions on roads, inclement weather or road repairs would cause a delay in delivering this valuable resource to market. This alternative is not desirable; therefore, MMC/ETC rejected a *Trucking Alternative*.

4.2.1.3 RAIL ALTERNATIVE:

Rail transport was also evaluated as a surface transportation alternative. However, the lack of active railroad service within reasonable proximity to the LMCS limited the viability of this alternative. Upon further analysis, this alternative was determined to be not feasible due to the associated environmental impacts, financial, logistic, and time constraints necessary to acquire land and construct the requisite rail infrastructure. This alternative is not desirable; therefore, MMC/ETC rejected a *Rail Alternative*.

4.2.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF NATURAL RESOURCES SHOULD THE PROPOSED CORRIDOR BE DESIGNATED

MMC/ETC is not aware of any irreversible or irretrievable commitments of natural resources that would result from the requested approvals.

4.2.3 EXISTING PLANS OF THE STATE, LOCAL GOVERNMENT AND PRIVATE ENTITIES FOR OTHER DEVELOPMENTS AT OR IN THE VICINITY OF THE PROPOSED ROUTE

MMC/ETC is not aware of any other future development plans within or in close proximity to the Project.

4.2.4 PROBLEMS RAISED BY FEDERAL AGENCIES, OTHER STATE AGENCIES AND LOCAL ENTITIES

MMC/ETC has consulted with several federal and state agencies to identify possible environmental resources within the Corridor and any related agency concerns.

4.3 EXCLUSION AREAS (NAC 69-06-08-02.1)

Exclusion areas are geographical areas that should be excluded from consideration when siting an energy transmission facility. A proposed Corridor may contain exclusion areas, but exclusion areas may not encompass more than 50 percent of the Corridor width at any point, unless there is no reasonable alternative. The following table and text identify and discuss exclusion areas identified within the Corridor.

Exclusion Area	Within Corridor
Federal	
National Parks or Memorial Parks	No
Historic Sites, or Landmarks	No
Natural Landmarks or Monuments	No
Wilderness Areas	No
State	
Historic Sites, Monuments, or Historical Markers	No
Archaeological Sites	Yes
Parks	No
Nature Preserves	No
County	
Parks	No
Recreation Areas	No
Municipal Parks	No
Other	
Areas Critical to the Life Stages of Threatened and Endangered Animal or Plant Species	No
Areas where Animal or Plant Species that are Unique or Rare to this State would be Irreversibly Damaged	No
Areas within 1,200 feet of a geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility.	No
Areas within 30 feet on either side of a direct line between (ICBM) launch or launch control facilities to avoid microwave interference.	No

4.3.1 FEDERAL RESOURCE REVIEW

MMC/ETC have initiated consultations with various federal agencies and has conducted a comprehensive review of published information. MMC/ETC concluded no national or memorial parks, natural landmarks or monuments, or wilderness areas will be affected by the Project. Please refer to Section 2: Studies of this document for a comprehensive discussion of MMC's/ETC's agency consultations, and Appendix C for copies of the consultations.

4.3.2 STATE RESOURCE REVIEW

MMC/ETC have confirmed through a combination of agency consultations, review of publicly available information and field studies the absence of state parks, historic sites, monuments, historical markers or nature preserves within the proposed Corridor. Please refer to Section 2: Studies of this document for a comprehensive discussion of MMC's/ETC's related consultations.

MMC/ETC commissioned a Class I Inventory of the Corridor. These efforts identified previously recorded historic properties and cultural resources. Please refer to Section 2: Studies of this document for a comprehensive discussion of MMC's/ETC's related consultations, and Appendix E for the Cultural Resource Report. Mitigation details are discussed in Section 5: Mitigative Measures of the Route Permit Application.

4.3.3 COUNTY RESOURCE REVIEW

MMC/ETC has confirmed through a combination of agency consultations and review of publicly available information the absence of county parks or recreation areas, municipal parks, or parks owned by other subdivisions of government bodies within the proposed Corridor. Please refer to Section 2: Studies of this document for a comprehensive discussion of MMC's/ETC's consultations and Appendix C for documentation of agency consultations.

4.3.4 AREAS CRITICAL TO THE LIFE STAGES OF THREATENED AND ENDANGERED ANIMAL OR PLANT SPECIES

MMC/ETC has conducted a comprehensive desktop review of the Corridor; these efforts were augmented with agency consultations and additional field surveys to confirm presence or absence of critical habitat.

Please refer to Appendix C for documentation of the agency consultations as well as Section 2: Route Analysis and Environmental Studies of the application for a Route Permit for details of the field studies.

4.3.5 AREAS WHERE ANIMAL OR PLANT SPECIES THAT ARE UNIQUE OR RARE TO THIS STATE WOULD BE IRREVERSIBLY DAMAGED

MMC/ETC has engaged in federal and state agency consultations, reviewed published information and conducted a desktop analysis of the Corridor to determine if areas of critical animal or plant habitat may occur. Based on these studies, MMC/ETC has confirmed the absence of protected species and/or their critical habitats. Please refer Appendix C for supporting documentation of agency consultations.

4.3.6 AREAS WITHIN 1,200 FEET OF THE GEOGRAPHIC CENTER OF AN ICBM LAUNCH OR LAUNCH CONTROL FACILITY

MMC/ETC conducted a review of publicly available information and concluded there are no ICBM launch or launch control facilities within the Corridor.

4.3.7 AREAS WITHIN 30 FEET ON EITHER SIDE OF A DIRECT LINE BETWEEN ICBM LAUNCH OR LAUNCH CONTROL FACILITIES TO AVOID MICROWAVE INTERFERENCE

MMC/ETC conducted a review of publicly available information and concluded there are no ICBM launch or launch control facilities within the Corridor.

4.4 AVOIDANCE AREAS (NAC 69-06-08-02.2)

Avoidance areas are geographic areas that shall not be considered in the routing of a transmission facility unless it is shown there is no reasonable alternative under the circumstances. A proposed corridor may contain avoidance areas, but may not encompass more than 50 percent of the corridor width at any point, unless there is no reasonable alternative. The following table and text identify and discuss avoidance areas within the proposed Corridor.

Avoidance Area	Within Corridor
Federal	
Historic Districts	No
Wildlife Areas	No
Wild, Scenic or Recreational Rivers	No
Wildlife Refuges	No
Grasslands	No
State	
Wild, Scenic, or Recreational Rivers	No
Game Refuges or Game Management Areas	No
Forests or Forest Management Areas	No
Grasslands	No
Other	
Other Historic Resources not meeting Exclusion Areas criteria	Yes
Areas of Known Geologic Instability	Yes
Areas within 500-Feet of a Residence, School, or Place of Business	Yes
Reservoirs and Municipal Water Supplies	No
Water Sources for Organized Rural Water Districts	No
Irrigated Land (not applicable to underground facilities)	N/A
Areas of Recreational Significance which are not designated as Exclusion Areas	No

4.4.1 FEDERAL RESOURCE REVIEW

MMC/ETC conducted a comprehensive review of publicly available information, and agency consultations of the proposed Corridor. This review indicated the absence of

designated or registered historic districts, refuges, grasslands, and wild, scenic or recreational rivers within the Corridor. Please refer to Appendix C for documentation of agency consultation.

4.4.2 STATE RESOURCE REVIEW

MMC/ETC conducted a review of publicly available information and conducted agency consultations and concluded there are no designated or registered state game refuges, game management areas, management areas, forests, forest management lands, grasslands or wild, scenic, or recreational rivers within the Corridor. Refer to Appendix C for documentation of agency consultation.

4.4.3 HISTORICAL RESOURCES NOT MEETING EXCLUSION AREA CRITERIA

MMC/ETC conducted a Class I Cultural Resource Inventory of the Corridor. The Class I work identified five historical resourced within the survey corridor that did not meet the exclusion area criteria. Refer to Appendix C for agency consultations and Appendix E for the complete Cultural Resource Report.

4.4.4 AREAS OF KNOWN GEOLOGIC INSTABILITY

A desktop review of the North Dakota Geological Survey (NDGS) landslide mapping data was completed. Review of *Areas of Landslides, Blacktail Lake & Spring Brook 24K Sheet, North Dakota* indicated landslide deposits are present within the Corridor in T156N R100W Sec. 26 and 27 and T155N R99W Sec. 11. These areas are not traversed by the preferred Route.

Additionally, North Dakota has not experienced an earthquake of sufficient magnitude to damage steel welded pipe or structural steel structures in recorded history. Sinkholes are known to occur in the region, but these are related to subsurface mining activities as opposed to limestone dissolution. One (1) abandoned mine was found within the Corridor; refer to Appendix B for its location.

4.4.5 AREAS WITHIN 500-FEET OF A RESIDENCE, SCHOOL OR PLACE OF BUSINESS

MMC/ETC utilized aerial photography to identify structures located within 500 feet of the proposed pipeline alignment. There appears to be one (1) residence located within 500 feet of the Project. MMC/ETC has obtained a landowner waiver from hits landowner; it is located in Appendix G.

4.4.6 RESERVOIRS AND MUNICIPAL WATER SUPPLIES

MMC/ETC has confirmed the Corridor does not contain reservoirs or municipal water supply sources. The wells identified within the Corridor are used for domestic, stock or irrigation purposes; however, the majority were test holes. The maps in Appendix B depict the location of these resources.

4.4.7 WATER SOURCES FOR ORGANIZED RURAL WATER DISTRICTS

Desktop analysis confirmed the presence of six (6) wells located within the Corridor. These wells are utilized for domestic, stock or irrigation purposes; however, the majority were observation wells. The location of these wells are depicted on the maps in Appendix B.

4.4.8 IRRIGATED LAND

This criterion does not apply to underground transmission facilities and as such, it is not applicable to this Project.

4.4.9 AREAS OF RECREATIONAL SIGNIFICANCE WHICH ARE NOT DESIGNATED AS EXCLUSION AREAS

MMC/ETC have confirmed the Corridor does not contain any areas of recreational significance that are not designated as exclusion areas.

4.5 SELECTION CRITERIA (NAC 69.06-08-02.3)

The selection criteria require assessment of the environmental impacts and alterations to land use that may result from the siting of the proposed Project. Through this process, MMC/ETC proposes that it has successfully avoided or minimized these effects to the maximum extent practicable.

4.5.1 AGRICULTURAL IMPACT

Agricultural Production: The Pipeline will temporarily affect approximately 196 acres of private land in North Dakota. The majority of the land crossed can be characterized as either agricultural or natural vegetative cover. Once construction is completed, the land will be restored to its pre-construction contours and land use. ETC will provide settlements to landowners for crop loss resulting from Pipeline construction. The expansion at the ES will not have a significant effect on agricultural projection, as it is located in an area previously developed for oil production.

Family Farms and Ranches: The Project will temporarily affect approximately 196 acres of private land in North Dakota. Once construction is complete, the land will be restored to its pre-construction contours and land use. MMC/ETC will negotiate easements with all affected landowners. The Project will have no permanent impacts to lifestyle or farm/ranch operations once construction has been completed.

Lands Suitable for Irrigation: This section is not applicable to buried pipelines (69-06-08-02.2h). The expansion at the ES will not affect lands suitable for irrigation as all ground disturbing/construction activities will occur within the boundaries of the existing MMC facility.

Surface Drainage: Standard construction techniques will be employed; significant modifications to surface drainage patterns are not anticipated. Site grading will be necessary at the ES; however, site design will minimize runoff impacts to adjacent landowners. Care will be taken throughout the construction process to minimize environmental impacts, including modification of drainage patterns. During restoration,

those areas that were disturbed during construction shall be restored, the local topography shall be restored to its original contours, vegetation shall be re-established and impacts shall be minimal and temporary. Best management practices will be implemented in accordance with the project-specific Storm water Pollution Prevention Plan (SWPPP), which will comply with the NDDoH Construction Storm Water General Permit requirements. The grading for the ES will occur to allow for the siting and construction of the storage tank. Permanent impacts to surface drainage will be minimized to the maximum extent possible. ES site drainage will be designed in a manner in which impacts to adjacent properties are not altered from pre-construction conditions.

Ground Water: Well data has been recorded by the State Water Commission for the Project area. Well data indicates that groundwater is located between 50-90 feet below the surface. The required tie-in excavations for the proposed Project are not anticipated to reach these depths as such no impact to ground water is anticipated.

4.5.2 THE IMPACTS UPON OTHER RESOURCES

Noise-Sensitive Land Uses: The Project is located in a rural setting, effectively isolating it from the majority of sensitive receptors. Construction of the proposed Project would affect the local noise environment. The ambient sound level of a region is defined by the total noise generated within the specific environment and is usually comprised of sounds emanating from natural and artificial sources. Construction could cause temporary increases in the ambient sound environment in the areas immediately surrounding active construction. Once constructed and in-service, normal pipeline operations and station operations are not audible. Once construction at the ES are complete the noise associated with operation the ES should not exceed 20% of the ambient noise level.

The construction of the proposed Project would be conducted during typical working hours and is expected to cause temporary increases in ambient sound within and adjacent to the Project area. The use of heavy equipment or trucks would be the primary noise source during construction and excavation. The level of impact would vary by equipment type, duration of construction activity, and the distance between the noise source and the receptor.

Visual Effect on Adjacent Areas: The proposed Project will include the installation of a block valve at each terminus of the pipeline and two additional mainline block valves. These block valves are small aboveground features which will be installed within the footprint of the facility. The visible piping and equipment are finished and maintained with a white painted surface.

One additional aboveground storage tank, associated secondary containment, and facility fencing will be constructed at the existing ES. Other oil development is occurring in proximity to the ES, and as such, visual impacts associated with the addition of one tank is minimal in this landscape.

No other permanent aboveground features are to be installed as a part of the Project.

Extractive and Storage Resources: This Project will not affect any extractive or storage resources.

Wetlands, Woodlands and Wooded Areas: A comprehensive desktop review of published data, including aerial photography and NWI data, was conducted to assess the presence or absence of wetlands, woodlands and wooded areas. The review of the proposed Corridor confirmed the presence of these resources. MMC/ETC commissioned field surveys to identify and record the locations of these resources within the survey corridor. Please refer to Section 2: Studies in Route Permit Application for a comprehensive discussion of MMC's/ETC's consultations, and Appendix C for copies of the consultations. Mitigation details are discussed in Section 5: Mitigative Measures of the Route Permit Application.

Radio and Television Reception, and other Communication or Electronic Control Facilities: MMC/ETC does not anticipate the Project will affect radio, television, or other electronic control facilities.

Human Health and Safety: MMC's/ETC's corporate Health and Safety policy meets or exceeds federal and state laws, rules and regulations, and is enforced equally with respect to MMC/ETC and contractor employees. The implementation of this policy promotes a safe and healthy workplace during construction and operation of all MMC's/ETC's assets.

The design of the Project has incorporated the use of block valves at regular intervals. The purpose of the block valve is to segment the system and allow for the isolation of select portions of the system to facilitate maintenance in a safe and controlled manner. Additionally, in the event of an abnormal operating condition, block valves can be closed as necessary to prevent an uncontrolled release of crude oil. Finally, the operation of the pipeline will be monitored in accordance with DOT regulations.

MMC has developed an Emergency Response Plan for the Epping Station storage facility and will train all employees on that plan and provide a copy of the plan to first responders. MMC prides itself on its safe work practices and considers health and safety to be among its core values.

Animal Health and Safety: The wildlife currently inhabiting the Corridor are common and are generally mobile. The local wildlife inhabitants will not be displaced by the Project with no measurable impact to the viability of these populations. No species of special concern are anticipated to experience direct impacts due to conversion or operation of the Project.

Plant Life: No species of special concern will be impacted by the Project. Reclamation will be completed utilizing native seed mixes where appropriate.

4.6 POLICY CRITERIA

4.6.1 POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

MMC/ETC will comply with requirements contained in the Corridor Certificate and Route Permit. MMC/ETC will conduct its activities with the objectives of providing a healthful and safe workplace for its employees, and preventing accidents and environmental incidents. All persons and firms providing service to MMC/ETC are required to conduct their work in compliance with environmental conditions, permit authorizations, and applicable regulations, and will be held accountable for their actions in that regard. MMC/ETC are committed to conducting its business in compliance with all applicable environmental laws and regulations. These laws, regulations and standards are designed to safeguard the environment, human health, wildlife and natural resources.

4.6.2 LOCATION AND DESIGN

This Project will connect two facilities, the ES to tie-in to the LMCS. From this location, the crude would be transported through North Dakota Pipeline Company LLC's North Dakota Pipeline System to Clearbrook, MN for further distribution to market hubs/centers throughout the United States. Refer to Appendix B for Project location maps.

The proposed pipeline will be constructed of steel and will be a nominal 10-inch diameter pipe. The pipe installed will have a nominal wall thickness of 0.365 inches denoted as API Code 5L specification ERW/FBE ARO pipe. The maximum operating pressure (MOP) of the pipeline will be 1,480 psi.

The proposed pipeline will meet DOT regulations, specifically the design criteria outlined in 49 CFR 195.100, constructed per 49 CFR 195.200 operated and maintained per 49 CFR 195.400.

The new storage tank will be located at the existing ES, approximately 1-mile south of Epping, ND. The new storage tank and associated containment structures will meet DOT regulations and be constructed to meet API 650 Standards.

4.6.3 TRAINING AND UTILIZATION OF AVAILABLE LABOR IN THIS STATE FOR THE GENERAL AND SPECIALIZED SKILLS REQUIRED

Pipeline construction is a specialized construction market and the labor force needed to build the Project will be primarily comprised of a workforce with these niche construction skills. The primary contractor will be a local contractor, supplying specialized skilled labor. MMC/ETC will draw upon the local labor force to supply general laborers. The workforce is anticipated to reach a peak of approximately 100 personnel.

4.6.4 ECONOMIES OF CONSTRUCTION AND OPERATION

The Project represents a total investment of approximately \$18 million to be spent in Williams County, North Dakota for the construction of the pipeline. Once in-service, the

continued costs of maintenance and operation of the proposed pipeline are expected to be minimal.

4.6.5 USE OF CITIZEN COORDINATING COMMITTEES

Through its corporate presence in the region (local office in Stanley, ND), MMC/ETC has established and maintains a good relationship with the local community officials and the local population. These relationships provide multiple grass roots communication channels to inform local residents regarding the developments associated with the Project.

4.6.6 COMMITMENT OF A PORTION OF THE TRANSMITTED PRODUCT FOR USE IN THIS STATE.

The proposed Project will interconnect with existing facilities. The products currently handled, transferred and shipped at these facilities are currently delivered to markets located in and out of the state.

4.6.7 LABOR RELATIONS

MMC/ETC maintains positive labor relations with its staff and contract work force and does not anticipate encountering any adverse labor relations on this Project. The labor market in the region is generally supportive of the oil and gas industry.

4.6.8 THE COORDINATION OF FACILITIES

MMC owns and operates the existing ES and will be responsible for its expansion; ETC will construct and own the Pipeline. The project will connect with the North Dakota Pipeline Company LLC's existing pipeline. MMC/ETC expect coordination with this entity to be seamless as the Project is of benefit to both parties.

4.6.9 MONITORING OF IMPACTS

MMC/ETC has operated pipeline gathering and associated facilities in the area since February of 2013. Through these operations, MMC/ETC have established and maintained positive landowner and community relationships throughout the region. MMC's/ETC's operations reflect its commitment to corporate citizenship standards founded on integrity. MMC/ETC will monitor landowner concerns, if any, through its Land Department and will respond to all reasonable concerns. Similarly, MMC/ETC will monitor community concerns and will respond to all reasonable concerns brought to its attention by local community leaders. Environmental responsibilities shall be coordinated in the same manner.

4.6.10 UTILIZATION OF EXISTING AND PROPOSED RIGHTS-OF-WAY AND CORRIDORS

MMC/ETC chose the preferred Project alignment in an effort to maximize the use of existing utility corridors.

4.6.11 OTHER EXISTING OR PROPOSED TRANSMISSION FACILITIES

Refer to Appendix F for MMC/ETC's 10-Year Plan.

SECTION 5: MITIGATIVE MEASURES

5.1 LOCATION

The selection of the proposed Corridor was a multi-disciplinary effort that included socio economic, environmental, logistics, engineering and financial considerations. The Corridor described in this application meets the siting criteria and provides MMC/ETC with the opportunity to utilize existing assets, and minimize landowner and environmental impacts.

Landowner considerations also factored into the Corridor selection. The proposed Corridor limits the number of potentially affected landowners while providing potential routing opportunities that would further minimize individual impacts to current land practices. All affected landowners would be compensated for Project impacts through negotiated easement agreements and settlements for seasonal crop losses.

The proposed Corridor selection was also influenced by environmental studies that suggested the area lacked sensitive features such as critical wildlife habitat, major wetlands or waterbodies, or other unique environmental features. The proposed Corridor will allow routing options that will further minimize waterbody crossings and potentially avoid all the wetland crossings entirely. In addition to these routing considerations, compliance with environmental permits procured for the Project will serve to effectively mitigate the impacts of construction along the final approved route. Standard pipeline construction techniques will involve temporary impacts, but long term or permanent impacts will be avoided through implementation of modern construction techniques, adherence to permit requirements, and avoidance of sensitive features identified during routing studies. Permanent impacts during ES construction will be minimized to the maximum extent possible.

MMC/ETC own and operate other assets in the region. Planning and development of these assets are conducted in a manner that maximizes the benefits to the region's resources. The proposed Corridor and Route will allow MMC/ETC to draw upon planned and existing pipeline and facility assets in the region.

5.2 CONSTRUCTION

The proposed construction of the Project will be conducted in an orderly sequence designed to complete the Project in the minimum amount of time required to safely prepare the site, install the pipeline and station facilities and restore the areas disturbed by construction.

Construction is estimated to require a minimum of 4-6 months to complete. Construction techniques will be employed that minimize the area of ground disturbance, off-site deposition of sediments and long-term impacts to agricultural productivity. Construction activities shall conform to all applicable permit stipulations; these requirements are mandated by the agency and implemented by the Project sponsor for minimizing impacts to the environment.

Restoration will immediately follow Project construction. Final grading will restore the original contours of the land where possible. Disturbed areas will be prepared for re-seeding and restoration will be coordinated to meet landowner specifications.

5.3 OPERATION

Once put into service, the proposed Pipeline will operate continuously, delivering crude oil from the ES to the LMCS. Normal pipeline operations are imperceptible to the public, as they are silent, buried and therefore not visible, and require only minimal aboveground activity. Standard operating procedures will conform to applicable DOT requirements, which include regular pipeline monitoring and periodic inspection. Additionally, routine maintenance of the right-of-way will likely be required on a regular basis to remain in compliance.

The ES will also operate continuously providing storage and supplying the Pipeline with oil for transport. Station operations will include pumping and allocation of the oil throughout the Project.

SECTION 6: LIST OF PREPARERS

John Millar

Vice President-Liquids Group
Summit Midstream

Mr. Millar is Vice President, Liquids Group for Summit Midstream and is responsible for developing liquid pipeline commercial opportunities and for managing Summit's liquid pipeline assets. Prior to joining Summit Midstream, Mr. Millar was Vice President and General Manager of Genesis Energy, L.P.'s pipeline, terminal, and trucking businesses, responsible for improving safety, operating efficiency, and service quality and for developing growth projects involving liquid pipeline facilities, marine terminals, rail facilities, and truck stations. Prior to joining Genesis, Mr. Millar held numerous positions in engineering, project management, field operations, control center operations, joint ventures, and business development for Chevron Pipe Line Company, EOTT Energy, Unocal Corporation, and Enbridge Energy Partners. Mr. Millar has over 28 years of experience in nearly all aspects of the oil pipeline industry and holds BS and MS degrees in Civil Engineering from the University of California and an MBA from the University of Houston. Mr. Millar is a licensed Civil Engineer in the State of California.

William McCarthy, C.W.B.

Senior Environmental Compliance Analyst
E3 Environmental, LLC, 871 West Jefferson Avenue, St. Paul, MN 55102

M.S. Wildlife Biology, University of Minnesota – Twin Cities; and B.S. Wildlife Biology, Michigan State University. Mr. McCarthy is an environmental compliance analyst with 15 years of environmental consulting experience working with various energy assets and regulatory agencies. As a compliance analyst, he has managed the environmental requirements for facility siting, pipeline routing, federal licensing and various federal, state and local permits. Mr. McCarthy is a certified wildlife biologist, and in this role conducts and coordinates field studies, agency consultations, mitigation and avoidance plans.

Katie Schmidt, EIT

Environmental Engineer and Senior Consultant
E3 Environmental, LLC, 871 West Jefferson Avenue, St. Paul, MN 55102

B.S. Civil Engineering with an emphasis in Environmental Engineering-Iowa State University. Ms. Schmidt is a Senior Environmental Consultant with 8 years of experience working with various energy assets and regulatory agencies. As a consultant, she has managed multiple pipeline projects supporting clients through the construction permitting and siting processes, which included coordination with various federal, state and local agencies.

Chris Schmidt, GIT

Associate Consultant 3
E3 Environmental, LLC, 871 Jefferson Avenue, St. Paul, MN 55102

B.S. in Environmental Geology and Geologist-In-Training Certification for Minnesota. Mr. Schmidt has over 3 years of environmental consulting experience. Mr. Schmidt has pursued a career focused on regulatory compliance and supports energy clients by providing regulatory review and permitting services. Mr. Schmidt's experience includes work supporting pipeline systems of natural gas, natural gas liquids, and petroleum throughout multiple states.

Dan Woodward, RPA

Senior Archaeologist
E3 Environmental, LLC, 871 Jefferson Ave St Paul, MN 55102

M.A. Anthropology (archaeology focus), California State University -- Fullerton; and B.A. History, University of Florida. Mr. Woodward is a secretary of the interior qualified archaeologist with 15 years of environmental consulting experience working with various energy assets and regulatory agencies. As a senior archaeologist, he has overseen all phases of archaeological fieldwork from class I record searches and class III intensive surveys to detailed excavations and archaeological damage assessments. He has authored dozens of cultural resource technical reports fulfilling NHPA and NEPA cultural resource requirements. Mr. Woodward has also coordinated with multiple Native American groups and has met with interested Tribal representatives in the field to address project concerns. Mr. Woodward has performed historic building analysis and authored built-environment technical reports. Mr. Woodward has also assisted with extensive paleontological fieldwork including paleontological surveys, monitoring, and salvage activities.

North Dakota Public Service Commission

Application for Route Permit

**Meadowlark Midstream Company, LLC &
Epping Transmission Company, LLC**

Little Muddy Creek Pipeline & Epping Station Project

Prepared by:

E3 Environmental, L.L.C.

October 2014



E3 ENVIRONMENTAL
Enhancing Execution with Experience

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INTRODUCTION

Meadowlark Midstream Company, LLC (MMC) and Epping Transmission Company, LLC (ETC) are wholly owned subsidiaries of Summit Midstream Partners, LLC (Summit). Summit, through its subsidiaries, owns and operates crude oil and gas assets throughout North Dakota. Jointly MMC and ETC are proposing the Little Muddy Creek Pipeline and Epping Station Project (Project). The Project will include the expansion of the existing Epping Station (ES), which is currently operated by MMC, and the construction of the Little Muddy Creek Pipeline (Pipeline), which will be constructed and operated by ETC. The Pipeline would be approximately 14 miles in length and would transport crude oil from MMC's ES, located near the city of Epping in Williams County, to North Dakota Pipeline Company LLC's Little Muddy Creek Station (LMCS), which is located approximately 10 miles northwest of Epping in Williams County.

Prior to commencement of this Project, approximately 10 miles of the proposed 14-mile transmission line will be operated as a gathering pipeline. The gathering pipeline is needed to fulfill existing commitments with area producers. The gathering pipeline gathers crude oil directly from the wellhead and delivers it to the ES. This Project would involve modifications to the 10-mile gathering pipeline. Modifications would include the reversal of the direction of the flow and the connection of the gathering pipeline to the newly constructed transmission pipeline. The new transmission pipeline would be approximately 4-miles in length and would connect the modified and reversed gathering pipeline to the LMCS.

The proposed Project will also include the construction of one additional above ground tank at the existing ES to support the Pipeline. This tank will provide surge protection for, storage associated with, and general support for the proposed Pipeline. Currently there is one existing aboveground tank at the ES which is used for storage for the gathering lines.

MMC/ETC jointly submit to the North Dakota Public Service Commission (PSC) a single consolidated application for a Certificate of Corridor Compatibility and Route Permit for the Project.

The application provides the information required by:

- North Dakota Century Code, Energy Conversion and Transmission Facility Siting Act, Chapter 49-22-08; and
- North Dakota Administrative Code, Article 69-06-05, Transmission Facility Permit.

SECTION 1: DESCRIPTION

1.1 TYPE OF TRANSMISSION FACILITY

The proposed Project would result in a new crude oil transmission pipeline and expansion of the existing ES. The steel pipeline will meet U.S. Department of Transportation (DOT) regulations, specifically the design criteria outlined in 49 CFR 195.100, constructed per 49 CFR 195.200 operated and maintained per 49 CFR 195.400. Tanks constructed at the Epping Station will meet DOT regulations and will be constructed to API 650 Standards.

1.2 PURPOSE OF TRANSMISSION FACILITY

The purpose of the Project is to transport crude oil from the ES northwest to the LMCS. From the LMCS the crude will be transported through North Dakota Pipeline Company LLC's North Dakota Pipeline System for further distribution throughout the United States.

1.3 LENGTH, SIZE AND DESIGN OF PIPELINE FACILITY

1.3.1 LENGTH OF FACILITY

The proposed Project is approximately 14 miles in length.

1.3.2 PIPE SIZE

The Project pipeline specifications are detailed below:

- One 10-inch Nominal Diameter Steel Pipe
 - API 5L ERW/FBE. ARO pipe.
 - Wall Thickness of 0.365 inch.
 - Pipeline casings installed at State and US Highway crossings and Railroad crossings.

1.3.3 OPERATING PRESSURE AND THROUGHPUT

The Project has been designed with the following design parameters listed below:

- Maximum Operating Pressure: 1,480 pounds per square inch (psi).
- Normal Operating Pressure: 500 psi
- Maximum Throughput: 100,000 barrels per day (bpd)
- Normal Throughput: 50,000 bpd
- Maximum Operating Temperature: 180 degrees Fahrenheit

1.4 ABOVEGROUND FACILITIES

The proposed Project will include one (1) additional above ground tank with 55,000 barrels of storage capacity, which will bring total storage capacity at the ES to approximately 75,000 barrels. The additional storage is required to support the

transmission line. Additionally, the transmission line will include four (4) block valves, one at each the terminus and two additional mainline block valves. These aboveground appurtenances will be designed to and installed at locations that will meet DOT regulations. The valves will be actuated, fail-safe, automated and controlled by both the local actuation and by a 24-hour Control Center located in the City of The Woodlands, Texas. Please see Appendix A for engineering documents and Appendix B for the location of these facilities.

The ES storage tank specifications are detailed below:

- One 105.5-foot diameter storage tank with 55,000-barrel capacity to support the new crude oil transmission pipeline to LMCS.

The existing storage tank is, and the new storage tanks will be located within an earthen berm with adequate capacity to satisfy applicable regulations.

1.5 WIDTH OF RIGHT-OF-WAY

This pipeline will be constructed utilizing a 110-foot construction right-of-way (ROW). ETC will maintain a typical 25-foot permanent ROW along the entire length of the Project.

1.6 LOCATION

The Project will be located in Williams County, North Dakota. The Project would result in a transmission pipeline originating at the ES in Williams County, approximately 1-mile south of Epping, ND. From the ES the pipeline will extend in a northwest direction to its terminus at the existing LMCS, located approximately 10 miles northwest of Epping, ND. Please refer to the project maps provided in Appendix B.

1.7 PROJECT SCHEDULE

1.7.1 ROUTE PERMIT

MMC/ETC is seeking a Route Permit in or before January 2015.

1.7.2 CERTIFICATE OF CORRIDOR COMPATIBILITY

MMC/ETC are seeking a Certificate of Corridor Compatibility in or before January 2015.

1.7.3 CONSTRUCTION SCHEDULE

MMC/ETC has scheduled construction activities to commence as early as the first quarter of 2015. The construction activities would take approximately 4-6 months to complete. Commissioning and restoration activities will commence immediately after construction is complete.

SECTION 2: ROUTE ANALYSIS AND ENVIRONMENTAL STUDIES

2.1 PIPELINE ROUTE

MMC/ETC has conducted a thorough analysis of the proposed Corridor as reported in the Application for a Certificate of Corridor Compatibility. This analysis was a broad based study of the proposed Corridor (a 1-mile corridor centered upon a proposed route which was chosen utilizing web-based mapping tools, (*i.e.*, one-half mile on either side of the proposed route). The purpose of this analysis was to confirm that the proposed Project corridor was suitable and that it would cause minimal environmental impacts thus conforming to the PSC siting criteria.

In conjunction with these efforts, MMC/ETC studied routing alternatives and developed the proposed Project alignment (Route). MMC/ETC chose this Project alignment to meet landowner requests and to minimize impacts to environmental features. The Route meets the Project's objectives while conforming to the PSC's transmission route siting requirements. In support of MMC/ETC's route selection, the desktop studies from the Corridor were refined and augmented with field studies along the entire length of the Project by trained natural and cultural resource specialists. The environmental survey corridor was a minimum of 150-feet centered on the proposed Route and encompassed the entire footprint of the ES. Field crews performed these comprehensive natural and cultural resource surveys on April 23-25, 2014 and September 2-3. The purpose of these field studies was two-fold: (1) to definitively identify any potential resource issues (*e.g.*, wetlands, waterbodies, protected species, critical habitats or cultural resources) within the survey corridor; and (2) to provide the baseline field data necessary to prescribe alternative routing or mitigation as necessary to minimize environmental impacts. The results of these field surveys are discussed in the following sections, while the full Natural Resources Survey Report is contained in Appendix D and the Class I and Class III Cultural Resource Inventories are detailed in the Cultural Resources Report located in Appendix E.

2.2 ROUTE ALTERNATIVES

The Project will deliver an average of 50,000 bpd of crude oil from the ES to the LMCS. From the LMCS the crude would be transported through North Dakota Pipeline Company LLC's North Dakota Pipeline System for further distribution to market hubs/centers throughout the United States. MMC/ETC identified and evaluated several project alternatives; however, none of these alternatives effectively satisfied the Project objective. These alternatives included:

- No Action Alternative;
- Trucking Alternative; and
- Rail Alternative.

No Action Alternative:

This alternative would leave the region constrained by limited transport capacity for safe and reliable transmission of crude oil products to markets. Overall, regional oil and gas production would continue to be constrained by the limited volume of product that could be shipped utilizing existing infrastructure. No action could result in curtailment of crude oil production. For these reasons, MMC/ETC rejected a *No Action Alternative*.

Trucking Alternative:

This alternative was reviewed and eliminated due to the volume of crude oil to be transported. The normal daily throughput of the proposed Project would be approximately 50,000 barrels or 2,100,000 gallons of crude oil. The average load for a truck carrying crude oil is approximately 178 barrels (7,500 gallons) per truck. Thus, it will require 280 trucks per day, an average of 11.7 trucks every hour for 24 hours a day to transport the volume of product the pipeline would transport to the LMCS. This level of truck activity is not logistically feasible; it would cause an unacceptable amount of heavy vehicle traffic as well additional wear and tear on the infrastructure. Disruption in the trucking capacity due to seasonal load restrictions on roads, inclement weather or road repairs would cause a delay in delivering this valuable resource to market. This alternative is not desirable; therefore, MMC/ETC rejected a *Trucking Alternative*.

Rail Alternative:

Rail transport was also evaluated as a surface transportation alternative. However, the lack of active railroad service within reasonable proximity to the LMCS limited the viability of this alternative. Upon further analysis, this alternative was determined to be not feasible due to the associated environmental impacts, financial, logistic, and time constraints necessary to acquire land and construct the requisite rail infrastructure. This alternative is not desirable; therefore, MMC/ETC rejected a *Rail Alternative*.

2.3 ENVIRONMENTAL SURVEY

Field surveys were conducted of the survey corridor, depicted on the maps in Appendix B, on April 23-25, 2014 and ancillary natural resource and cultural resource surveys were conducted on September 2-3, 2014 to accommodate alignment adjustments that fell outside the original survey corridor.

2.3.1 NOXIOUS WEEDS

“Noxious weed” is a general term used to describe fast-spreading, non-native plant species in a given area. They have adverse ecological and economic impacts due to their ability to outcompete native plant species for habitat and resources. Field surveys identified one (1) area of Canada thistle in the survey corridor. MMC/ETC will

implement the appropriate mitigation measures in this area to avoid the spread of this noxious weed. Please see Appendix D for the complete Natural Resources Survey Report, and Section 5: Mitigative Measures in this document for the proposed mitigation procedures.

2.3.2 TREE/SAPLING/SHRUB SURVEY

During field survey, crews performed a detailed tree/shrub inventory. This inventory recorded the pre-construction status of these resources, which will form the baseline for restoration and mitigation reconciliation. Based on this effort, 9 tree rows and 11 naturally occurring wooded areas were observed within the survey corridor. In total, approximately 1,835 trees were identified within the survey corridor; 59 of these features were located within the surveyed 110-foot wide construction ROW. Please see Appendix D for the complete Natural Resources Survey Report and Section 5 for planned mitigation measures.

2.3.3 WETLAND AND WATERBODIES SURVEY

The survey corridor was inventoried for wetland and waterbody features (*i.e.*, creek, pond, streams, rivers). Field crews identified features, characterized these features as a wetland or waterbody and recorded feature boundaries relative to the proposed Route to facilitate avoidance mitigation where practicable. Appendix D contains the Natural Resources Survey Report, which outlines the results of these field efforts.

2.3.3.1 WETLAND SURVEY

Field surveys identified six (6) wetland features within the 110-foot wide construction ROW. MMC/ETC will implement appropriate mitigation at these features, which may include avoidance (*e.g.* workspace modification or horizontal directional drill) or use of construction mats and other best management practices to minimize impacts when working in or around wetlands. Please see Appendix B: Project Maps for the mapped location of each feature and Appendix D for the detailed Natural Resources Survey Report.

2.3.3.2 WATERBODIES SURVEY

No waterbodies and three (3) ephemeral drainages were identified during field surveys. See Appendix B for the mapped location of each feature, Appendix D for the detailed Natural Resources Survey Report, and Section 5: Mitigative Measures of this application for the proposed mitigation measures.

2.3.4 WILDLIFE INVENTORY

Approximately 160 wildlife species are resident or seasonal visitors to the Project Area. These include common mammals (*i.e.*, white-tailed deer, mule deer, raccoon and pronghorn antelope); various song birds (*i.e.*, western meadowlark, LeConte's sparrow, and horned lark); raptors (*i.e.*, bald eagle, golden eagle, red-tailed hawk, rough-legged hawk) and numerous other fauna. The proposed Route was inventoried for general wildlife species, state-listed plant and animal species of concern, and other significant ecological communities. No state-listed species or significant ecological communities

were observed by field biologists during field surveys. Please see Appendix D for the Natural Resources Report.

2.3.4.1 FEDERALLY PROTECTED SPECIES SURVEY

Under authority of the Endangered Species Act (ESA), the USFWS and the Fisheries Service division of the National Oceanic and Atmospheric Administration (NOAA) have identified and maintain a list of species and critical habitats that have been afforded protection under the ESA. The ESA also provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they live.

MMC/ETC commissioned field studies to confirm the presence or absence of these species and/or their critical habitats within the survey corridor. The results of this assessment are outlined below; refer to the Natural Resources Report in Appendix D, which outlines the results of these field efforts.

Whooping Crane: The Aransas-Wood Buffalo Population of Whooping Cranes engages in semi-annual migration through North Dakota. This flock breeds in the Wood Buffalo National Park in Alberta and Northwest Territories, Canada, and winters in the Aransas National Wildlife Refuge in Texas. This species has been closely studied and monitored in recent years due to its small, fragile population. North Dakota provides migratory habitat for the species, providing roosting and feeding opportunities during migration. During migration, the species is most closely associated with larger wetland complexes for roosting habitat, typically using adjacent uplands to forage.

Suitable foraging habitat (*i.e.*, cultivated cropland and wetlands) was observed within the survey corridor. Additionally, the Project is located within the migratory corridor for the whooping crane. The proposed Project may affect but is not likely to adversely affect the whooping crane. Please refer to Appendix C for related agency consultations, Appendix D for the detailed Natural Resources Report, and Section 5: Mitigative Measures in this document for proposed mitigation measures.

Interior least tern: The interior population(s) of the least tern have historically been associated with large river systems for breeding and migratory habitats. Breeding birds are known to breed in colonies, utilizing sandbar habitat common to larger rivers. Regionally the Missouri River is known to host remnant breeding populations of terns. The Project is approximately 12 miles north/northwest of the Missouri River and Lake Sakakewea. Suitable shoreline habitat for breeding and nesting terns does not occur in the survey corridor. Terns may transition through the project area during migration. The Project may, but is not likely to adversely affect the least terns. Refer to Appendix D for the detailed Natural Resources Report, and Section 5: Mitigative Measures in this document for proposed mitigation measures.

Pallid sturgeon: The pallid sturgeon preferred habitat includes the benthic environment associated with swift waters of large turbid, free-flowing rivers with braided channels, dynamic flow patterns, periodic flooding of terrestrial habitats and requiring extensive microhabitat diversity. Portions of the Missouri River are thought

to provide the required habitat for the pallid sturgeon though much of the habitat has been compromised due to channelization, installation of impoundments and altered flow regimes. If a large spill were to occur the pallid sturgeon could be impacted by from impacts to water quality. Therefore, proposed Project may affect but is not likely to adversely affect the pallid sturgeon. Please refer to Appendix D for the detailed Natural Resources Report, and Section 5: Mitigative Measures in this document for proposed mitigation measures.

Piping plover: The piping plover is associated with shorelines along small alkaline lakes, large reservoir beaches, river islands and adjacent sand pits. Breeding birds select wide beaches with highly clumped vegetation covering less than 25 percent of the area. The piping plover's current breeding range on the Northern Great Plains extends south along major prairie rivers including the Yellowstone and Missouri, and in alkali wetlands including those in northeastern Montana and North Dakota. The piping plover may occur within the project area as a migrant. Therefore, proposed Project may affect but is not likely to adversely affect the piping plover. Please refer to Appendix D for the detailed Natural Resources Report, and Section 5: Mitigative Measures in this document for proposed mitigation measures.

Bald Eagle: Field studies confirmed the absence of nesting or roosting habitat within 0.5 miles of the centerline of the survey corridor.

Golden Eagle: Field studies confirmed the absence of nesting or roosting habitat within 0.5 miles of the centerline of the survey corridor.

Migratory Bird: Field studies identified an active migratory bird nest (Horned lark) within the survey corridor during survey in April of 2014. The federally-listed candidate species and migratory bird, Sprague's pipit, was heard vocalizing near the Project however no there was no primary siting and no suitable nesting habitat for this species was observed. Project activities may occur within the February 1- July 15 breeding season. Please refer to Appendix D for the detailed Natural Resources Report, and Section 5: Mitigative Measures in this document for proposed mitigation measures.

2.3.5 NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE

The North Dakota State Historic Preservation Office (NDSHPO) is responsible for managing the historic and archaeological resources of the state; as such, the NDSHPO maintains records of all previously recorded cultural resources within the state. On April 22, 2014, SWCA conducted a Class I Cultural Resources Literature Search of records from the NDSHPO to identify previously completed cultural resource investigations and recorded cultural resources within the Corridor. Results of the investigation identified 42 previously recorded cultural sites within the Corridor.

The ensuing Class III Cultural Resource Inventory of the survey corridor was completed on April 23-25, 2014 by SWCA. During the inventory, SWCA personnel revisited one (1) previously recorded cultural resource (32WIX572), recorded one

(1) new isolated find (32WIX627) and recorded one (1) undocumented segment of the Great Northern Railroad (32WI481). Each cultural resource is detailed in Appendix E in the Cultural Resources Report.

The previously recorded isolated find is a prehistoric chipped stone (32WIX572). The newly recorded isolated find is an isolated piece of farm equipment (32WIX627) and an undocumented segment of the Great Northern Railroad (32WI481). Of these resources, 32WIX572 and 32WIX627 are recommended not eligible for the National Register of Historic Places (NRHP), and therefore no further work is necessary. Site 32WI481 has been previously determined to be eligible for NHRP, therefore this site will be avoided via horizontal directional drilling underneath the site.

The Cultural Resource Report was submitted to the NDSHPO for review and concurrence on June 4, 2014, the NDSHPO responded on June 10, 2014 concurring that the Project will have *No Significant Impacts* provided the mitigation measures outlined in the Cultural Resource Report are implemented. A record of this communication can be found in Appendix C.

On September 2-3, 2014, E3 commissioned SWCA Environmental Consultants to conduct an additional Class I and Class III Cultural Resource Inventory to accommodate Project adjustments that placed the centerline outside of the previously inventoried survey corridor. During the inventory, SWCA personnel recorded two resources; site 32WI481, which is detailed in the original Class I and Class III survey and in the paragraphs above. An isolated find (32WIX646) consisting of a Knife River Flint biface was also surveyed, it is recommended not eligible for the NRHP, and therefore no further work is necessary. The Addendum Cultural Resource Report was submitted to the NDSHPO and concurrence with the finding was received on October 10, 2014. A record of this communication can be found in Appendix C.

2.3.6 U.S. FISH AND WILDLIFE SERVICE MANAGED LANDS

On May 20, 2014, E3 requested a USFWS review of the Project, requesting information relating to the presence or absence of USFWS managed land within the survey corridor. The USFWS responded on August 11, 2014 and recommended that coordination with the Crosby Wetland Management District to confirm the presence or absence of USFWS wetland and grassland easements. MMC coordinated with the USFWS Crosby and Lostwood Wetland Management District on October 2, 2014 and on October 8, 2014 they confirmed that the pipeline does not cross any USFWS wetland easements. A record of this communication can be found in Appendix C.

SECTION 3: NEED FOR FACILITY

3.1 ANALYSIS OF NEED BASED ON PRESENT AND PROJECTED DEMAND, INCLUDING SYSTEM STUDIES

The development of hydrocarbon production in the Williston Basin has increased significantly in recent years due to advancements in deep horizontal directional drilling techniques and subsequent oil extraction in the Bakken and Three Forks shale formations. Studies conducted by the North Dakota Department of Mineral Resources and the USGS in 2010 estimated mean undiscovered volumes of 3.65 billion barrels of recoverable crude oil reserves may be available in North Dakota's deep shale formations. From March of 2007 to March of 2013, oil production in North Dakota has surged by 564 percent. In March of 2007, North Dakota produced 118,000 barrels of oil per day. That figure has increased to 783,000 barrels per day in March of 2013. In 2007, North Dakota accounted for roughly 2.5 percent of all the oil produced in the United States. In 2013, North Dakota accounted for roughly 11 percent of all the oil produced in the country.

A major constraint in transporting hydrocarbons from North Dakota to distribution centers and eventual end users in the United States is the lack of pipeline capacity. To relieve the pipeline constraints, several projects have been planned to address the growing volumes of crude oil, natural gas and natural gas liquids. However, pipeline capacity is not expected to keep pace with production, leaving incremental volumes to find alternative transportation methods, primarily rail or other surface transportation alternatives.

Construction of the proposed Project will provide firm, reliable service for 50,000 barrels of crude oil per day and provide a critical link between the ES and the LMCS. From the LMCS facilities, the crude would be transported through North Dakota Pipeline Company LLC's North Dakota Pipeline System for further distribution to market hubs/centers throughout the United States.

SECTION 4: SITING CRITERIA ANALYSIS

4.1 FACTORS TO BE CONSIDERED IN EVALUATING APPLICATIONS AND DESIGNATIONS OF SITES, CORRIDORS AND ROUTES (NDCC 49-22-09)

4.1.1 AVAILABLE RESEARCH AND INVESTIGATION RELATING TO THE EFFECTS OF THE LOCATION, CONSTRUCTION, AND OPERATION OF THE PROPOSED FACILITY ON PUBLIC HEALTH AND WELFARE, NATURAL RESOURCES AND THE ENVIRONMENT:

Route planning between the existing ES and the LMCS identified and evaluated several options for routing this Project. These studies were designed to define a preferred route that achieves project objectives, is technologically and economically feasible to construct, and minimizes impacts on landowners and the environment. The key logistical considerations were identification of existing utility corridors for collocation, and acquisition of pipeline rights-of-way (ROW) from area landowners. The majority of the proposed Project will be collocated with existing utilities or will parallel existing roadways.

Field studies were conducted to identify environmental, biological, and cultural resources along the Route; the results of this effort are discussed in Section 2 of this document, and full reports are provided in Appendices D and E. The sections below discuss possible effects on the public health and welfare.

4.1.2 THE EFFECTS OF NEW ENERGY CONVERSION AND TRANSMISSION TECHNOLOGIES AND SYSTEMS DESIGNED TO MINIMIZE ADVERSE ENVIRONMENTAL EFFECTS:

The Project does not include energy conversion or transmission technologies/systems that are specifically designed to minimize adverse environmental impacts. The Project will be constructed in compliance with environmental permits; the conditions of these permits are designed to minimize adverse environmental impacts. Refer to Section 5 of this document for a full description of the mitigation measures MMC/ETC has planned to minimize impacts resulting from the Project's location, construction and operation.

4.1.3 ADVERSE DIRECT AND INDIRECT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSED SITE OR ROUTE BE DESIGNATED:

Unavoidable adverse direct and indirect environmental effects will be temporary and shall be minimized through compliance with environmental permits. The potential impacts to resources including vegetation, wildlife, agricultural operations, transportation and noise levels associated with construction as discussed in Section 4.4. MMC/ETC will mitigate these temporary impacts to the maximum extent possible.

The Project will be constructed in compliance with environmental permits; the conditions of these permits are designed to minimize adverse environmental impacts. Refer to Section 5 for a full description of the mitigative measures planned to minimize impacts resulting from the Project's location, construction and operation.

4.1.4 ALTERNATIVES TO THE PROPOSED CORRIDOR OR ROUTE WHICH ARE DEVELOPED DURING THE HEARING PROCESS AND WHICH MINIMIZE ADVERSE EFFECTS:

MMC/ETC will fully participate in the hearing process and will address any alternatives developed during the hearing process, as applicable.

4.1.5 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF NATURAL RESOURCES SHOULD THE PROPOSED CORRIDOR AND ROUTE BE DESIGNATED:

MMC/ETC is not aware of any irreversible or irretrievable commitments of natural resources that would result from the requested approvals.

4.1.6 DIRECT AND INDIRECT ECONOMIC IMPACTS OF THE PROPOSED FACILITY:

Construction of this Project will provide firm, reliable service for 50,000 bpd of crude oil and provide a critical transportation link between the ES and the LMCS for delivery to critical United States markets.

4.1.7 EXISTING PLANS OF THE STATE, LOCAL GOVERNMENT, AND PRIVATE ENTITIES FOR OTHER DEVELOPMENTS AT OR IN THE VICINITY OF THE PROPOSED ROUTE:

MMC/ETC is not aware of any other future development plans within or in close proximity to the Project.

4.1.8 THE EFFECT OF THE PROPOSED ROUTE ON EXISTING SCENIC AREAS, HISTORIC SITES AND STRUCTURES AND PALEONTOLOGICAL OR ARCHAEOLOGICAL SITES:

MMC/ETC has commissioned Class I and Class III cultural resource surveys of the Project. MMC/ETC developed mitigation plans for registered, eligible or unevaluated sites that encroach on the proposed construction corridor. The proposed mitigation is detailed in Section 5 of this document. All related correspondence can be found in Appendix C and supporting documentation of field studies can be found in Appendix E.

Project-specific consultation with various federal, state, and local agencies did not identify any scenic areas within the Route. Refer to Appendix C for a record of these consultations.

4.1.9 THE EFFECT OF THE PROPOSED ROUTE ON AREAS WHICH ARE UNIQUE BECAUSE OF BIOLOGICAL WEALTH OR BECAUSE THEY ARE HABITATS FOR RARE AND ENDANGERED SPECIES:

The proposed Project is not anticipated to result in permanent adverse impacts to the environment. Please see Section 2: Route Analysis and Environmental Studies for a comprehensive discussion of MMC/ETC'S efforts to identify sensitive environmental resources along the proposed Route and Section 5 for a comprehensive discussion of proposed mitigation. MMC/ETC has worked with agencies to develop a route that avoids or minimizes environmental impacts. Provided the mitigation plans are fully implemented and environmental permit conditions are faithfully executed, the Project will not result in any impact to listed or sensitive species or their habitats. Please see Appendix C for complete federal and state agency consultations. Detailed survey results can be found in Appendix D.

4.1.10 PROBLEMS RAISED BY FEDERAL AGENCIES, OTHER STATE AGENCIES AND LOCAL ENTITIES:

MMC/ETC consulted with several federal and state agencies to identify possible environmental resources within the Corridor and any related agency concerns. Resource issues raised by agencies included:

- USFWS: Additional coordination is recommended to confirm that the Project avoids USFWS wetland and grassland easements. The USFWS also recommend that if the project area has potential Sprague's pipit habitat that impacts should be minimized and documented. USFWS also indicated that the project area has potentially suitable roosting and feeding habitat for the Whooping crane and that proper steps should be taken to prevent impacts.
- ND Department of Trust Lands: Gravel deposits are located along pipeline corridor. If deposits are crossed MMC/ETC will need to test for gravel depth and pay royalties for lost gravel.
- NDGFD: The Department's primary concern is with the disturbance to native prairie and wooded draws associated with construction of the pipeline and associated access roads. Avoidance of these areas is recommended, if avoidance cannot be achieved areas should be reclaimed to pre-project conditions.

MMC/ETC incorporated this feedback into the Route selection process, and as appropriate, into field survey protocols. If field studies confirmed the presence of these items, MMC/ETC refined the proposed alignment or developed mitigation strategies to avoid or minimize direct impacts. Further discussion on agency consultations and concerns can be found in the Certificate of Corridor Compatibility application and discussions of avoidance and mitigation measures are found in Section 5 of this document. Please see Appendix C for complete federal and state agency consultations. Detailed survey results can be found in Appendix D and E.

4.2 EXCLUSION AREAS (NAC 69-06-08-02.1)

Exclusion areas are geographical areas that must be excluded in the consideration of a route for a transmission facility. The following table and text identify and discuss exclusion areas identified along the proposed Route.

Exclusion Area	Crossed by Proposed Route
Federal	
National Parks or Memorial Parks	No
Historic Sites or Landmarks	No
Natural Landmarks or Monuments	No
Wilderness Areas	No
State	
Historic Sites, Monuments, or Historical Markers;	No
Archaeological Sites	Yes
Parks	No
Nature Preserves	No
County	
Parks	No
Recreation Areas	No
Municipal Parks	No
Other	
Areas Critical to the Life Stages of Threatened or Endangered Animal or Plant Species	No
Areas where Animal or Plant Species that are Unique or Rare to this State would be Irreversibly Damaged	No
Areas within 1,200 feet of a geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility.	No
Areas within 30 feet on either side of a direct line between (ICBM) launch or launch control facilities to avoid microwave interference.	No

4.2.1 FEDERAL RESOURCE REVIEW

MMC/ETC has initiated consultations with various federal agencies and has conducted a comprehensive review of published information. MMC/ETC has concluded no national parks, memorial parks, landmarks, natural landmarks, monuments, or wilderness areas will be affected by the Project.

4.2.2 STATE RESOURCE REVIEW

MMC/ETC has confirmed, through a combination of agency consultations, review of publicly available information and field studies, no state parks, historic sites,

monuments, historical markers, or nature preserves are crossed by the proposed Route. Please refer to Section 2 of this document for a comprehensive discussion of MMC/ETC's consultations and Appendix C for copies of the correspondence.

MMC/ETC commissioned a Class I Cultural Resource Inventory of the proposed Corridor and augmented the effort with a Class III Cultural Resource Inventory of the Route. The results of the Class III effort are summarized in Section 2.3.5. Please see Appendix C for copies of agency consultations and Appendix E for the Cultural Resources Survey Report.

4.2.3 COUNTY RESOURCE REVIEW

MMC/ETC has confirmed through a combination of agency consultations, review of publicly available information and field studies the absence of county parks, county recreation areas, municipal parks, or parks owned by other subdivisions of government bodies within the proposed Route. Please refer to Section 2 of this document for a comprehensive discussion of MMC/ETC's consultations and Appendix C for copies of the correspondence.

4.2.4 AREAS CRITICAL TO THE LIFE STAGES OF THREATENED AND ENDANGERED ANIMAL OR PLANT SPECIES

MMC/ETC commissioned natural resource surveys of the proposed Route. The scope of the surveys included documentation of the presence or absence of federally listed and state listed species of concern or evidence of suitable habitats for these species. Emphasis was placed on those species identified through project consultations for the Corridor analysis that agencies indicated had the potential to occur within the Corridor and therefore, the Route. The results of these field efforts are detailed in Section 2.3 and planned mitigative measures are discussed in Section 5 of this document. Appendix D contains the complete Natural Resources Survey Report.

4.2.5 AREAS WHERE ANIMAL OR PLANT SPECIES THAT ARE UNIQUE OR RARE TO THIS STATE WOULD BE IRREVERSIBLY DAMAGED

Based upon agency consultations and subsequent field surveys, the proposed Project would not result in irreversible impacts that are detrimental to sensitive plant and animal species or their habitats. The implementation of the proposed mitigation plans and full compliance with environmental permits will fully mitigate the potential for irreversible damage.

4.2.6 AREAS WITHIN 1,200 FEET OF THE GEOGRAPHIC CENTER OF AN ICBM LAUNCH OR LAUNCH CONTROL FACILITY

MMC/ETC conducted a review of publicly available information and concluded there are no ICBM launch or launch control facilities within 1,200 feet of the Route.

4.2.7 AREAS WITHIN 30 FEET ON EITHER SIDE OF A DIRECT LINE BETWEEN ICBM LAUNCH OR LAUNCH CONTROL FACILITIES TO AVOID MICROWAVE INTERFERENCE

MMC/ETC conducted a review of publicly available information and concluded there are no ICBM launch or launch control facilities within 30-feet of the Route.

4.3 AVOIDANCE AREAS (NAC 69-06-08-02.2)

Avoidance areas are geographical areas that shall not be considered in the routing of a transmission facility unless, under the circumstances, it is shown there is no reasonable alternative. The following table and text identify and discuss avoidance areas crossed by the proposed Route.

Avoidance Area	Crossed by Proposed Route
Federal	
Historic Districts	No
Wildlife Areas	No
Wild, Scenic or Recreational Rivers	No
Wildlife Refuges	No
Grasslands	No
State	
Wild, Scenic or Recreational Rivers	No
Game Refuges or Game Management Areas	No
Forests or Forest Management Lands	No
Grasslands	No
Other	
Historic Resources not meeting Exclusion Areas criteria	Yes
Areas of Known Geologic Instability	No
Areas within 500-Feet of a Residence, School, or Place of Business	Yes
Reservoirs and Municipal Water Supplies	No
Water Sources for Organized Rural Water Districts	No
Irrigated Land (not applicable to underground facilities)	N/A
Areas of Recreational Significance which are not designated as Exclusion Areas	No

4.3.1 FEDERAL RESOURCE REVIEW

MMC/ETC conducted a comprehensive review of publicly available information and field studies of the survey corridor. This review indicated the absence of designated or

registered historic districts, refuges, grasslands, and wild, scenic or recreational rivers in the survey corridor.

4.3.2 STATE RESOURCE REVIEW

MMC/ETC conducted a review of publicly available resources and concluded no designated or registered state wild, scenic or recreational rivers, game refuges, game management areas, management areas, forests, forest management lands, or grasslands are crossed by the survey corridor.

4.3.3 HISTORICAL RESOURCES NOT MEETING EXCLUSION AREA CRITERIA

MMC/ETC conducted a review of publicly available resources along with field surveys and concluded there is one historical resource within the survey corridor that did not meet the exclusion area criteria. Refer to Section 5 of this document for additional mitigative measures, Appendix C for agency consultations and Appendix E for the complete Cultural Resources Report.

4.3.4 AREAS OF KNOWN GEOLOGIC INSTABILITY

There are no known areas of geological instability within the survey corridor. North Dakota has not experienced an earthquake of sufficient magnitude to damage welded steel piping or structural steel in recorded history. Sink holes are known to occur in North Dakota but are more closely related to mining activities and no evidence of mining or sink holes was identified. Finally, the potential for landslides was evaluated; earth movement of this nature is closely associated with areas of great topographic relief, high gradient slopes, recent deposits that have yet to reach a stable angle of repose, or where underground water movement may create a slurry of rock and mud resulting in a subsidence. No locations along the Route that can be characterized as unstable or prone to landslides.

4.3.5 AREAS WITHIN 500-FEET OF A RESIDENCE, SCHOOL OR PLACE OF BUSINESS

MMC/ETC utilized aerial photography to identify structures located within 500 feet of the proposed pipeline alignment. There appears to be one (1) residence located within 500 feet of the Project. MMC/ETC has obtained a landowner waiver from hits landowner; it is located in Appendix G.

4.3.6 RESERVOIRS AND MUNICIPAL WATER SUPPLIES

MMC/ETC has confirmed the Route does not contain reservoirs or municipal source water protection areas for community water supply sources. While a number of wells were identified adjacent to the Route, these wells are used for either local domestic, stock, or irrigation purposes and none were located directly within the Route. The maps in Appendix B depict the location of these resources.

4.3.7 WATER SOURCES FOR ORGANIZED RURAL WATER DISTRICTS

MMC/ETC has confirmed the Route does not contain known water sources within the proposed Route. While a number of wells were identified adjacent to the Route, these wells are used for either local domestic, stock, or irrigation purposes and none were

located directly within or near the construction ROW. The maps in Appendix B depict the location of these resources.

4.3.8 IRRIGATED LAND

This criterion does not apply to underground transmission facilities and as such, it is not applicable to this Project.

4.3.9 AREAS OF RECREATIONAL SIGNIFICANCE WHICH ARE NOT DESIGNATED AS EXCLUSION AREAS

MMC/ETC has confirmed the Route does not traverse areas of recreational significance.

4.4 SELECTION CRITERIA (NAC 69-06-08-02.3)

The selection criteria require assessment of the environmental impacts and alterations to land use that may result from the siting of the proposed Project. Through this process, MMC/ETC proposes that it has successfully avoided or minimized these effects to the maximum extent practicable.

4.4.1 AGRICULTURAL IMPACTS

Agricultural Production: The Pipeline will temporarily affect approximately 186 acres of private land in North Dakota. The majority of the land crossed can be characterized as either agricultural or natural vegetative cover. Once the construction is complete, the land will be restored to its pre-construction contours and land use. MMC/ETC will provide settlements to landowners for crop loss resulting from Pipeline construction. The expansion at the ES will not have a significant effect on agricultural production, as it is located in an area previously developed for oil production.

Family Farms and Ranches: The Project will have no appreciable impact to lifestyle or farm/ranch operations, as no construction activities will be taking place in proximity to these areas. Ground-disturbing activities will take place only within the confines of the proposed construction right-of-way.

The location of pipeline markers is defined under 49 CFR 195 for pipelines. MMC/ETC works with local landowners and county officials to ensure that pipeline markers are located where required but also in an acceptable location for these parties. These markers are to be placed in full view so that they are not accidentally damaged by nor cause damage to landowner or county equipment.

Lands Suitable for Irrigation: This section is not applicable to buried pipelines (69-06-08-02.2h). The expansion at the ES will not affect lands suitable for irrigation as all ground disturbing/construction activities will occur within the boundaries of the existing MMC facility.

Surface Drainage: Standard pipeline construction techniques to be employed will not modify existing surface drainage patterns. Care will be taken throughout the construction process to minimize environmental impacts, including modification of

drainage patterns. During restoration, those areas that were disturbed during construction shall be restored, the local topography shall be restored to its original contours, vegetation shall be re-established and impacts shall be minimal and temporary. Best management practices will be implemented in accordance with the project-specific Storm water Pollution Prevention Plan (SWPPP), which will comply with the NDDoH Construction Storm Water General Permit requirements. The grading for the ES will occur to allow for the siting and construction of the storage tank. Permanent impacts to surface drainage will be minimized to the maximum extent possible. ES site drainage will be designed in a manner in which impacts to adjacent properties are not altered from pre-construction conditions.

Ground Water: Well data has been recorded by the State Water Commission for the Project area. Well data indicates that groundwater is located between 50-90 feet below the surface. The required tie-in excavations for the proposed Project are not anticipated to reach these depths as such no impact to ground water is anticipated.

4.4.2 THE IMPACTS UPON OTHER RESOURCES

Noise-Sensitive Land Uses: The Project is located in a rural setting, effectively isolating it from the majority of sensitive receptors. Construction of the proposed Project would affect the local noise environment. The ambient sound level of a region is defined by the total noise generated within the specific environment and is usually comprised of sounds emanating from natural and artificial sources. Construction could cause temporary increases in the ambient sound environment in the areas immediately surrounding active construction. Once constructed and in-service, normal pipeline operations are not audible. The ES is located in a rural setting, effectively isolating it from the majority of sensitive receptors. Once in operation noise from the ES should not exceed 20% of the ambient noise level.

The construction of the proposed Project would be conducted during typical working hours and is expected to cause temporary increases in ambient sound within and adjacent to the Project area. The use of heavy equipment or trucks would be the primary noise source during construction and excavation. The level of impact would vary by equipment type, duration of construction activity, and the distance between the noise source and the receptor.

Visual Effect on Adjacent Areas: The proposed Project will include the installation of a block valve at each terminus of the pipeline and two additional mainline block valves. These block valves are small aboveground features which will be installed within the footprint of each the facility. The visible piping and equipment are finished and maintained with a white painted surface.

One additional aboveground storage tank, associated secondary containment, and facility fencing will be constructed at the existing ES. Other oil development is occurring in proximity to the ES, and as such, visual impacts associated with the addition of one tank is minimal in this landscape.

No other permanent aboveground features are to be installed as a part of the Project.

Extractive and Storage Resources: One additional aboveground storage tank, associated secondary containment, and facility fencing will be constructed at the existing ES. Other oil development is occurring in proximity to the ES, and as such, visual impacts associated with the addition of one tank is minimal in this landscape.

Wetlands, Woodlands, and Wooded Areas: A comprehensive desktop review of published data, including aerial photography and NWI data, was conducted to assess the presence or absence of wetlands, woodlands, and wooded areas. The review of the proposed Corridor confirmed the presence of these resources. MMC/ETC commissioned field surveys to further identify and record the locations of these resources along the proposed Route. The results of these field studies will be used to implement construction measures to avoid or minimize impacts to wetlands, woodlands and wooded areas. The proposed mitigation is detailed in Section 5 of this document and detailed survey results can be found in Appendix D.

Radio and Television Reception, and other Communication or Electronic Control Facilities: MMC/ETC does not anticipate that the Project will affect radio, television, or other electronic control facilities.

Human Health and Safety: MMC/ETC's corporate Health and Safety policy meets or exceeds federal and state laws, rules and regulations, and is enforced equally with respect to both MMC/ETC and contractor employees. The implementation of this policy promotes a safe and healthy workplace during construction and operation of all MMC/ETC's assets.

The design of the Project has incorporated the use of block valves at regular intervals. The purpose of the block valve is to segment the system and allow for the isolation of select portions of the system to facilitate maintenance in a safe and controlled manner. Additionally, in the event of an abnormal operating condition, block valves can be closed as necessary to prevent an uncontrolled release of crude oil. Finally, the operation of the pipeline will be monitored in accordance with DOT regulations.

MMC has developed an Emergency Response Plan for the Epping Station storage facility and will train all employees on that plan and provide a copy of the plan to first responders. MMC prides itself on its safe work practices and considers health and safety to be among its core values

Animal Health and Safety: The wildlife currently inhabiting the Route are common and are generally mobile. The local wildlife inhabitants will not be displaced by the Project with no measurable impact to the viability of these populations. No species of special concern are anticipated to experience direct impacts due to construction or operation of the Project.

Plant Life: The Project will not result in the loss of agricultural or pastureland. No species of special concern will be impacted by the Project. Reclamation will be completed utilizing native seed mixes where appropriate.

4.5 POLICY CRITERIA (NAC 69-06-08-02.4)

4.5.1 POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

MMC/ETC will comply with requirements contained in the Corridor Compatibility Certificate and Route Permit. MMC/ETC will conduct its activities with the objectives of providing a healthful and safe workplace for its employees, and preventing accidents and environmental incidents. All persons and firms providing service to MMC/ETC are required to conduct their work in compliance with environmental conditions, permit authorizations, and applicable regulations, and will be held accountable for their actions in that regard. MMC/ETC is committed to conducting its business in compliance with all applicable environmental laws and regulations. These laws, regulations and standards are designed to safeguard the environment, human health, wildlife and natural resources.

4.5.2 LOCATION AND DESIGN

This Project will connect two facilities, the ES to tie-in to the LMCS. From this location, the crude would be transported through North Dakota Pipeline Company LLC's North Dakota Pipeline System to Clearbrook, MN for further distribution to market hubs/centers throughout the United States. Refer to Appendix B for Project location maps.

The proposed pipeline will be constructed of steel and will be a nominal 10-inch diameter pipe. The pipe installed will have a nominal wall thickness of 0.365 inches denoted as API Code 5L specification ERW/FBE ARO pipe. The maximum operating pressure (MOP) of the pipeline will be 1,480 psi.

The proposed pipeline will meet US Department of Transportation regulations, specifically the design criteria outlined in 49 CFR 195.100, constructed per 49 CFR 195.200 operated and maintained per 49 CFR 195.400.

The new storage tank will be located at the existing ES, approximately 1-mile south of Epping, ND. The new storage tank and associated containment structures will meet DOT regulations and be constructed to meet API 650 Standards.

4.5.3 TRAINING AND UTILIZATION OF AVAILABLE LABOR IN THIS STATE FOR THE GENERAL AND SPECIALIZED SKILLS REQUIRED

Pipeline construction is a specialized construction market and the labor force needed to build the Project will be primarily comprised of a workforce with these niche construction skills. The primary contractor will be a local contractor, supplying specialized skilled labor. MMC/ETC will draw upon the local labor force to supply general laborers. The workforce is anticipated to reach a peak of approximately 100 personnel.

4.5.4 ECONOMIES OF CONSTRUCTION AND OPERATION

The Project represents a total investment of approximately \$18 million to be spent in Williams County, North Dakota for the construction of the pipeline and station expansion. Once in-service, the continued costs of maintenance and operation of the proposed pipeline are expected to be minimal.

4.5.5 USE OF CITIZEN COORDINATING COMMITTEES

Through its corporate presence in the region (local office in Stanley), MMC/ETC has established and maintains a good relationship with the local community officials and the local population. These relationships provide multiple grass roots communication channels to inform local residents regarding the developments associated with the Project.

4.5.6 COMMITMENT OF A PORTION OF THE TRANSMITTED PRODUCT FOR USE IN THIS STATE

The proposed Project will interconnect with existing facilities. The products currently handled, transferred, and shipped at these facilities are currently delivered to markets located in and out of the state.

4.5.7 LABOR RELATIONS

MMC/ETC maintains positive labor relations with its staff and contract work force and does not anticipate encountering any adverse labor relations on this Project. The labor market in the region is generally supportive of the oil and gas industry.

4.5.8 THE COORDINATION OF FACILITIES

MMC own and operate the existing ES and will be responsible for its expansion; ETC will construct and own the Pipeline. The project will connect with the North Dakota Pipeline Company LLC's existing pipeline. MMC/ETC expect coordination with this entity to be seamless as the Project is of benefit to both parties.

4.5.9 MONITORING OF IMPACTS

MMC/ETC has operated pipeline gathering and associated facilities in the area since February of 2013. Through these operations has established and maintained positive landowner and community relationships throughout the region. MMC/ETC's operations reflect its commitment to corporate citizenship standards founded on integrity. MMC/ETC will monitor landowner concerns, if any, through its Land Department and will respond to all reasonable concerns. Similarly, MMC/ETC will monitor community concerns and will respond to all reasonable concerns brought to its attention by local community leaders. MMC/ETC is currently in the process of selecting a primary contractor for the construction of the Project, and will coordinate with this contractor with respect to the oversight responsibilities for construction activities. Environmental responsibilities shall be coordinated in the same manner.

4.5.10 UTILIZATION OF EXISTING AND PROPOSED ROW AND CORRIDORS

MMC/ETC chose the preferred Project alignment in an effort to maximize the use of existing utility corridors. Much of the proposed Project is adjacent to existing roadways or will share a corridor with another pipeline.

4.5.11 OTHER EXISTING OR PROPOSED TRANSMISSION FACILITIES

Appendix F contains MMC/ETC's 10-Year Plan.

SECTION 5: MITIGATIVE MEASURES

5.1 LOCATION

The location of the proposed route is a function of location of the ES, the LMCS and suitable routing. MMC/ETC commissioned field surveys of the proposed Route to facilitate treatment of specific agency concerns expressed during consultations; inventory the resources throughout the survey corridor, define the location and boundaries of resources that intersect the proposed alignment; identify potential impacts to natural resources; and identify avoidance or other mitigation opportunities to further minimize the impacts of the Project.

Trees and shrubs: MMC/ETC shall comply with the Commission's tree and shrub mitigation specifications. Field surveys included a pre-construction tree and shrub inventory. The clearing or removal of trees or shrubs will be done selectively, in a manner that minimizes the disturbance to woody vegetation and in compliance with the Commission's specifications. The replacement of trees and shrubs will be based upon actual impacts due to construction, shall meet the 2:1 ratio specified, and shall be fully documented.

Wetlands and Waterbodies: MMC/ETC will minimize impacts to wetland and waterbodies by minimizing workspace through these features and by utilizing low-impact crossing methods such as horizontal directional drilling where appropriate. Furthermore MMC/ETC would conduct all regulated crossings in compliance with the U.S. Army Corps of Engineers Nationwide Permit #12. Features will be returned to their pre-construction condition and contours.

Migratory Bird Treaty Act: The commonly observed timeframe for migration of protected species in North Dakota is February 1st to July 15th. Construction activities for the proposed Project are planned to begin in the first quarter of 2015. Based on the Project's schedule, construction activities may occur during the recognized migration/breeding season. MMC/ETC will develop and implement a mitigation plan which may include conducting survey for nesting birds prior to the commencement of ground disturbing activities and implementing avoidance and monitoring measures of any active nests.

Interior least tern: The interior population(s) of the least tern have historically been associated with large river systems for breeding and migratory habitats. Breeding birds are known to breed in colonies, utilizing sandbar habitat common to larger rivers. The interior least tern may occur within the Project area as a migrant. MMC/ETC will suspend heavy equipment operations when Interior least terns are found within 0.5 mile (line of sight) of the construction corridor. Suspended activities would resume in the absence of the Interior least tern(s).

Pallid sturgeon: The pallid sturgeon preferred habitat includes the benthic environment associated with swift waters of large turbid, free-flowing rivers with braided channels, dynamic flow patterns, periodic flooding of terrestrial habitats and

requiring extensive microhabitat diversity. Portions of the Missouri River are thought to provide the required habitat for the pallid sturgeon though much of the habitat has been compromised due to channelization, installation of impoundments and altered flow regimes. MMC/ETC maintains spill and emergency response plans which meet the requirement of federal agencies. The implementation of these plans in the event of a spill or release will mitigate the potential for such a release to impact water quality of the river infrastructure associated with Lake Sakakawea, which is located over 21.75 river miles from the Project.

Whooping crane: The Whooping crane is federally listed as an endangered species. It is present in North Dakota on a semi-annual basis during the spring and fall migration between breeding grounds in Wood Buffalo National Park in Alberta and Northwest Territories, Canada, winter grounds in the Aransas National Wildlife Refuge in the Gulf of Mexico. Whooping cranes may utilize a variety of habitats across a vast landscape during migration. Field surveys identified potential migratory foraging and roosting habitat in the survey corridor.

Scientists assume that the changing length of daylight coupled with seasonal weather patterns trigger the annual fall migration event. In North Dakota, the cranes will typically pass through the state during the fall migration occurring late August through mid-October with peak migration typically occurring in September. The spring migration typically occurs from late-March to mid-April. Construction activities for the proposed Project are scheduled to begin in the first quarter of 2015, which should largely mitigate impacts to this species. Additionally, to mitigate any adverse effects on migratory cranes, MMC/ETC will suspend heavy equipment operations when whooping crane(s) are found within 1 mile of the construction corridor. Suspended activities would resume in the absence of whooping cranes. Please see Appendix C for MMC/ETC's project notification to the USFWS.

Piping plover: The piping plover is associated with shorelines along small alkaline lakes, large reservoir beaches, river islands and adjacent sand pits. Breeding birds select wide beaches with highly clumped vegetation covering less than 25 percent of the area. The piping plover's current breeding range on the Northern Great Plains extends south along major prairie rivers including the Yellowstone and Missouri, and in alkali wetlands including those in northeastern Montana and North Dakota. The Piping plover may occur within the project area as a migrant. MMC/ETC will suspend heavy equipment operations when Interior least terns are found within 0.5 mile (line of sight) of the construction corridor. Suspended activities would resume in the absence of the Interior least tern(s).

Bald and Golden Eagle: Field surveys conducted in April and September of 2014 confirmed the absence of nests or nesting activities where habitat was suitable along the route.

To mitigate potential adverse effects on nesting and breeding eagles, the USFWS generally recommends maintaining a nest buffer of at least 0.5 miles for any eagles

nesting in the area. MMC/ETC will work with the USFWS as necessary if an eagle nest is identified within 0.5 miles of the proposed pipeline route.

Cultural Resources: On June 10th, 2014 and October 10, 2014 the NDSHPO provided concurrence of *No Significant Sites Affected* for the Project provided the mitigation measures outlined below are implemented.

32WIX572: This is a previously recorded isolated find located within the survey area. 32WIX572 is a prehistoric chipped stone consisting of a single Knife River Flint utilizing flake. Attempts were made to relocate this isolated find, however the resource was not found during field efforts. By definition, isolated finds are considered to lack the historic integrity to be determined eligible for nomination to the NRHP. Therefore, no further work is recommended or mitigation required for this resource.

32WIX627: This is a newly recorded isolated find located within the survey area. 32WIX627 consists of the remains of a Deering harvester with DEERING CHICAGO USA on the harvester. This harvester most likely dates back the early 20th century, potentially before the merger of McCormick-Deering. By definition, isolated finds are considered to lack the historic integrity to be determined eligible for nomination to the NRHP. Therefore, no further work is recommended or mitigation required for this resource.

32WI481: This is a previously recorded site within the survey area. 32WI481 is a segment of the Great Northern Railroad that is now owned and operated by Burlington Northern Santa Fe (BNSF). Segments of 32WI481 were recorded in 2001, 2008, 2010, 2011, 2012 and 2013. In 2001, these sites were recommended eligible for listing on the NRHP under Criterion A. Therefore, it is recommended that the site continue to be considered eligible for listing under Criterion A. In order to avoid this site MMC will horizontal directional drill beneath the site.

32WIX646: This is a prehistoric isolated find located within a harvested wheat field in the Missouri Coteau region surrounded by a low, rolling plain. The isolated find consists of an early stage Knife River Flint biface. Heavy patination and cortex were observed. Flakes had only been removed along the edge of the tool; none extended into the middle. No evidence of use-wear or retouching was observed on the biface. By definition, isolated finds are considered to lack the historic integrity to be determined eligible for nomination to the NRHP. Therefore, no further work is recommended or mitigation required for this resource.

5.2 CONSTRUCTION

The proposed construction of the pipeline will be conducted in an orderly sequence designed to complete the project in the minimum amount of time required to safely prepare the site, install the pipeline and restore the areas disturbed by construction.

Construction is estimated to require approximately 4-6 months to complete. Construction techniques will be employed that minimize the area of ground disturbance, off site deposition of sediments and long-term impacts to agricultural

productivity. Construction activities shall conform to all applicable permit stipulations; these requirements are mandated by the agency and implemented by the Project sponsor for minimizing impacts to the environment.

Restoration will immediately follow pipeline construction. Final grading will restore the original contours of the land. Disturbed areas will be prepared for re-seeding and restoration will be coordinated to meet landowner specifications.

No ground-disturbing activities will take place outside of the confines of the existing ES for the planned expansion. Construction of the ES will be done in accordance with all applicable local, state and federal regulations.

5.3 OPERATION

Once put into service, the proposed Project will operate continuously, delivering crude oil from the ES to the LMCS. Normal pipeline operations are imperceptible to the public, as they are silent, buried and therefore not visible, and require only minimal aboveground activity. Standard operating procedures will conform to applicable DOT requirements, which include regular pipeline monitoring and periodic inspection. Additionally, routine maintenance of the right-of-way will likely be required on a regular basis to remain in compliance.

The ES will also operate continuously providing storage and supplying the Pipeline with oil for transport. Station operations will include pumping and allocation of the oil throughout the Project

SECTION 6: DESCRIPTION OF RIGHT-OF-WAY PREPARATION, CONSTRUCTION AND RECLAMATION PROCEDURES

6.1 PIPELINE CONSTRUCTION

Construction will be an assembly-line process and will include the following general tasks: surveying and staking, clearing and grading, trenching, pipe stringing, pipe bending, welding, coating, hydrostatic testing, lowering in, tie-ins, backfilling, rough grading, and final restoration (*e.g.*, topsoil replacement, final grading, seeding and mulching, where required). The pipeline may be placed into service before final restoration has been completed in all areas.

At any location in the Project Area, construction activities will require approximately 4-6 months to complete from start to finish, except when weather-related delays affect the schedule. However, construction activity at any location is not continual but occurs in distinct phases with several days or weeks between each phase. For example, clearing and grading may require 10 hours to progress for one mile along the pipeline right-of-way, but trenching may not follow in that area for several weeks. During the interim, activity in the area may be completely lacking or limited to occasional vehicular or pedestrian traffic.

Surveying and Staking: Prior to construction activities, ETC will stake the centerline and establish the boundaries of the approved work areas (*e.g.*, the construction right-of-way boundaries and temporary extra workspace areas), and flag the location of approved access roads and foreign utility lines. Wetland boundaries and other environmentally sensitive areas will also be marked or fenced for protection at this time.

Clearing and Grading: Prior to clearing, landowner fences will be braced and cut, and temporary gates and fences will be installed to control livestock where necessary. A clearing crew will clear the work area of vegetation and obstacles that may be encountered (*e.g.*, remaining trees, stumps, logs, brush, and rocks) in the work area.

The right-of-way will be graded, where necessary, to provide a reasonably level work surface and to segregate topsoil. Topsoil will be carefully removed and stored along the edge(s) of the right-of-way in a manner that allows for a haul road and trench line. The topsoil depth in the area is variable, but generally, the topsoil is between 2-9 inches deep with the deepest topsoil in valleys and the thinnest topsoil on the hillsides and hilltops. The topsoil depth and the layer removed will be determined in the field; upon completion of pipeline construction, the trench will be backfilled and topsoil will be returned to the upper soil horizon. All disturbed areas shall be graded to restore the original contours.

Where steep slopes or side slopes are encountered, the construction contractor may grade the slope to reduce the grade, or in areas of side slopes, two-tone the area to create level working surface. At these locations, excess spoil will be pushed to the side of the construction right-of-way, distributed over the working area and travel lane, or

stored in alternative temporary work space (ATWS.) This material will be returned to the original location and preconstruction contours reestablished during restoration.

Concurrent with grading, erosion and sediment control devices will be installed as required by state storm water permit conditions. Water bodies may be bored using horizontal directional drilling (HDD) methods to place pipe under the water body without disturbing the water body. The pipeline will be placed such that adequate cover from the bottom of the water body is in place. This is individual to the water body but is to be no closer than 5 feet to the bottom of the water body. Construction mats will also be installed across saturated wetlands to prevent rutting as equipment travels the right-of-way. Erosion and sediment control devices, which may include silt fences, straw wattles, straw bales and road access pads, will be installed where necessary to prevent soil and sediment from leaving the construction work area.

Following installation of the pipe and backfilling of subsoil in the trench, the right-of-way will be returned to the original grade and the topsoil will be redistributed over the work area.

Trenching: The trench will be excavated by using backhoes to a depth that provides sufficient cover over the pipeline after backfilling. The bottom width of the trench will be sufficient to accommodate the 10-inch-diameter pipeline. Typically, the trench will be excavated to a depth of about five feet deep to allow for a minimum of four feet of cover after construction. In cultivated areas, the depth of cover will be sufficient to be safely below the maximum tillage depth. Additional cover requirements may be applicable at public road crossings.

Trench spoil will be stored adjacent to but will not be mixed with topsoil on the non-working side of the right-of-way. In some cases, however, where sufficient space is lacking on the non-working side, trench spoil may be side cast on the travel lane and spread over the working side of the right-of-way.

Pipe Stringing, Bending, and Welding: Sections of externally coated pipe up to 60 feet long (*e.g.*, joints) will be transported over public roads to the right-of-way by truck and placed or “strung” along the right-of-way parallel to the trench in a continuous line. After the pipe sections are strung along the trench and before they are welded together, individual sections of the pipe may be bent, where necessary, so that the finished pipeline sections conform to the natural contours of the land. Typically, a track-mounted, hydraulic pipe-bending machine will be used. Where multiple or complex bends greater than what can be properly bent in the field are required, a factory made “fitting” will be used.

After the pipe sections are bent, the joints will be welded together into sections and placed on temporary supports. Welding will comply with requirements listed in Title 49 CFR Part 195 and API Standard 1104 *Welding of Pipelines and Related Facilities*. Each weld will be tested by using radiographic non-destructive examination to ensure that no defective welds are present and that ETC engineering standards are met. Welds that do not meet standards and specifications will be removed and/or repaired.

A third-party contractor certified in non-destructive inspection will be used and inspections will be performed as outlined in Title 49 CFR Part 195. After the welds are approved, a protective epoxy coating will be applied to the welded joints. The pipeline will subsequently be electronically and visually inspected for defects in the epoxy coating. Damage to or defects in the coating will be repaired prior to lowering-in the pipeline. Cathodic protection systems will also be directly bonded to the pipe at this time.

Lowering-in and Backfilling: The trench will be inspected for the presence of rocks and other debris that could damage the pipe or protective coating. If rocks or other obstructions are observed, these will be removed or the pipeline trench bottom will be padded with subsoil or sand prior to the pipeline lowered into the trench.

If the trench bottom is obscured by water, the trench will be dewatered. Where dewatering is required, ETC will pump water from the trench into well-vegetated upland areas or into sediment filtration/energy dissipation devices.

In areas of steep slopes, breakers consisting of sand bags or foam will be installed to prevent 'piping' from occurring along the pipe in the trench after the area is backfilled.

The trench will be backfilled using the native material removed and compacted; however, the trench may be slightly crowned to accommodate settling.

Hydrostatic Testing: ETC will hydrostatically test the pipeline. Hydrostatic testing shall conform to DOT standards and shall establish the maximum operating pressure (MOP) for the pipeline when it is operational. Testing involves installation of test headers that control the pressure applied. The test headers are later removed upon the completion of a successful pressure test. The test procedures are a function of pressure and time, once the desired test pressure has been achieved, the test section must hold the pressure for an 8-hour period, without a significant change in pressure. Once testing is completed, the test water is evacuated; the line is dried, and prepared for commissioning. ETC will either procure discharge permit(s) from the NDDoH and the ensuing discharge will conform to the conditions stipulated in the permit, or capture the water and transport the water offsite for disposal.

Final Tie-in and Commissioning: Following successful pressure testing, test manifolds will be removed and the final pipeline tie-ins will be made. After final tie-ins are complete, the tie-in welds have been inspected and the line is sufficiently dried, the pipeline will be commissioned. Commissioning involves activities to verify that equipment is properly installed and working, the controls and communications systems are functional, and that the pipeline is ready for service. The pipeline will be cleaned and dried using mechanical devices; the line will be purged of air and then loaded with product.

Cleanup and Restoration: Final cleanup will begin after backfilling as soon as weather and site conditions permit. During cleanup, construction debris remaining on

the right-of-way will be collected and disposed of properly. Work areas will be graded and restored to preconstruction contours as closely as practical.

During restoration, segregated topsoil will be spread over the surface after final grading and permanent erosion controls will be installed. After permanent erosion control devices are installed, disturbed, non-cultivated areas will be seeded and slopes mulched where required. Seed mixes will be approved in advanced by the landowner, and seeding will occur within the recommended seeding dates for the Project area.

For cultivated areas, no seed or mulch will be applied after the topsoil is replaced unless specifically requested by the landowner.

Every reasonable effort will be made to complete final cleanup (including final grading and installation of erosion control devices) in accordance with landowner requests or permit conditions within 21 days of backfilling.

Markers showing the location of the pipeline will be installed at fence and road crossings in order to identify the owner of the pipeline and convey emergency information in accordance with applicable governmental regulations, including DOT safety requirements. Special markers providing information and guidance to aerial patrol pilots will also be installed.

The horizontal directional drilling bore method involves setting a horizontal drill rig at one or both ends of the bore area. If the drill rig is located on or near the stream bank, erosion countermeasures will be installed to minimize bank disturbance and prevent further erosion during the drilling operation. The drill bores underneath the water body followed by a casing pipe, which provides drilling fluid to dissipate heat and remove soil spoils. The main pipe, known as the string pipe, will be installed inside the casing pipe once the bore has been completed. The string pipe will then be connected to the main pipeline.

Following installation of the casing and string pipes, the stream bank will be restored as necessary. ETC will compact the banks and install erosion and sediment control blankets on the banks after seeding to prevent scour and a discharge of sediment to the waterbody. In addition, sediment control barriers will be installed on the top of the banks to prevent sediment generated from the right-of-way from entering the waterbody. These barriers will remain in place until the right-of-way approaches are adequately vegetated.

ETC is proposing to cross-flowing waterbodies using methods that will minimize the length of time necessary to install the pipes and restore the stream bank, as well as to prevent sediment from entering the waterbody during construction to reduce the impacts on the waterbody. For all ephemeral, intermittent and perennial crossings, ETC will implement the following mitigative measures:

- Temporary extra workspaces will be located at least 50 feet from the edges of the waterbody, unless a 10-foot setback is identified for waterbodies located in actively cultivated agricultural fields.
- Temporary extra workspaces will be limited to the minimum size needed to construct the waterbody crossing.
- Riparian vegetation will be preserved by limiting clearing of vegetation between temporary extra workspace areas and waterbody edges;
- Temporary sediment and erosion control devices will be installed across the width of the right-of-way after clearing but before ground disturbance. These devices will remain in place throughout construction until stream banks and adjacent upland areas are stabilized.
- Trench spoil placement will be restricted to at least 10 feet from the water's edge on the right-of-way, or in temporary extra workspace areas.
- Waterbody buffers will be maintained (*e.g.*, temporary extra workspace area setbacks, refueling restrictions) in the field with signs until construction, related ground-disturbing activities are complete.
- The use of equipment operating in the waterbody will be limited to that needed to construct the crossing.
- Construction will be completed across minor waterbodies (*i.e.*, less than or equal to 10 feet wide) within a single 24-hour time period.
- Storage and refueling activities will be restricted near surface waters and procedures in the Spill Prevention, Control and Countermeasure (SPCC) Plan will be promptly implemented if a spill or leak occurs during construction.
- Bank stabilization and re-establishment of streambed and bank contours will be required after construction.
- A permanent slope breaker will be installed across the right-of-way at the base of slopes greater than 5 percent that are less than 50 feet from the water's edge.

Wetland Restoration: Following pipeline installation, the trench will be backfilled with the material excavated and, to the maximum extent possible, restored to pre-construction contours. Replacing the wetland soil and restoring pre-construction hydrology will promote the rapid re-establishment of hydrophytic vegetation.

ETC will also take precautionary measures outside wetland boundaries to prevent construction in uplands from having an impact on wetlands. These measures include:

- Installing sediment barriers across the entire construction right-of-way immediately upslope of the wetland boundary where necessary to prevent sediment flow into the wetlands.
- Installing sediment barriers along the edge of the construction work area where wetlands are adjacent to the construction right-of-way and the ground surface slopes toward the wetland.

Following backfilling, topsoil segregated before trenching will be returned to the area from which it was stripped. If timber mats or riprap were used, ETC will remove the supports from the wetland. No lime, mulch or fertilizer will be used in wetlands, but ETC will apply annual ryegrass in wetlands without standing water.

All materials used for equipment crossings in wetlands will be removed in their entirety following construction, and the area will be restored and stabilized according to the relevant permit authorizations.

Agricultural Land Restoration: Extensive portions of the Project will involve heavy construction through agricultural areas. These areas consist of active croplands predominately used to grow durum, hard red spring wheat, red winter wheat, barley, sunflowers and canola. Additionally, agricultural lands are also used as range or pasture land used for livestock production. ETC will utilize the following general construction methods in agricultural areas, consistent with the requirements of landowners:

- Prior to construction, landowners will be contacted and irrigation facilities, and wells, waterlines and other and livestock watering systems will be located.
- Water flow will be maintained in supply systems unless shutoff is coordinated with the affected parties.
- Existing fences will be cut and braced along the right-of-way, and temporary gates and fences, if necessary, will be installed to control livestock and limit public access.
- On all active agricultural lands, which include fallow or rotated cropland, hayfields, improved pastures and rangeland, ETC will remove the topsoil removal and segregate the soil from subsoil.
- ETC will decompact the travel lane on the right-of-way if requested by the landowner.
- On all actively cultivated lands free of shallow bedrock, the trench would be excavated to sufficient depth to allow a minimum of 4 feet of soil cover between the top of the pipe and the final land surface after backfilling.
- Restoration and revegetation practices (*i.e.*, seeding) will comply with the requirements outlined in the landowner line list.
- ETC will not plant an annual cover crop on actively cultivated land unless requested by the landowner.
- Weed-free mulch will be used on steep slopes to control erosion unless the landowner requests that mulch not be applied. Mulch will be crimped into the soil.
- Earthen diversion berms will be constructed to reduce runoff on steep slopes only when the landowner approves.
- No erosion control fabric will be used in rangeland without having landowner approval.

- Fences and gates will be replaced in accordance with landowner agreements.
- Private roads will be restored to equal pre-construction condition.
- ETC will respond promptly to landowner concerns following construction to mitigate areas of subsidence and erosion problems should they occur.
- ETC will require the contractor to thoroughly clean the equipment and materials (*e.g.*, timber mates, bridges, etc.) at the contractor yard prior to mobilization to the right-of-way to prevent spread of nuisance weeds.

6.2 EPPING STATION EXPANSION

No construction-related activities will take place outside of the footprint of MMC'S properties at the existing ES. As such, no surveying, staking or clearing will be necessary. The construction activities will include grading, tie-in and commissioning, and clean/final restoration activities.

Grading: The storage tank site will be graded, where necessary, to provide a reasonably level work surface. Where steep slopes or side slopes are encountered, the construction contractor may grade the slope to reduce the grade, or in areas of side slopes, two-tone the area to create level working surface.

Concurrent with grading, erosion and sediment control devices will be installed as required by state storm water permit conditions. Erosion and sediment control devices, which may include silt fences, straw wattles, straw bales and road access pads, will be installed where necessary to prevent soil and sediment from leaving the construction work area.

Final Tie-in and Commissioning: Following successful testing, test manifolds will be removed and the final pipeline tie-ins will be made. After final tie-ins are complete, the tie-in welds have been inspected and the line is sufficiently dried, the storage tank will be commissioned. Commissioning involves activities to verify that equipment is properly installed and working, the controls and communications systems are functional, and that the storage tank is ready for service. The storage tank will be cleaned and dried using mechanical devices; the tank will be purged of air and then loaded with product.

Cleanup and Restoration: Final cleanup will begin after backfilling as soon as weather and site conditions permit. During cleanup, construction debris remaining in the work area will be collected and disposed of properly. Work areas will be graded and restored to preconstruction contours as closely as practical.

Every reasonable effort will be made to complete final cleanup (including final grading and installation of erosion control devices) in accordance with landowner requests or permit conditions within 21 days of completion.

SECTION 7: EASEMENT, ACQUISITION, LANDOWNER NOTIFICATION AND EASEMENT COMPENSATION PLAN

7.1 LANDOWNER INFORMATION REGARDING EASEMENT ACQUISITION, AND NECESSARY EASEMENT CONDITIONS AND RESTRICTIONS

Once a preliminary route has been established, a title review is conducted of courthouse records for the purpose of identifying the current landowner. ETC initiates contacts with affected landowners via telephone to be followed with personal visits and e-mail correspondence. Contact by surface mail may be used as a last resort if no other means of landowner contact is successful.

The refinement of the Route includes adjustments made per landowner request. ETC, at all times, negotiates in good faith and necessary easement conditions and restrictions are presented and discussed. All fee land easements for the proposed Route have been acquired at this time for the portion of the route located in the State of North Dakota.

7.2 COMPENSATION POLICY

ETC'S practice for determining landowner compensation for easements is based on research of comparable fair market pricing and prior experience negotiating easements locally.

SECTION 8: LIST OF PREPARERS

John Millar

Vice President-Liquids Group
Summit Midstream

Mr. Millar is Vice President, Liquids Group for Summit Midstream and is responsible for developing liquid pipeline commercial opportunities and for managing Summit's liquid pipeline assets. Prior to joining Summit Midstream, Mr. Millar was Vice President and General Manager of Genesis Energy, L.P.'s pipeline, terminal, and trucking businesses, responsible for improving safety, operating efficiency, and service quality and for developing growth projects involving liquid pipeline facilities, marine terminals, rail facilities, and truck stations. Prior to joining Genesis, Mr. Millar held numerous positions in engineering, project management, field operations, control center operations, joint ventures, and business development for Chevron Pipe Line Company, EOTT Energy, Unocal Corporation, and Enbridge Energy Partners. Mr. Millar has over 28 years of experience in nearly all aspects of the oil pipeline industry and holds BS and MS degrees in Civil Engineering from the University of California and an MBA from the University of Houston. Mr. Millar is a licensed Civil Engineer in the State of California.

William McCarthy, C.W.B.

Senior Environmental Compliance Analyst
E3 Environmental, LLC, 871 Jefferson Avenue, St. Paul, MN 55102

M.S. Wildlife Biology, University of Minnesota – Twin Cities; and B.S. Wildlife Biology, Michigan State University. Mr. McCarthy is an environmental compliance analyst with 15 years of environmental consulting experience working with various energy assets and regulatory agencies. As a compliance analyst, he has managed the environmental requirements for facility siting, pipeline routing, federal licensing and various federal, state and local permits. Mr. McCarthy is a certified wildlife biologist and in this role conducts and coordinates field studies, agency consultations, mitigation and avoidance plans.

Katie Schmidt, EIT

Environmental Engineer and Senior Consultant

E3 Environmental, LLC, 871 Jefferson Avenue, St. Paul, MN 55102

B.S. Civil Engineering with an emphasis in Environmental Engineering-Iowa State University. Ms. Schmidt is a Senior Environmental Consultant with 8 years of experience working with various energy assets and regulatory agencies. As a consultant, she has managed multiple pipeline projects supporting clients through the construction permitting and siting processes, which included coordination with various federal, state and local agencies.

Chris Schmidt, GIT

Associate Consultant 3

E3 Environmental, LLC, 871 Jefferson Avenue, St. Paul, MN 55102

B.S. in Environmental Geology and Geologist-In-Training Certification for Minnesota. Mr. Schmidt has over 3 years of environmental consulting experience. Mr. Schmidt has pursued a career focused on regulatory compliance and supports energy clients by providing regulatory review and permitting services. Mr. Schmidt's experience includes work supporting pipeline systems of natural gas, natural gas liquids, and petroleum throughout multiple states.

Dan Woodward, RPA

Senior Archaeologist

E3 Environmental, LLC, 871 Jefferson Ave St Paul, MN 55102

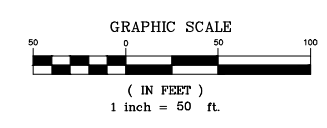
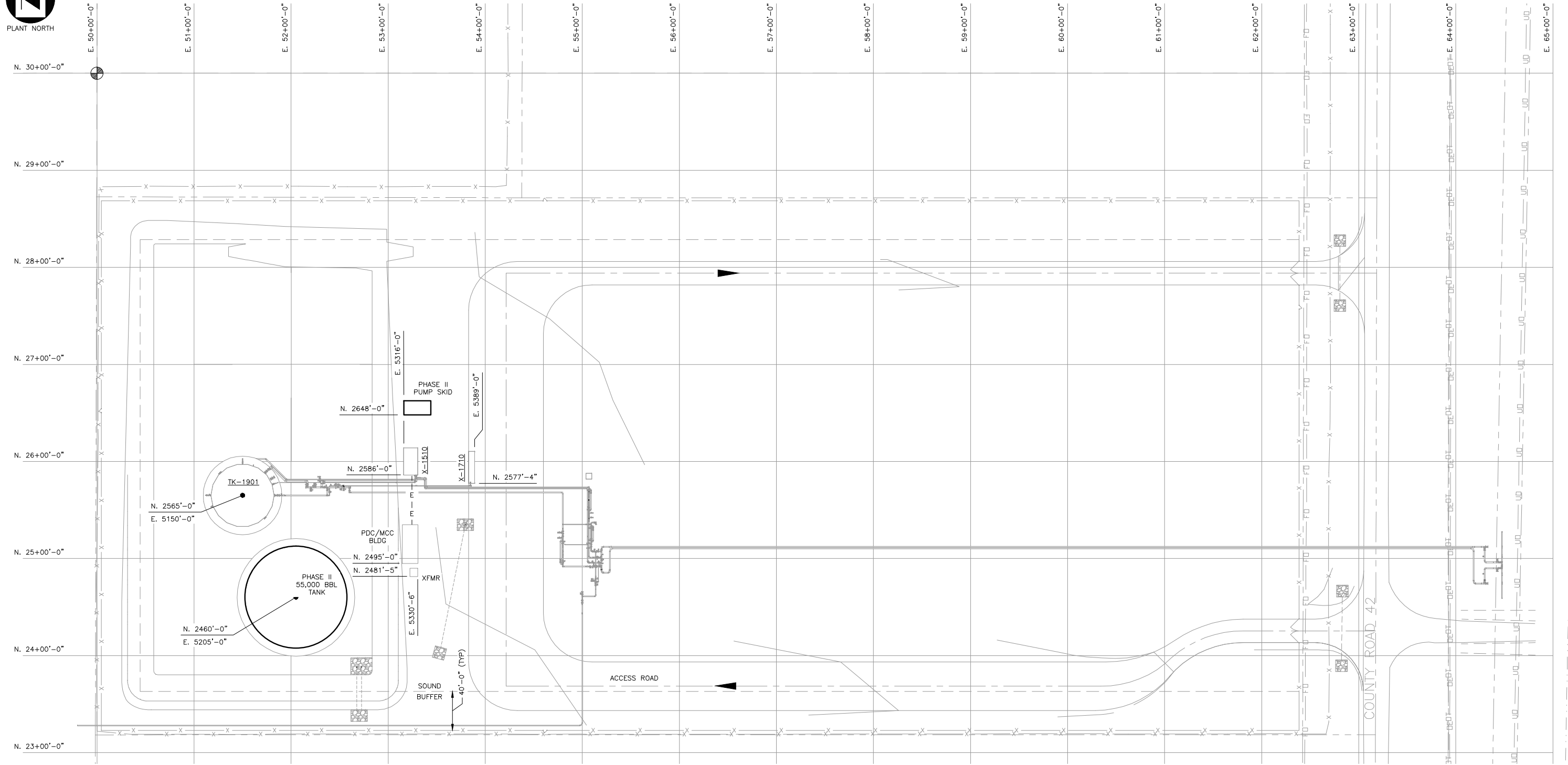
M.A. Anthropology (archaeology focus), California State University -- Fullerton; and B.A. History, University of Florida. Mr. Woodward is a secretary of the interior qualified archaeologist with 15 years of environmental consulting experience working with various energy assets and regulatory agencies. As a senior archaeologist, he has overseen all phases of archaeological fieldwork from class I record searches and class III intensive surveys to detailed excavations and archaeological damage assessments. He has authored dozens of cultural resource technical reports fulfilling NHPA and NEPA cultural resource requirements. Mr. Woodward has also coordinated with multiple Native American groups and has met with interested Tribal representatives in the field to address project concerns. Mr. Woodward has performed historic building analysis and authored built-environment technical reports. Mr. Woodward has also assisted with extensive paleontological fieldwork including paleontological surveys, monitoring, and salvage activities.

Appendix A

Engineering Documents



PLANT NORTH



NOTES:

REV	DESCRIPTION	DATE	BY	APPROVED	REV	DESCRIPTION	DATE	BY	APPROVED
B	ISSUED FOR CLIENT REVIEW								
A	ISSUED FOR INTERNAL REVIEW								

DRAWING NUMBER	DESCRIPTION
	REFERENCE DRAWINGS
CONFIDENTIAL	



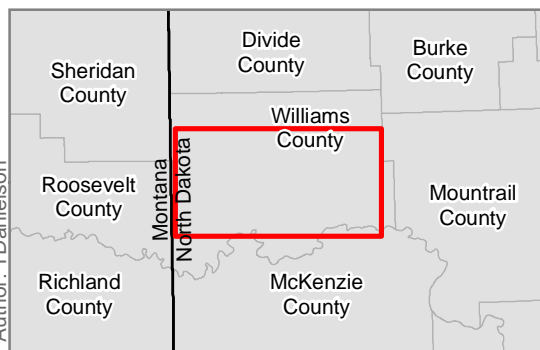
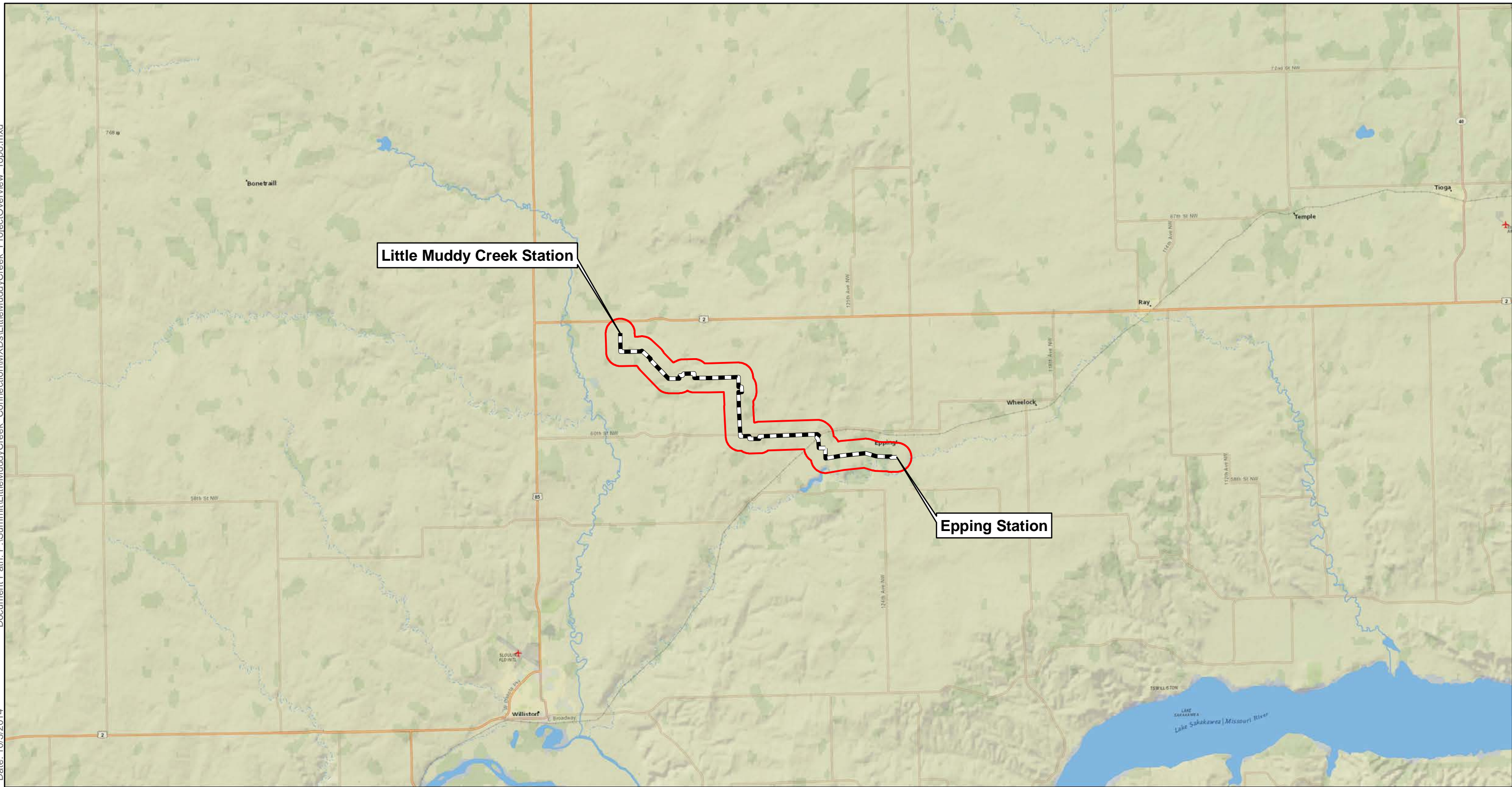
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HLN	09/09/13
CHECKED BY	DATE
ENGINEERED BY	DATE
APPROVED BY	DATE
APPROVED BY	DATE



EPPING (POLAR) OIL TERMINAL PIPING GENERAL ARRANGEMENT	
CAD FILE P541001.DWG	SCALE 1"=50'-0"
DRAWING NUMBER SK-002	REV B


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Appendix B

Project Maps



-  Pipeline
-  Corridor (1 Mile)



E3 ENVIRONMENTAL
Enhancing Execution with Experience

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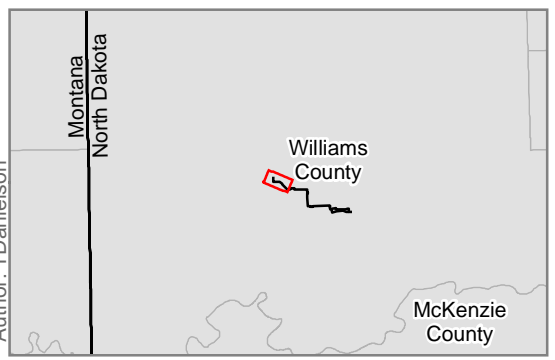
Map not to scale, for environmental review purposes only.

Meadowlark Midstream Company, LLC

Little Muddy Creek Pipeline

Topo Overview Map

Williams County, ND



Centerline	Noxious Weed
Inventory Corridor	NDWC Well
Corridor (1 mile)	Potentially Occupied Structure
Ephemeral Drainage	1 Mile Corridor
Wetland	Inventory Corridor
Woody Vegetation	

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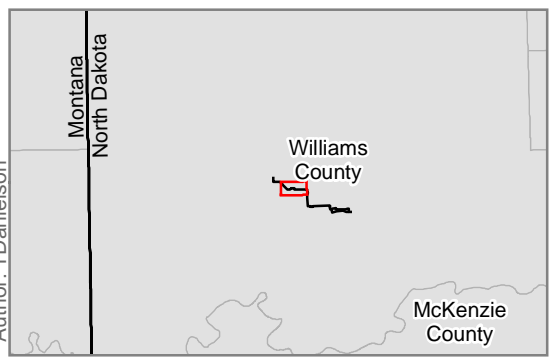
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Summit Midstream Partners
Little Muddy Creek Connection
 Siting Criteria
 Natural Resource - Aerial Map
Page 1 of 6
 Williams County, North Dakota

Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\PS_C_Maps\LMCC_11x17_NaturalResource.mxd

Date: 10/7/2014

Author: TDanielson



Centerline	Noxious Weed
Inventory Corridor	NDWC Well
Corridor (1 mile)	Potentially Occupied Structure
Ephemeral Drainage	1 Mile Corridor
Wetland	Inventory Corridor
Woody Vegetation	

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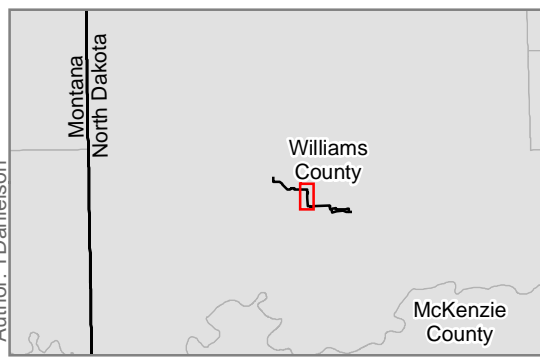
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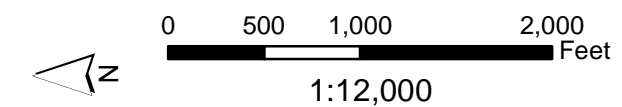
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Author: TDanielson

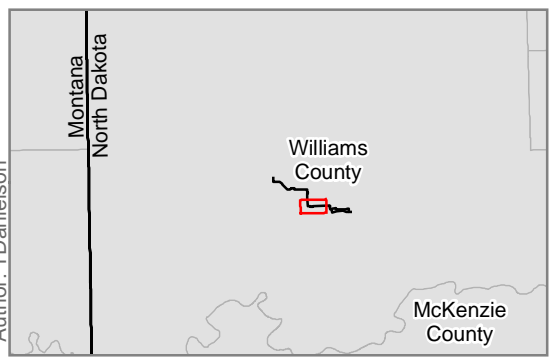


-  Centerline
-  Inventory Corridor
-  Corridor (1 mile)
-  Ephemeral Drainage
-  Wetland
-  Woody Vegetation
-  Noxious Weed
-  NDWC Well
- Potentially Occupied Structure**
-  1 Mile Corridor
-  Inventory Corridor



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Little Muddy Creek Connection
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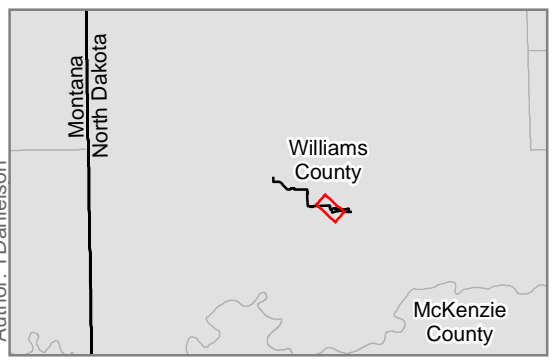
Centerline	Noxious Weed
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Corridor (1 mile)	Potentially Occupied Structure
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Woody Vegetation	

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Little Muddy Creek Connection
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 Williams County, North Dakota



Centerline	Noxious Weed
Inventory Corridor	NDWC Well
Corridor (1 mile)	Potentially Occupied Structure
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Wetland	Inventory Corridor
Woody Vegetation	

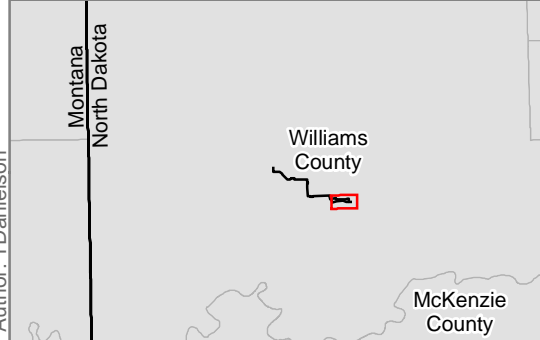
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 Williams County, North Dakota



	Centerline		Noxious Weed
	Inventory Corridor		NDWC Well
	Corridor (1 mile)	Potentially Occupied Structure	
	Ephemeral Drainage		1 Mile Corridor
	Wetland		Inventory Corridor
	Woody Vegetation		

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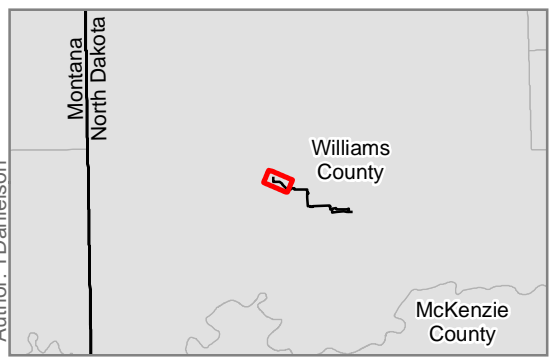
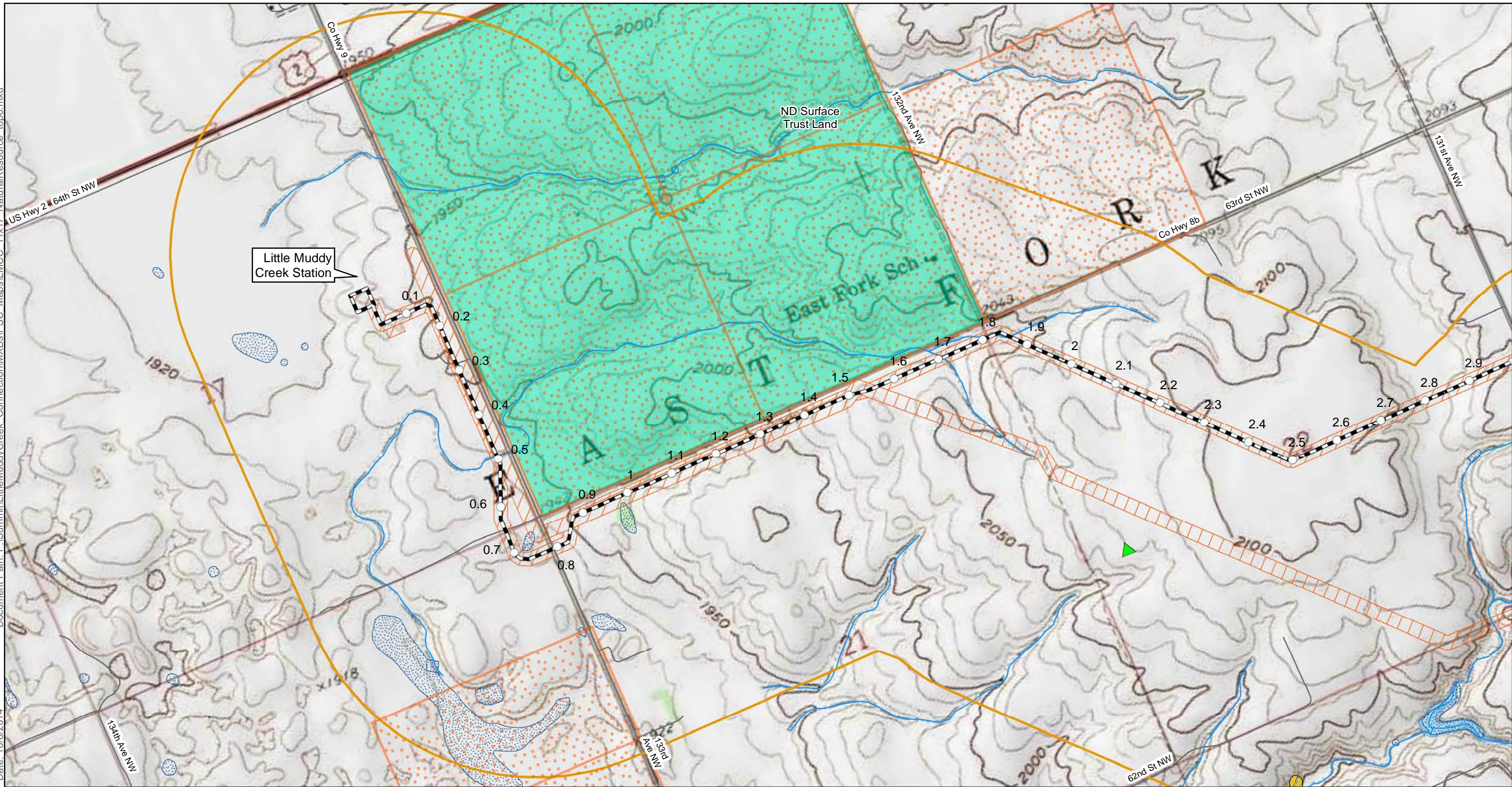
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 Williams County, North Dakota

Author: TDanielson
 Date: 10/8/2014
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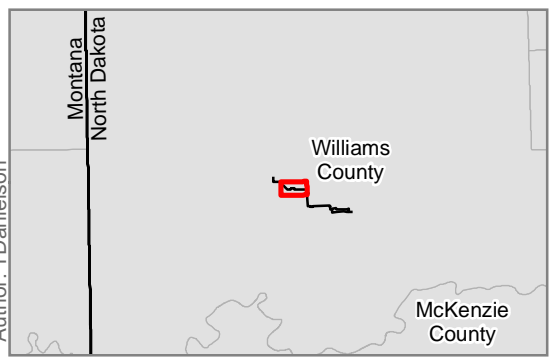
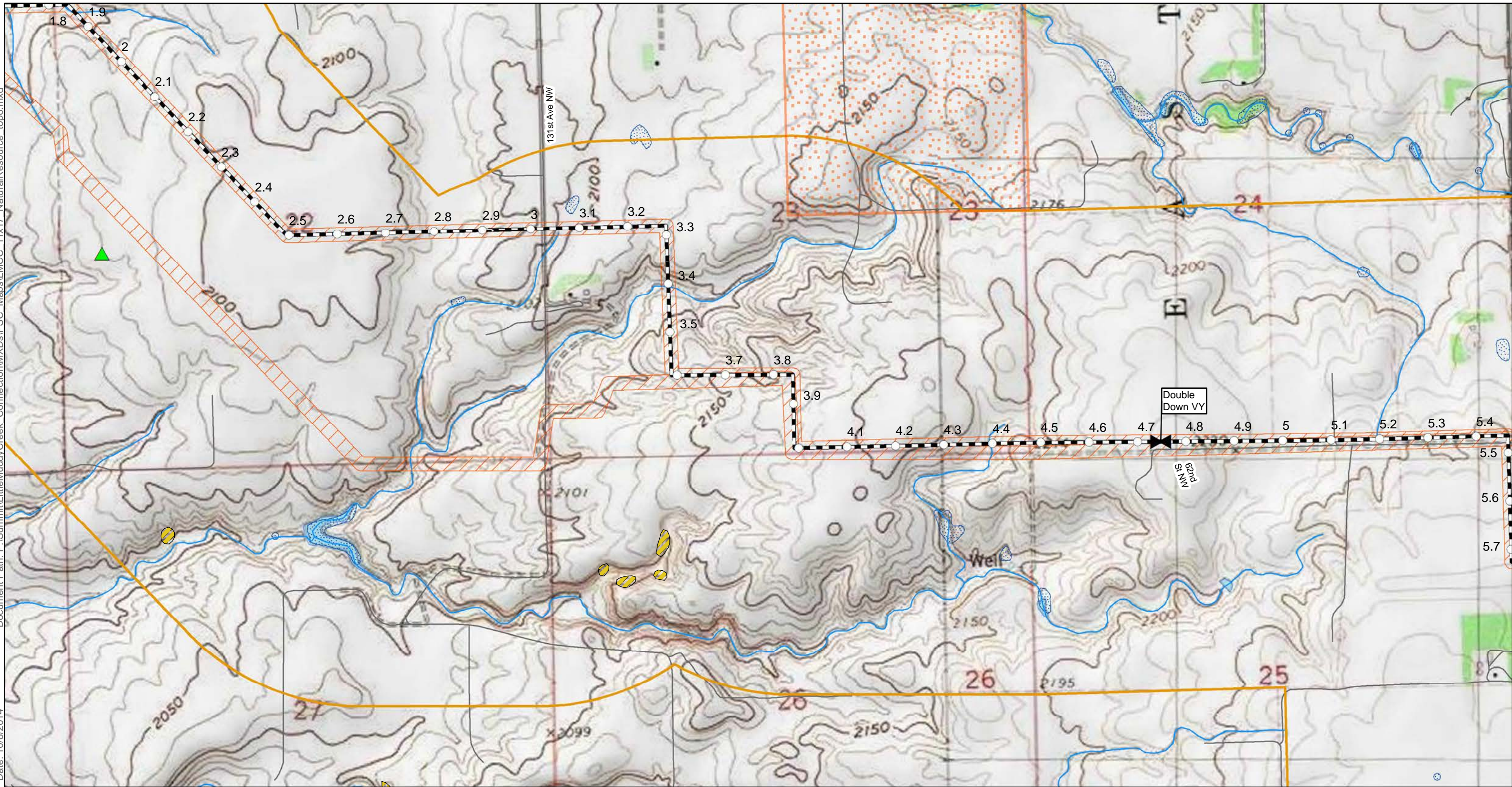
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Valve	Criteria Data	PLOTS Land
Milepost	Federal Land	Abandoned Mine
Inventory Corridor	Joint Ownership	NDGS Landslide Deposits
Corridor (1 mile)	Local Land	North Dakota Mineral Trust Lands
NHD Waterway	Native American Land	
NWI Wetland	Private Conservation Land	

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 Williams County, North Dakota

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Enhancing Execution with Experience

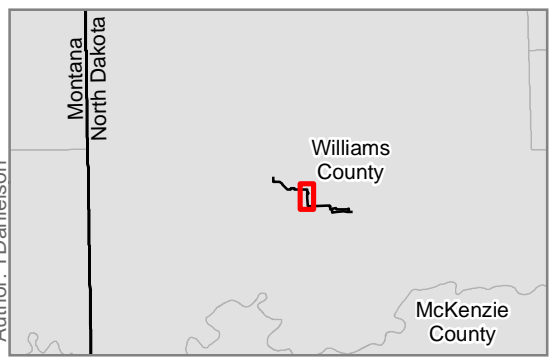
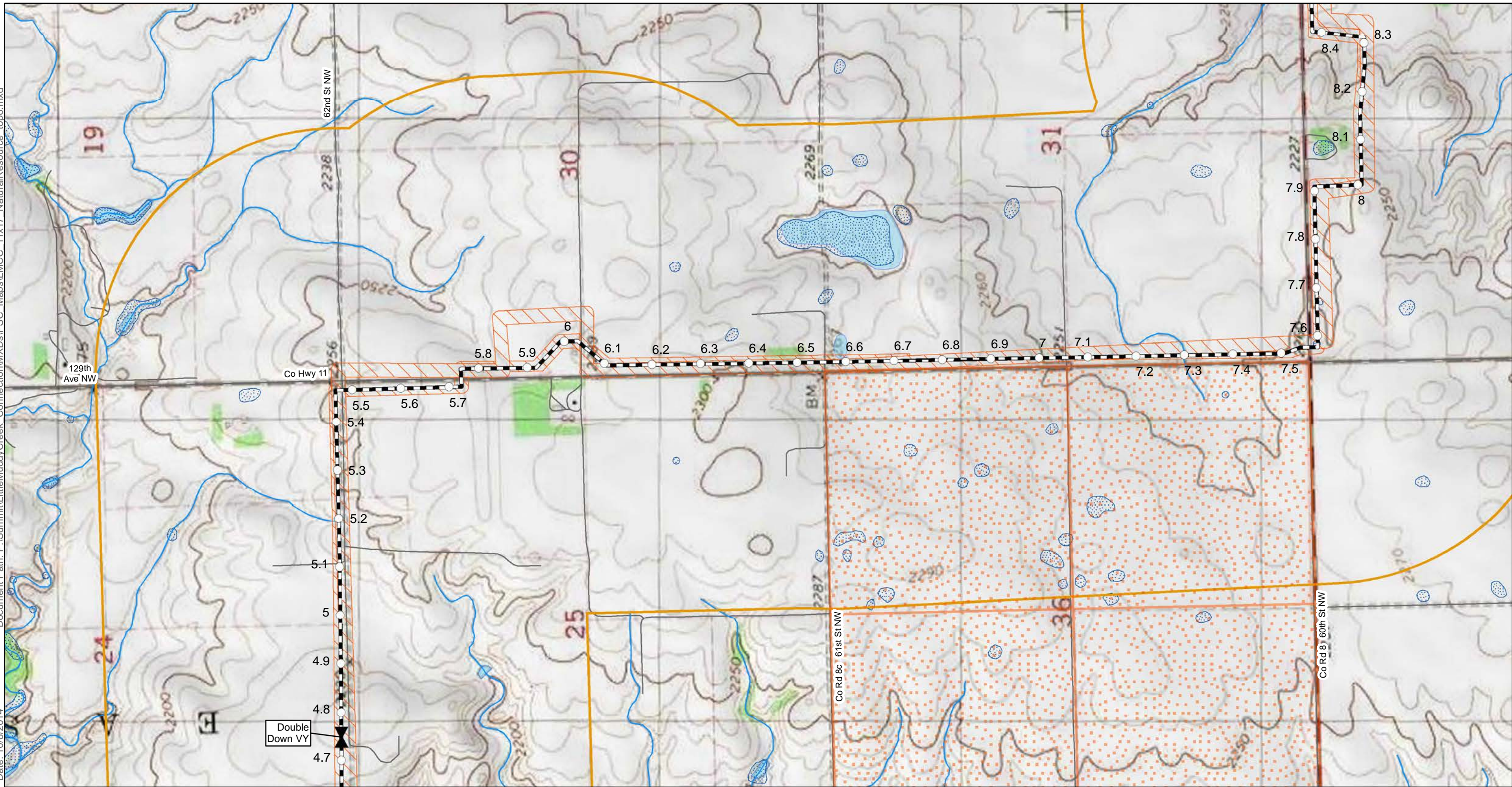
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Page 2 of 6
 Williams County, North Dakota

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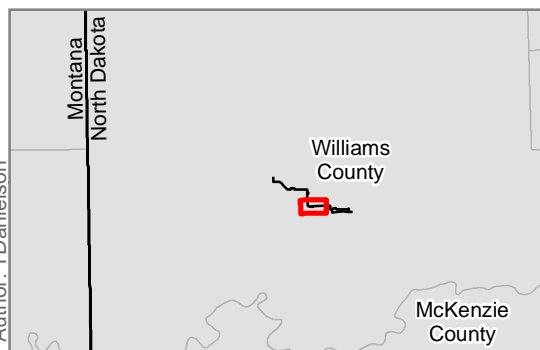
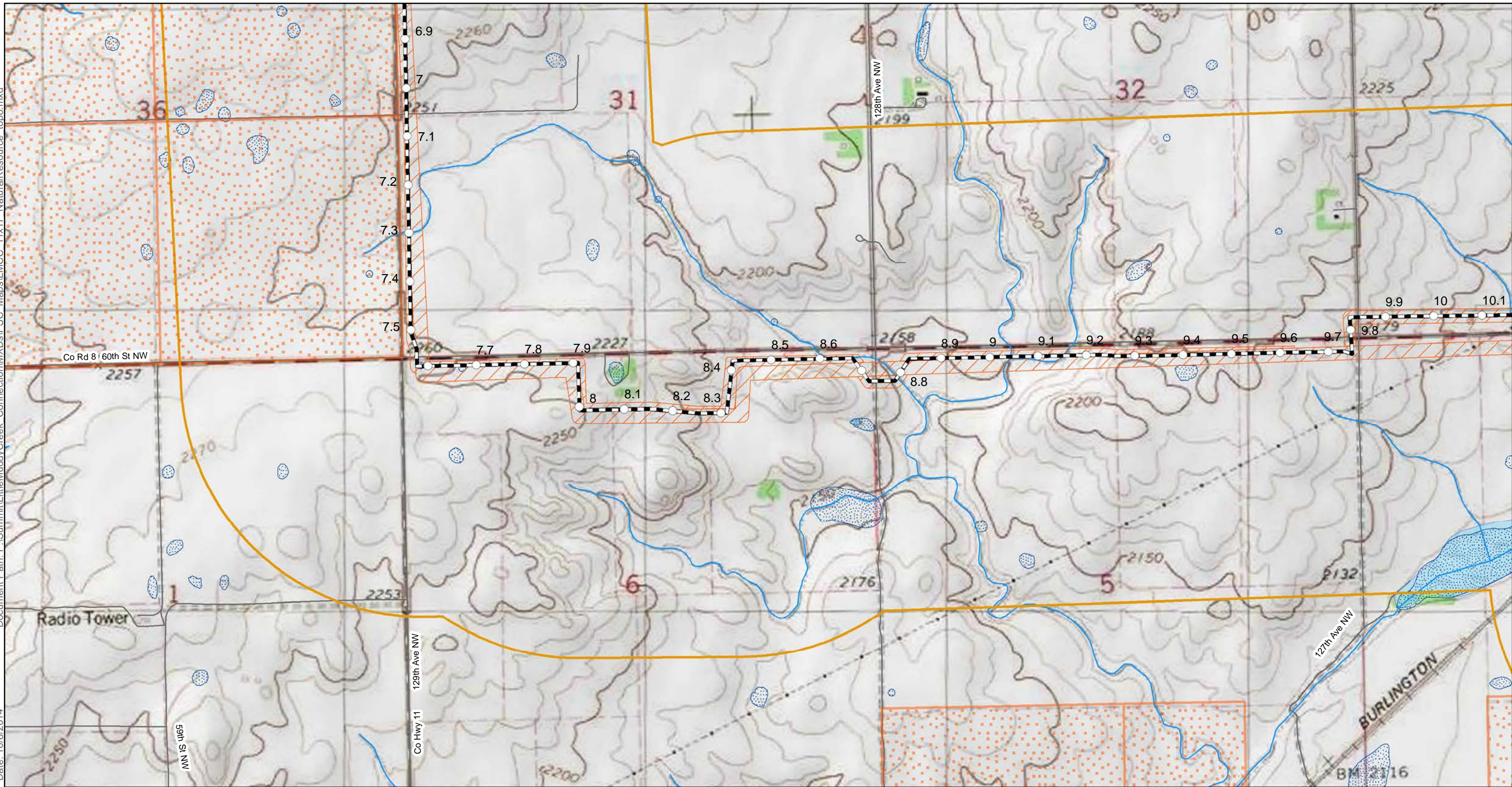


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Valve	Criteria Data	PLOTS Land
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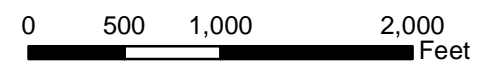
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 Williams County, North Dakota

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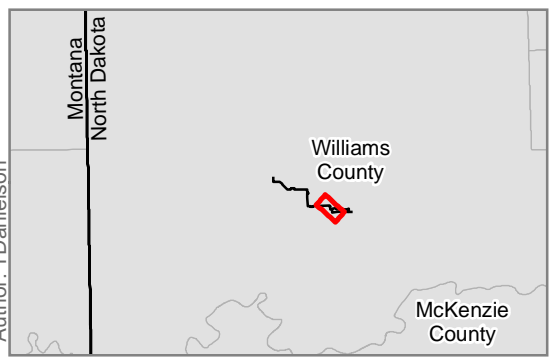
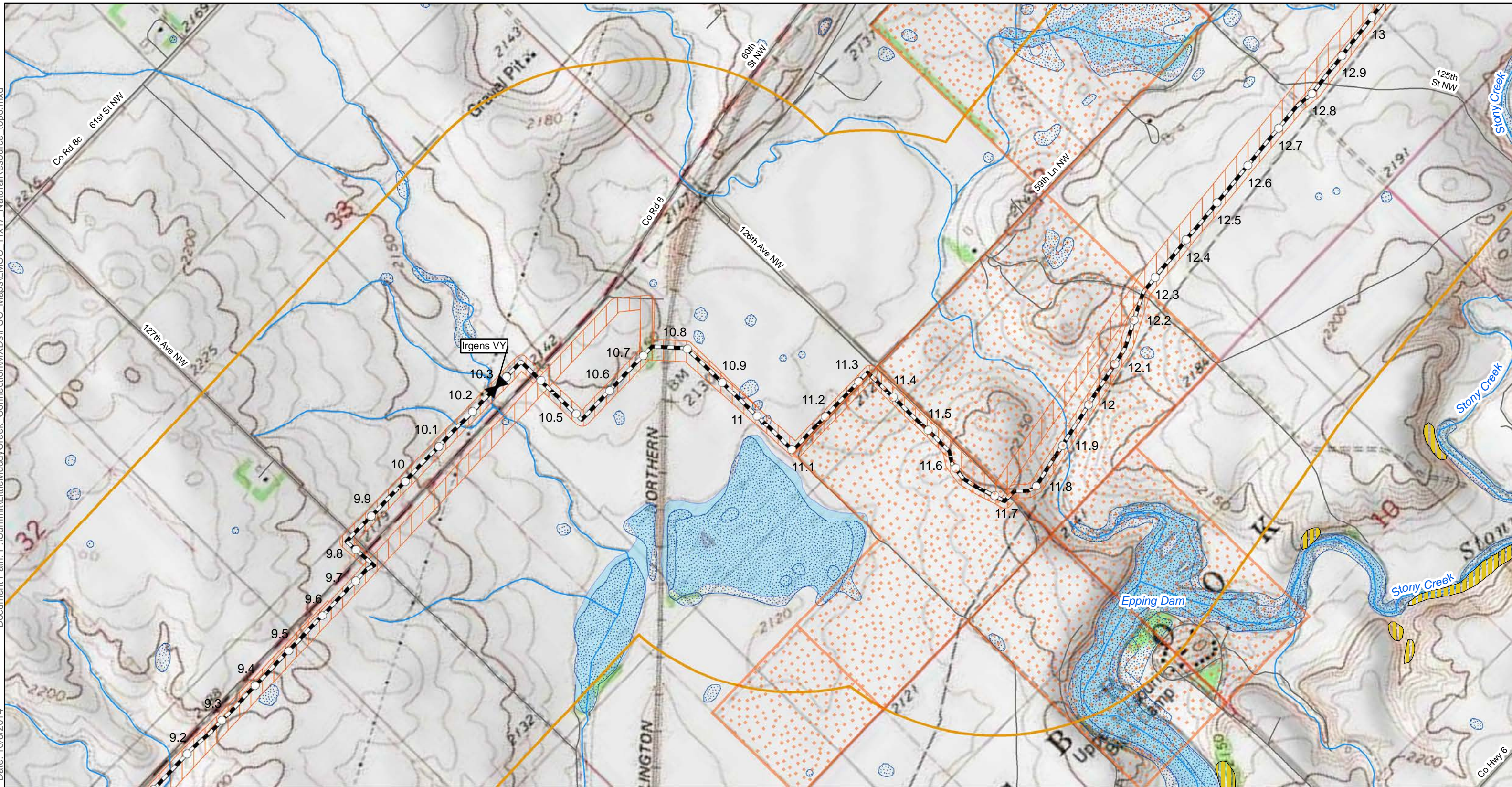


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 Author: TDanielson



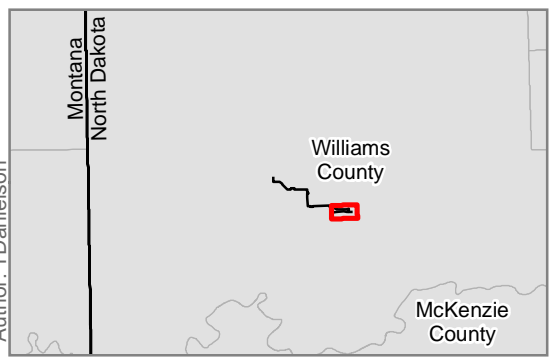
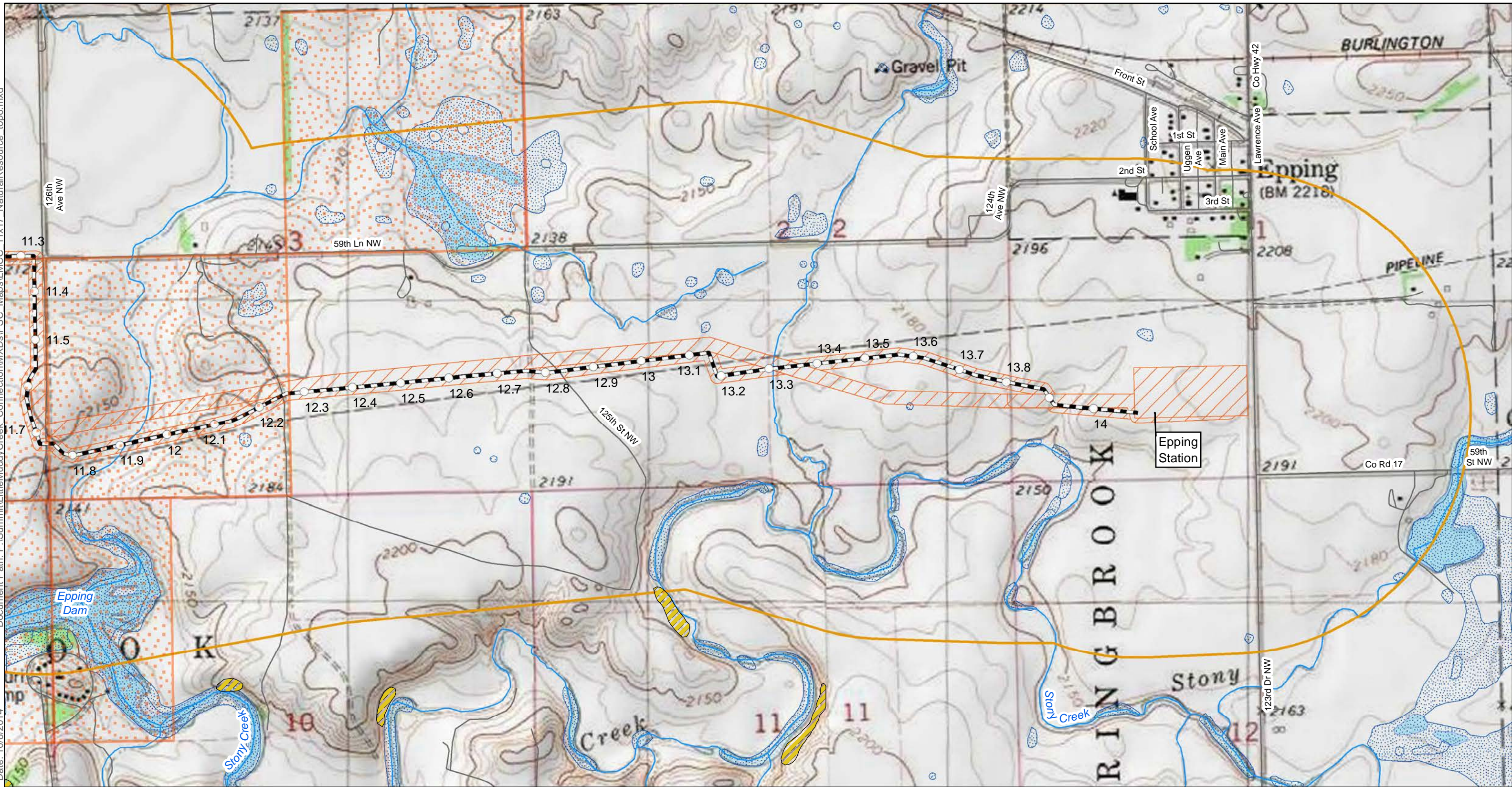
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Valve	Criteria Data	PLOTS Land
Milepost	Federal Land	Abandoned Mine
Inventory Corridor	Joint Ownership	NDGS Landslide Deposits
Corridor (1 mile)	Local Land	North Dakota Mineral Trust Lands
NHD Waterway	Native American Land	
NWI Wetland	Private Conservation Land	

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Map not to scale, for environmental review purposes only.

Summit Midstream Partners
 Little Muddy Creek Connection
 Siting Criteria
 Natural Resource - Topo Map
Page 5 of 6
 Williams County, North Dakota

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 Date: 10/8/2014
 Author: TDanielson



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E3 ENVIRONMENTAL
Enhancing Execution with Experience

Map not to scale, for environmental review purposes only.

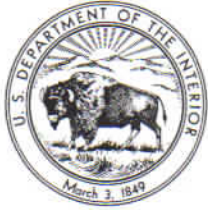
Summit Midstream Partners
 Little Muddy Creek Connection
 Siting Criteria
 Natural Resource - Topo Map
Page 6 of 6
 Williams County, North Dakota

Appendix C

Consultations

U.S. Fish and Wildlife Service

Consultation



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Lostwood Wetland Management District Complex

8315 Hwy 8

Kenmare, ND 58746

Refuges: Lostwood

Wetland Districts: Crosby, Lostwood



October 8, 2014

ATTN: Scott Sanders
Dakota Land Services
PO Box 733
Minot, ND 58702-0733

Dear Mr. Sanders:

This letter is in reference to Meadowlark Midstream Company, LLC proposed Little Muddy pipeline in Sections 17, 20, 21, 22, 23, 24, 25, T. 156 N., R. 100 W., Sections 30, 31, 33, T.156 N. 99 W., Sections 1, 2, 3, 4, 5, 6, T. 155 N. R. 99 W. Williams County, North Dakota. Mr. Jacob Krebsbach of the U.S. Fish and Wildlife Service (Service) received GIS shape files for the pipeline from Mr. Scott Sanders of Dakota Land Services on October 2nd, 2014. Jacob Krebsbach reviewed the survey information and found that the pipeline does not cross Service wetland easement tracts.

This letter does not supersede any required permits from landowners, local, state, and federal entities.

Please be advised of other federal laws including the Endangered Species Act (ESA), the Migratory Bird Treaty Act (MBTA), the National Wildlife Refuge System Improvement Act and the Bald and Golden Eagle Protection Act (BGEPA) when planning your proposal. The ESA, MBTA, and BGEPA prohibit the unauthorized take of federally-listed threatened and endangered species, all migratory birds, and bald and golden eagles, respectively. You must ensure that your activities do not violate these laws. The best way to do that is through early coordination of your plans with the Ecological Services office for North Dakota. Please contact the acting ND field supervisor, Mr. Scott Larson, 420 South Garfield Ave., Pierre SD 57501; by phone 605-224-8693 x224, or email at Scott_larson@fws.gov. Additional information on these wildlife resources and potential impacts and requirements for oil and gas development is available at website www.fws.gov/northdakotafielddoffice/.

If you have any questions please contact Scott Williams or myself at Lostwood Wetland Management District Complex, telephone 701-965-6488, from 7 a.m. to 4:30 p.m. Thank you for your cooperation.

Sincerely,

A handwritten signature in blue ink, appearing to read "David Gillund", with a stylized flourish at the end.

David Gillund
Project Leader



United States Department of the Interior



FISH AND WILDLIFE SERVICE
North Dakota Ecological Services Field Office
3425 Miriam Avenue
Bismarck, North Dakota 58501
(701) 250-4481, ndfieldoffice@fws.gov

August 11, 2014

Katie Schmidt, Senior Consultant
E3 Environmental, LLC
871 Jefferson Avenue
St. Paul, Minnesota 55102

Dear Ms. Schmidt:

This is in response to your letter dated July 10, 2014, regarding a proposal by the Meadowlark Midstream Company (MMC) to construct and operate a 14.75-mile, 10-inch crude pipeline in Williams County, North Dakota. In addition to the pipeline, MMC is also proposing to expand the tank storage capacity at their existing Epping Station in Williams County.

The U.S. Fish and Wildlife Service (Service) offers the following comments under the authority of and in accordance with the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 *et seq.*), the Endangered Species Act (ESA) (16 U.S.C. 1531 *et seq.*), the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57), and the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d, 54 Stat. 250).

Service Property Interests

The Service administers National Wildlife Refuges and Waterfowl Production Areas owned in fee title as well as wetland and grassland easements throughout North Dakota, including an ongoing easement acquisition program.

The Service recommends that all property interests within the National Wildlife Refuge System be avoided whenever possible. A special use permit or right-of-way will be necessary for construction affecting property interests administered by the Service. The issuance of a special use permit or right-of-way is subject to the final determination of a refuge compatibility review process. This determination may add some time to the review process so early coordination with the affected Refuge or Wetland Management District is important. Please contact David Gillund, Project Leader, Crosby Wetland Management District, 10100 Hwy 42 NW, Crosby, ND 58730; Phone: (701)965-6488; Email: david_gillund@fws.gov, for additional information on Service property interests and specific information relative to Service easements and up to date realty records.

Threatened and Endangered Species

Private individuals and companies are required to ensure that their actions do not result in “take” of federally listed animals. Take is broadly defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct”. Section 10(a)(1)(B) of the ESA allows non-Federal parties planning activities that have no Federal nexus, but which could result in the incidental taking of listed animals, to apply for an incidental take permit. (A Federal nexus exists whenever an activity is conducted, funded, or licensed or permitted by a Federal agency). The application must include a habitat conservation plan (HCP) describing the proposed actions, determining the effects of those actions on Federally-listed plant and wildlife species and their habitats (and may include proposed or candidate species), and defining measures to minimize and mitigate adverse effects. The following species may be located in the project area:

Whooping Crane

The Aransas Wood Buffalo Population (AWBP) of the endangered whooping crane (*Grus americana*) is the only self-sustaining migratory population of whooping cranes remaining in the wild. Whooping cranes breed in the wetlands of Wood Buffalo National Park in Alberta and the Northwest Territories of northern Canada, and overwinter on the Texas coast. Whooping cranes in the AWBP annually migrate through North Dakota during their spring and fall migrations.

The proposed project lies within a corridor that includes approximately 95 percent of all reported whooping crane sightings in the State. The presence of suitable roosting and feeding habitat for whooping cranes indicate the potential for whooping crane presence in the proposed project area. The Service recommends that if a whooping crane is sighted within one mile of project while it is under construction, that all work cease within one mile of that part of the project and the Service be contacted immediately. In coordination with the Service, work may resume after the bird(s) leave the area. Whooping cranes are unlikely to spend more than a few days in any one spot during migration.

Proposed Species

Northern Long-Eared Bat

The northern long-eared bat (*Myotis septentrionalis*) (NLEB) is currently proposed for listing as endangered under the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). The final listing decision for the NLEB is expected in March 2015. At this time, no critical habitat has been proposed for the NLEB. The state of North Dakota is within the known range of the NLEB. During the summer, NLEBs typically roost singly or in colonies in cavities, underneath bark, crevices, or hollows of both live and dead trees and/or snags (typically ≥ 3 inches dbh). Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat seems opportunistic in selecting roosts, using tree species based on presence of

cavities or crevices or presence of peeling bark. It has also been occasionally found roosting in structures like barns and sheds (particularly when suitable tree roosts are unavailable). They forage for insects in upland and lowland woodlots and tree lined corridors. During the winter, NLEBs predominately hibernate in caves and abandoned mine portals. Additional habitat types may be identified as new information is obtained.

Species proposed for listing are not afforded protection under the ESA; however as soon as a listing becomes effective, the prohibition against jeopardizing its continued existence and “take” applies regardless of an action’s stage of completion. If the agency retains any discretionary involvement or control over on-the-ground actions that may affect the species after listing, section 7 applies. Therefore, if suitable NLEB habitat is present within the proposed project area, we recommend further coordination with our office to avoid potential project delays should the species be listed. Additional information regarding NLEB and conference procedures can be found at (<http://www.fws.gov/midwest/endangered/mammals/nlba/index.html>).

Candidate Species

Sprague’s pipit (*Anthus spragueii*) was added to the candidate species list in 2010. Candidate species such as the Sprague’s pipit are not protected under the ESA. However Sprague’s pipit as a migratory bird is still protected under the MBTA. Sprague’s pipits require large patches of grassland habitat for breeding, with preferred grass height between 4-12 inches (10-30 cm). The species prefers to breed in well-drained, open grasslands and avoids grasslands with excessive shrubs. They can be found in lightly to heavily grazed areas. They avoid intrusive human features on the landscape, so the impact of a development can be much larger than the actual footprint of the feature. If Sprague’s pipit habitat is present within your proposed project area, the Service requests that you document any steps taken to avoid and minimize disturbance of this habitat, and that you share this information with our office.

No legal requirement exists to protect candidate species; however, it is within the spirit of the ESA to consider these species as having significant value and worth protecting. The Service’s Candidate Conservation Program provides a means for conserving these species. Early conservation preserves management options, minimizes the cost of recovery, and reduces the potential for restrictive land use policies in the future. Through Candidate Conservation Agreements and Candidate Conservation Agreements with Assurances the Service can work with interested public and private parties to identify threats to candidate species or species at risk. If there is a federal nexus, a federal agency may also request a conference on any proposed action that may affect a proposed or candidate species.

Migratory Birds

The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, and transportation, (among other actions) of migratory birds, their eggs, parts, and nests, except when specifically permitted by regulations. While the MBTA has no provision for allowing incidental take, the Service realizes that some birds may be killed during project construction and operation even if all known reasonable and effective measures to protect birds are used. The Service’s

Office of Law Enforcement carries out its mission to protect migratory birds through investigations and enforcement, as well as by fostering relationships with individuals, companies, and agencies that have taken effective steps to avoid take of migratory birds, and by encouraging others to implement measures to avoid take of migratory birds. It is not possible to absolve individuals, companies, or agencies from liability even if they implement bird mortality avoidance or other similar protective measures. However, the Office of Law Enforcement focuses its resources on investigating and prosecuting individuals, companies, and agencies that take migratory birds without identifying and implementing all reasonable, prudent, and effective measures to avoid that take. Individuals, companies, or agencies are encouraged to work closely with Service biologists to identify available protective measures when developing project plans and/or avian protection plans, and to implement those measures prior to/during construction or similar activities.

To the extent practicable, schedule construction for late summer or fall/early winter so as not to disrupt migratory birds during the breeding season, February 1 to July 15. If work is proposed to take place during the breeding season, there may be take of migratory birds, their eggs, or active nests. If project construction cannot avoid the nesting season, the Service suggests that a qualified biologist could be hired to conduct bird/nest surveys within five days prior to the initiation of construction. If active nests are identified, the project proponent should cease construction, maintain a sufficient buffer around active nests to avoid disturbing breeding activities and contact the Service immediately. The Service recommends that MMC implement all practicable measures to avoid all take, such as suspending construction where necessary, and/or maintaining adequate buffers to protect the birds until the young have fledged. The Service further recommends that if you choose to conduct field surveys for nesting birds with the intent of avoiding take, that you maintain any documentation of the presence of migratory birds, eggs, and active nests, along with information regarding the qualifications of the biologist(s) performing the survey(s), and any avoidance measures implemented at the project site. Should surveys or other available information indicate a potential for take of migratory birds, their eggs, or active nests, the Service requests that you contact this office for further coordination on the extent of the impact and the long-term implications of the intended use of the project on migratory bird populations.

Our GIS analysis of the proposed project shows that it crosses a number of wetlands and native prairie. These habitat types provide important ecological services, including nesting and foraging habitat for migratory birds. Wetlands typically take at least two to three years for the vegetation to return, and at least this long for full functionality to be recovered. Native prairie can take a decade or more to recover, and even then, the replanted area is not as diverse as the original habitat. Additionally, non-natives which become established when the project area is disturbed may spread into the adjacent prairie.

To help ameliorate these impacts, the Service suggests that MMC develop a conservation plan for migratory birds to compensate for the impacts associated with the construction, operation, and maintenance of the proposed project. We recommend that the conservation plan include the following: an analysis of the type and acreage of each habitat impacted; a discussion of how impacts on native habitat (wetlands, native prairie, woody draws) will be avoided or minimized

to the extent practicable; a plan to reclaim the native habitat that cannot be avoided; a monitoring plan to ensure that reclamation is successful and that non-natives do not take over; and a compensation plan for the impacts on native habitat that cannot be avoided. As part of the conservation plan, we recommend that MMC may consider purchasing perpetual grassland easements or perform additional habitat mitigation to ensure that the overall amount and quality of native habitat does not decline as a result of this project. In addition to benefitting migratory birds, the actions in the conservation plan may also benefit any proposed and candidate species that may be affected.

Bald and Golden Eagles

Bald and Golden Eagles are federally-protected under both the BGEPA and the MBTA. The BGEPA prohibits anyone without a permit issued by the Secretary of the Interior from taking bald eagles (*Haliaeetus leucocephalus*) or golden eagles (*Aquila chrysaetos*), including their parts, nests, or eggs. The BGEPA provides criminal and civil penalties for persons who take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald or golden eagle, alive or dead, or any part, nest, or egg thereof. The BGEPA defines take as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. "Disturb" means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available: 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagles return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment.

The Service's overall management objective for golden eagle and bald eagle populations is to ensure no declines in breeding populations of either species. Numerous relatively minor disruptions to eagle behaviors from multiple activities, even if spatially or temporally distributed, may lead to disturbance that would not have resulted from fewer or more carefully sited activities. The accumulation of multiple land development projects or siting of multiple infrastructures that may be hazardous to eagles can cumulatively reduce the availability of alternative sites suitable for breeding, feeding, or sheltering, resulting in a greater than additive risk of take to eagles.

If your proposed activity is anticipated to result in take of bald or golden eagles, you must first apply for, and receive a permit to take prior to the taking. The determination of the likelihood of take will entail identifying the impacts of your proposed activity. The proposed project area may contain suitable habitat for bald eagles.

Recommendations Specific to Bald Eagles

The size and shape of effective buffers vary depending on the topography and other ecological characteristics surrounding the nest site. In open areas where there are little or no forested or topographical buffers, such as in North Dakota, distance alone must often serve as the buffer. To avoid/minimize impacts to nesting bald eagles from construction activities, the Service recommends: (1) keeping a minimum ½-mile buffer between the activity and any bald eagle nest if no landscape buffer exists; (2) keeping a minimum 660-foot buffer and maintaining a landscape buffer or natural areas between the activity and around nest trees; and (3) avoiding activities during the bald eagle breeding season (February 1 – July 15). The buffer areas serve to minimize visual and auditory impacts associated with human activities near nest sites. Ideally, buffers would be large enough to protect existing nest sites and provide for alternative or replacement nest sites. The Service's May 2007, National Bald Eagle Management Guidelines contains detailed information on protecting bald eagles from disturbance due to human activity. The guidelines can be accessed on the Service's website at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BaldEagle/NationalBaldEagleManagementGuidelines.pdf>.

We appreciate the opportunity to provide comments on your proposed project. For further information, please have your staff contact Heidi Riddle of my staff at (701) 355-8503, or contact me at 605-224-8693 ext. 224, or at the letterhead address.

Sincerely,



Scott Larson
Field Supervisor
North Dakota and South Dakota Field Offices

cc: USFWS, Crosby Wetland Management District, Crosby, ND (Attn: D. Gillund)

Katie Schmidt

To: Heidi_Riddle@fws.gov
Cc: Chris Schmidt
Subject: MMC-Little Muddy Creek Project Data and Amended Project Consultation
Attachments: LittleMuddyCreek_Amended_Consultation_07102014.pdf; LMCC_Shapefiles_07082014.zip

Heidi,

Good afternoon. Per our conversation earlier this week I have attached a zip file which contains the shapefile data for the Little Muddy Creek Pipeline Project. In addition to this data I have also attached an amended consultation letter. The scope of the project has changed slightly since the original submittal and this letter and associated maps detail these minor changes. Please let me know if you have any questions or need additional information.

Thanks-Katie

Katie Schmidt, EIT
Senior Consultant
E3 Environmental, LLC
kschmidt@go2e3.com
O: 651.282.0652
M: 651.216.6881
871 Jefferson Avenue
St. Paul, MN 55102
www.go2e3.com



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July 10, 2014

Mr. Jeffrey Towner, Field Supervisor
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

RE: Little Muddy Creek Pipeline and Epping Station expansion Project: Consultation Letter Amendment.

E3 Environmental, LLC (E3), on the behalf of Meadowlark Midstream Company (MMC), submitted a consultation letter for your review regarding the proposed Little Muddy Creek Pipeline Project (Project). This submittal was dated May 20, 2014. Typographical errors were noted in this original consultation request and the corrections are as follows:

- The pipeline will originate at the Epping Station not the Colt Rail Terminal as indicated on the original Project map;
- The Epping Station is approximately 1-mile south of Epping, North Dakota not 10-miles; and
- The Little Muddy Creek pipeline endpoint will tie-in to the North Dakota Pipeline Company, LLC's Little Muddy Creek Injection Station, not existing MMC assets.

The Project, as described in the previous submittal, includes the construction and operation of a 14.75 mile, 10-inch crude pipeline. In addition to the pipeline, MMC will be expanding the tank storage capacity at their existing Epping Station. This expansion will occur within the 1-mile corridor depicted on the original consultation maps.

MMC is a wholly owned subsidiary of Summit Midstream Partners, LLC. MMC will expand and currently operates the existing Epping Station. The Little Muddy Creek Pipeline will be constructed and operated by Epping Transmission Company, LLC (ETC). ETC is also a wholly owned subsidiary of Summit Midstream Partners, LLC.

E3 has been retained by MMC/ETC to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

Sincerely,

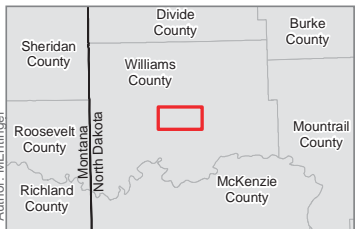
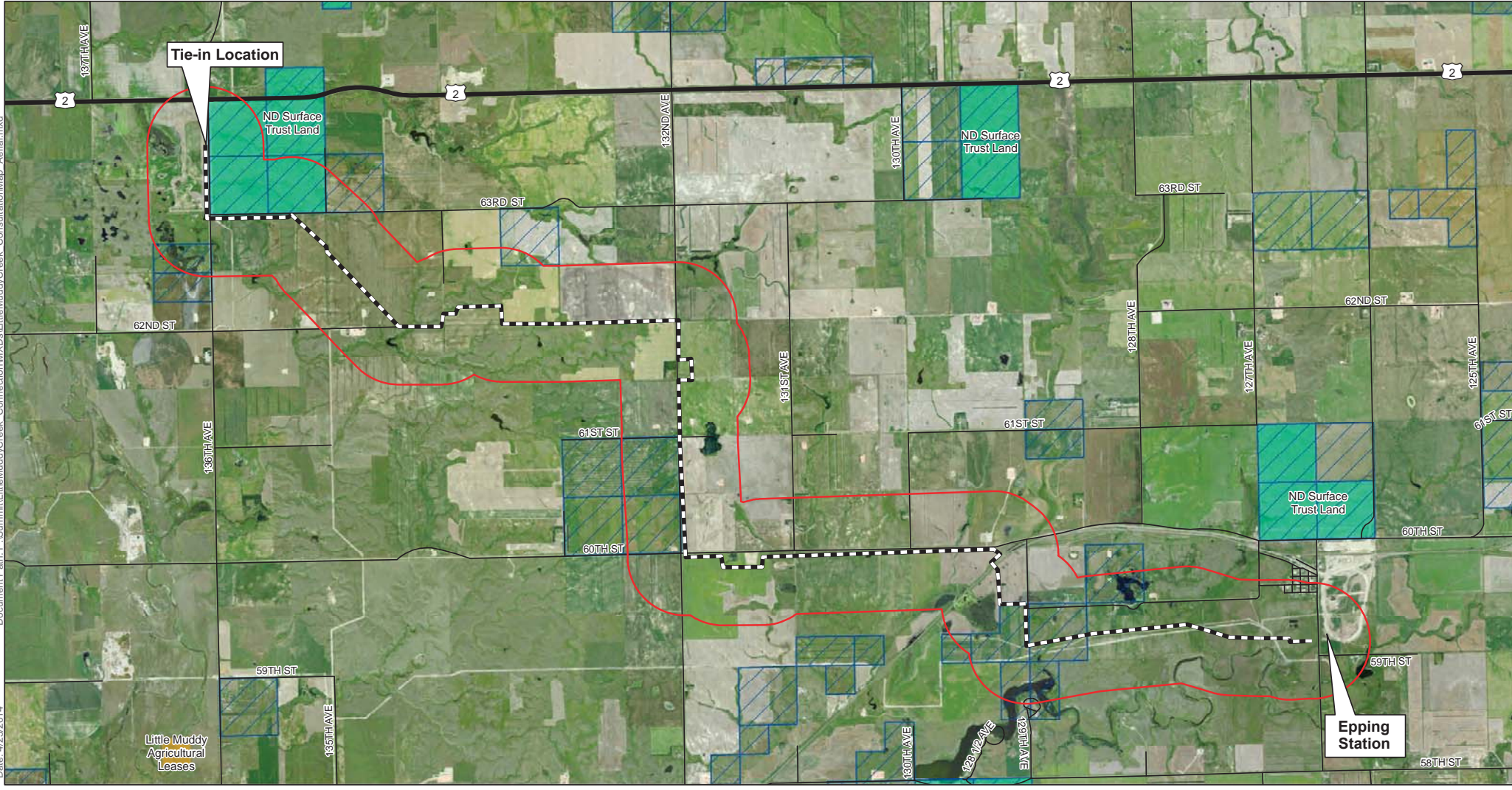
Katie Schmidt, Senior Consultant
E3 Environmental, LLC
871 Jefferson Ave
St. Paul, MN 55102

Enclosures: Project maps

cc: E3 Project Files

Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\LittleMuddyCreek_ConsultationMap_Aerial.mxd

Date: 4/25/2014
Author: MEminger



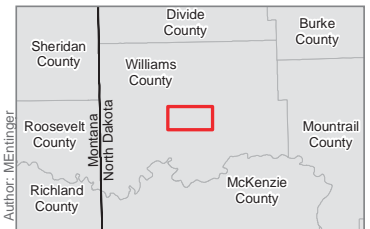
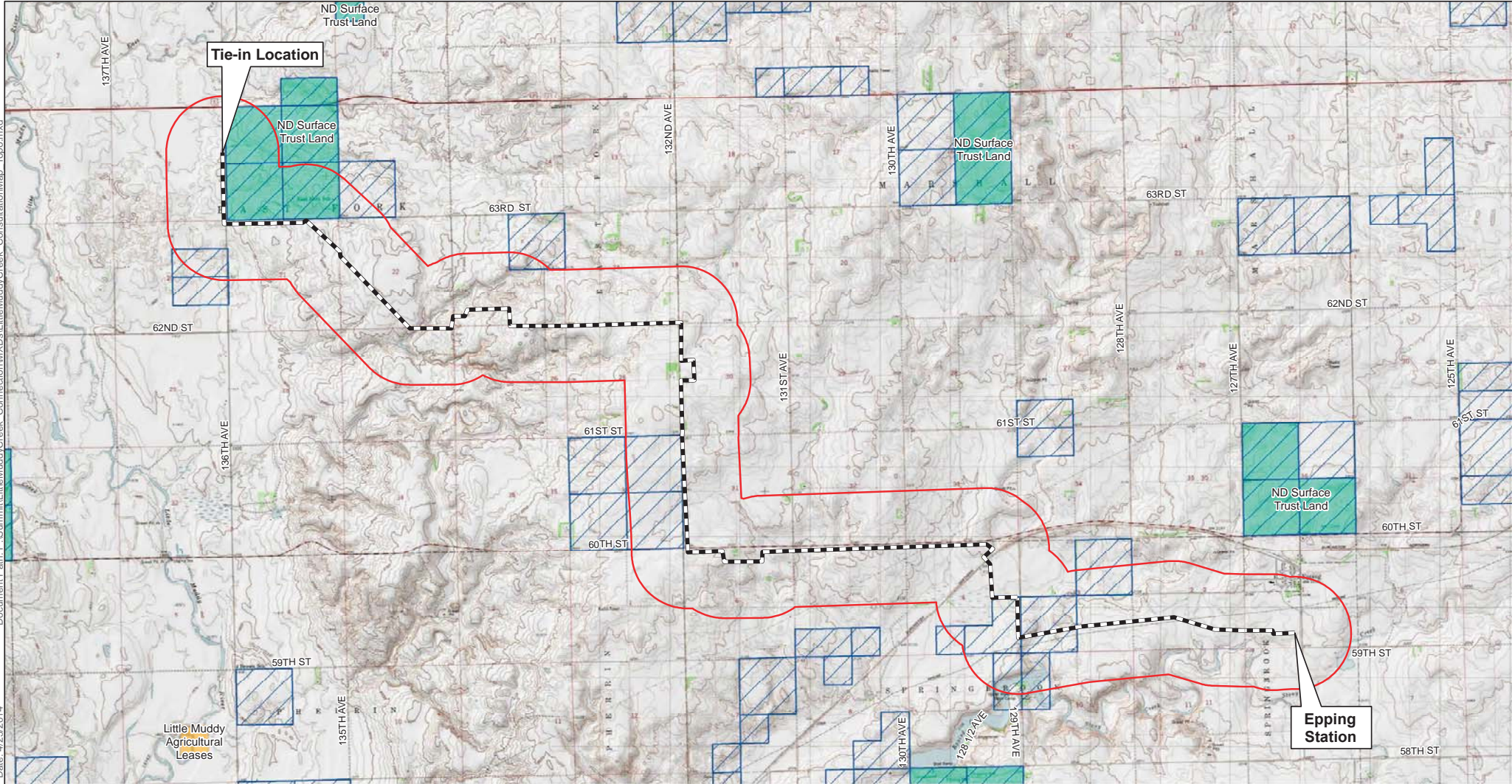
Pipeline
 Corridor (1 Mile)
 Mineral Trust Land
 Federal Land
 State Land

E3 ENVIRONMENTAL
Enhancing Execution with Experience

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Meadowlark Midstream Company, LLC
 Little Muddy Creek Pipeline
 Aerial Overview Map
 Williams County, ND

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Date: 4/25/2014



- Pipeline
- Corridor (1 Mile)
- Mineral Trust Land
- Federal Land
- State Land

E3 ENVIRONMENTAL
Enhancing Execution with Experience

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Map not to scale, for environmental review purposes only.

Meadowlark Midstream Company, LLC
Little Muddy Creek Pipeline
Topo Overview Map
Williams County, ND



May 20, 2014

Mr. Jeffrey Towner, Field Supervisor
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

RE: Meadowlark Midstream Company, LLC – Little Muddy Creek Pipeline Project
Threatened and Endangered Species, Migratory Bird, and Managed Lands
Review.

Meadowlark Midstream Company, LLC (MMC) has proposed the construction of the Little Muddy Creek Pipeline Project (Project). The proposed Project is a new 14.75-mile; 10-inch diameter Crude Pipeline that will originate at the Epping Station located approximately 10 miles south of Epping, ND and will tie-in to existing MMC assets located northwest of Epping, ND. Pipeline construction activities would typically occupy a 110-foot right-of-way. Following construction, the pipeline would be operated within a 25-foot permanent easement. Pipeline construction involves temporary impacts, with a post-construction restoration standard of restoring disturbed areas to their original pre-construction condition.

The location of the proposed Project is described below and depicted on the attached maps.

Williams County, North Dakota the pipeline crosses:

- Township 155N, Range 99W, Section 1, 2, 3, 4, 5, and 6
- Township 156N, Range 99W, Sections 19, 20, and 31
- Township 156N, Range 100W, Sections 17, 20, 21, 22, 23, and 24

The purpose of this request is to compile U.S. Fish and Wildlife Service's (USFWS) comments on environmental topics that are relevant to the North Dakota Public Service Commission's (PSC) siting requirements for Energy Transmission Facility Siting. This request has been prepared to augment that effort and facilitate a thorough project review.

Federally Listed Species Analysis:

Results of the review of the USFWS Information Planning and Conservation System (IPaC) database, at <http://ecos.fws.gov/ipac>, on April 25, 2014 listed the following species to be considered in an effects analysis for the Project:

Federally Listed Species

- Whooping crane (*Grus americana*) – Endangered
- Interior least tern (*Sternula antillarum*) – Endangered
- Pallid sturgeon (*Scaphirhynchus albus*) – Endangered
- Gray wolf (*Canis lupus*) – Endangered
- Piping plover (*Charadrius melodus*) – Threatened
- Designated Critical Habitat – Missouri River

E3 has reviewed the available data describing the life history, critical habitat, and conservation measures associated with each species to evaluate the potential effects of the Project on these resources. The results of this analysis are as follows:

Whooping crane: The whooping crane is a large bodied marsh species that breeds primarily in Canada and winters in the Gulf of Mexico. This species has been closely studied and monitored in recent years due to its small population. North Dakota provides migratory habitat for the species, providing roosting and feeding opportunities during migration. This species prefers larger wetland complexes for roosting habitat, typically using adjacent uplands for foraging opportunities. The proposed project will not result in a loss of crane habitat. Pipeline construction involves temporary impacts, with a post-construction restoration standard of restoring disturbed areas to their original pre-construction condition. Potential impacts are anticipated to be limited to the time period during active construction should it coincide with the spring migration period. Spring migration by the Aransas/Wood Buffalo population from the Texas Gulf Coast begins between the end of March and mid-April, with the last birds generally leaving Texas by the first of May. Experienced breeders are among the first to arrive in Canadian nesting areas in late April, with the rest of the birds arriving throughout the following 6-8 weeks.

Project precautionary measures would be implemented if a whooping crane is sighted in or near the project area. MMC would voluntarily suspend all heavy equipment operation activities and notify the USFWS should a whooping crane be spotted within 0.5 mile of the project area. Heavy equipment activities would resume upon the departure of the individual(s). The pipeline is a buried utility and will not have a direct impact on this species. As a result, the proposed pipeline would have **no effect** on the species.

Interior least tern: The interior population(s) of the least tern has historically been associated with large river systems for breeding and migratory habitats. Breeding birds are known to breed in colonies, utilizing sandbar habitat common to larger rivers. Regionally the Missouri River is known to host remnant breeding populations of terns. The project is approximately 13 miles north of the Missouri River, and therefore will have **no effect** on the species.

Pallid sturgeon: The pallid sturgeon preferred habitat includes the benthic environment associated with swift waters of large turbid, free-flowing rivers with braided channels, dynamic flow patterns, periodic flooding of terrestrial habitats, and requiring extensive micro habitat diversity. Portions of the Missouri River are thought to provide the required habitat for the pallid sturgeon though much of the habitat has been compromised due to channelization, installation of impoundments and altered flow regimes. The project is approximately 13 miles from the Missouri River and Lake Sakakewea, and therefore will have **no effect** on the species.

Gray wolf: Historical records show that wolf sightings are very rare within North Dakota. Sightings in proximity to the project have been reported in the Killdeer Mountains in Dunn County (Johnson 1999). The Killdeer Mountains are about 60 miles to the southeast of the survey area. Most wolves in North Dakota are likely dispersed animals that originated in northern Minnesota, Riding National Park or Spruce Woods Reserve, Manitoba. Currently, wolves are not known to inhabit the project area. The proposed project will have **no effect** on the gray wolf.

Piping plover: The piping plover is associated with shorelines along small alkaline lakes, large reservoir beaches, and river islands and adjacent sand pits. Breeding birds select wide beaches with highly clumped vegetation covering less than 25% of the area. Current breeding range on the Northern Great Plains extends south along major prairie rivers including the Yellowstone and Missouri, and in alkali wetlands including those in northeastern Montana and North Dakota. The project will intersect prairie pothole wetlands, some of which may be suitable alkali wetland *habitat*, particularly in low-water years. Total pipeline distance that intersects wetlands is less than one mile and shorelines and bars were not exposed during the field surveys due to high water. No records of piping plovers in the area were cited by the USFWS or North Dakota Parks and Recreation in consultations conducted for the biological assessment. The project is approximately 13 miles from the Missouri River. All construction will occur within the fence line of existing production plants. The proposed project will have **no effect** on piping plovers or designated critical habitat for the piping plover.

USFWS Managed Lands:

Conservation programs such as Waterfowl Production Areas and wetland and grassland easements represent an important tool used by USFWS to identify and manage high quality wildlife habitat. A review of public records failed to identify any of these USFWS managed lands in the project study area. MMC requests confirmation regarding the presence or absence of USFWS managed lands within the proposed study area.

Migratory Bird Consultation:

USFWS administers various wildlife related mandates of national concern including the Migratory Bird Treaty Act (MBTA). MMC understands that unlike the Endangered Species Act, the MBTA has no provisions for the allowance of a take and therefore compliance may best be achieved by avoiding or minimizing the potential to interact with migratory species during the active breeding season. MMC also understands that in North Dakota, the breeding season is typically defined as occurring annually from February 1 through July 15.

Meadowlark Midstream Company, LLC
Little Muddy Creek Pipeline Project
May 20th, 2014



E3 ENVIRONMENTAL
871 Jefferson Avenue
St. Paul, MN 55102

E3 Environmental, LLC (E3) has been retained by MMC to provide environmental consulting support for this project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

Sincerely,

A handwritten signature in purple ink that reads "Katie Schmidt".

Katie Schmidt, Senior Consultant
E3 Environmental, LLC
871 Jefferson Ave
St. Paul, MN 55102

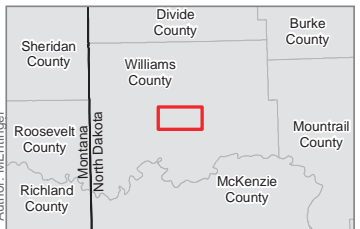
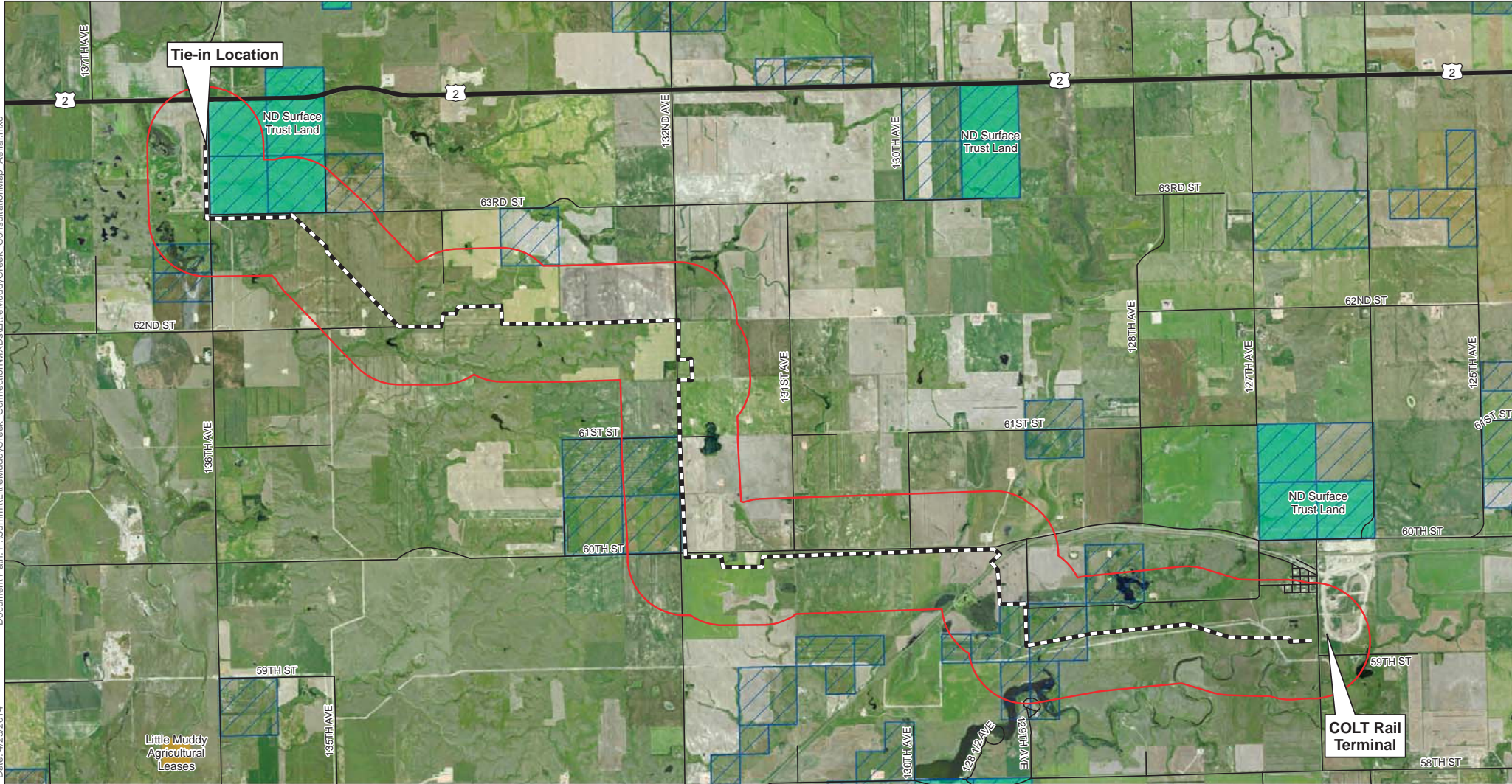
Enclosures: Project maps – USGS topographic and aerial photography






cc: E3 Project Files


Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\LittleMuddyCreek_ConsultationMap_Aerial.mxd

Date: 4/25/2014


Author: MEminger



-  Pipeline
-  Corridor (1 Mile)
-  Mineral Trust Land
-  Federal Land
-  State Land




E3 ENVIRONMENTAL
Enhancing Execution with Experience



0 0.5 1 2 Miles

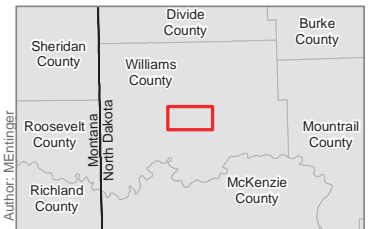
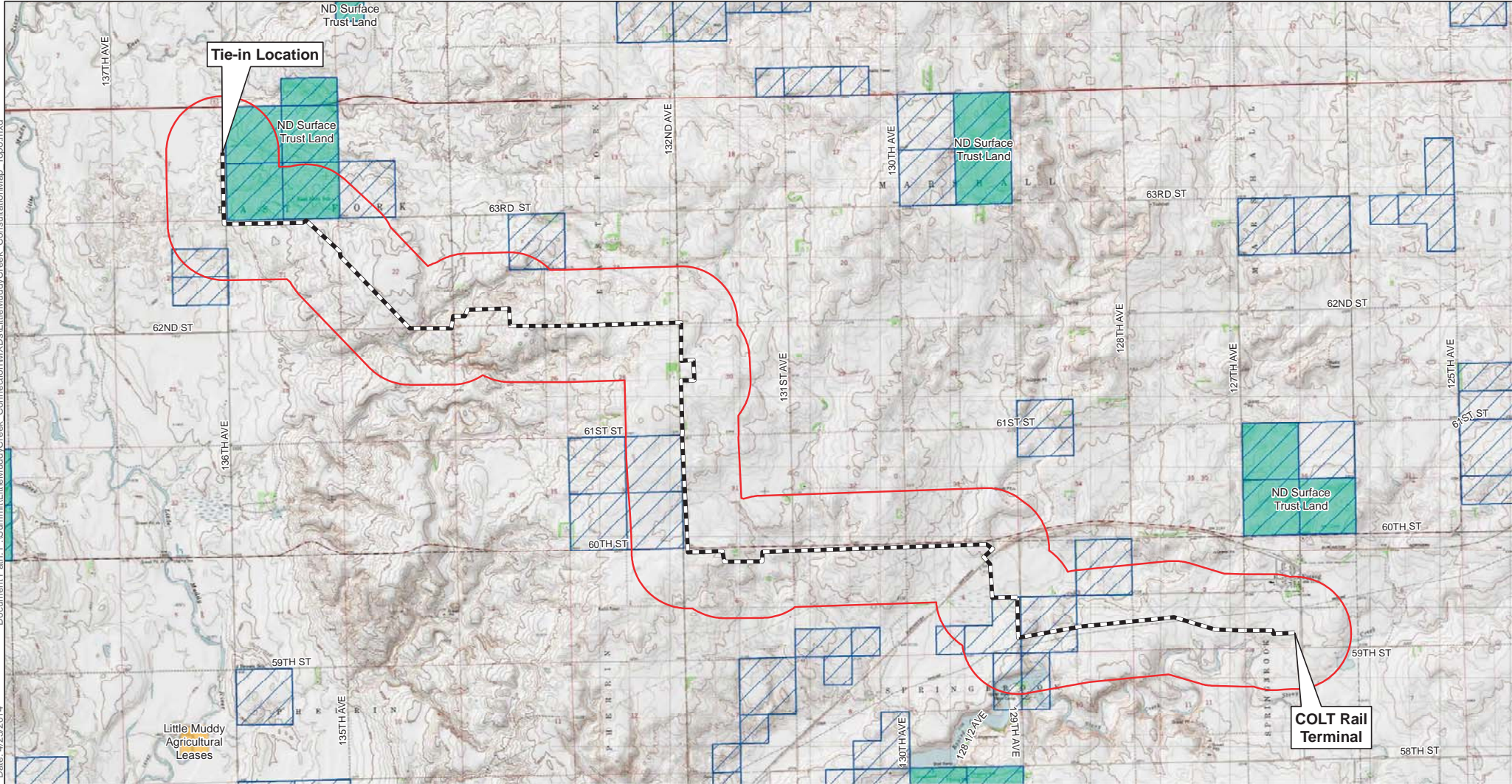
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Map not to scale, for environmental review purposes only.

Meadowlark Midstream Company, LLC
 Little Muddy Creek Pipeline
 Aerial Overview Map
 Williams County, ND

Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\LittleMuddyCreek_ConsultationMap_Topo.mxd
Date: 4/25/2014



Pipeline
 Corridor (1 Mile)
 Mineral Trust Land
 Federal Land
 State Land



E3 ENVIRONMENTAL
Enhancing Execution with Experience



0 0.5 1 2 Miles

1:51,657

Map not to scale, for environmental review purposes only.

**Meadowlark Midstream
Company, LLC**
 Little Muddy Creek Pipeline
 Topo Overview Map
 Williams County, ND

North Dakota Game and Fish Department

Consultation

From: Schumacher, John D. [mailto:jdschumacher@nd.gov]
Sent: Thursday, August 7, 2014 2:07 PM
To: Katie Schmidt
Subject: Little Muddy Creek Pipeline & Epping Station Expansion

Ms. Schmidt,

The North Dakota Game and Fish Department has reviewed this project as amended and has no additional concerns. Our original comments are still applicable. If you have any questions, please let me know.

JOHN SCHUMACHER
RESOURCE BIOLOGIST
ND GAME AND FISH DEPT
701.328.6321



July 10, 2014

Mr. Greg Link, Chief
Conservation and Communication Division
North Dakota Game and Fish Department
100 N. Bismarck Expressway
Bismarck, ND 58501-5095

Dear Mr. Link,

RE: Little Muddy Creek Pipeline and Epping Station expansion Project: Consultation Letter Amendment.

E3 Environmental, LLC (E3), on the behalf of Meadowlark Midstream Company (MMC), submitted a consultation letter for your review regarding the proposed Little Muddy Creek Pipeline Project (Project). This submittal was dated May 20, 2014. Typographical errors were noted in this original consultation request and the corrections are as follows:

- The pipeline will originate at the Epping Station not the Colt Rail Terminal as indicated on the original Project map;
- The Epping Station is approximately 1-mile south of Epping, North Dakota not 10-miles; and
- The Little Muddy Creek pipeline endpoint will tie-in to the North Dakota Pipeline Company, LLC's Little Muddy Creek Injection Station, not existing MMC assets.

The Project, as described in the previous submittal, includes the construction and operation of a 14.75 mile, 10-inch crude pipeline. In addition to the pipeline, MMC will be expanding the tank storage capacity at their existing Epping Station. This expansion will occur within the 1-mile corridor depicted on the original consultation maps.

MMC is a wholly owned subsidiary of Summit Midstream Partners, LLC. MMC will expand and currently operates the existing Epping Station. The Little Muddy Creek Pipeline will be constructed and operated by Epping Transmission Company, LLC (ETC). ETC is also a wholly owned subsidiary of Summit Midstream Partners, LLC.

E3 has been retained by MMC/ETC to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

Sincerely,

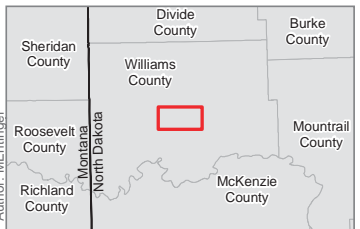
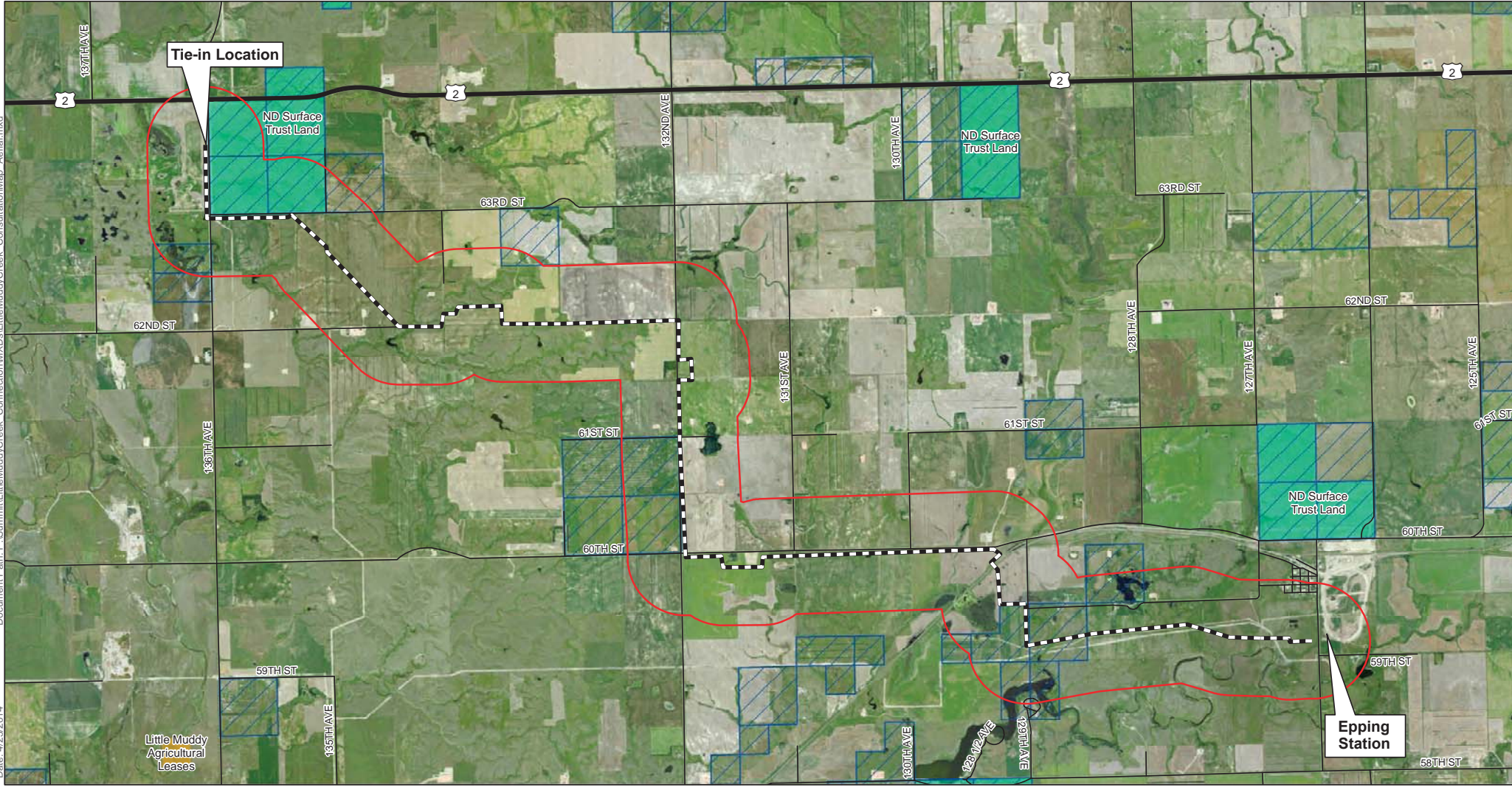
Katie Schmidt, Senior Consultant
E3 Environmental, LLC
871 Jefferson Ave
St. Paul, MN 55102

Enclosures: Project Map

cc: E3 Project Files

Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\LittleMuddyCreek_ConsultationMap_Aerial.mxd

Date: 4/25/2014
Author: MEminger



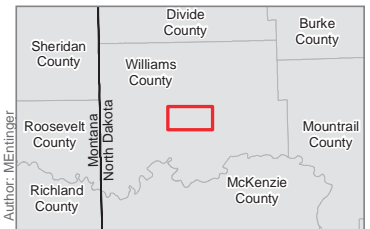
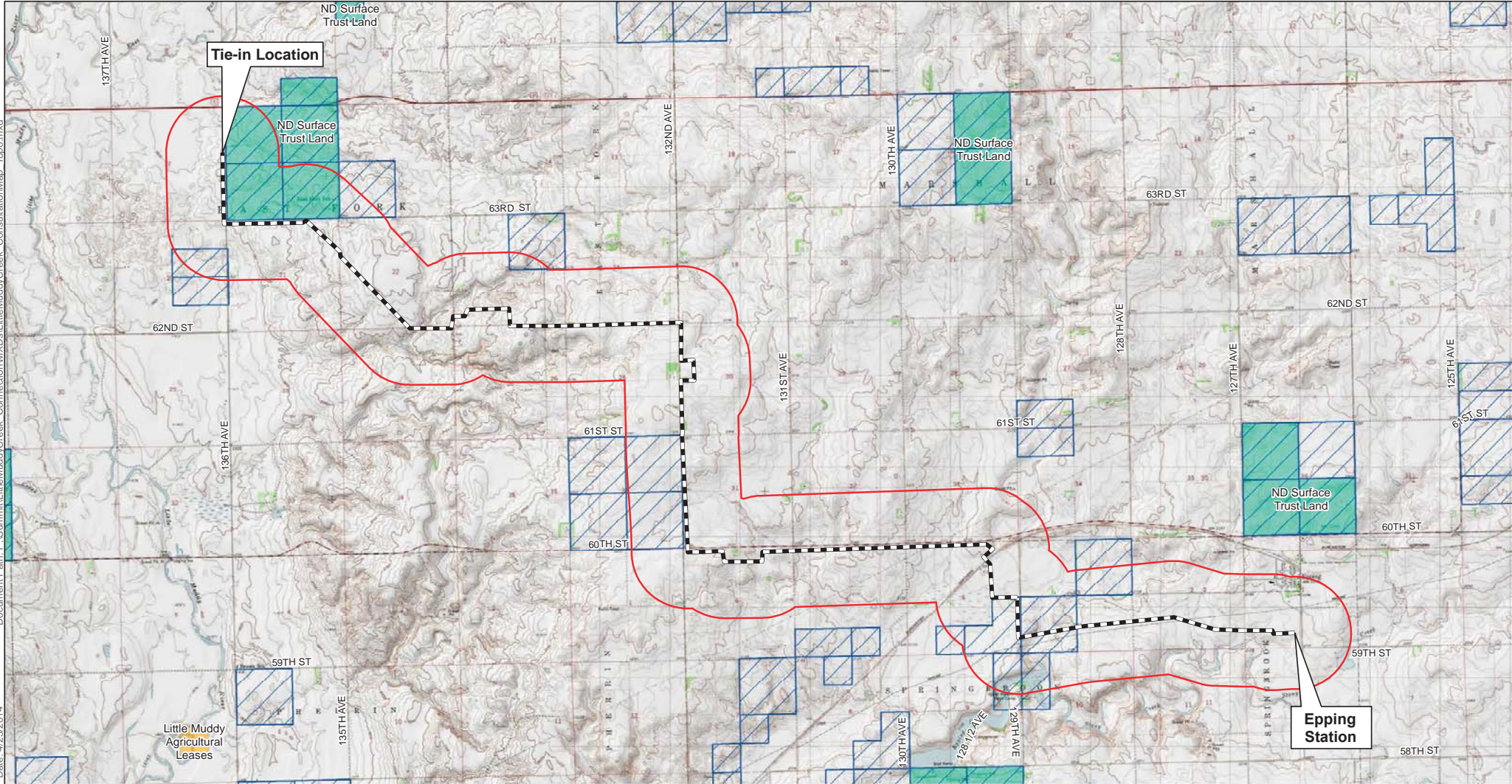
Pipeline
 Corridor (1 Mile)
 Mineral Trust Land
 Federal Land
 State Land

E3 ENVIRONMENTAL
Enhancing Execution with Experience

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 Map not to scale, for environmental review purposes only.

Meadowlark Midstream Company, LLC
 Little Muddy Creek Pipeline
 Aerial Overview Map
 Williams County, ND

Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\LittleMuddyCreek_ConsultationMap_Topo.mxd
Date: 4/25/2014



- Pipeline
- Corridor (1 Mile)
- Mineral Trust Land
- Federal Land
- State Land

E3 ENVIRONMENTAL
Enhancing Execution with Experience

0 0.5 1 2 Miles
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Map not to scale, for environmental review purposes only.

Meadowlark Midstream Company, LLC
Little Muddy Creek Pipeline
Topo Overview Map
Williams County, ND



"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

June 10, 2014

Katie Schmidt
Senior Consultant
E3 Environmental, LLC
871 Jefferson Avenue
St. Paul, MN 55102

Dear Ms. Schmidt:

RE: Meadowlark Midstream Company, LLC – Little Muddy Creek Pipeline Project

Meadowlark Midstream Company, LLC (MMC) has proposed the construction of the Little Muddy Creek Pipeline, a new 14.75-mile 10-inch diameter crude oil pipeline that will originate at the Epping Station and tie-in to existing MMC assets northwest of Epping in Williams County, North Dakota.

The National Wetland Inventory indicates various wetlands within the proposed project corridor. Steps should be taken to protect any wetlands that cannot be avoided, no alterations should be made to existing drainage patterns, and above-ground appurtenances should not be placed in wetland areas.

We do not believe this project will have significant adverse effects on wildlife or wildlife habitat, including species of conservation priority, provided any unavoidable destruction or degradation of wetland acres is mitigated in kind, and disturbed areas are reclaimed to pre-project conditions.

Private Lands Open to Sportsmen (PLOTS) is a public access program which cost-shares with private landowners to help conserve fish and wildlife habitat. The ND Game and Fish Department does not own or manage PLOTS lands. Information regarding PLOTS locations is available on the department website at: <http://gf.nd.gov/hunting/private-land-open-sportsmen>. This page is updated to reflect changes as tracts are added or removed.

Sincerely,

A handwritten signature in blue ink that reads "Greg Link".

Greg Link
Chief
Conservation & Communication Division

js



May 20, 2014

Mr. Greg Link, Chief
Conservation and Communication Division
North Dakota Game and Fish Department
100 N. Bismarck Expressway
Bismarck, ND 58501-5095

Dear Mr. Link,

RE: Meadowlark Midstream Company, LLC – Little Muddy Creek Pipeline Project
State Conservation Priority Species Consultation, State Plots Land Review.

Meadowlark Midstream Company, LLC (MMC) has proposed the construction of the Little Muddy Creek Pipeline Project (Project). The proposed Project is a new 14.75-mile; 10-inch diameter Crude Pipeline that will originate at the Epping Station located approximately 10 miles south of Epping, ND and will tie-in to existing MMC assets located northwest of Epping, ND. Pipeline construction activities would typically occupy a 110-foot right-of-way. Following construction, the pipeline would be operated within a 25-foot permanent easement. Pipeline construction involves temporary impacts, with a post-construction restoration standard of restoring disturbed areas to their original pre-construction condition.

The location of the proposed Project is described below and depicted on the attached maps.

Williams County, North Dakota the pipeline crosses:

- Township 155N, Range 99W, Section 1, 2, 3, 4, 5, and 6
- Township 156N, Range 99W, Sections 19, 20, and 31
- Township 156N, Range 100W, Sections 17, 20, 21, 22, 23, and 24

The purpose of this correspondence is twofold: to request a review of the proposed Project for presence or absence of State Conservation Priority Species; and to request confirmation of the presence or absence of North Dakota Game and Fish Department PLOTS Lands within the proposed pipeline corridor (see attached). This information will be included in a North Dakota Public Service Commission application for the Project.

Meadowlark Midstream Company, LLC
Little Muddy Creek Pipeline Project
May 20th, 2014



E3 Environmental, LLC (E3) has been retained by MMC to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

Sincerely,



Katie Schmidt, Senior Consultant
E3 Environmental, LLC
871 Jefferson Ave
St. Paul, MN 55102

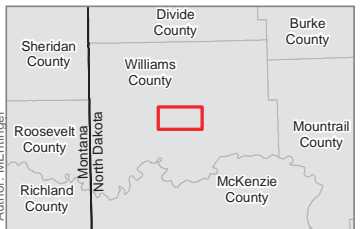
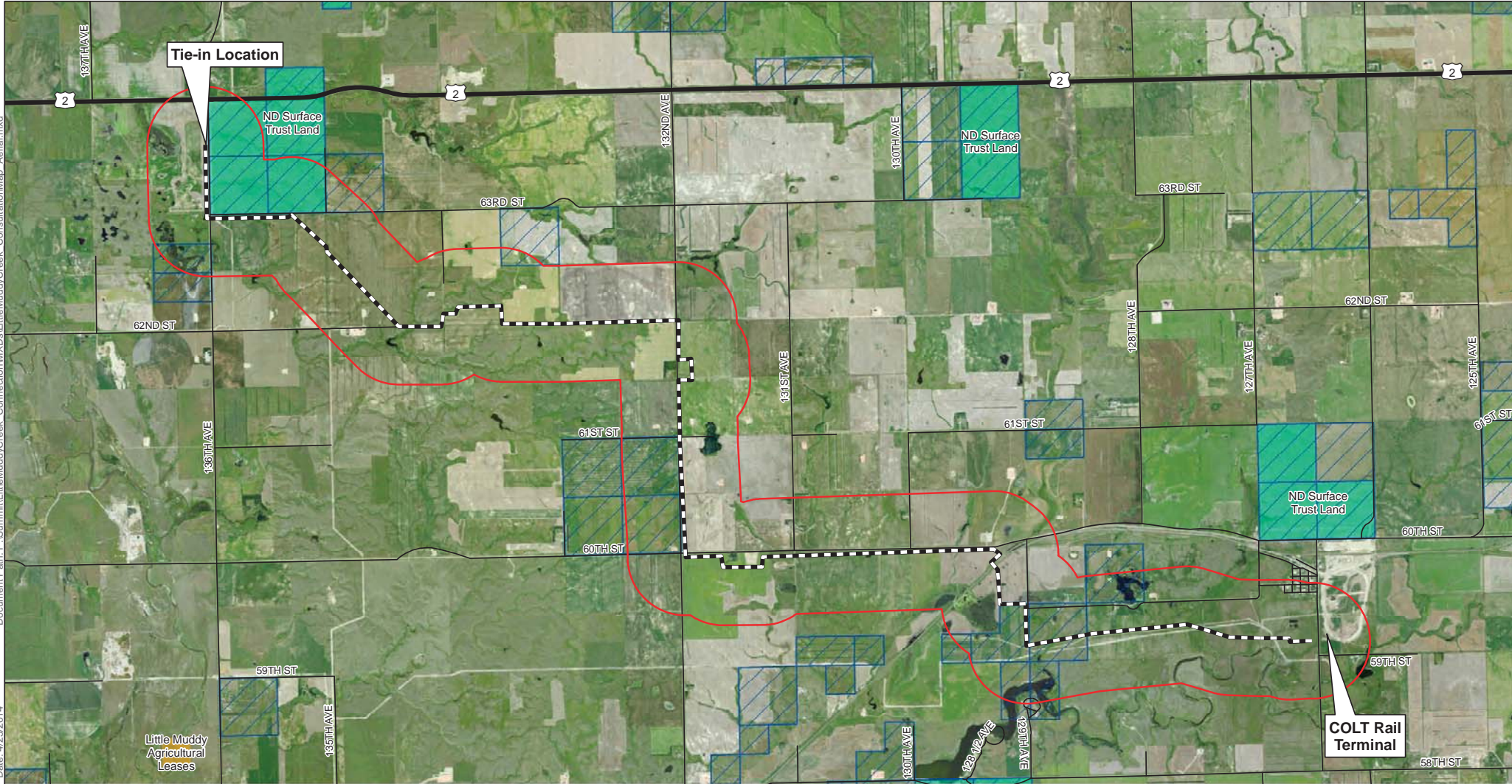
Enclosures: Project map






cc: E3 Project Files


Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\LittleMuddyCreek_ConsultationMap_Aerial.mxd

Date: 4/25/2014


Author: MEminger



-  Pipeline
-  Corridor (1 Mile)
-  Mineral Trust Land
-  Federal Land
-  State Land




E3 ENVIRONMENTAL
Enhancing Execution with Experience



0 0.5 1 2 Miles

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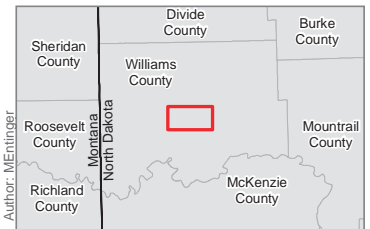
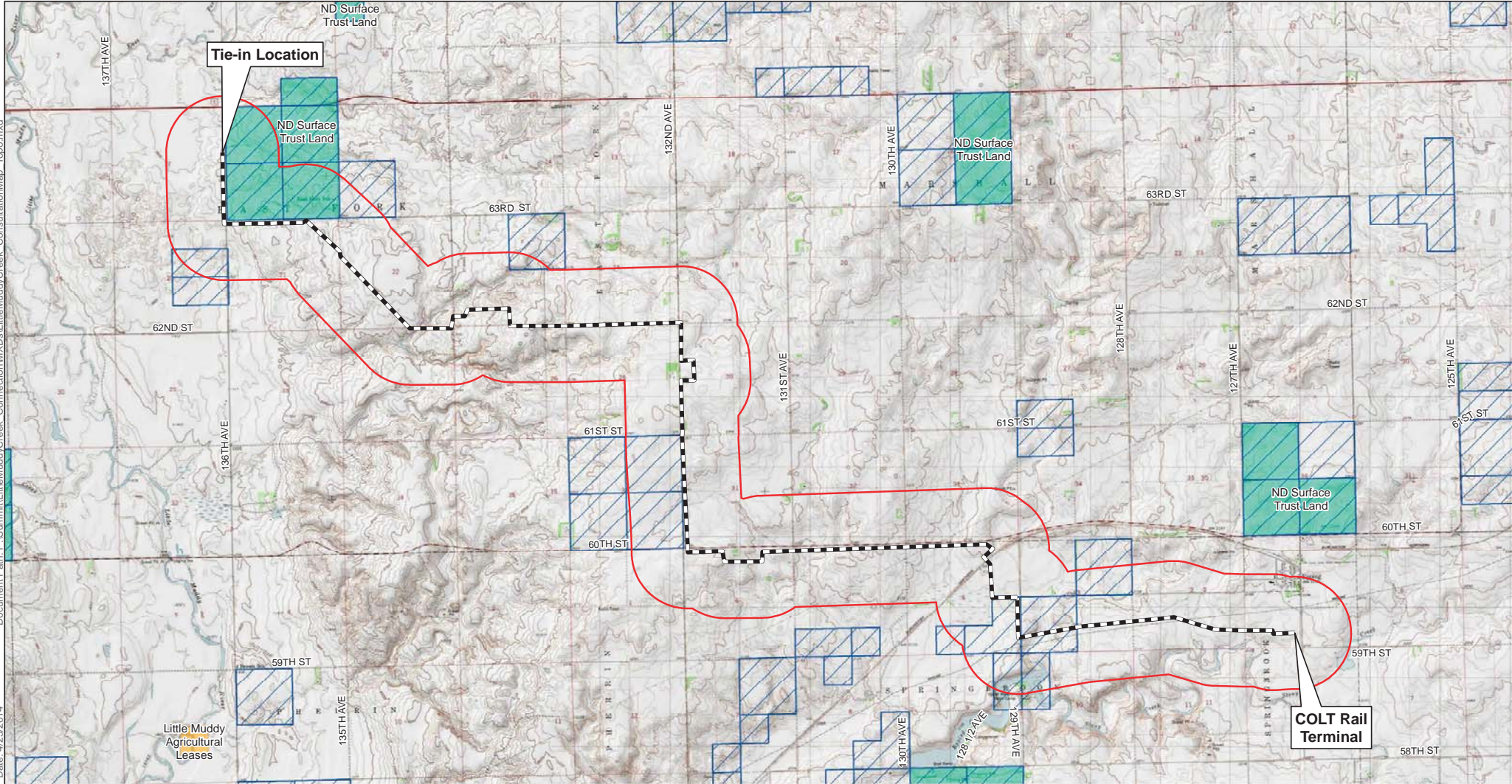


Map not to scale, for environmental review purposes only.

Meadowlark Midstream Company, LLC

Little Muddy Creek Pipeline
Aerial Overview Map
Williams County, ND

Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\LittleMuddyCreek_ConsultationMap_Topo.mxd
Date: 4/25/2014



- - - Pipeline
 [Red Outline] Corridor (1 Mile)
 [Blue Hatched] Mineral Trust Land
 [Yellow] Federal Land
 [Green] State Land


E3 ENVIRONMENTAL
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 Map not to scale, for environmental review purposes only.

Meadowlark Midstream Company, LLC
 Little Muddy Creek Pipeline
 Topo Overview Map
 Williams County, ND

North Dakota Parks and Recreation Department

Consultation



July 10, 2014

Ms. Kathy Duttonhefner, Coordinator
Natural Resources Division
North Dakota Department of Parks and Recreation
1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649

RE: Little Muddy Creek Pipeline and Epping Station expansion Project: Consultation Letter Amendment.

E3 Environmental, LLC (E3), on the behalf of Meadowlark Midstream Company (MMC), submitted a consultation letter for your review regarding the proposed Little Muddy Creek Pipeline Project (Project). This submittal was dated May 20, 2014. Typographical errors were noted in this original consultation request and the corrections are as follows:

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E3 has been retained by MMC/ETC to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

Sincerely,

Katie Schmidt, Senior Consultant
E3 Environmental, LLC
871 Jefferson Ave
St. Paul, MN 55102

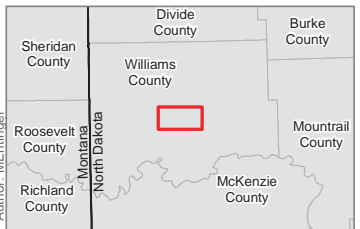
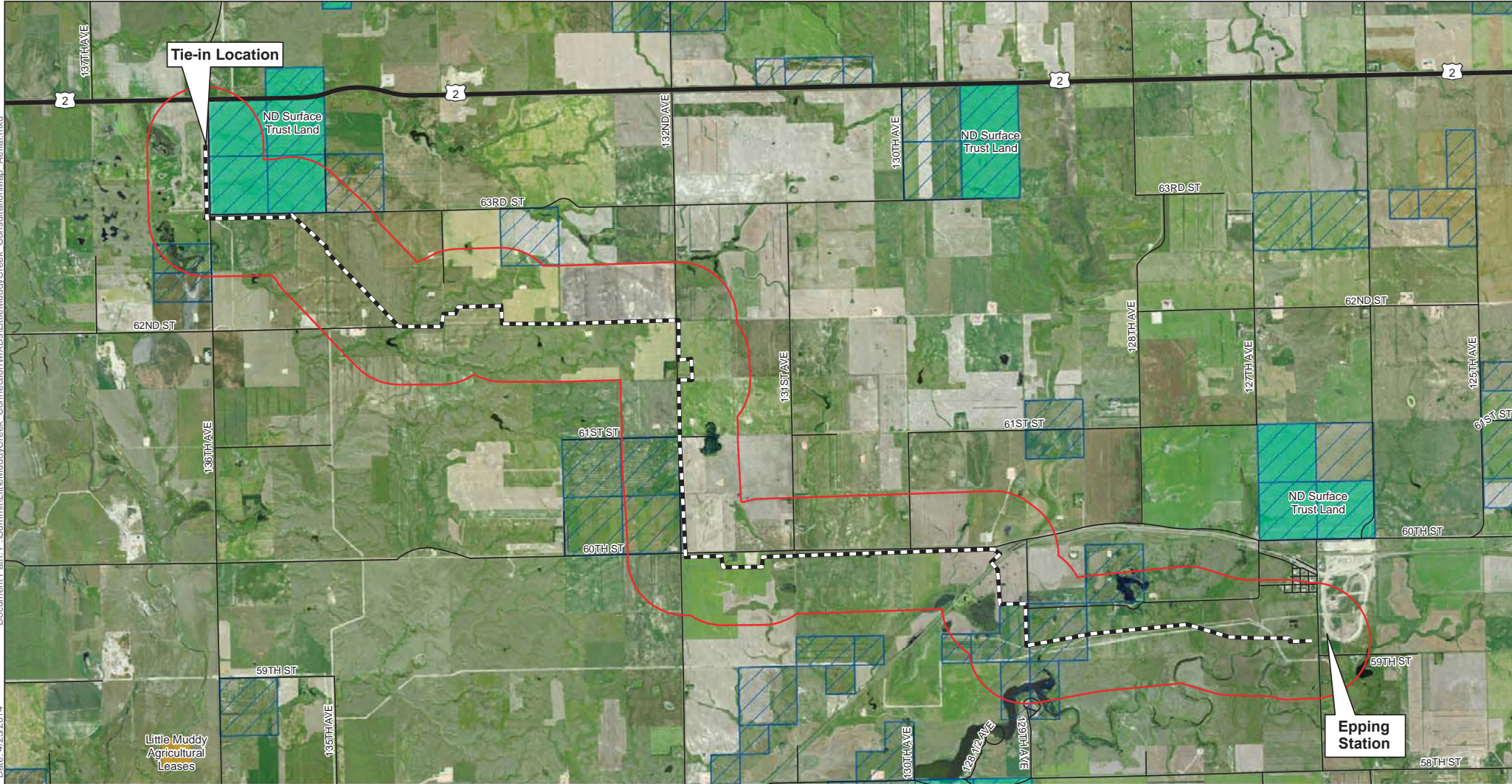
Enclosures: Project Maps

cc: E3 Project Files

Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\LittleMuddyCreek_ConsultationMap_Aerial.mxd

Date: 4/25/2014

Author: MEminger



- Pipeline
- Corridor (1 Mile)
- Mineral Trust Land
- Federal Land
- State Land

E3 ENVIRONMENTAL
Enhancing Execution with Experience

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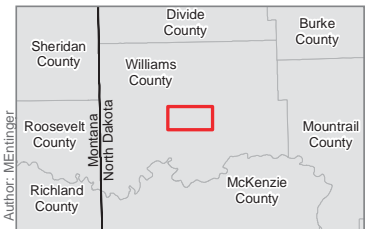
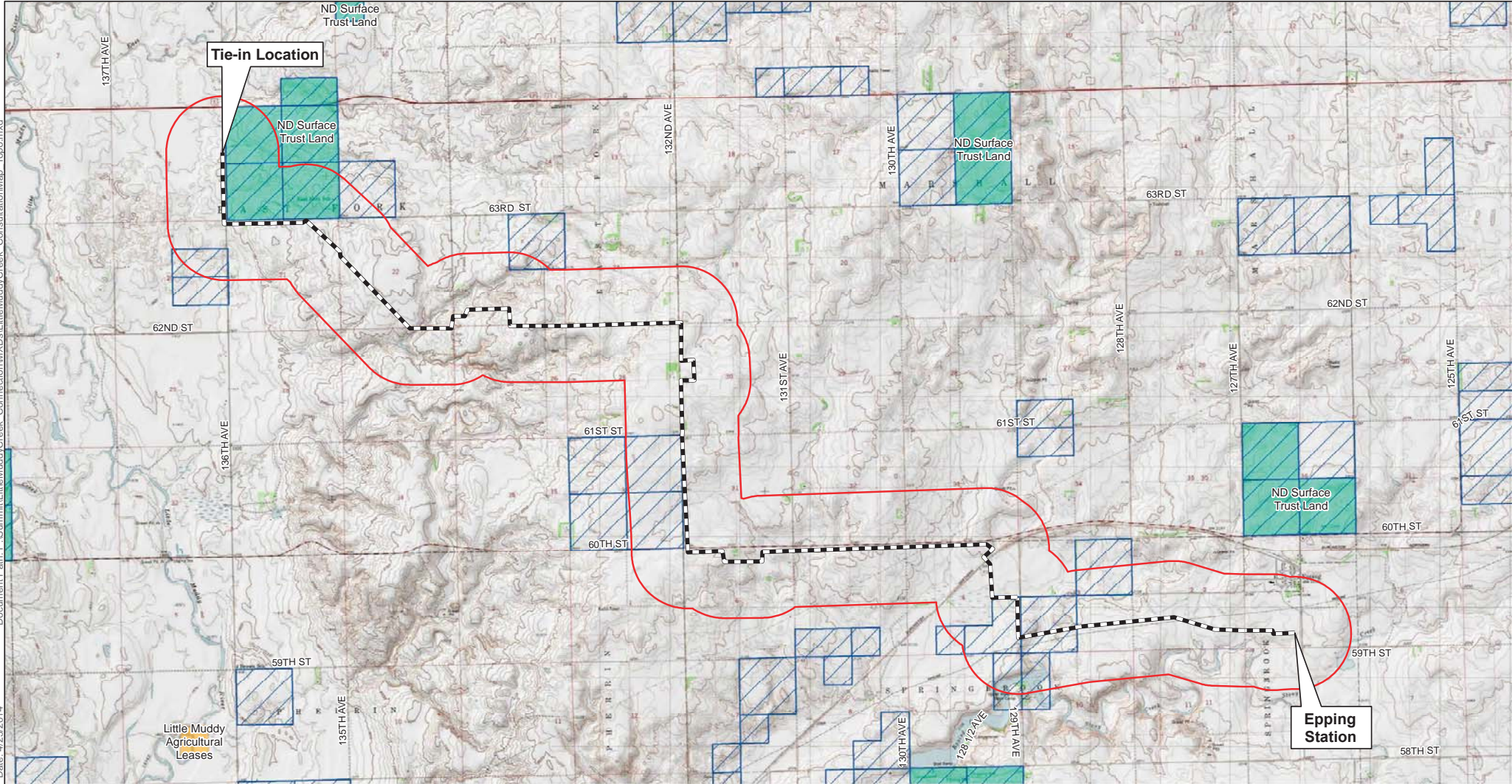
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Map not to scale, for environmental review purposes only.

Meadowlark Midstream Company, LLC

Little Muddy Creek Pipeline
Aerial Overview Map
Williams County, ND

Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\LittleMuddyCreek_ConsultationMap_Topo.mxd
Date: 4/25/2014



- Pipeline
- Corridor (1 Mile)
- Mineral Trust Land
- Federal Land
- State Land

E3 ENVIRONMENTAL
Enhancing Execution with Experience

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Map not to scale, for environmental review purposes only.

Meadowlark Midstream Company, LLC

Little Muddy Creek Pipeline

Topo Overview Map

Williams County, ND



Jack Dalrymple, Governor
Mark A. Zimmerman, Director
1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649
Phone 701-328-5357
Fax 701-328-5363
E-mail parkrec@nd.gov
www.parkrec.nd.gov

June 2, 2014

Katie Schmidt
E3 Environmental LLC
871 Jefferson Ave., St Paul, MN 55102

Re: Meadowlark Midstream Company, LLV Little Muddy Creek Pipeline Project

Dear Katie Schmidt:

The North Dakota Parks and Recreation Department (the Department) has reviewed the above referenced proposed Little Muddy Creek Pipeline Project south of Epping, North Dakota.

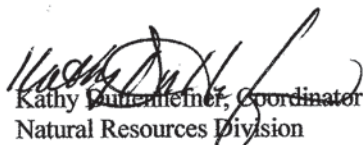
Our agency scope of authority and expertise covers recreation and biological resources (in particular rare plants and ecological communities). The project as defined does not affect state park lands that we manage or Land and Water Conservation Fund recreation projects that we coordinate.

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, there are no documented occurrences in our database within or adjacent to project area. Because this information is not based on a comprehensive inventory, there may be species of concern or otherwise significant ecological communities in the area that are not represented in the database. The lack of data for any project area cannot be construed to mean that no significant features are present. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

The Department recommends that the project be accomplished with minimal impacts and that all efforts be made to ensure that critical habitats not be disturbed in the project area to help secure rare species conservation in North Dakota. Regarding any reclamation efforts, we recommend that any impacted areas be revegetated with species native to the project area.

We appreciate your commitment to rare plant, animal and ecological community conservation, management and inter-agency cooperation to date. For additional information please contact me at (701-328-5370 or kgduttonhefner@nd.gov). Thank you for the opportunity to comment on this proposed project.

Sincerely,


Kathy Duttonhefner, Coordinator
Natural Resources Division

R.USNDNHI*2014_106KD6/3/2014DL6.7.2014

.....
Play in our backyard!



May 20, 2014

Ms. Kathy Duttonhefner, Coordinator
Natural Resources Division
North Dakota Department of Parks and Recreation
1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649

RE: Meadowlark Midstream Company, LLC – Little Muddy Creek Pipeline Project
State Conservation Priority Species Consultation, State Plots Land Review.

Meadowlark Midstream Company, LLC (MMC) has proposed the construction of the Little Muddy Creek Pipeline Project (Project). The proposed Project is a new 14.75-mile; 10-inch diameter Crude Pipeline that will originate at the Epping Station located approximately 10 miles south of Epping, ND and will tie-in to existing MMC assets located northwest of Epping, ND. Pipeline construction activities would typically occupy a 110-foot right-of-way. Following construction, the pipeline would be operated within a 25-foot permanent easement. Pipeline construction involves temporary impacts, with a post-construction restoration standard of restoring disturbed areas to their original pre-construction condition.

The location of the proposed Project is described below and depicted on the attached maps.

Williams County, North Dakota the pipeline crosses:

- Township 155N, Range 99W, Section 1, 2, 3, 4, 5, and 6
- Township 156N, Range 99W, Sections 19, 20, and 31
- Township 156N, Range 100W, Sections 17, 20, 21, 22, 23, and 24

The purpose of this request is to compile the North Dakota Parks and Recreation Department's (Department) comments on environmental topics that are relevant to the North Dakota Public Service Commission's siting requirements for Energy Transmission Facility Siting. It is our understanding that the Department administers the following state programs:

- State Park Lands
- Land and Water Conservation Fund
- Natural Heritage Inventory

We request a review of the proposed corridor and route (see attached map) for the presence or absence of any lands, projects and/or sensitive species that fall under the purview of these programs.

Meadowlark Midstream Company, LLC
Little Muddy Creek Pipeline Project
May 20th, 2014



E3 Environmental, LLC (E3) has been retained by MMC to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

Sincerely,



Katie Schmidt, Senior Consultant
E3 Environmental, LLC
871 Jefferson Ave
St. Paul, MN 55102

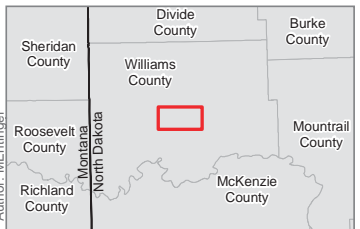
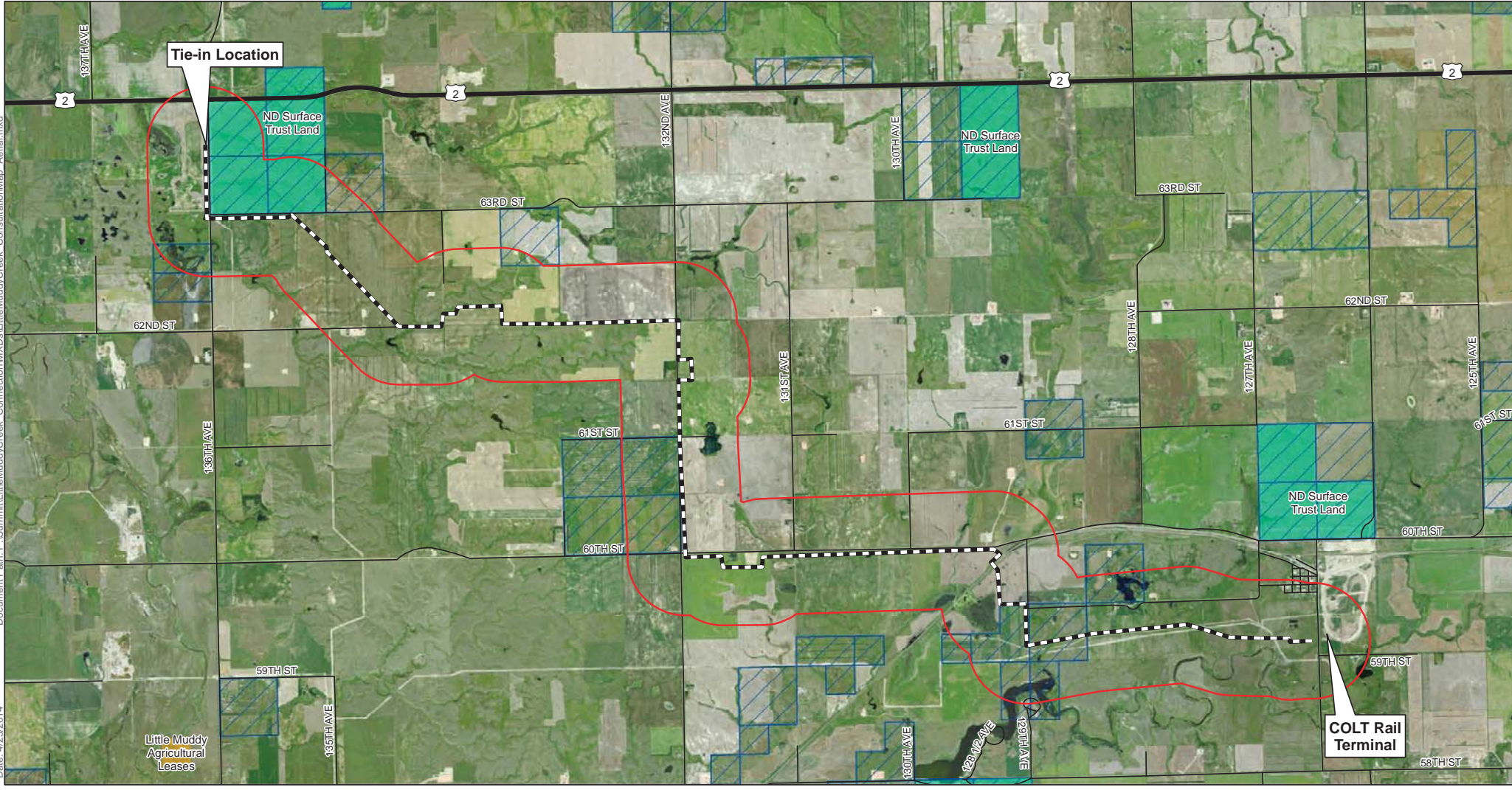
Enclosures: Project map

cc: E3 Project Files

Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\LittleMuddyCreek_ConsultationMap_Aerial.mxd

Date: 4/25/2014

Author: MEminger



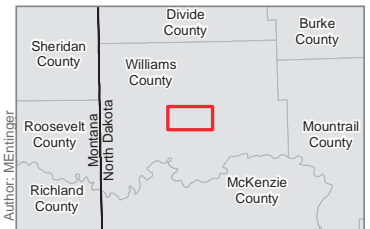
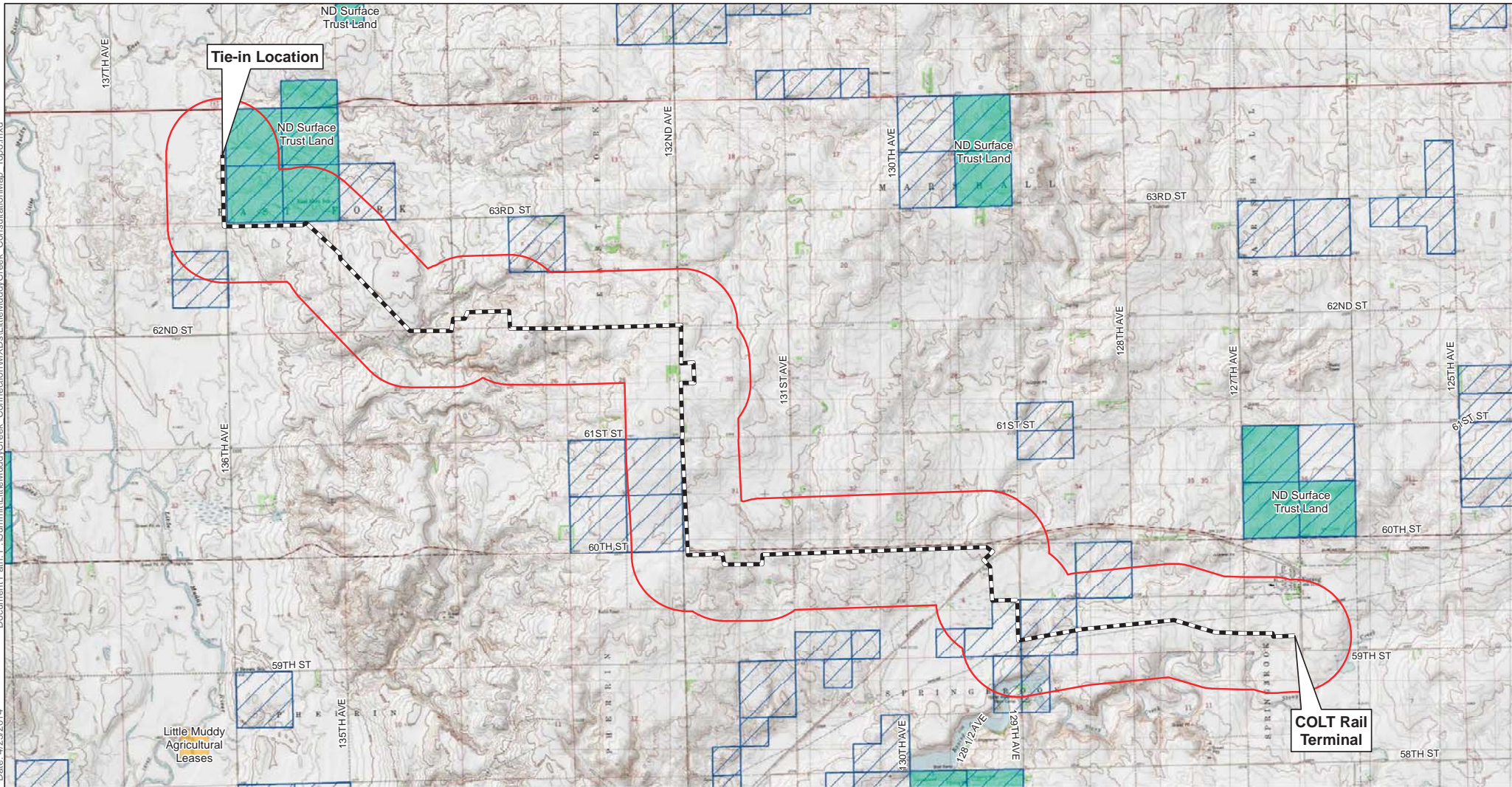
Pipeline
 Corridor (1 Mile)
 Mineral Trust Land
 Federal Land
 State Land

E3 ENVIRONMENTAL
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 Map not to scale, for environmental review purposes only.


Meadowlark Midstream Company, LLC
 Little Muddy Creek Pipeline
 Aerial Overview Map
 Williams County, ND

Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\LittleMuddyCreek_ConsultationMap_Topo.mxd
Date: 4/25/2014



- Pipeline
- Corridor (1 Mile)
- Mineral Trust Land
- Federal Land
- State Land


E3 ENVIRONMENTAL
Enhancing Execution with Experience


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 Map not to scale, for environmental review purposes only.

**Meadowlark Midstream
 Company, LLC**
 Little Muddy Creek Pipeline
 Topo Overview Map
 Williams County, ND

North Dakota State Lands Department-School Trust Lands

Constulation

Chris Schmidt

From: Haupt, Michael L. <mhaupt@nd.gov>
Sent: Thursday, July 10, 2014 3:42 PM
To: Katie Schmidt
Cc: Chris Schmidt
Subject: RE: MMC-Little Muddy Creek Amended Consultation
Attachments: LittleMuddyCreek_ConsultationMap_Updated_06262014.pdf

Katie,

Good afternoon! We may have talked to Meadowlark already about a route on the Trust land in section 16. There is potential for gravel deposits and a request for a pipeline easement would require prospecting by Meadowlark and determination by the Trust of the amount of royalties Meadowlark would pay for the un-mineable gravel, in addition to the easement consideration. Let me know if you have questions. Thanks.

Michael L. Haupt

Land Management Professional P M
North Dakota Department of Trust lands
1000 10th Street
Bismarck ND 58102
mhaupt@nd.gov

Note: You can track the real time status of your right-of-way application 24/7 at <http://www.land.nd.gov/surface/right-of-way.aspx> using either the ROW number or by entering at least the first three letters of the company name. By checking this site you can find the name, telephone number and email address of the person working on the application as well as its current status in real time.

From: Katie Schmidt [mailto:KSchmidt@go2e3.com]
Sent: Thursday, July 10, 2014 2:46 PM
To: Haupt, Michael L.
Cc: Chris Schmidt
Subject: MMC-Little Muddy Creek Amended Consultation

Mr. Haupt,

E3 Environmental, LLC (E3), on the behalf of Meadowlark Midstream Company (MMC), submitted a consultation letter for your review regarding the proposed Little Muddy Creek Pipeline Project (Project). This submittal was dated May 20, 2014. Typographical errors were noted in this original consultation request and the corrections are as follows:

- The pipeline will originate at the Epping Station not the Colt Rail Terminal as indicated on the original Project map;
- The Epping Station is approximately 1-mile south of Epping, North Dakota not 10-miles; and
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MMC is a wholly owned subsidiary of Summit Midstream Partners, LLC. MMC will expand and currently operates the existing Epping Station. The Little Muddy Creek Pipeline will be constructed and operated by Epping Transmission Company, LLC (ETC). ETC is also a wholly owned subsidiary of Summit Midstream Partners, LLC.

E3 has been retained by MMC/ETC to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

Sincerely,

Katie Schmidt, EIT
Senior Consultant

E3 Environmental, LLC

kschmidt@go2e3.com

O: 651.282.0652

M: 651.216.6881

871 Jefferson Avenue

St. Paul, MN 55102

www.go2e3.com



***** Internet Email Confidentiality ***** The information contained in this message may be privileged and confidential and protected from disclosure. If the reader of this message is not the intended recipient, or an employee or agent responsible for delivering this message to the intended recipient, you are hereby notified that it is strictly prohibited (a) to disseminate, distribute or copy this communication or any of the information contained in it, or (b) to take any action based on the information in it. If you have received this communication in error, please notify us immediately by replying to the message and deleting it from your computer.

Katie Schmidt

To: mhaupt@nd.gov
Cc: Chris Schmidt
Subject: MMC-Little Muddy Creek Amended Consultation
Attachments: LittleMuddyCreek_ConsultationMap_Updated_06262014.pdf

Mr. Haupt,

E3 Environmental, LLC (E3), on the behalf of Meadowlark Midstream Company (MMC), submitted a consultation letter for your review regarding the proposed Little Muddy Creek Pipeline Project (Project). This submittal was dated May 20, 2014. Typographical errors were noted in this original consultation request and the corrections are as follows:

- The pipeline will originate at the Epping Station not the Colt Rail Terminal as indicated on the original Project map;
- The Epping Station is approximately 1-mile south of Epping, North Dakota not 10-miles; and
- The Little Muddy Creek pipeline endpoint will tie-in to the North Dakota Pipeline Company, LLC's Little Muddy Creek Injection Station, not existing MMC assets.

The Project, as described in the previous submittal, includes the construction and operation of a 14.75 mile, 10-inch crude pipeline. In addition to the pipeline, MMC will be expanding the tank storage capacity at their existing Epping Station. This expansion will occur within the 1-mile corridor depicted on the original consultation maps.

MMC is a wholly owned subsidiary of Summit Midstream Partners, LLC. MMC will expand and currently operates the existing Epping Station. The Little Muddy Creek Pipeline will be constructed and operated by Epping Transmission Company, LLC (ETC). ETC is also a wholly owned subsidiary of Summit Midstream Partners, LLC.

E3 has been retained by MMC/ETC to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

Sincerely,

Katie Schmidt, EIT
Senior Consultant

E3 Environmental, LLC
kschmidt@go2e3.com
O: 651.282.0652
M: 651.216.6881
871 Jefferson Avenue
St. Paul, MN 55102
www.go2e3.com

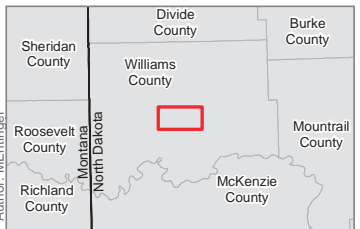
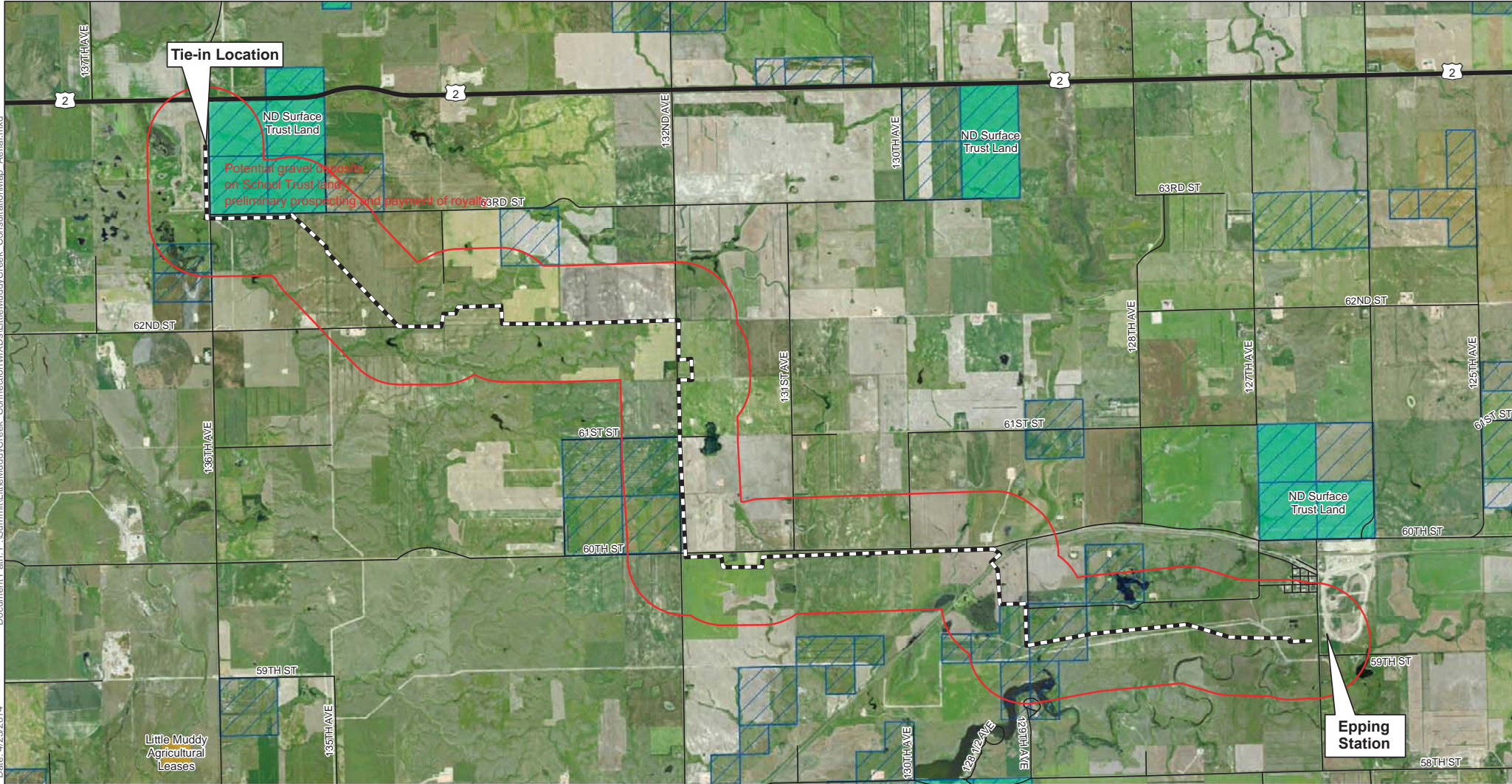







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Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\LittleMuddyCreek_ConsultationMap_Aerial.mxd

Date: 4/25/2014


Author: MEminger



-  Pipeline
-  Corridor (1 Mile)
-  Mineral Trust Land
-  Federal Land
-  State Land




E3 ENVIRONMENTAL
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0 0.5 1 2 Miles

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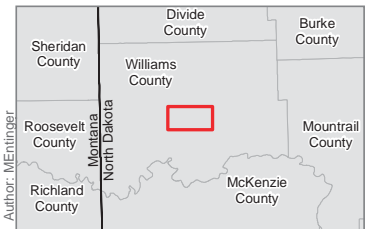
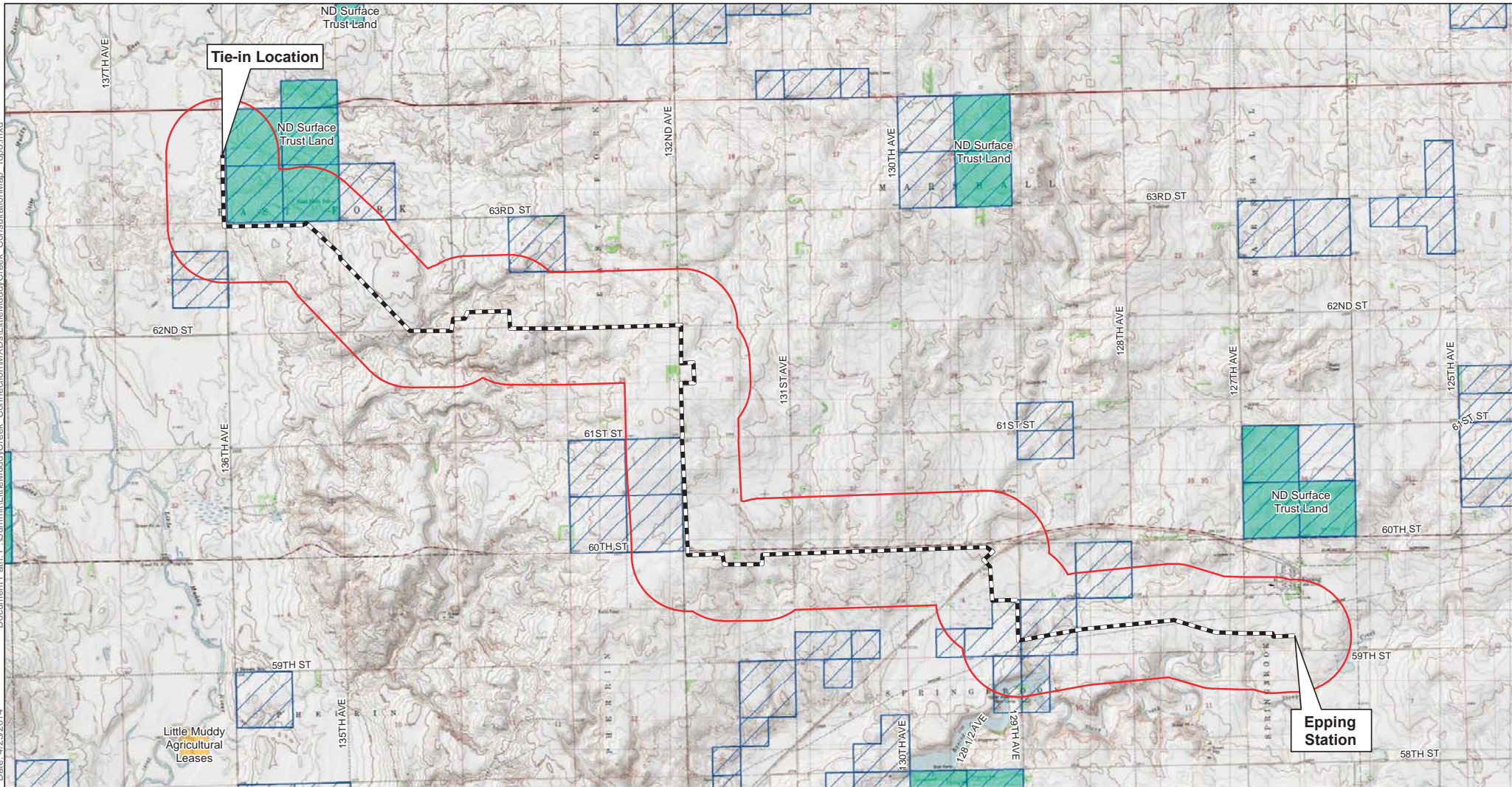


Map not to scale, for environmental review purposes only.

Meadowlark Midstream Company, LLC

Little Muddy Creek Pipeline
Aerial Overview Map
Williams County, ND

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Date: 4/25/2014



- - - Pipeline
 [Red Outline] Corridor (1 Mile)
 [Blue Hatched] Mineral Trust Land
 [Yellow] Federal Land
 [Green] State Land


E3 ENVIRONMENTAL
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 Map not to scale, for environmental review purposes only.

Meadowlark Midstream Company, LLC
 Little Muddy Creek Pipeline
 Topo Overview Map
 Williams County, ND

Chris Schmidt

From: Haupt, Michael L. <mhaupt@nd.gov>
Sent: Wednesday, May 21, 2014 3:10 PM
To: Chris Schmidt
Cc: Katie Schmidt
Subject: RE: Little Muddy Creek: North Dakota School Trust Lands Consultation

Follow Up Flag: Follow up
Flag Status: Flagged

Chris,

Good afternoon! There is School Trust land within the proposed corridor, including section 16-156-100 Williams County, but there are gravel deposits on this tract and pipeline easements across this tract are currently on hold, possibly until the gravel deposits are mined. If a pipeline were to cross this tract the company would have to test for gravel depth and pay royalties for lost gravel, in addition to easement consideration. Thanks.

Michael L. Haupt

Land Management Professional P
North Dakota Department of Trust Lands
11th Street
Bismarck, ND
mhaupt@nd.gov

Note: You can track the real time status of your right-of-way application 24/7 at <http://www.land.nd.gov/surface/right-of-way.aspx> using either the ROW number or by entering at least the first three letters of the company name. By checking this site you can find the name, telephone number and email address of the person working on the application as well as its current status in real time.

From: Chris Schmidt [mailto:CSchmidt@go2e3.com]
Sent: Tuesday, May 20, 2014 2:23 PM
To: Haupt, Michael L.
Cc: Katie Schmidt
Subject: Little Muddy Creek: North Dakota School Trust Lands Consultation

Dear Mr. Haupt,

Meadowlark Midstream Company, LLC (MMC) has proposed the construction of the Little Muddy Creek Pipeline Project (Project). The proposed Project is a new 14.75-mile; 10-inch diameter Crude Pipeline that will originate at the Epping Station located approximately 10 miles south of Epping, ND and will tie-in to existing MMC assets located northwest of Epping, ND. Pipeline construction activities would typically occupy a 110-foot right-of-way. Following construction, the pipeline would be operated within a 25-foot permanent easement. Pipeline construction involves temporary impacts, with a post-construction restoration standard of restoring disturbed areas to their original pre-construction condition.

The location of the proposed Project is described below and depicted on the attached maps.

Williams County, North Dakota the pipeline crosses:

- Township 155N, Range 99W, Section 1, 2, 3, 4, 5, and 6
- Township 156N, Range 99W, Sections 19, 20, and 31
- Township 156N, Range 100W, Sections 17, 20, 21, 22, 23, and 24

The purpose of this correspondence is to request a review of the proposed project corridor (see attached) for the presence or absence of State School Trust Lands. This information will be included in a North Dakota Public Service Commission application for the Project.

E3 Environmental, LLC has been retained by MMC to provide environmental consulting support for this project. Should you have any questions or require additional information, please contact me at 651-282-0654 or cschmidt@go2e3.com.

Sincerely,

Chris Schmidt, GIT
Associate Consultant
E3 Environmental, LLC
cschmidt@go2e3.com
O: 651.282.0654
871 Jefferson Avenue
St. Paul, MN 55102
www.go2e3.com



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Chris Schmidt

From: Chris Schmidt
Sent: Tuesday, May 20, 2014 2:23 PM
To: 'mhaupt@nd.gov'
Cc: Katie Schmidt
Subject: Little Muddy Creek: North Dakota School Trust Lands Consultation
Attachments: LittleMuddyCreek_ConsultationMap.pdf

Dear Mr. Haupt,

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Sincerely,

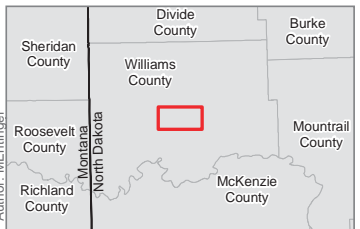
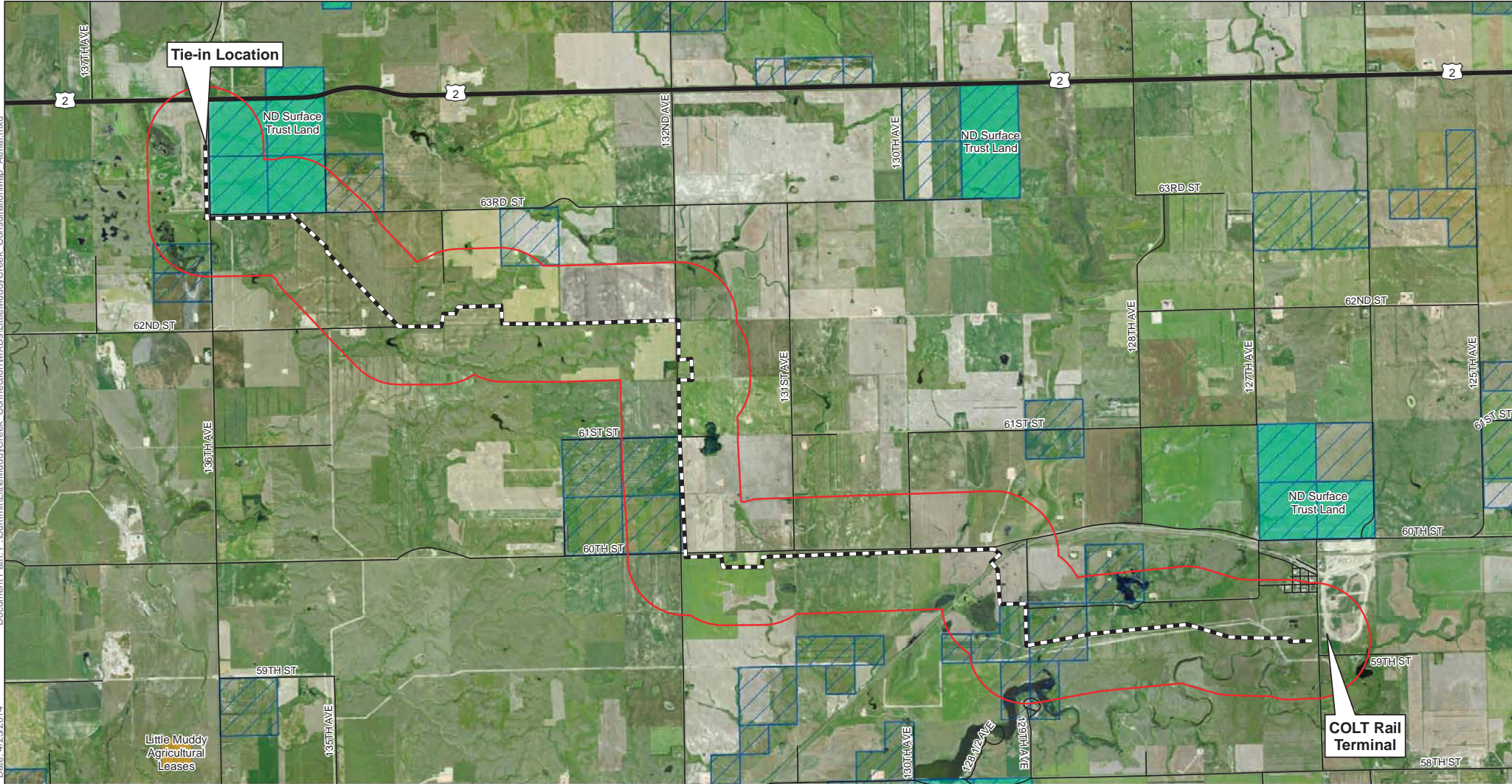
Chris Schmidt, GIT
Associate Consultant
E3 Environmental, LLC
cschmidt@go2e3.com
O: 651.282.0654
871 Jefferson Avenue
St. Paul, MN 55102
www.go2e3.com









Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\LittleMuddyCreek_ConsultationMap_Aerial.mxd

Date: 4/25/2014


Author: MEminger




-  Pipeline
-  Corridor (1 Mile)
-  Mineral Trust Land
-  Federal Land
-  State Land



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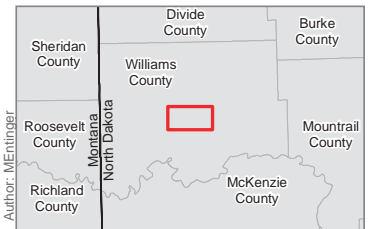
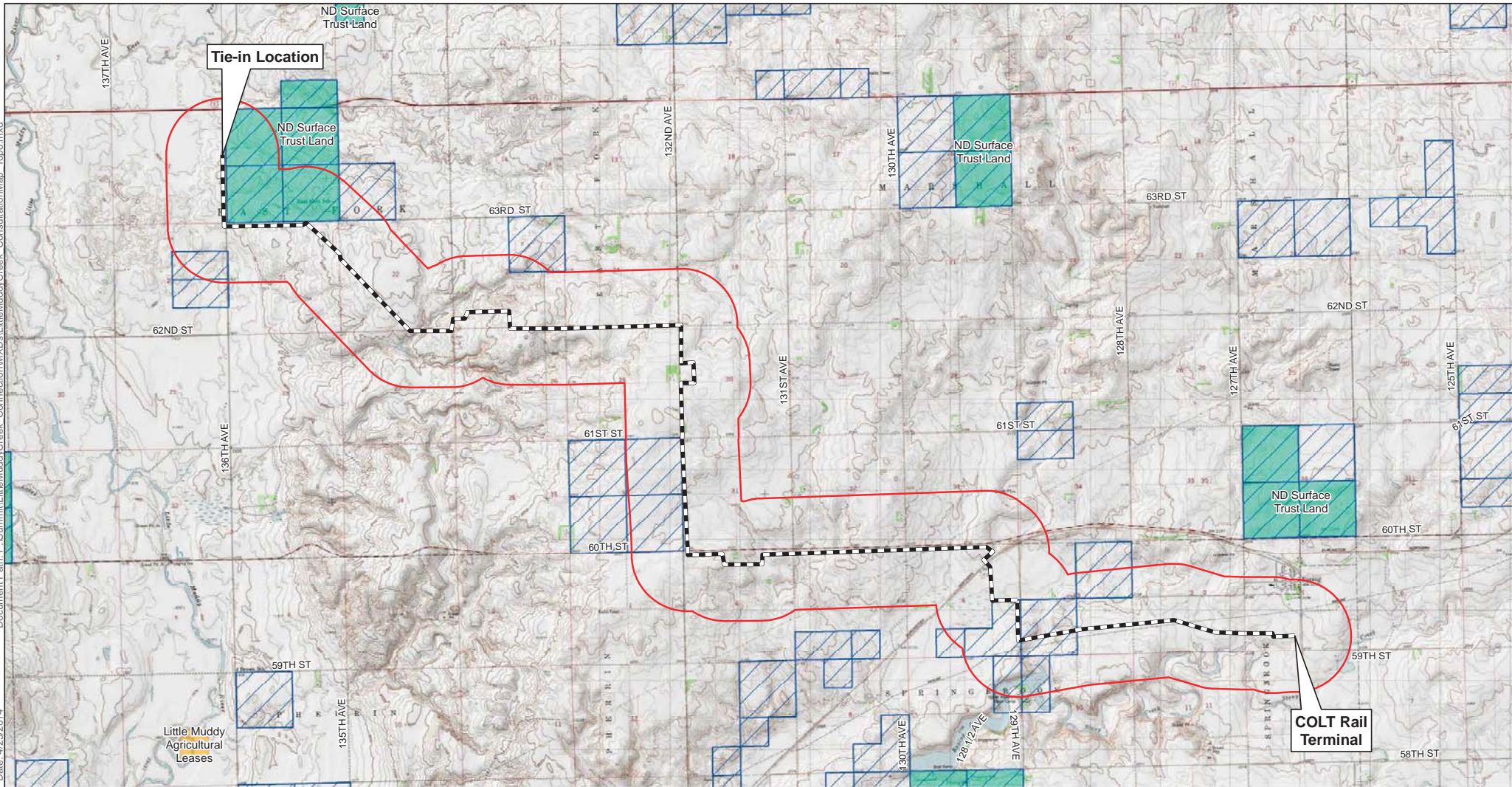
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Map not to scale, for environmental review purposes only.

Meadowlark Midstream Company, LLC
 Little Muddy Creek Pipeline
 Aerial Overview Map
 Williams County, ND

Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\LittleMuddyCreek_ConsultationMap_Topo.mxd
Date: 4/25/2014



- - - Pipeline
 [Red Outline] Corridor (1 Mile)
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 0 0.5 1 2 Miles
 1:51,657
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Meadowlark Midstream Company, LLC
 Little Muddy Creek Pipeline
 Topo Overview Map
 Williams County, ND

North Dakota State Lands Department-Mineral Trust Lands
Constulation

Katie Schmidt

To: Bayley, Keith W.
Cc: Chris Schmidt
Subject: MMC Little Muddy Creek Consultation Clarification/Amendment

Dear Mr. Bayley,

E3 Environmental, LLC (E3), on the behalf of Meadowlark Midstream Company (MMC), submitted a consultation letter for your review regarding the proposed Little Muddy Creek Pipeline Project (Project). This submittal was dated May 20, 2014. Typographical errors were noted in this original consultation request and the corrections are as follows:

- The pipeline will originate at the Epping Station not the Colt Rail Terminal as indicated on the original Project map;
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E3 has been retained by MMC/ETC to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

Sincerely,

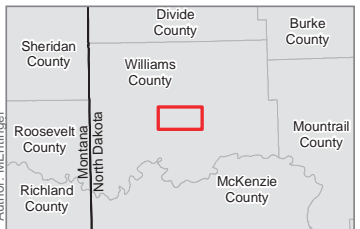
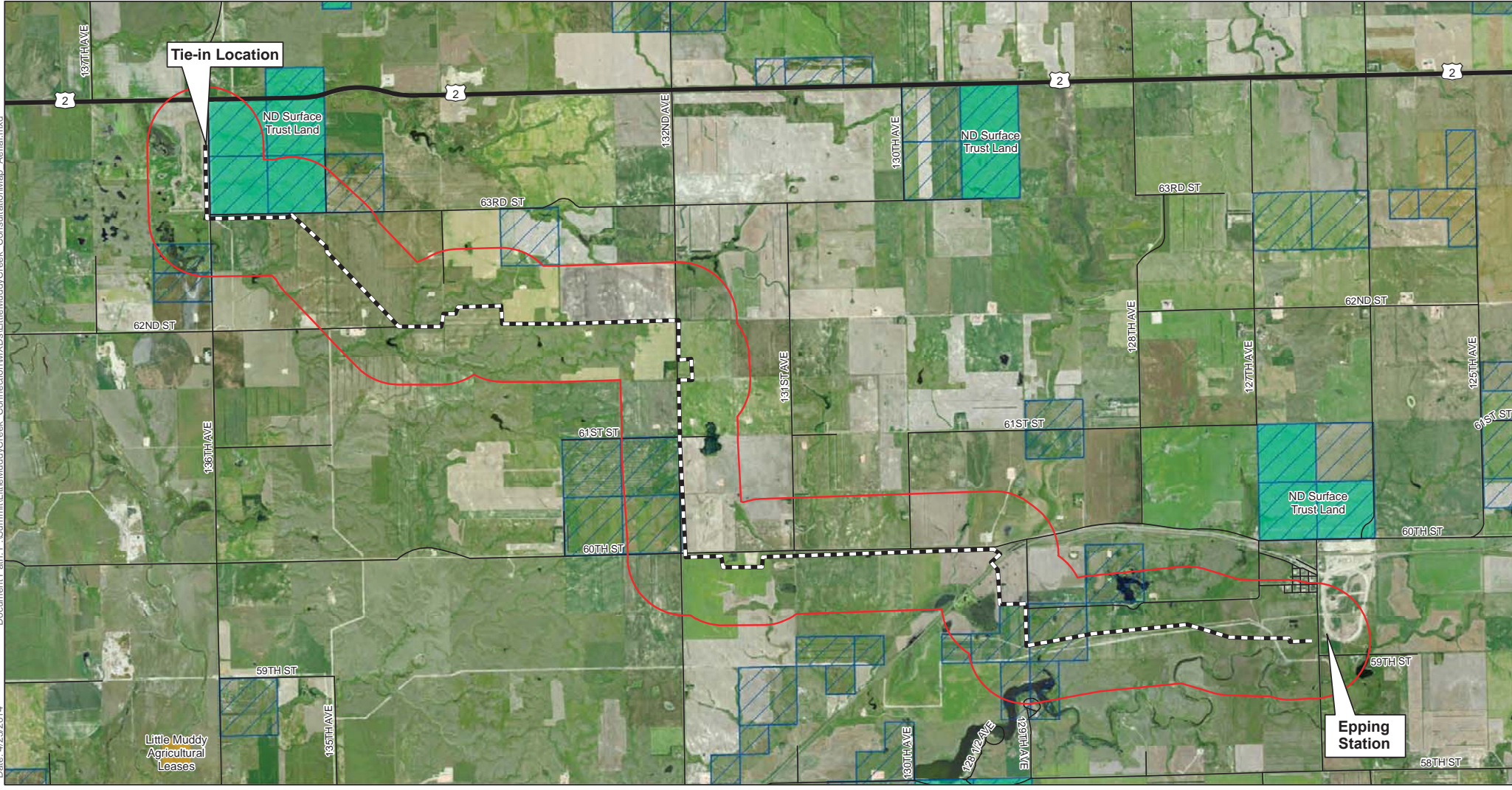
Katie Schmidt, EIT
Senior Consultant

E3 Environmental, LLC
kschmidt@go2e3.com
O: 651.282.0652
M: 651.216.6881
871 Jefferson Avenue
St. Paul, MN 55102
www.go2e3.com



Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\LittleMuddyCreek_ConsultationMap_Aerial.mxd

Date: 4/25/2014
Author: MEminger



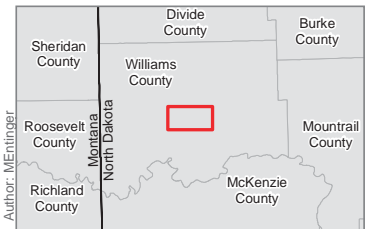
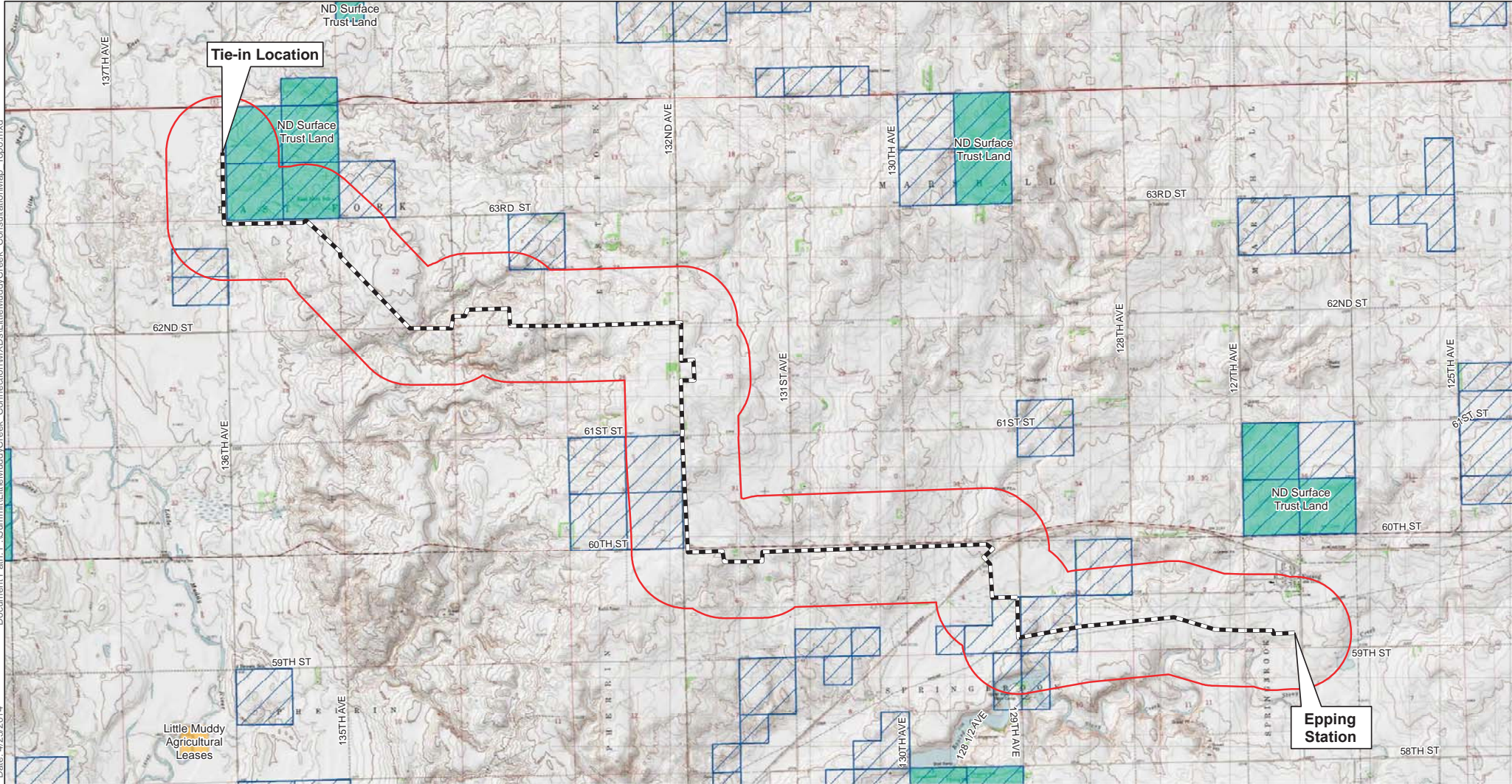
Pipeline
 Corridor (1 Mile)
 Mineral Trust Land
 Federal Land
 State Land

E3 ENVIRONMENTAL
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0 0.5 1 2 Miles
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 Map not to scale, for environmental review purposes only.

Meadowlark Midstream Company, LLC
 Little Muddy Creek Pipeline
 Aerial Overview Map
 Williams County, ND

Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\LittleMuddyCreek_ConsultationMap_Topo.mxd
Date: 4/25/2014



- Pipeline
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0 0.5 1 2 Miles

1:51,657

Map not to scale, for environmental review purposes only.

Meadowlark Midstream Company, LLC

Little Muddy Creek Pipeline

Topo Overview Map

Williams County, ND

Chris Schmidt

From: Bayley, Keith W. <kbayley@nd.gov>
Sent: Thursday, May 22, 2014 9:22 AM
To: Chris Schmidt
Subject: RE: Little Muddy Creek: North Dakota Mineral State Trust Consultation
Attachments: LittleMuddyCreek.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Chris,

Attached is a plat of the Little Muddy Creek pipeline and corridor location from the data you provided to us. These plats show the location of our mineral interests along the routes. Our plat identifies 156-99-36 as outside of the corridor.

If you need anything further, let me know.

Keith Bayley
Land Professional
ND Department of Trust Lands
701.328.1912
kbayley@nd.gov

From: Chris Schmidt [mailto:CSchmidt@go2e3.com]
Sent: Tuesday, May 20, 2014 2:27 PM
To: Bayley, Keith W.
Cc: Katie Schmidt
Subject: Little Muddy Creek: North Dakota Mineral State Trust Consultation

Dear Mr. Bayley,

Meadowlark Midstream Company, LLC (MMC) has proposed the construction of the Little Muddy Creek Pipeline Project (Project). The proposed Project is a new 14.75-mile; 10-inch diameter Crude Pipeline that will originate at the Epping Station located approximately 10 miles south of Epping, ND and will tie-in to existing MMC assets located northwest of Epping, ND. Pipeline construction activities would typically occupy a 110-foot right-of-way. Following construction, the pipeline would be operated within a 25-foot permanent easement. Pipeline construction involves temporary impacts, with a post-construction restoration standard of restoring disturbed areas to their original pre-construction condition.

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- Township 156N, Range 99W, Sections 19, 20, and 31
- Township 156N, Range 100W, Sections 17, 20, 21, 22, 23, and 24

E3 has accessed www.land.nd.gov to review the proposed Project corridor for the presence of State Mineral Trust Lands. The results of this search concluded that the following sections intersect State Lands in Williams County:

- Township 155N, Range 99W Sections 3, 4, 9, and 10
- Township 156N, Range 99 W Section 36
- Township 156N, Range 100W Sections 15, 16, 20, 23, and 36

The purpose of this consultation is to seek your concurrence with this analysis. This information will be included in a North Dakota Public Service Commission application for the Project. For your convenience, please refer to the attached map and shapefiles, which depicts the Project corridor and State Mineral Trust Lands.

E3 has been retained by MMC to provide environmental consulting support for this project. Should you have any questions or require additional information, please contact me at 651-282-0654 or cschmidt@go2e3.com.

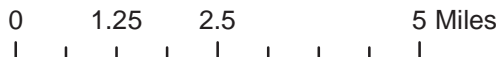
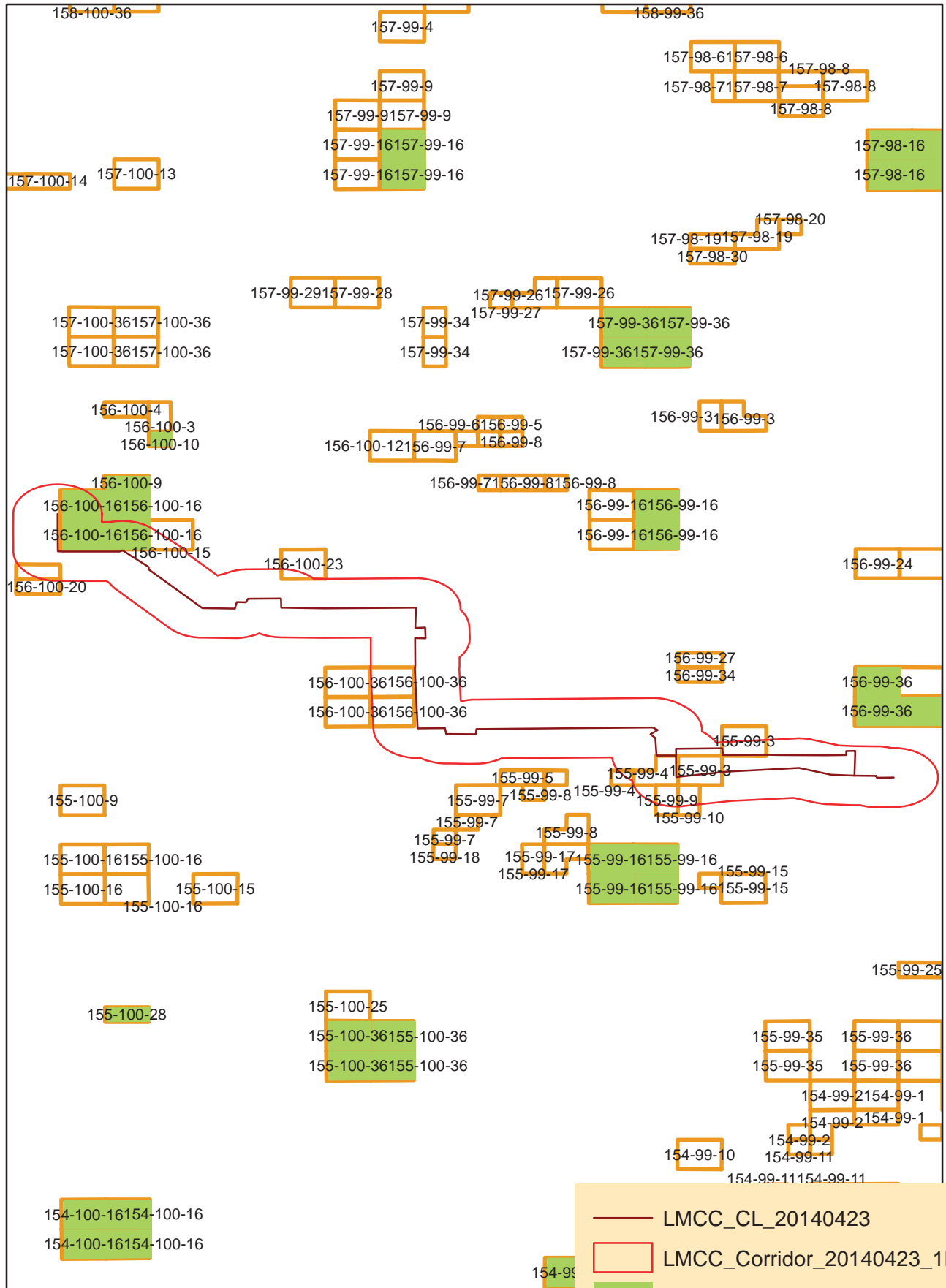
Sincerely,

Chris Schmidt, GIT
Associate Consultant
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cschmidt@go2e3.com
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Little Muddy Creek Pipeline Plat



- LMCC_CL_20140423
- LMCC_Corridor_20140423_1Mile
- Trustland_Surface
- Trustland_Minerals

Chris Schmidt

From: Chris Schmidt
Sent: Tuesday, May 20, 2014 2:27 PM
To: 'kbayley@nd.gov'
Cc: Katie Schmidt
Subject: Little Muddy Creek: North Dakota Mineral State Trust Consultation
Attachments: LittleMuddyCreek_MineralTrustLands.pdf; LMCC_CL_20140423.shx; LMCC_CL_20140423.dbf; LMCC_CL_20140423.prj; LMCC_CL_20140423.sbn; LMCC_CL_20140423.sbx; LMCC_CL_20140423.shp; LMCC_Corridor_20140423_1Mile.shx; LMCC_Corridor_20140423_1Mile.dbf; LMCC_Corridor_20140423_1Mile.prj; LMCC_Corridor_20140423_1Mile.sbn; LMCC_Corridor_20140423_1Mile.sbx; LMCC_Corridor_20140423_1Mile.shp; LMCC_Corridor_20140423_1Mile.shp.xml

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Sincerely,

Chris Schmidt, GIT

Associate Consultant

E3 Environmental, LLC

cschmidt@go2e3.com

O: 651.282.0654

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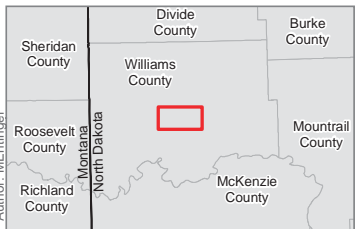
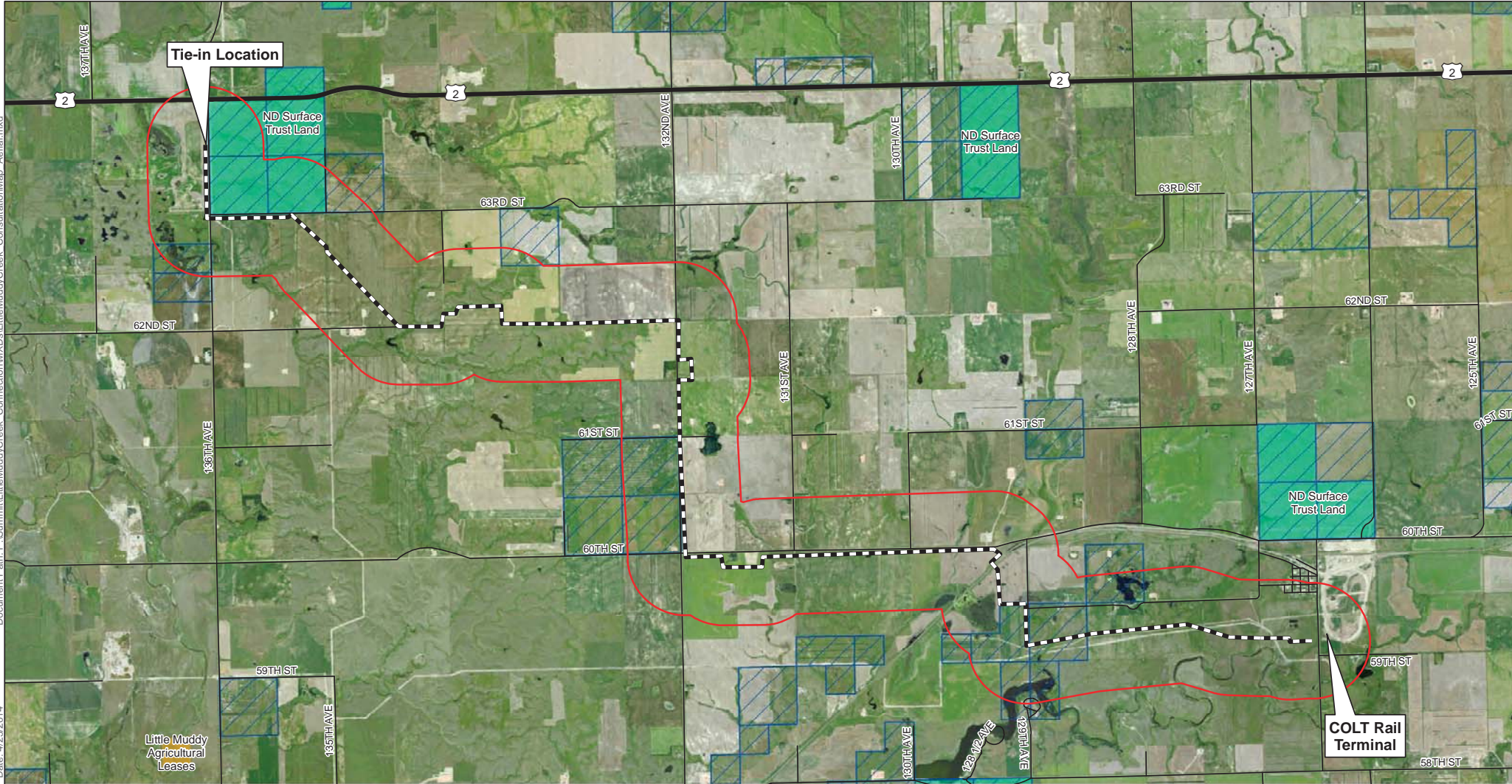


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Date: 4/25/2014

Author: MEminger



- Pipeline
- Corridor (1 Mile)
- Mineral Trust Land
- Federal Land
- State Land

E3 ENVIRONMENTAL
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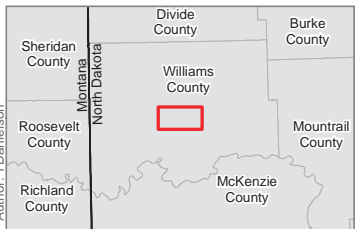
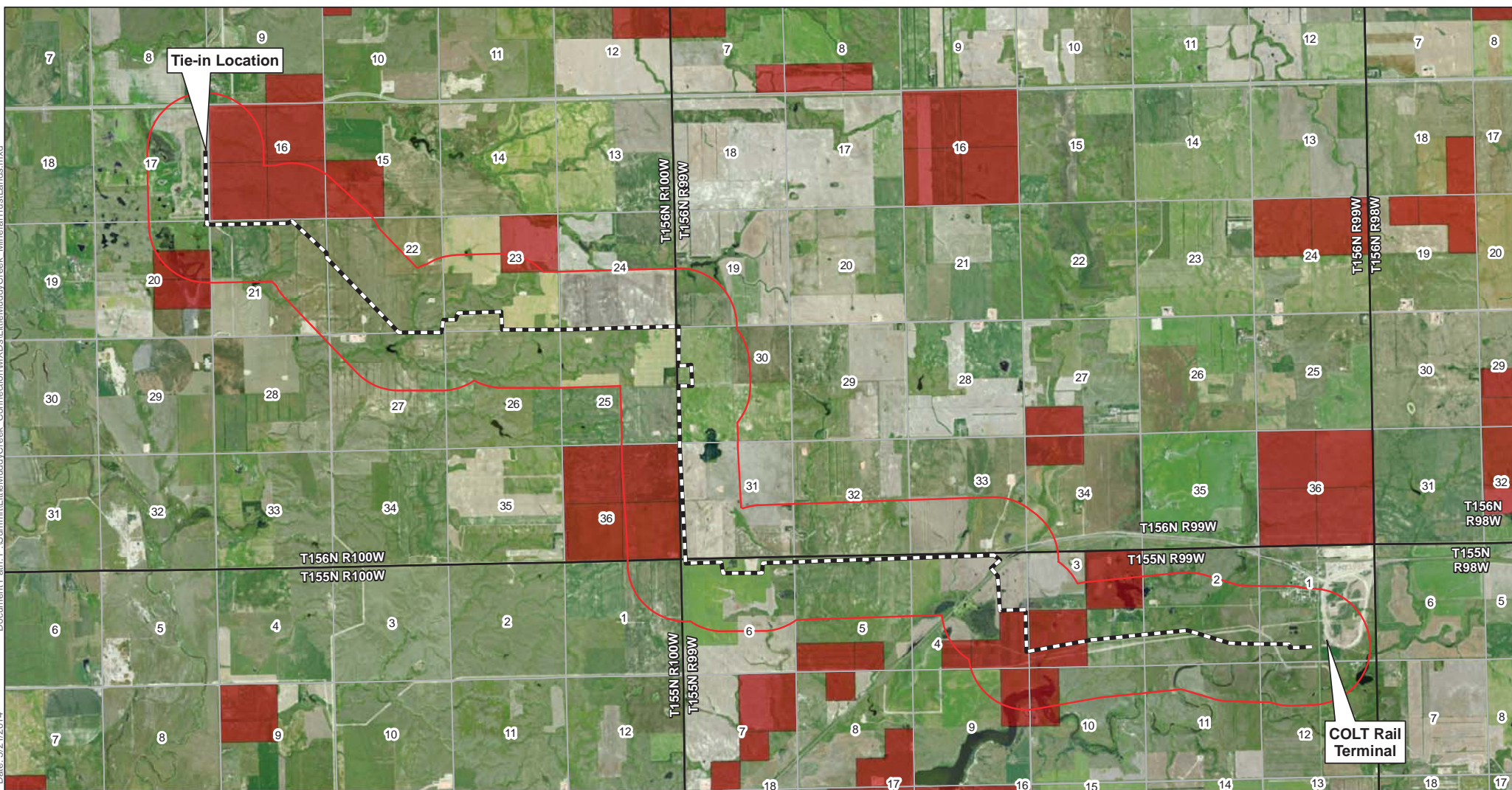
Map not to scale, for environmental review purposes only.

Meadowlark Midstream Company, LLC

Little Muddy Creek Pipeline
Aerial Overview Map
Williams County, ND

Document Path: P:\Summit\LittleMuddyCreek_Connection\MXD\slittlemuddyCreek_MineralTrustlands.mxd
Date: 5/21/2014

Author: TDanielson



- Pipeline
- Corridor (1 Mile)
- Mineral Trust Land

E3 ENVIRONMENTAL
Enhancing Execution with Experience

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Map not to scale, for environmental review purposes only.

**Meadowlark Midstream
Company, LLC**

Little Muddy Creek Pipeline
ND Mineral Trust Lands
Williams County, ND

North Dakota State Historic Preservation Office

Constulation



**STATE
HISTORICAL
SOCIETY
OF NORTH DAKOTA**

Jack Dalrymple
Governor of North Dakota

North Dakota
State Historical Board

Calvin Grinnell
New Town - President

A. Ruric Todd III
Jamestown - Vice President

Margaret Puetz
Bismarck - Secretary

Albert I. Berger
Grand Forks

Gereld Gerntholz
Valley City

Diane K. Larson
Bismarck

Chester E Nelson, Jr.
Bismarck

Sara Otte Coleman
*Director
Tourism Division*

Kelly Schmidt
State Treasurer

Alvin A. Jaeger
Secretary of State

Mark Zimmerman
*Director
Parks and Recreation
Department*

Grant Levi
*Director
Department of Transportation*

Merlan E. Paaverud, Jr.
Director

*Accredited by the
American Alliance
of Museums since 1986*

October 10, 2014

Katie Schmidt, Consultant
E3 Environmental, LLC
871 Jefferson Ave
St. Paul, MN 55102

NDSHPO REF.: 14-1221A PSC Case #PU-14-223 Meadowlark Midstream Company, LLC "Addendum to A Class I and Class III Cultural Resource Inventory of the Little Muddy Creek Pipeline, Williams County, North Dakota, for Pipeline Alignment Reroutes and Two Potential Facility Sites"

Dear Ms. Schmidt,

We reviewed NDSHPO REF.: 14-1221A PSC Case #PU-14-223 Meadowlark Midstream Company, LLC "Addendum to A Class I and Class III Cultural Resource Inventory of the Little Muddy Creek Pipeline, Williams County, North Dakota, for Pipeline Alignment Reroutes and Two Potential Facility Sites," and find the report acceptable. We concur with a "No Significant Sites" determination for the project, provided the project remains as described and mapped in the above-captioned SWCA report.

Thank you for the opportunity to review this project. If you have questions please contact Susan Quinnell at squinnell@nd.gov or (701) 328-3576.

Sincerely,

Merlan E. Paaverud, Jr.
Director, State Historical Society of North Dakota



October 1, 2014

Paul Picha
Chief Archaeologist
State Historical Society of North Dakota
Archeology & Historic Preservation Division
North Dakota Heritage Center
612 East Boulevard Avenue
Bismarck, ND 58505-0830

Re: Meadowlark Midstream Company, LLC
Little Muddy Creek Project: Addendum to A Class I and Class III Cultural
Resource Inventory

Dear Mr. Picha,

Meadowlark Midstream Company, LLC (MMC) is planning the Little Muddy Creek Pipeline Project. The Project will be wholly located in Williams County, North Dakota. E3 Environmental, LLC (E3), MMC's Environmental Consultant, is preparing the required application materials for the NDPSC; a cultural resource inventory is a required part of this filing. On June 10, 2014, the North Dakota State Historical Preservation Office (ND SHPO) provided concurrence with the findings and recommendations of the original Class I and Class III Cultural Resource Inventory for this Project (NDSHPO REF.: 14-1221). To meet the Project objectives, the alignment of the proposed Project has been altered resulting in the need for an additional Cultural Resource Inventory.

E3 submits the enclosed report titled *Addendum to a Class I and Class III Cultural Resource Inventory of the Little Muddy Creek Pipeline, Williams County, North Dakota, for Pipeline Alignment Reroutes and Two Potential Facility Sites* (Report). This Report, prepared by SWCA Environmental Consultants (SWCA) documents the results of the cultural resource inventory conducted for the proposed Project. Inventory results are summarized below; enclosed please find the Report.

Two (2) resources were recorded; site 32WI481, an undocumented segment of the Great Northern Railroad. This site has previously been determined eligible for the NRHP; avoidance via the implementation of a horizontal directional drill (HDD) is recommended. An isolated find (32WIX646) consisting of a Knife River

Flint biface, is recommended not eligible for the NRHP, and therefore no further work is necessary.

Should you have any project related questions or require additional information, please contact me at 651-282-0652 or by email at kschmidt@go2e3.com.

Sincerely,



Katie Schmidt, Consultant
E3 Environmental, LLC
871 Jefferson Ave
St. Paul, MN 55102

Enclosures:

Meadowlark Midstream Company, LLC – Addendum to A Class I and Class III Cultural Resource Inventory of the Little Muddy Creek Pipeline (1 Copy)

cc: Jason Panek, Meadowlark Midstream Company, LLC
Jolene Schleicher, SWCA Environmental Consultants
E3 Project Files



**STATE
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June 10, 2014

Katie Schmidt, Consultant
E3 Environmental, LLC
871 Jefferson Ave
St. Paul, MN 55102

NDSHPO REF.: 14-1221 PSC Case #PU-14-223 Meadowlark Midstream Company, LLC "A Class I and Class III Cultural Resource Inventory of the Little Muddy Creek Pipeline, Williams County, North Dakota"

Dear Ms. Schmidt,

We reviewed NDSHPO REF.: 14-1221 PSC Case #PU-14-223 Meadowlark Midstream Company, LLC "A Class I and Class III Cultural Resource Inventory of the Little Muddy Creek Pipeline, Williams County, North Dakota" and find the report acceptable. We concur with a "No Significant Sites" determination for the project, provided the project remains as described and mapped in the above-captioned SWCA report.

Thank you for the opportunity to review this project. If you have questions please contact Susan Quinnell at squinnell@nd.gov or (701) 328-3576.

Sincerely,

Merlan E. Paaverud, Jr.
Director, State Historical Society of North Dakota



CERTIFIED MAIL

RETURN RECEIPT REQUESTED

June 4th, 2014

Paul Picha
Chief Archaeologist
State Historical Society of North Dakota
Archeology & Historic Preservation Division
North Dakota Heritage Center
612 East Boulevard Avenue
Bismarck, ND 58505-0830

Meadowlark Midstream Company, LLC: Little Muddy Creek Pipeline Project-Class III Cultural Resource Inventory Report

Dear Mr. Picha,

Meadowlark Midstream Company, LLC (MMC) is proposing the Little Muddy Creek Pipeline Project (Project). This Project includes the construction of a 14.75-mile crude oil transmission pipeline and associated facilities; as such the Project is subject to the North Dakota Public Service Commissions (PSC) Siting Act. The Project will be wholly located in Williams County, North Dakota. E3 Environmental, LLC (E3), MMC's Environmental Consultant, is preparing the required application materials for the NDPSC; a cultural resource inventory is a required part of this filing.

MMC submits the enclosed report titled *A Class I and Class III Cultural Resource Inventory of the Little Muddy Creek Pipeline, Williams County, North Dakota* (Report). This Report, prepared by SWCA Environmental Consultants (SWCA) documents the results of the cultural resource inventory conducted for the proposed Project.

One previously recorded isolated find cultural resource was revisited for the Project. It is described below:

32WIX572: Isolated Chipped Stone; Not Eligible

One cultural resource was newly recorded isolated find and one previously recorded site; the sites are described below respectively:

32WIX627: Deering harvester; Isolated Find

32WI481: Great Northern Railroad; Eligible



Of the resources outlined above, 32WIX572 and 32WIX627 are recommended not eligible for the NRHP, and therefore no further work is necessary. Site 32WI481 has previously been eligible for the NRHP. Therefore, SWCA and E3 recommends that MMC avoids site 32WI481 through the use of a horizontal directional drill beneath the site.

Should you have any project related questions or require additional information, please contact me at 651-282-0652 or by email at kschmidt@go2e3.com.

Sincerely,

A handwritten signature in black ink that reads "Katie Schmidt".

Katie Schmidt, Consultant
E3 Environmental, LLC
871 Jefferson Ave
St. Paul, MN 55102

Enclosures:

Meadowlark Midstream Company, LLC – Little Muddy Creek Crude Petroleum Pipeline:
Class III Cultural Resource Inventory Report (1 Copy)

cc: Jason Panek, Meadowlark Midstream Company, LLC
Jolene Schleicher, SWCA Environmental Consultants
E3 Project Files

Appendix D

Natural Resource Report

**Natural Resources and Wetland
Delineation Report for the
Little Muddy Creek Pipeline and Epping
Station, Williams County, North Dakota**

Prepared for

E3 Environmental, LLC

Prepared by

SWCA Environmental Consultants

October 2014

**Natural Resources and Wetland Delineation Report for the
Little Muddy Creek Pipeline and Epping Station,
Williams County, North Dakota**

Prepared for:

**E3 Environmental, LLC
871 Jefferson Avenue
St. Paul, Minnesota 55102**

Prepared by:

**Kate Kenninger
Environmental Specialist**

Reviewed by:

**Tom Furgason
Sr. Principal, Rocky Mountain Plains Offices**

**SWCA Environmental Consultants
116 North 4th Street, Suite 200
Bismarck, North Dakota 58501
Phone (701) 258-6622, Fax (701) 258-5957**

SWCA Project No. 28755

October 7, 2014

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1.0 INTRODUCTION

1.1 BACKGROUND

SWCA Environmental Consultants (SWCA) conducted natural resources field surveys in order to identify exclusion and avoidance areas as specified in North Dakota Administrative Code 69-06-08-02 for the proposed Meadowlark Midstream Company, LLC (MMC) Little Muddy Creek pipeline (Little Muddy) project. MMC proposes to construct a pipeline beginning northeast of Williston, North Dakota, to the Epping station, located southwest of Epping, North Dakota.

The Little Muddy pipeline, as proposed, is approximately 14 miles long, spanning private lands entirely within Williams County, North Dakota (see maps in Appendix A). This pipeline project falls under the jurisdiction of the North Dakota Public Service Commission (NDPSC). E3 Environmental (E3) is assisting MMC with their application to the NDPSC for a certificate of corridor compatibility and route permit for the project. The pipeline was surveyed with a typical 150-foot-wide survey corridor centered on the proposed pipeline centerline. SWCA surveyed approximately 417 acres for the Little Muddy pipeline (including reroute areas) and the proposed Epping compressor station at the eastern terminus of the Little Muddy pipeline.

The proposed pipeline would be constructed within a 110-foot-wide temporary construction right-of-way (ROW). The ROW would be set on the centerline, with 50 feet of construction ROW on each side.

SWCA conducted field surveys on April 23–24 and September 2–3, 2014, to determine the potential presence and extent of wetlands and waterbodies, including jurisdictional waters of the U.S., commonly referred to as wetland and ordinary high water mark (OHWM) delineations, within the proposed survey area. Concurrently with the wetland delineation, SWCA conducted a cursory threatened and endangered species survey and habitat assessment; a tree, sapling, and shrub enumeration survey; a migratory bird/raptor survey; and a noxious weed survey. Site layout maps of the survey area and natural resource features identified during the field surveys are provided in Appendix A.

This report outlines the methodology used by SWCA’s biologists to complete each of the aforementioned surveys. Additionally, this report presents the results of the completed field surveys and regulatory recommendations to ensure compliance with the NDPSC and the U.S. Army Corps of Engineers (USACE) Nationwide Permit 12.

1.2 REGULATORY BACKGROUND

1.2.1 Clean Water Act, Section 404

Section 404 of the Clean Water Act prohibits the discharge of fill material into waters of the U.S., also known as jurisdictional waters, without a permit from the USACE.

1.2.2 USACE Nationwide Permit 12

The USACE Nationwide Permit 12 authorizes the construction of utility lines and associated facilities in waters of the U.S., provided the activity does not result in the permanent loss of greater than 0.5 acre of waters of the U.S., including wetlands.

Nationwide Permit 12 also authorizes the construction of access roads for utility lines, provided that the access road, in combination with all other activities included in one single and complete project:

- does not result in the permanent loss of greater than 0.5 acre of waters of the U.S.;
- is constructed to the minimum width necessary;
- is constructed so that the length of the road minimizes any adverse effects to waters of the U.S.;
- is as near as possible to pre-construction contours and elevations; and
- is properly bridged or culverted when constructed above pre-construction contours.

If the access roads are used exclusively for construction purposes, they must be temporary and removed upon project completion.

Nationwide Permit 12 requires that the permittee submit a pre-construction notification prior to commencing construction if any of the following criteria are met.

- The activity involves mechanized land clearing in a forested wetland.
- A Section 10 permit is required to cross a navigable waterbody (Rivers and Harbors Act).
- The utility line exceeds 500 feet in length through any single crossing of a water of the U.S.
- The utility line is placed within a jurisdictional area (i.e., water of the U.S.) and it runs parallel to a stream bed that is within that jurisdictional area.
- Discharges result in the permanent loss of greater than 0.1 acre of waters of the U.S.
- Permanent access roads are constructed above grade in waters of the U.S. for a distance of more than 500 feet.
- Permanent access roads are constructed in waters of the U.S. with impervious materials.

1.2.3 USACE Regional Conditions

The USACE has published several regional conditions for projects operating under Nationwide Permits in North Dakota. The regional conditions apply to wetlands classified as “fens,” waters adjacent to natural springs, the Missouri River, historic properties, and fish spawning areas.

2.0 METHODS

2.1 SURVEY AREA

Overall, northwest North Dakota is characterized by a moderate to cool climate, with cold, dry winters and mild to warm summers. Mean annual precipitation for the area is 14 to 16 inches (Bryce et al. 1998).

The proposed project is located in the Northwestern Glaciated Plains, which marks the westernmost extent of glacial activity (Bryce et al. 1998). The Northwestern Glaciated Plains have significant surface irregularity characteristic of a youthful morainal landscape, with hills and depressions and high concentrations of wetlands. Further, the proposed project is located in the Glaciated Dark Brown Prairie (level IV ecoregion) region. This ecoregion has a well-defined drainage system and fewer wetlands compared to the more recently glaciated ecoregions to the east (Bryce et al. 1998).

The project area is located on gently rolling plains (Figure 1) and active agricultural fields (Figure 2). The elevation ranges from approximately 1,930 to 2,300 feet above sea level, with the highest elevations in the middle portion of the project area, and the lowest elevations in the northwestern portion of the project area.



Figure 1. Project area overview depicting general topography towards southwest end of pipeline corridor, facing east.



Figure 2. Project area overview depicting general topography and agriculture disturbance near the middle section of the pipeline corridor, facing west.

The inventoried area for the project area discussed herein is situated on the U.S. Geological Survey Blacktail Lake SE (1961), Spring Brook (1979), and Epping (1979), North Dakota, quadrangles. The inventoried area includes parcels in Sections 1, 2, 3, 4, 5, and 6, Township (T) 155 North (N), Range (R) 99 West (W); Sections 19, 30, 31, 32, and 33, T156N, R99W; and Sections 17, 20, 21, 22, 23, 24, 25, 26, 27, and 36, T156N, R100W, entirely within Williams County, North Dakota (see Appendix A).

2.2 PRE-FIELD REVIEW

Prior to conducting field surveys, SWCA reviewed applicable U.S. Fish and Wildlife Service (USFWS) threatened and endangered species list for Williams County, North Dakota (USFWS 2014). Additionally, SWCA reviewed applicable National Wetland Inventory (NWI) data as well as preliminary National Weather Service climatological data.

2.3 WETLANDS

SWCA biologists conducted wetland delineations within the survey area based on the principles and guidelines provided in the 1987 *Corps of Engineers Wetlands Delineation Manual* (Manual) (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetlands Determination Manual: Great Plains Region Version 2.0* (Supplement) (USACE 2010). According to the Manual, an area is a wetland if three mandatory wetland indicators are present in a given area, with special exceptions. These

criteria include the presence of hydrophytic vegetation, wetland hydrology, and hydric soils. All wetlands and waterbodies geographically referenced within the survey area during field survey are depicted on the site layout maps in Appendix A.

2.3.1 Hydrophytic Vegetation

Biologists recorded all plants within the vegetative community based on the respective stratum in which each species was found. A tree is defined by the Supplement to be 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 is defined by the Supplement to be composed of woody-stemmed plants with a trunk DBH of less than 3 inches, regardless of height. The herbaceous stratum includes all non-woody-stemmed plants regardless of height. Finally, the woody vine stratum includes all woody-stemmed vines, regardless of diameter.

SWCA recorded the binomial scientific name and percent cover of all plants within a 30-foot radius for the tree stratum, a 15-foot radius for the sapling/shrub stratum, a 5-foot radius for the herbaceous stratum, and a 30-foot radius for the woody vine stratum. SWCA biologists noted each plant species' respective USFWS indicator status (i.e., upland [UPL], facultative upland [FACU], facultative [FAC], facultative wetland [FACW], and obligate [OBL]). In some instances the size and shape of the vegetative sampling plot was manipulated to better encompass each wetland or upland area, though the overall area assessed remained unchanged.

2.3.2 Wetland Hydrology

A wetland was determined to contain wetland hydrology if at least one primary indicator or at least two secondary indicators of wetland hydrology were present, as defined by the Manual and Supplement. Common hydrologic indicators include the presence of surface water, high water table, soil saturation, water marks on trees or other objects, sediment deposits, water-stained leaves, and oxidized rhizospheres on living roots.

2.3.3 Hydric Soil

Biologists recorded detailed notes regarding soil profiles including the hue, value, and chroma (i.e., color) of the soil (using Munsell Soil Color Charts); the depth and extent of that soil color within the entire soil profile; the concentration of any redoximorphic concentrations or depletions; and the texture of the soil at each depth where a color change was observed. Soil pits were excavated to a minimum depth of 20 inches at each data point. During the April surveys, soils in some locations were frozen below the first 6 inches. Common hydric soil indicators of the Northern Great Plains subregion include the presence of hydrogen sulfide gas within the soil pit, redox depressions, redox dark surfaces, and a depleted matrix.

2.4 WATERBODIES

Waterbodies (i.e., ponds, creeks, streams, rivers) were identified by the presence of an OHWM. Common identifiable indicators of an OHWM include open water or evidence of a clear, natural line visible on the bank; shelving; changes in soil characteristics; the destruction of terrestrial vegetation; the presence of litter and debris; and watermarks on structures that

are inundated during normal high water conditions. The OHWM typically represents the potential limits of the USACE jurisdiction. Please note that the USACE has full discretion in determining the jurisdictional status of referenced wetlands and waterbodies.

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 stream bed. Groundwater is the primary water source for stream flow while precipitation runoff is supplemental. Biologists classified streams that showed significant flow during the field survey as perennial. Additionally, the U.S. Geological Survey 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.

2.5 NOXIOUS WEED SURVEYS

SWCA conducted a noxious weed survey of all populations of North Dakota state- or county-listed noxious weeds within the project area.

2.6 TREE, SAPLING, AND SHRUB COUNT

SWCA biologists determined the total number of trees, saplings, and shrubs present within the surveyed 150-foot-wide ROW by using several different techniques depending on the type of woody vegetation habitat (i.e., forested upland, shrubland, or shelterbelt) encountered and the overall extent of each habitat within the ROW. The boundary of all forested upland, shrubland, and shelterbelt habitat was geographically referenced using a Trimble GeoXT series handheld global positioning system (GPS) unit. In forested upland and shrubland habitat, SWCA counted the number of all woody-stemmed vegetation with at least a 1-inch DBH. In shelterbelt areas, all woody-stemmed vegetation, regardless of DBH, was inventoried via direct count. Biologists taxonomically identified all recorded individuals to the species level within each habitat type.

2.7 WILDLIFE INCLUDING THREATENED AND ENDANGERED SPECIES

Information regarding the presence of threatened or endangered species that may occur within the survey area was obtained from the USFWS list of threatened and endangered species by North Dakota county (USFWS 2014). This document does not represent a comprehensive survey, but rather acknowledges the past and/or current presence of listed species. The lack of discovery of threatened or endangered species does not signify their non-existence within the area, but only that no primary or secondary indications of these species were recorded.

SWCA completed a cursory survey for all listed species and suitable habitat that may be potentially impacted by construction activities within survey area. A line-of-sight survey for raptor species was also conducted for a distance of approximately 0.5 mile with the aid of binoculars. Unique wildlife habitats were closely inspected on foot. SWCA biologists noted all wildlife observed during the field survey. Wildlife sightings can involve primary observations (i.e., actual sighting of an animal) or secondary observations (i.e., observation of scat, tracks, or fur deposits).

2.8 MAPPING

The boundaries of each wetland, waterbody, woody vegetation habitat, and noxious weed assemblage were geographically recorded using a Trimble GeoXT GPS unit. The aforementioned GPS unit is capable of recording geographic data with sub-meter accuracy. SWCA used Universal Transverse Mercator Zone 13 North as the projected coordinate system and North American Datum 1983 as the datum. ArcGIS v10.0 (ESRI Redlands, California) was used to analyze collected features, calculate areas, and generate the maps provided in Appendix A. Please note that all data collected using the GPS unit, and displayed on the attached maps, are for review purposes only and do not represent a professional civil survey.

3.0 RESULTS

3.1 VEGETATION

During the field survey, SWCA biologists identified four general types of vegetative communities within the survey area. These vegetative communities were classified as herbaceous upland, shrubland and upland woody vegetation, cropland, and palustrine emergent (PEM) wetland. PEM wetlands are characterized by the presence of herbaceous hydrophytic or submergent aquatic macrophytes.

Vegetation communities met the hydrophytic vegetation criterion for wetlands if greater than 50% of dominant species had an indicator status of FAC, FACW, or OBL. The upland communities failed to meet at least one of the three assessed wetland criteria.

3.1.1 Herbaceous Upland

Herbaceous upland communities occurring throughout the survey area consisted of non-wetland areas dominated by non-woody vegetation such as grasses and forbs. The largest natural vegetation community within the construction corridor is remnant of Northwestern Great Plains Mixedgrass Prairie, although most areas have been degraded due to the presence and encroachment of non-native grass species such as smooth brome (*Bromis inermis*), Kentucky bluegrass (*Poa pratensis*), and crested wheatgrass (*Agropyron cristatum*). Several areas within the project area have been previously cultivated for agricultural purposes and have since transitioned to disturbed areas heavily dominated by these invasive grasses.

Species common to the Northwestern Great Plains Mixedgrass Prairie and confirmed during field surveys included western wheatgrass (*Agropyron smithii*), green needlegrass (*Nassella viridula*), and prairie junegrass (*Koeleria macrantha*). Other common species found within these herbaceous upland communities include fringed sagewort (*Artemisia frigida*), blue grama (*Bouteloua gracilis*), pasque flower (*Anemone patens*), goldenrod (*Solidago* sp.), purple coneflower (*Echinacea angustifolia*), prairie coneflower (*Ratibida columnifera*), prairie rose (*Rosa arkansana*), and little bluestem (*Schizachyrium scoparium*).

One area of Canada thistle (*Cirsium arvense*), a state-listed noxious weed, was recorded during the survey (BNX1; Appendix A).

3.1.2 Shrubland and Woody Vegetation

The shrubland communities occurring throughout the survey area consisted of upland areas dominated by woody-stemmed vegetation. A majority of these wooded areas were not naturally occurring, but rather planted species compromising single or multiple rows (shelterbelts). Species observed included Siberian elm (*Ulmus pumila*), eastern cottonwood (*Populus deltoides*), Russian olive (*Eleagnus angustifolia*), ponderosa pine (*Pinus ponderosa*), Rocky Mountain juniper (*Juniperus scopulorum*), Scots pine (*Pinus sylvestris*), Siberian peashrub (*Caragana arborescens*), and American elm (*Ulmus americana*). A photograph of the woody vegetation community types is provided in Appendix B.

3.1.3 Cropland

Field surveys indicate several types of agricultural occupation within the proposed ROW, which occupied a large portion of the construction corridor. Cropland vegetation was dominated by wheat (*Triticum* spp.).

3.1.4 PEM Wetland

The wetlands were found to mainly consist of herbaceous, non-woody vegetation such as sedges, spike-rushes, grasses, and forbs. Wetland vegetation species identified include reed canarygrass (*Phalaris arundinacea*), dock (*Rumex* spp.), foxtail barley (*Hordeum jubatum*), prairie cordgrass (*Spartina pectinata*), rush (*Juncus* spp.), sedge (*Carex* spp.), swamp smartweed (*Polygonum amphibium*), and cattail (*Typha* spp.).

3.2 HYDROLOGY

All wetland communities observed during the delineation effort displayed at least one primary or two secondary indicators of wetland hydrology, as defined by the USACE Manual and Supplement. Upland communities either failed to display hydrologic indicators or failed to meet the hydrophytic vegetation criterion, as defined by the Manual and Supplement. In some instances, during the survey completed in April, the spring snowmelt and subsequent runoff obscured the wetland/waterbody boundary and OHWM usually present during normal hydrologic conditions. Common indicators of wetland hydrology observed during field surveys include Surface Water (A1), High Water Table (A2), Saturation (A3), Water Marks (B1), Drift Deposits (B3), Algal Mat or Crust (B4), Inundation Visible on Aerial Imagery (B7), Drainage Patterns (B10), Saturation Visible on Aerial Imagery (C9), Geomorphic Position (D2), and FAC-Neutral Test (D5).

The Sloulin International Airport weather station located in Williston, North Dakota, was used to determine regional precipitation measurements prior to the April 2014 field survey. This location was selected due to its proximity to the project area (12 miles southwest). According to National Weather Service (NWS) preliminary climatological data for Williston, North Dakota, 8.45 inches of precipitation was recorded from January 2014 to September 3, 2014 (Table 1). This amount is 2.79 inches below normal for this time period.

Table 1. Monthly Recorded Rainfall at Weather Station in Williston, North Dakota.

Month	Recorded Precipitation (inches)	Normal Precipitation (inches)	Difference (inches)
January 2014	0.18	0.59	-0.41
February 2014	0.26	0.39	-0.13
March 2014	0.32	0.71	-0.39
April 2014	1.71	1.00	0.71
May 2014	1.62	1.92	-0.30
June 2014	1.44	2.52	-1.08
July 2014	0.66	2.54	-1.88
August 2014	2.24	1.45	0.79
September 1–3, 2014	0.02	0.12	-0.10
Total	8.45	11.24	-2.79

Source: National Oceanic and Atmospheric Administration 2014

3.3 WETLANDS

SWCA recorded nine PEM wetlands within the 150-foot survey area, totaling approximately 2.22 acres. In total, approximately 0.90 acre of PEM wetlands is proposed to be temporarily impacted in the 110-foot-wide construction ROW (Table 2). Although only the USACE has the final authority to determine if these PEM wetlands are jurisdictional, the field survey indicates that four wetlands may be jurisdictional, based on a significant nexus to waters of the U.S. See Appendix B for representative photographs of wetlands.

During the April surveys, AWET1 through AWET7 were delineated. During the September surveys, BWET1 and BWET2 were delineated. Feature AWET1 has an NWI signature and exhibits hydrophytic vegetation and wetland hydrology. However, due to the time of year, water levels extended into areas dominated by upland vegetation and non-hydric soils. Under normal circumstances, SWCA would expect the water levels to be lower and hydric soils would be observed farther into the wetland boundary. AWET2 is located in an area that has been disturbed by a previously constructed pipeline and is located directly adjacent to an NWI signature. Wetland hydrology and hydric soils were observed, however SWCA determined that due to recent construction of a pipeline, the vegetation has been heavily disturbed. Under normal circumstance, SWCA would expect that hydrophytic vegetation would be more prevalent and that this assumed wetland would meet all three criteria. Feature AWET6 has an NWI signature, is located in an agriculture field, and has been previously farmed through. Soils and vegetation in this area have been heavily disturbed. Under normal circumstance, SWCA assumes that hydric soils and hydrophytic vegetation would be observed for this feature. Features AWET3, AWET4, AWET5, AWET7, BWET1, and BWET2 all exhibited the three indicators used to determine a wetland.

Table 2. PEM Wetland Acreage within the Survey Area.

Feature ID	USACE Jurisdiction*	Total PEM Size (acres)	Temporarily Impacted Area within 110-foot-wide ROW (acres)	Length of Required Crossing (feet)
AWET1	Isolated	0.40	0.00	0.00
AWET2	Isolated	0.12	0.11	87.34
AWET3	Isolated	0.05	0.03	52.80
AWET4	Isolated	0.68	0.25	322.58
AWET5	Likely Jurisdictional	0.14	0.00	0.00
AWET6	Isolated	0.07	0.04	77.58
AWET7	Likely Jurisdictional	0.14	0.00	0.00
BWET1	Likely Jurisdictional	0.19	0.13	73.63
BWET2	Likely Jurisdictional	0.43	0.35	175.54
Total		2.22	0.90	

* The U.S. Army Corps of Engineers (USACE) has the final authority on the jurisdictional status of a waterbody.

PEM = palustrine emergent

ROW = right-of-way

3.4 WATERBODIES

SWCA did not identify any waterbodies during the field survey. However, three ephemeral drainages were recorded during the survey (ASTR1, ASTR2, ASTR3; Appendix A). No hydrophytic vegetation was noted within the ephemeral drainages and no evidence of an OHWM was observed. Because these drainages do not have a significant nexus to waters of the U.S., and were not intermittent or perennial, they would be considered non-jurisdictional.

3.5 SOILS

Twenty-two soil types are present in the project construction corridor, based on Natural Resources Conservation Service (NRCS) mapping (NRCS 2014). The project area analyzed for soils covers the 110-foot-wide construction corridor. Table 3 lists all soil units within the project area. The following soil component descriptions represent the most prevalent soil series found within the survey area (NRCS 2014).

Table 3. NRCS Derived Soil Series Present within the ROW.

Soil Series	Slopes (%)	Acres within 110-foot-wide ROW	Percent within Map Unit
Williams-Bowbells loams	3 to 6	70.97	37.85
Williams-Zahl-Zahill complex	6 to 9	25.67	13.69
Williams-Bowbells loams	0 to 3	19.28	10.28
Appam sandy loam	0 to 6	13.98	7.46
Livona fine sandy loam	0 to 6	13.56	7.23

Soil Series	Slopes (%)	Acres within 110-foot-wide ROW	Percent within Map Unit
Zahl-Williams loams	9 to 15	11.94	6.37
Livona-Zahl complex	6 to 9	10.39	5.54
Williams-Zahl loams	3 to 6	4.08	2.17
Vallers loam, saline	0 to 1	3.92	2.09
Arnegard loam	0 to 2	3.21	1.71
Lehr loam	2 to 6	3.01	1.61
Livona fine sandy loam	0 to 6	1.72	0.92
Lehr-Williams loams	0 to 6	1.64	0.87
Arnegard loam	2 to 6	1.47	0.78
Zahl-Max loams	15 to 25	0.86	0.46
Korchea-Divide loams, channeled	0 to 2	0.43	0.23
Lihen-Blanchard loamy fine sands	6 to 15	0.39	0.21
Wildrose silty clay	0 to 2	0.36	0.19
Wabek-Lehr complex	6 to 9	0.32	0.17
Hamerly-Tonka complex	0 to 3	0.18	0.09
Dooley fine sandy loam	0 to 6	0.13	0.07
Zahl-Williams loams	9 to 15	0.02	0.01
Total		187.52	100.00

Source: Natural Resources Conservation Service 2014.

3.5.1 Williams

The Williams series consists of very deep, well-drained, moderately slow or slowly permeable soils formed in calcareous glacial till. These soils are on glacial till plains and moraines and have slopes of 0 to 35 percent. Mean annual air temperature is about 40 degrees Fahrenheit (°F), and mean annual precipitation is about 14 inches. Cultivated areas are used for growing small grains, flax, corn, hay, or pasture. Native vegetation species common to this soil type include western wheatgrass, needle and thread (*Hesperostipa comata*), blue grama, green needlegrass, and prairie junegrass (NRCS 2014).

3.5.2 Bowbells

The Bowbells series consists of very deep, well- and moderately well-drained soils formed in glacial till and alluvium from glacial till on glacial till plains and moraines. These soils have moderate permeability in the upper part and moderately slow or slow in the substratum. Slopes range from 0 to 9 percent. Mean annual precipitation is about 14 inches, and mean annual air temperature is about 42°F. These soils are cropped to small grains; some areas are used for hay and pasture. Native vegetation species common to this soil type include green needlegrass, western wheatgrass, porcupinegrass (*Heterostipa spartea*), and big bluestem (*Andropogon gerardii*) (NRCS 2014).

3.5.3 Zahl

The Zahl series consists of very deep, well-drained, moderately slow or slowly permeable soils that formed in calcareous glacial till. These soils are on glacial till plains, moraines, and

valley side slopes and have slopes of 1 to 60 percent. Mean annual air temperature is 40°F, and mean annual precipitation is 14 inches. The native vegetation species most common to this soil type are little bluestem, western wheatgrass, and needle and thread (NRCS 2014).

3.5.4 Zahill

The Zahill series consists of very deep, well-drained soils that formed in till and are found on till plains, hills, moraines, and escarpments. Slopes are 0 to 65 percent. The mean annual precipitation is approximately 13 inches and mean annual air temperature is approximately 42°F. This soil type is used in mainly range and dryland crops. Native vegetation species common to this soil type include western wheatgrass, needle and thread, green needlegrass, little bluestem, prairie sandreed (*Calamovilfa longifolia*), bluebunch wheatgrass (*Pseudoroegneria spicata*), prairie junegrass, blue grama, sedges, and other forbs (NRCS 2014).

3.5.5 Appam

The Appam series consists of very deep, somewhat excessively drained soils that formed in glaciofluvial deposits. Permeability is moderately rapid in the upper part and very rapid in the substratum. These soils are on outwash plains and terraces and have slopes of 0 to 15 percent. Mean annual air temperature is about 41°F and mean annual precipitation is about 14 inches. Native vegetation species common to this soil type include needle and thread, prairie sandreed, prairie junegrass, sand sedge (*Carex arenaria*), threadleaf sedge (*Carex filifolia*), and a wide variety of forbs (NRCS 2014).

3.5.6 Livona

The Livona series consists of very deep, well-drained, moderately slowly permeable soils that formed in moderately coarse textured eolian material overlying till. These soils are on upland plains and have slopes ranging from 0 to 15 percent. Mean annual temperature is 42°F, and mean annual precipitation is 16 inches. Native vegetation species common to this soil type include needle and thread, prairie sandreed, and western wheatgrass (NRCS 2014).

3.6 TREE, SAPLING, AND SHRUB COUNT

During SWCA’s field survey, nine tree rows and 11 naturally occurring wooded areas were geographically referenced within the survey area. Table 4 indicates the number of trees estimated to be impacted by the project as currently proposed. The NDPSC requires a 2:1 post- to pre-construction mitigation for all trees, saplings, and shrubs impacted during the construction of the proposed pipeline. Therefore, SWCA estimates approximately 118 two-year-old sapling individuals would need to be replanted in order to fulfill the 2:1 mitigation requirement.

Table 4. Tree, Sapling, and Shrub Count.

Woody Vegetation (WV) ID	Species	Type	Number of Trees*		Estimated Mitigation Commitment
			150-foot-wide Survey Corridor	110-foot-wide Construction ROW	
AWV1	Eastern cottonwood (<i>Populus deltoides</i>)	Tree	107	0	0
AWV2	Ponderosa pine (<i>Pinus ponderosa</i>)	Tree	4	0	0
AWV3	Siberian elm (<i>Ulmus pumila</i>)	Tree	1	0	0
AWV4	Siberian elm	Tree	1	0	0
AWV5	Siberian elm	Tree	308	0	0
AWV6	Siberian elm Russian olive (<i>Elaeagnus angustifolia</i>)	Tree	702	14	28
		Tree	375	7	14
AWV7	Siberian elm	Tree	1	0	0
AWV8	Ponderosa pine	Tree	12	8	16
AWV9	Ponderosa pine	Tree	12	7	14
AWV10	Siberian elm; Russian olive	Tree	2	2	4
		Tree	1	1	2
AWV11	Siberian elm	Tree	3	3	6
AWV12	Siberian elm	Tree	3	0	0
AWV13	Siberian elm	Tree	107	0	0
AWV14	Siberian elm	Tree	149	0	0
AWV15	Siberian elm	Tree	8	0	0
BWV1 ⁺	Rocky Mountain juniper (<i>Juniperus scopulorum</i>); Scots pine (<i>Pinus sylvestris</i>); Siberian peashrub (<i>Caragana arborescens</i>)	Tree	-	0	0
		Tree			
		Shrub			

Woody Vegetation (WV) ID	Species	Type	Number of Trees*		Estimated Mitigation Commitment
			150-foot-wide Survey Corridor	110-foot-wide Construction ROW	
BWV2	Ponderosa pine	Tree	2	2	4
BWV3	American elm (<i>Ulmus americana</i>)	Tree	3	3	6
BWV4	American elm;	Tree	2	2	4
	Russian olive	Tree	2	2	4
BWV5	American elm	Tree	30	8	16
Total			1,835	59	118

* Estimated value based off of the observed density of trees.

+ Does not meet 1-inch diameter at breast height.

ROW = right-of-way

3.7 WILDLIFE

SWCA conducted cursory wildlife surveys (including a threatened and endangered species and habitat assessment, migratory bird survey, and a raptor 0.5-mile line-of-sight survey) concurrently with the wetland determination. Biologists did not observe any primary (i.e., actual sighting) or secondary (tracks, scat, fur) indication of the presence of threatened or endangered species. A Sprague’s pipit (*Anthus spragueii*), listed as a candidate species, was heard vocalizing during surveys near the northeast portion of the pipeline route. Although a Sprague’s pipit was heard in the vicinity of the proposed project, the surveyed areas did not contain suitable nesting habitat for this species. However, the survey area does contain suitable foraging and stopover habitat (wetland/agriculture field associations) for the whooping crane (*Grus americana*). Migratory bird nesting habitat is prevalent throughout the project area. SWCA biologists observed one migratory bird nest (horned lark – *Eremophila alpestris*), located in a harvested agriculture field during the surveys. The nest was determined to be active, as the female was flushed from the nest and two eggs were observed. This nest is indicated as ANST1 on the maps in Appendix A.

The proposed project was not found to contain any suitable habitat for any of the other listed species. The project would have no effect on the gray wolf (*Canis lupus*), northern long-eared bat (*Myotis septentrionalis*), rufa red knot (*Calidris canutus rufa*), or designated critical habitat for piping plover (*Charadrius melodus*). Interior least tern (*Sterna antillarum*), whooping crane, Sprague’s pipit, and piping plover have the potential to occur within the project area as migrants and as a result may be affected, but are not likely to be adversely affected by the proposed project. In the event of a large spill, pallid sturgeon (*Scaphirhynchus albus*) may be potentially impacted from impacts to water quality. As a result, this species may be affected, but is not likely to be adversely affected by the proposed project.

3.7.1 Endangered Species Act

3.7.1.1 Gray Wolf

Federal Status: Endangered

Affects Determination: No Effect

The gray wolf, listed as endangered in the United States in 1978, was believed extirpated from North Dakota in the 1920s and 1930s, with only sporadic reports from the 1930s to present (Licht and Huffman 1996; USFWS 1978). The presence of wolves in most of North Dakota consists of occasional dispersing animals from Minnesota and Manitoba (Licht and Fritts 1994; Licht and Huffman 1996). Most documented gray wolf sightings within western North Dakota are believed to be young males seeking to establish territory (Hagen et al. 2005). The Turtle Mountain region of north-central North Dakota provides marginal habitat that may be able to support a very small population of wolves. The closest known pack of wolves is the Minnesota population located approximately 17 miles (28 kilometers [km]) from the northeast corner of North Dakota.

The gray wolf uses a variety of habitats that support a large prey base, including montane and low-elevation forests, grasslands, and desert scrub (USFWS 2013a). Due to a lack of forested habitat and distance from Minnesota and Manitoba populations, as well as the troubled relationship between humans and wolves and their vulnerability to being shot in open habitats (Licht and Huffman 1996), the re-establishment of gray wolf populations in North Dakota is unlikely. Additionally, habitat fragmentation may further act as a barrier against wolf recolonization in western North Dakota. Therefore, the proposed project would have **no effect** on the gray wolf.

3.7.1.2 Whooping Crane

Federal Status: Endangered

Affect Determination: May Affect, Is Not Likely to Adversely Affect

The whooping crane was listed as endangered in 1970 in the United States by the USFWS and in 1978 in Canada. Historically, population declines were caused by shooting and destruction of nesting habitat in the prairies from agricultural development. Current threats to the species include habitat destruction, especially suitable wetland habitats that support breeding and nesting, as well as feeding and roosting during their fall and spring migration (Canadian Wildlife Service and USFWS 2007).

The July 2010 total wild population was estimated at 383 (USFWS 2013b). There is only one self-sustaining wild population, the Aransas-Wood Buffalo National Park population, which nests in Wood Buffalo National Park and adjacent areas in Canada, where approximately 83% of the wild nesting sites occur (Canadian Wildlife Service and USFWS 2007; USFWS 2013b). Williams County, including the project area, is within the primary migratory flyway of whooping cranes.

Whooping cranes probe the soil subsurface with their bills for foods on the soil or vegetation substrate (Canadian Wildlife Service and USFWS 2007). Whooping cranes are omnivores and foods typically include agricultural grains, as well as insects, frogs, rodents, small birds,

minnows, berries, and plant tubers. The largest amount of time during migration is spent feeding in harvested grain fields (Canadian Wildlife Service and USFWS 2007). Studies indicate that whooping cranes use a variety of habitats during migration, in addition to cultivated croplands, and generally roost in small palustrine (marshy) wetlands within 0.6 mile (1 km) of suitable feeding areas (Howe 1987, 1989). Whooping cranes have been recorded in riverine habitats during their migration, with eight sightings along the Missouri River in North Dakota (Canadian Wildlife Service and USFWS 2007:18). In these cases, they roost on submerged sandbars in wide, unobstructed channels that are isolated from human disturbance (Armbruster 1990).

Suitable whooping crane foraging habitat (i.e., cultivated cropland) and roosting habitat (shallow wetlands with low visual obstructions) were observed within and near the surveyed areas. The closest known sighting of whooping cranes was approximately 4.6 miles northwest of the project area (in 1979, when four adults were observed). Several other whooping crane sightings have been confirmed within 10 miles of the project area, so it is plausible that cranes could be present within the project area during spring and fall migrations. Therefore, the proposed project **may affect, but is not likely to adversely affect** the endangered whooping crane.

3.7.1.3 Piping Plover

Federal Status: Threatened

Affect Determination: May Affect, Is Not Likely to Adversely Affect

The piping plover is a small shorebird which breeds only in three geographic regions of North America: the Atlantic Coast, the Northern Great Plains, and the Great Lakes. Piping plover populations were federally listed as threatened and endangered in 1985, with the Northern Great Plains and Atlantic Coast populations listed as threatened, and the Great Lakes population listed as endangered (USFWS 1985a).

Plovers in the Great Plains make their nests on open, sparsely vegetated sand or gravel beaches adjacent to alkali wetlands, and on beaches, sand bars, and dredged material islands of major river systems (USFWS 2002, 2012). The shorelines of lakes of the Missouri River constitute significant nesting areas for the bird. Piping plovers nest on the ground, making shallow scrapes in the sand, which they line with small pebbles or rocks (USFWS 1988). Anthropogenic alterations of the landscape along rivers and lakes where piping plover nest have increased the number and type of predators, subsequently decreasing nest success and chick survival (USFWS 2002, 2012). The birds fly south by mid to late August to areas along the Texas coast and Mexico (USFWS 2002). The Northern Great Plains population has continued to decline despite federal listing, with population estimates of 1,500 breeding pairs in 1985 reduced to fewer than 1,100 in 1990. Low survival of adult birds has been identified as a factor (Root et al. 1992). Current conservation strategies include identification and preservation of known nesting sites, public education, and limiting or preventing shoreline disturbances near nests and hatched chicks (USFWS 1988, 2012).

Suitable shoreline habitat for breeding and nesting plovers does not occur within the project area and Lake Sakakawea is a minimum of 11.5 straight-line miles from the proposed survey

area. It is unlikely but possible that migrating plovers may traverse the project area during their migration. Therefore, the proposed project **may affect, but is not likely to adversely affect** piping plovers.

3.7.1.4 Designated Critical Habitat of Piping Plover

Federal Status: Threatened

Affect Determination: No Effect

The USFWS has designated critical habitat for the Great Lakes and Northern Great Plains populations of piping plover (USFWS 2002). Designated critical habitat for the piping plover includes 183,422 acres and 1,207.5 river miles of habitat along the shoreline of Lake Sakakawea in Williams County, North Dakota (USFWS 2002).

Since the proposed project would not modify, alter, disturb, or affect the shoreline of Lake Sakakawea or any other designated critical habitat, **no effect** to designated critical habitat of the piping plover would occur.

3.7.1.5 Interior Least Tern

Federal Status: Endangered

Affect Determination: May Affect, Is Not Likely to Adversely Affect

The interior population of the least tern is listed as endangered by the USFWS (1985b). This bird is the smallest member of the gull and tern family, measuring approximately 9 inches in length. Terns remain near flowing water, where they feed by hovering over and diving into standing or flowing water to catch small fish (USFWS 2013c).

The interior population of least terns breeds in isolated areas along the Missouri, Mississippi, Ohio, Red, and Rio Grande river systems, where they nest in small colonies. From late April to August, terns nest in a shallow hole scraped in an open sandy area, gravel patch, or exposed flat and bare sandbars along rivers, sand and gravel pits, or lake and reservoir shorelines. The adults continue to care for chicks after they hatch. Least terns in North Dakota will often be found sharing sandbars with the piping plover, a threatened species (USFWS 2013c).

Census data indicate over 8,000 least terns in the interior population. In North Dakota, the least tern is found mainly on the Missouri River from Garrison Dam south to Lake Oahe, and on the Missouri and Yellowstone Rivers upstream of Lake Sakakawea (USFWS 1990a, 2013c). Approximately 100 pairs breed in North Dakota (USFWS 2013c). Details of their migration are not known, but their winter range is reported to include the Gulf of Mexico and Caribbean Islands (USFWS 1990a, 2013c).

Loss of suitable breeding and nesting habitat for terns has resulted from dam construction and river channelization on major rivers throughout the Mississippi, Missouri, and Rio Grande river systems. River and reservoir changes have led to reduced sandbar formation and other shoreline habitats for breeding, resulting in population declines. In addition, other human shoreline disturbances affect the species (USFWS 1990a). Critical habitat has not been designated for the species (USFWS 2013c). Current conservation strategies include

identification and avoidance of known nesting areas, public education, and limiting or preventing shoreline disturbances near nests and hatched chicks (USFWS 2013c).

A suitable shoreline habitat for breeding and nesting terns does not occur in the project area, and Lake Sakakawea is a minimum of 11.5 straight-line miles away from the survey area. It is unlikely that terns would visit the upland or wetland habitats present in the survey area; however, it is possible that terns may transition through the project area during migration periods. Therefore, the proposed project **may affect, but is not likely to adversely affect** endangered least terns.

3.7.1.6 Pallid Sturgeon

Federal Status: Endangered

Affect Determination: May Affect, Is Not Likely to Adversely Affect

The pallid sturgeon was listed as endangered in 1990 in the United States by the USFWS (1990b). The primary factor leading to the decline of this species is the alteration of habitat through river channelization, creation of impoundments, and alteration of flow regimes (USFWS 1990b). These alterations within the Missouri River have blocked movements to spawning, feeding, and rearing areas; destroyed spawning habitat; altered flow conditions which can delay spawning cues; and reduced food sources by lowering productivity (USFWS 2007). The fundamental elements of pallid sturgeon habitat are defined as the bottom of swift waters of large, turbid, free-flowing rivers with braided channels, dynamic flow patterns, flooding of terrestrial habitats, and extensive microhabitat diversity (USFWS 1990b).

The pallid sturgeon populations occur in the Missouri River below Fort Peck Dam to the headwaters of Lake Sakakawea and the lower Yellowstone River up the confluence of the Tongue River, Montana (USFWS 2007). This population consists of approximately 136 wild adult pallid sturgeon (USFWS 2007). Hatchery-reared sturgeon have also been stocked since 1998. The pallid sturgeon has been found to utilize the 15.5 miles (25 km) of riverine habitat that would be inundated by Lake Sakakawea at full pool (Bramblett 1996 per USFWS 2007). Larval pallid sturgeons have also been found to drift into Lake Sakakawea. While the majority of pallid sturgeons are found in the headwaters of Lake Sakakawea, the North Dakota Game and Fish Department has caught and released pallid sturgeon in nets set in 80 to 90 feet of water between the New Town and Van Hook areas. Based on this information, pallid sturgeon could be found throughout Lake Sakakawea (personal communication, email from Steve Krentz, Pallid Sturgeon Project Lead, U.S. Fish and Wildlife Service, to SWCA Environmental Consultants, September 3, 2010).

Suitable habitat for pallid sturgeon is not present in the surveyed areas, and the closest habitat is Lake Sakakawea, which is a minimum of 11.50 straight-line miles and 21.75 river miles from the project area. Potential pollution occurring as a result of construction activities, hydrostatic testing, and pipeline operations are concerns for downstream populations of endangered pallid sturgeon. Activities associated with the proposed project are not anticipated to adversely affect the water quality of Lake Sakakawea and/or its tributaries, and subsequently the pallid sturgeon. However, in the event of a large leak or spill, the possibility

exists for contamination to reach Lake Sakakawea. Therefore, the proposed project **may effect, but is not likely to adversely affect** pallid sturgeon.

3.7.1.7 Sprague's Pipit

Federal Status: Candidate

Affect Determination: May Affect, Is Not Likely to Adversely Affect

The Sprague's pipit is a small passerine, 10 to 15 centimeters in length, endemic to the Northern Great Plains (USFWS 2011). The Sprague's pipit requires large tracts of native prairie habitat, unplowed, throughout their life cycle. Because native grasslands are disturbance-dependent, Sprague's pipit prefers grassland habitats that are regularly disturbed. The frequency of disturbance required for habitat maintenance depends on how quickly grasses grow to an intermediate height (4 to 12 inches) following a disturbance event.

In North Dakota, Sprague's pipit has been found in areas of moderate grazing. Sprague's pipits are sensitive to patch size and avoid edges between grasslands and other habitat features (USFWS 2011). They may avoid non-grassland features including roads, trails, oil wells, croplands, woody vegetation, and wetlands. The Sprague's pipit is reported to stay up to 350 meters away from anthropogenic features such as roads, oil wells, and wind turbines (USFWS 2011). The USFWS has estimated that each new oil well and associated road in North Dakota results in potential impacts to approximately 51 acres of pipit habitat due to avoidance and habitat fragmentation (USFWS 2011). Because of increasing habitat fragmentation, especially by energy development, throughout the Sprague's pipit range, and the loss of native prairie habitat, the Sprague's pipit was listed as a Candidate Species under the Endangered Species Act in 2010 (USFWS 2011).

In North Dakota, Sprague's pipit breeds throughout the state except for the easternmost counties. During the breeding season they prefer large patches of well-drained, open native grassland with a minimum size of 358.3 acres (range = 170 to 776 acres). They have not been observed in areas smaller than 71.6 acres on their breeding grounds (USFWS 2011).

Large areas with native prairie habitat containing grasses of intermediate height do not occur within the project area, and a majority of the habitat within and surrounding the project area has been previously disturbed by agriculture, roads, and oil and gas development. However, a Sprague's pipit was heard vocalizing near the northeast portion of the pipeline. The pipit was heard in a large pasture to the north of the survey area, which contained suitable nesting habitat. The survey area on this portion of the alignment was dominated by non-native grasses and had a thick litter layer. Therefore, this project is unlikely to directly affect habitat due to lack of habitat requirements necessary for the Sprague's pipit for breeding in the immediate project area, but may indirectly contribute to reduced use of any nearby suitable grassland habitat patches within 350 meters of the proposed project. Therefore, the proposed project **may affect, but is not likely to adversely affect** Sprague's pipit.

3.7.1.8 Rufa Red Knot

Federal Status: Proposed for Listing as Threatened

Affect Determination: No Effect

The rufa red knot is a robin-sized shorebird that migrates long distances annually between its breeding grounds in the Canadian Arctic and several wintering regions, including the southeast United States, the northeast Gulf of Mexico, northern Brazil, and Tierra del Fuego at the southern tip of South America (USFWS 2013d). During migration, rufa red knots use key staging and stopover areas to rest and feed. In North Dakota, the red knot is a very rare migrant (USFWS 2013d). There are no known records of rufa red knot in the project vicinity; however, this species could use habitat along Lake Sakakawea as a stopover during migration.

Potential habitat along the lake is approximately 11.5 straight-line miles from the proposed project area. Activities associated with the construction, production, or reclamation of the proposed project are not anticipated to adversely affect suitable stopover habitat for the rufa red knot. Therefore, the proposed project would have **no effect** on the rufa red knot.

3.7.1.9 Northern Long-eared Bat

Federal Status: Proposed for Listing as Endangered

Affect Determination: No Effect

On October 2, 2013, the USFWS proposed the northern long-eared bat for listing as endangered under the Endangered Species Act (USFWS 2013e). This medium-sized bat ranges across the eastern and north-central United States and all of the Canadian provinces (USFWS 2013e). Throughout most of this species' range, populations are patchily distributed. They emerge at dusk to fly through the understory of forested hillsides and ridges, feeding on moths, flies, leafhoppers, caddis flies, and beetles.

Most records of northern long-eared bats are from winter hibernacula surveys, with more than 780 hibernacula identified within the United States. No known hibernacula are located in North Dakota, due to either no suitable hibernacula present or a lack of survey effort (USFWS 2013f). This bat species occupies a wide range of rocky and forested habitats. Suitable winter habitat contains large caves and mines (USFWS 2013e). Summer day roosts include abandoned buildings, bridges, hollow trees, stumps, spaces under loose bark, and rock fissures (Jones and Choate 1978).

Northern long-eared bats are not known to occur in the project area. Suitable winter habitat for northern long-eared bats does not occur in the project area. Nearby trees and rocky outcrops can act as suitable summer day roosts. Due to the low likelihood of northern long-eared bat occurrence in the project area, the proposed project would have **no effect** on the northern long-eared bat.

3.7.2 Migratory Bird Treaty Act / Bald and Golden Eagle Protection Act

3.7.2.1 Bald Eagle

Federal Status: Delisted in 2007; protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act

Effects of Project: May impact individuals or their habitat but likely would not contribute to a trend toward federal listing or cause a loss of viability to the population or species

The bald eagle (*Haliaeetus leucocephalus*) feeds on fish and carrion and typically roosts in large trees near a water source. Bald eagle nesting habitat is typically any mature stands of conifer or cottonwood trees in association with rivers, streams, reservoirs, lakes, or any significant body of water. Bald eagles are uncommon in North Dakota and are usually observed along the Missouri River (Gomes n.d.) and Yellowstone River. Bald eagles frequently migrate through the grassland habitats; however, no bald eagles or nests were observed during the field surveys. Marginal nesting and roosting habitat exists near AWET1, which has a mature stand of cottonwoods. Due to heavy disturbance in the area and overall distance to preferred feeding areas (Lake Sakakawea), nesting or roosting in this area would be unlikely. Therefore, the proposed project **may impact individuals or their habitat but likely would not contribute to a trend toward federal listing or cause a loss of viability to the population or species.**

3.7.2.2 Golden Eagle

Federal Status: Unlisted; protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act

Effects of Project: No adverse effects anticipated

Golden eagles (*Aquila chrysaetos*) nest on steep cliff faces and in large cottonwood trees along intermittent creeks. Golden eagles have been documented near the project area year-round; however, the majority of golden eagles migrate. The breeding season for golden eagles is from mid-March through late July. No golden eagles or suitable nesting habitat was observed within the analysis area, and the closest known golden eagle nest is approximately 40 miles to the southeast of the project area. Therefore, the proposed project would have **no adverse impacts** on this species at this time.

3.7.2.3 Migratory Birds

Federal Status: Not listed, protected under the Migratory Bird Treaty Act

Effects of Project: No adverse effects anticipated

Suitable habitat for migratory birds exists within the entire project area. All types of migratory species including grassland nesting species and raptors can be expected to be observed within/near the project area, especially during the migratory bird breeding season between February 1 and July 15. Suitable woodland nesting habitat also occurs within the project area. Impacts to migratory birds can be mitigated by conducting all construction outside of the migratory bird breeding season or, if construction occurs during the bird breeding season, either mow, maintain, or completely remove vegetation within the project construction area, or conduct an avian survey of the project area no greater than 5 days before construction

begins, and if active nests are discovered, notify the USFWS. If migratory bird mitigation measures are conducted, the project is likely to cause **no adverse impacts** to migratory birds.

3.7.3 Wildlife Observed

During the field survey, SWCA biologists observed various wildlife species which use wetlands and other habitats within the survey area (Table 5). Common wildlife species may be affected both directly via incidents with construction equipment or indirectly through the temporary fragmentation of habitat as a result of construction activities. Migratory birds are protected by the Migratory Bird Treaty Act (16 United States Code 703 et seq.) which prohibits the “take” of individuals and nests.

Table 5. Wildlife Observed during Field Surveys at the Proposed Pipeline Route.

Common Name	Scientific Name	Observation Type	Comments
Northern harrier	<i>Circus cyaneus</i>	Primary	
Sprague’s pipit	<i>Anthus spragueii</i>	Secondary	
Ring-necked pheasant	<i>Phasianus colchicus</i>	Primary	
Killdeer	<i>Charadrius vociferus</i>	Primary	
Red-winged blackbird	<i>Agelaius phoeniceus</i>	Primary	
Western meadowlark	<i>Sturnella neglecta</i>	Primary	
Horned lark	<i>Eremophila alpestris</i>	Primary	ANST1
Mourning dove	<i>Zenaida macroura</i>	Primary	
American robin	<i>Turdus migratorius</i>	Primary	
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>	Primary	
American crow	<i>Corvus brachyrhynchos</i>	Primary	
Grey partridge	<i>Perdix perdix</i>	Primary	
Mallard	<i>Anas platyrhynchos</i>	Primary	
Gadwall	<i>Anas strepera</i>	Primary	
Northern pintail	<i>Anas acuta</i>	Primary	
Northern shoveler	<i>Anas clypeata</i>	Primary	
Blue-winged teal	<i>Anas discors</i>	Primary	
Canvasback	<i>Aythya valisineria</i>	Primary	
Redhead	<i>Aythya Americana</i>	Primary	
Canada goose	<i>Branta canadensis</i>	Primary	
Raccoon	<i>Procyon lotor</i>	Secondary	
Richardson’s ground squirrel	<i>Spermophilus richardsonii</i>	Primary	
Northern leopard frog	<i>Rana pipiens</i>	Secondary	

Natural Resources and Wetland Delineation Report for the Little Muddy Creek Pipeline and Epping Station, Williams County, North Dakota
October 2014

Common Name	Scientific Name	Observation Type	Comments
Coyote	<i>Canis latrans</i>	Primary	
American badger	<i>Taxidea taxus</i>	Primary	
White-tailed deer	<i>Odocoileus virginianus</i>	Primary	
Grey partridge	<i>Perdix perdix</i>	Primary	

4.0 CONCLUSIONS AND RECOMMENDATIONS

1. SWCA biologists recorded approximately 2.22 acres of wetlands within the survey area. In total, approximately 0.90 acre of PEM wetland *may* be temporarily impacted by construction activities within the 110-foot-wide construction ROW.
2. No waterbodies (streams, lakes, etc.) were observed within the surveyed areas. Three ephemeral drainages were recorded. Two of them appeared to be human-made, and the other appeared to be natural. These features did not contain hydrophytic vegetation, and had no indicators of an OHWM.
3. SWCA estimates 59 trees, saplings, and shrubs may be impacted. Therefore, approximately 118 2-year-old saplings may need to be replanted to fulfill the 2:1 mitigation requirement.

According to the recommendations of the North Dakota Forest Service, tree species selection for replacement should be accomplished through collaboration with a reputable area nursery. This will allow for species to be selected based on various factors including species hardiness and area soil type.

4. No federally listed threatened or endangered species were observed during the field survey. Suitable roosting and foraging habitat exists within the project area for the whooping crane, and there have been several sightings within 10 miles of the project area. SWCA recommends that if construction is to occur within whooping crane spring and fall migration periods, and a whooping crane is observed within 1 mile of the project, to stop construction and coordinate with the USFWS.

The other listed threatened and endangered species and proposed species which occur in Williams County (piping plover, least tern, pallid sturgeon, gray wolf, northern long-eared bat, rufa red knot) are not likely to be detrimentally impacted by construction activities. One listed candidate species, Sprague's pipit, was observed near the project area, however suitable nesting habitat does not exist within surveyed areas and no direct impacts would be anticipated.

5. Migratory birds and habitat were observed throughout the entire project area. An active migratory bird nest (horned lark) was discovered in a harvested agriculture field. Other types of suitable migratory bird habitat (including raptor habitat) exists throughout the surveyed areas. A 0.5-mile line-of-sight survey was conducted throughout the survey area. A northern harrier was observed flying within the vicinity of the proposed pipeline.

No active raptor nests or other species of raptor were observed. In order to reduce impacts to migratory birds, SWCA recommends conducting all construction outside of the migratory bird breeding season. If construction occurs during the bird breeding season, SWCA recommends to either mow, maintain, or completely remove vegetation within the project construction area, or conduct an avian survey of the project area no greater than 5 days before construction begins. If active nests are discovered, notify the USFWS.

6. One isolated 0.74-acre area of noxious weeds, Canada thistle, was discovered within the surveyed areas, including the construction ROW. If additional areas of noxious weeds are confirmed during construction activities, actions should be taken to reduce the potential to spread any state-listed noxious weed species, especially to native areas.

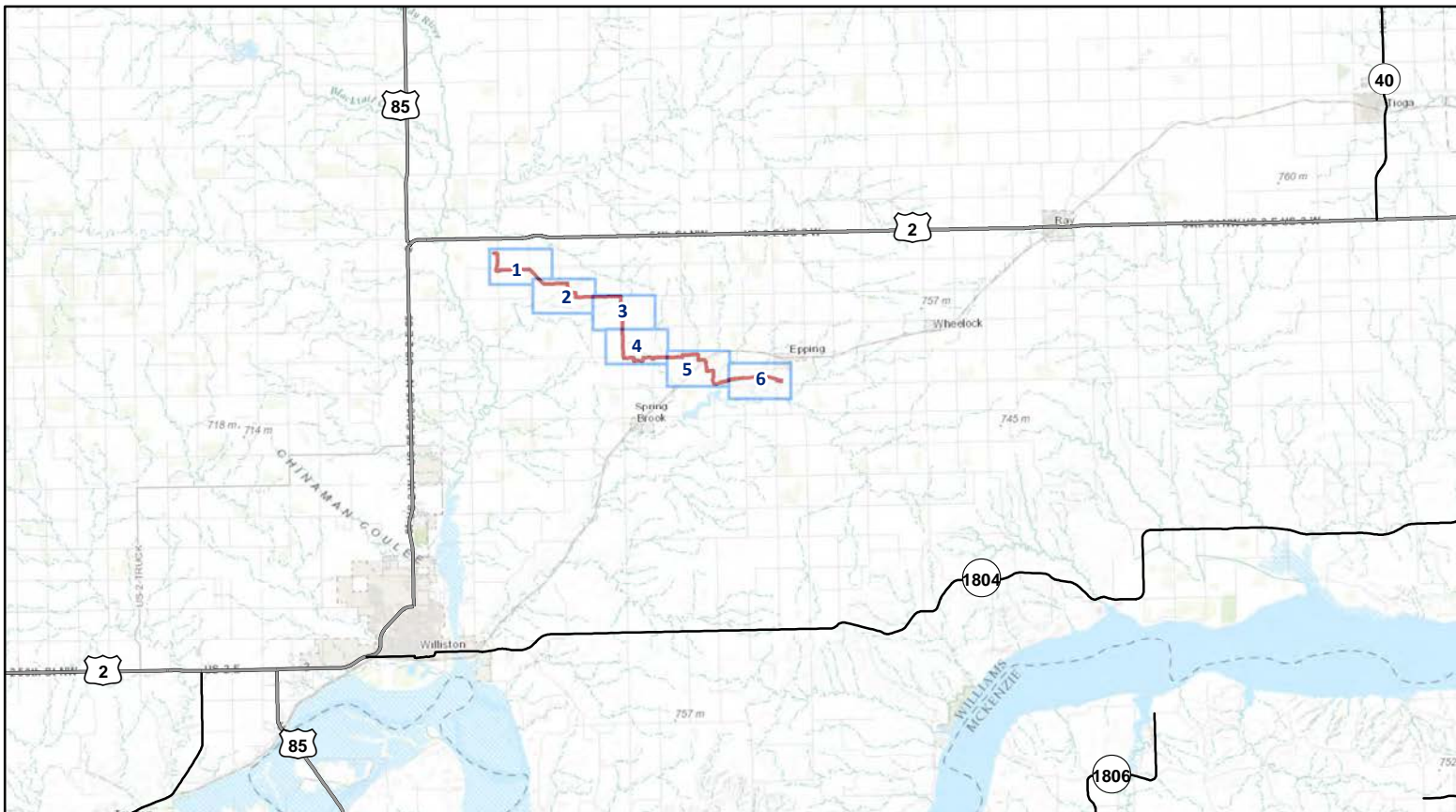
5.0 LITERATURE CITED

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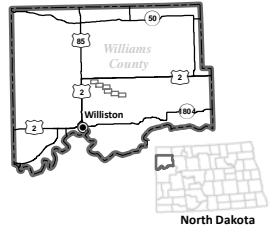
APPENDIX A
Vicinity Maps and Site Layout Maps



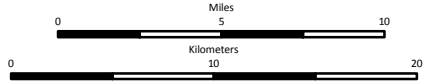
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Little Muddy Creek

- Proposed Gathering Pipeline
- State Highway
- U.S. Highway



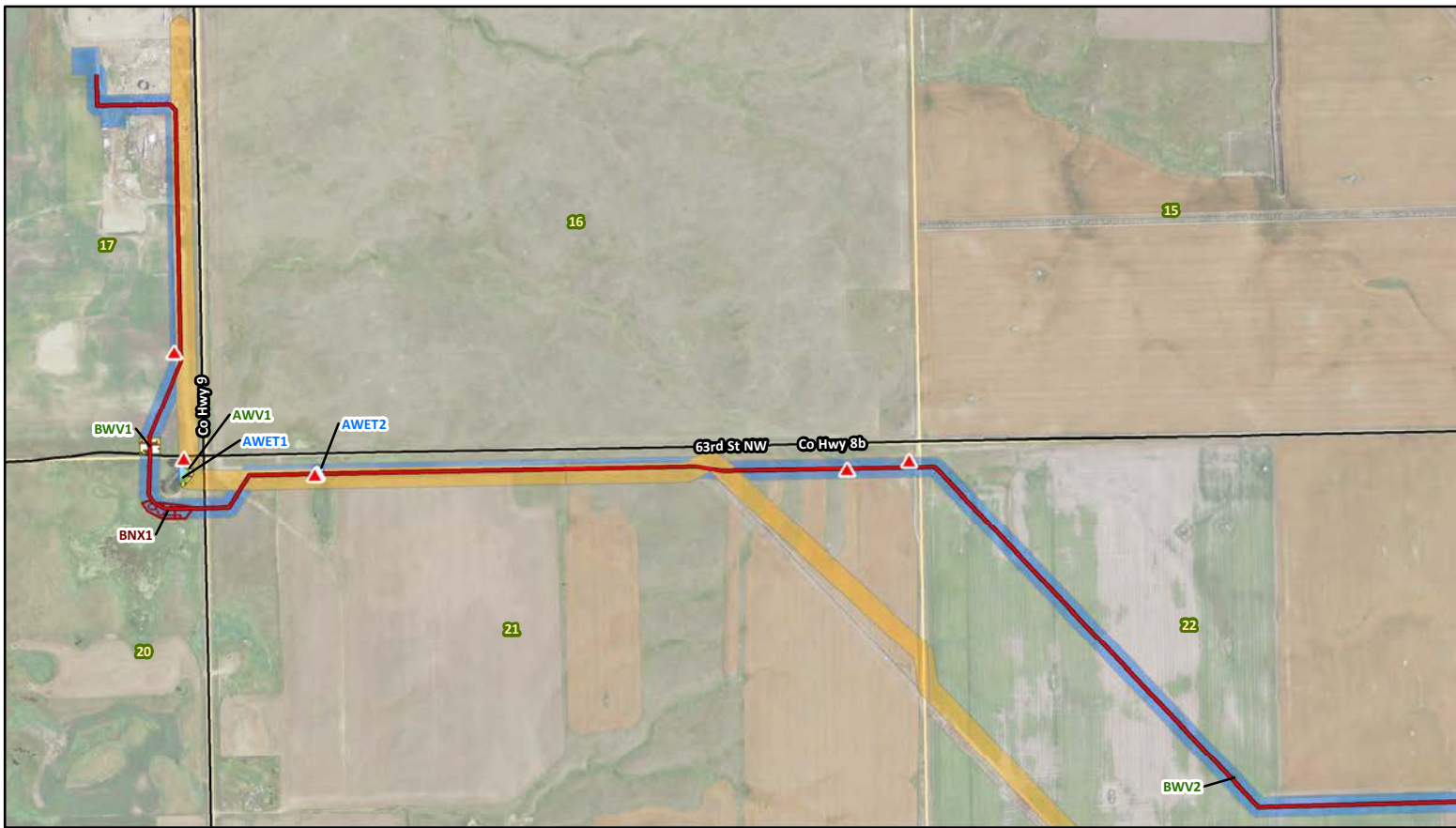
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Base Map: Topographic Map
 Source: ESRI ArcGIS online service
 Williams County, North Dakota

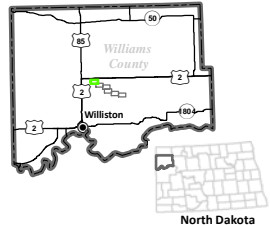
Projection: NAD 1983 UTM Zone 13N





Little Muddy Creek

- ▲ Upland Data Point
- ▲ Wetland Data Point
- Nest
- Proposed Gathering Pipeline
- Stream
- Existing Road
- Wetland
- Woody Vegetation
- Noxious Weed
- Survey Area
- Previously Inventoried Area
- Township/Range Boundary
- Section Boundary



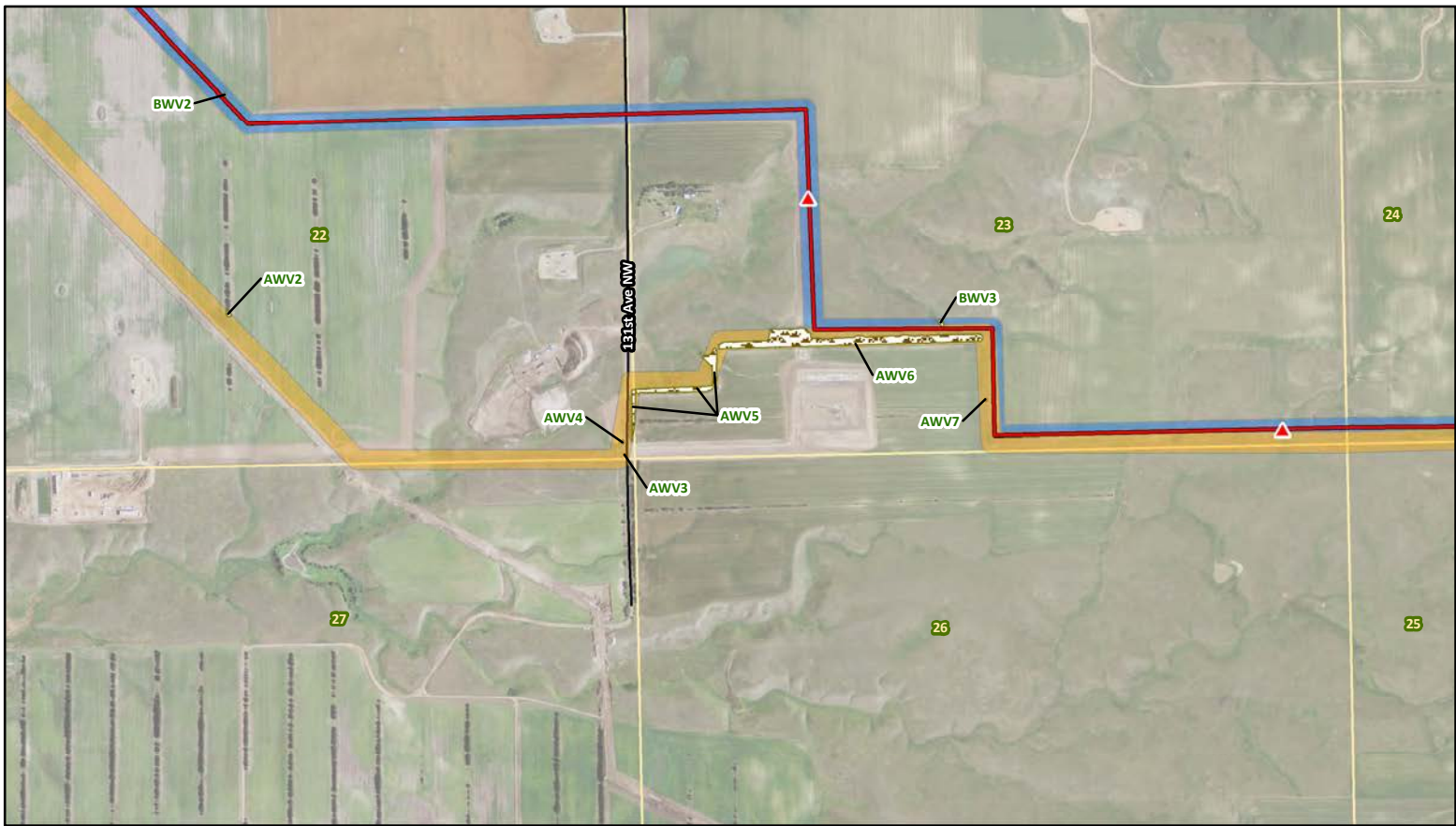
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Base Map: 2012 Aerial Imagery
 Source: USDA/FSA - Aerial Photography Field Office
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 Township/Range: T156N, R100W
 Williams County, North Dakota

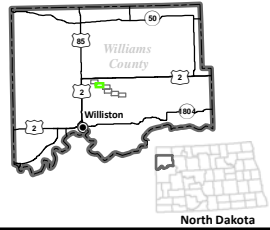
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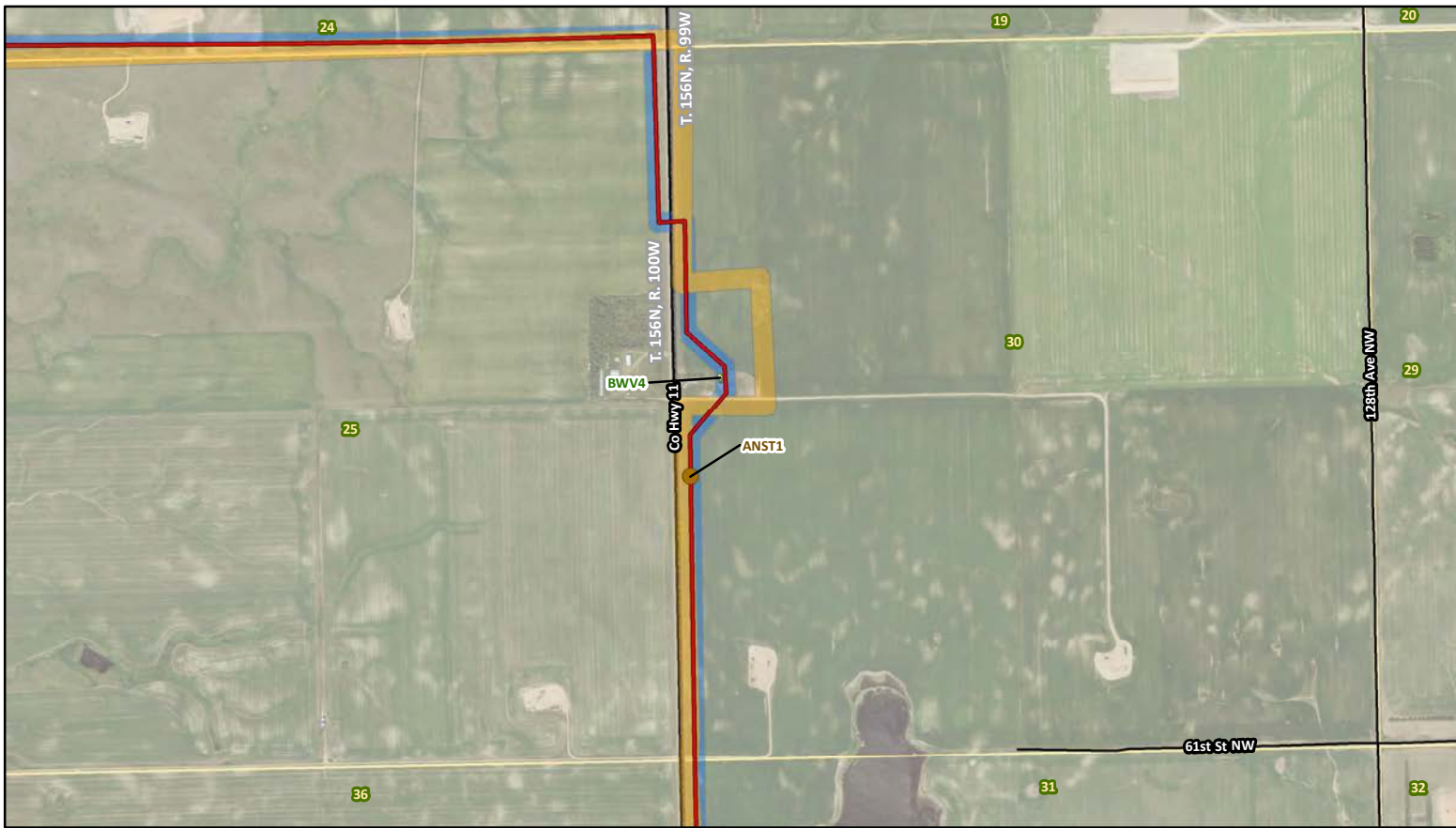


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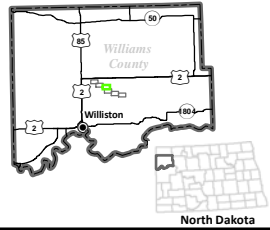
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 Williams County, North Dakota

Projection: NAD 1983 UTM Zone 13N



Little Muddy Creek

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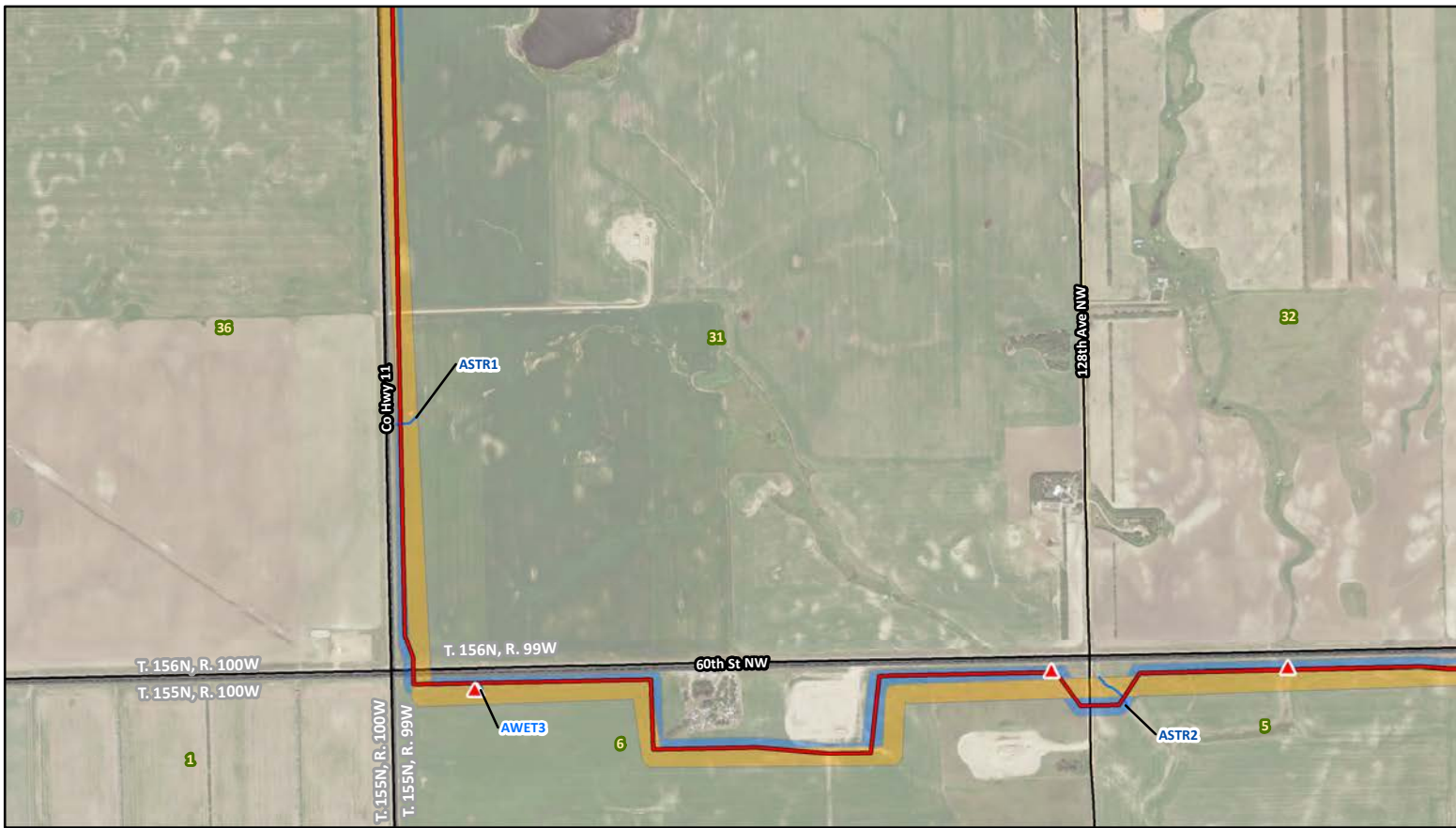


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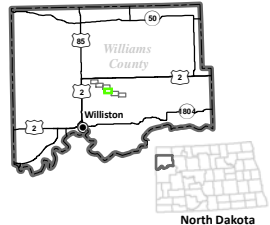
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 Quadrangle: Spring Brook (1979)
 Township/Range: T156N, R100W & T156N, R99W
 Williams County, North Dakota

Projection: NAD 1983 UTM Zone 13N



Little Muddy Creek

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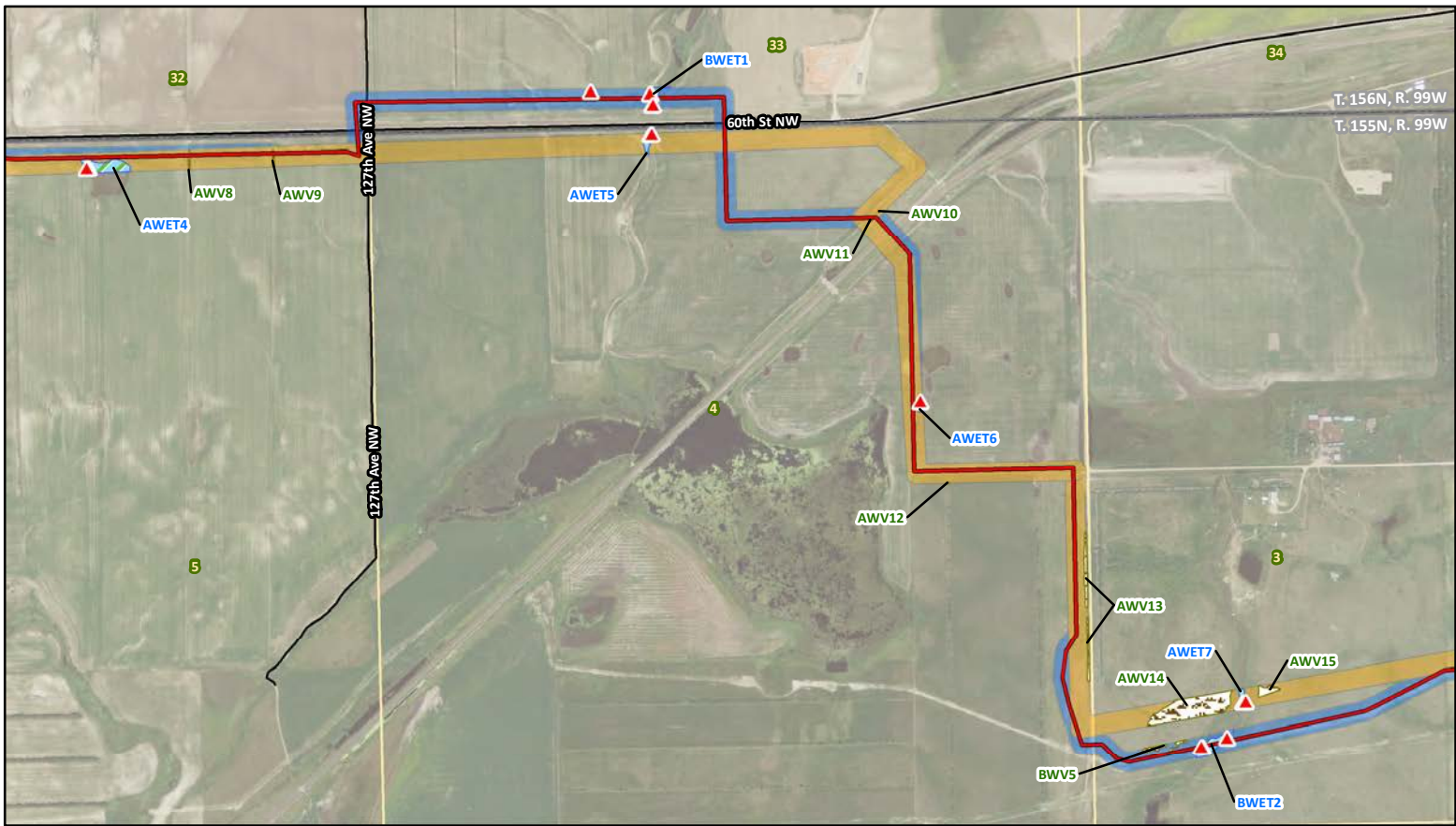
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Base Map: 2012 Aerial Imagery
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 Williams County, North Dakota

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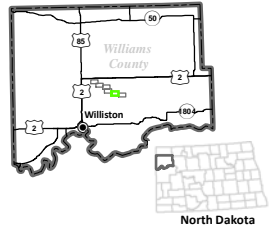
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T. 156N, R. 99W
T. 155N, R. 99W

Little Muddy Creek

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Base Map: 2012 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Spring Brook (1979)
Township/Range: T155N, R99W
Williams County, North Dakota

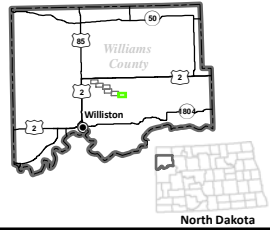
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 Kilometers

Base Map: 2012 Aerial Imagery
 Source: USDA/FSA - Aerial Photography Field Office
 Quadrangle: Spring Brook (1979), Epping (1979)
 Township/Range: T155N, R99W
 Williams County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N

APPENDIX B
Photographs of Project Area Corridor



Figure B.1. View of the project area. Note existing pipeline disturbance.



Figure B.2. View of AWW2, facing northwest.



Figure B.3. View of AWET1 and AWW1, facing southeast.



Figure B.4. View of AWET2, facing east.



Figure B.5. Representative photograph of dominant vegetation (non-native) within project area, facing northwest.



Figure B.6. View of the AWW6, facing northwest.



Figure B.7. View of ASTR1 (ephemeral drainage), facing northeast.



Figure B.8. View of AWET3, facing east.



Figure B.9. View of ASTR2 (ephemeral drainage), facing south. Note pipeline scar.



Figure B.10. View of ASTR2 (ephemeral drainage), facing south. Note that this portion of drainage has been mechanically altered.



Figure B.11. View of AWET4, facing east.



Figure B.12. View of AWET5, facing north.



Figure B.13. View of AWET6, facing south.



Figure B.14. View of AWW14, facing east.



Figure B.15. View of AWET7, facing west.



Figure B.16. View of ASTR3 (ephemeral drainage), facing south.



Figure B.17. View of ANST1, close-up of active horned lark nest.



Figure B.18. View of BWV1, facing southwest.



Figure B.19. View of BNX1, Canada thistle, facing west.



Figure B.20. Overview of BWV2, facing east.



Figure B.21. Overview of BWV3, facing west.



Figure B.22. Overview of BWV4, facing west.



Figure B.23. Overview of BWET1, facing northeast.



Figure B.24. Overview of BWV5, facing northwest.



Figure B.25. Overview of BWET2, facing northwest.

Appendix E

Cultural Resource Report

**Addendum to A Class I and Class III
Cultural Resource Inventory of the
Little Muddy Creek Pipeline, Williams
County, North Dakota, for Pipeline
Alignment Reroutes and Two Potential
Facility Sites**

Prepared for

E3 Environmental, LLC

Prepared by

SWCA Environmental Consultants

September 2014

MANUSCRIPT DATA RECORD FORM

1. Manuscript Number:
2. SHPO Reference #:
3. Author(s): Jolene Schleicher
4. Title: Addendum to A Class I and Class III Cultural Resource Inventory of the Little Muddy Creek Pipeline, Williams County, North Dakota, for Pipeline Alignment Reroutes and Two Potential Facility Sites
5. Report Date: September 22, 2014
6. Number of Pages: 34
7. Type – I, T, E, O: I
8. Acres: 147.29
9. Legal Location(s) (no quarter sections) with Historic Context Study Unit(s):
Consult the township tables in *The North Dakota Comprehensive Plan for Historic Preservation: Archeological Component*, (SHSND 2008; available at <http://history.nd.gov/hp/hpforms.html>) for Study Unit assignments.
Study Units: LM, CB, KN, HE, SM, GA, JA, GR, NR, SR, SO, SH, YE

<u>COUNTY</u>	<u>TWP</u>	<u>RNG</u>	<u>SEC</u>	<u>SU</u>
Williams	156N	100W	17, 20–25	GA
Williams	156N	99W	30–33	GA
Williams	155N	99W	1–6	GA

**Addendum to A Class I and Class III Cultural Resource Inventory of the
Little Muddy Creek Pipeline, Williams County, North Dakota,
for Pipeline Alignment Reroutes and Two Potential Facility Sites**

Submitted to:

State Historical Society of North Dakota

Prepared for:

E3 Environmental, LLC
871 Jefferson Avenue
St. Paul, Minnesota 55102

Prepared by:

Jolene Schleicher

Principal Investigator:

William Harding

SWCA Environmental Consultants

116 North 4th Street, Suite 200
Bismarck, North Dakota 58501

SWCA Cultural Resource Report Number 14-494
Addendum to SWCA Cultural Resource Report Number 14-223
Addendum to NDSHPO Manuscript Number 015167

September 22, 2014

ABSTRACT

This report is an addendum to the Class I and Class III cultural resource inventory report for the proposed Little Muddy Creek pipeline (Cox and Picka 2014), and presents the results of a Class III cultural resource inventory conducted by SWCA Environmental Consultants (SWCA) on September 2 and 3, 2014, on behalf of E3 Environmental, LLC, in support of reroutes to the proposed Little Muddy Creek pipeline alignment and two proposed facility sites. An update to the Class I cultural resource inventory was conducted on August 25, 2014. Meadowlark Midstream Company, LLC, proposes to construct the Little Muddy Creek pipeline on privately owned lands in Williams County, North Dakota.

The project area for the pipeline reroutes and proposed potential facility sites is located in Sections 17 and 20–25, Township (T) 156 North (N), Range (R) 100 West (W); Sections 30–33, T156N, R99W; and Sections 1–6, T155N, R99W, and is situated on the Blacktail Lake SE (1961), Epping (1979), and Spring Brook (1979), North Dakota, U.S. Geological Survey 7.5-minute quadrangles. The inventory area consists of a non-overlapping linear survey corridor up to 150 feet wide, totaling 146.09 acres, to compensate for shifting the proposed centerline. Two block surveys totaling 1.20 acres were surveyed for the proposed facility sites. In total, 147.29 acres were inventoried for the project. Portions of the currently proposed Little Muddy Creek pipeline reroutes are located within areas previously inventoried for the original alignment of the Little Muddy Creek pipeline (Cox and Picka 2014).

During the inventory, SWCA newly recorded an undocumented segment of the Great Northern Railroad (32WI481) and one isolated Knife River Flint biface (32WIX646). 32WI481 was previously determined eligible for listing in the National Register of Historic Places (NRHP). SWCA recommends project disturbance avoid all potentially eligible and unevaluated resources by 50 feet. 32WI481 will be avoided through the use of a horizontal directional drill beneath the site. By definition, isolated finds are considered to lack integrity and are not eligible for the NRHP; therefore, 32WIX646 is not eligible for inclusion in the NRHP. No further work is recommended. With the above stipulations, it is recommended that a determination of *No Significant Sites Affected* and *No Historic Properties Affected* be granted for the project to proceed as planned.

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A Class I and Class III Cultural Resource Inventory of the Little Muddy Creek Pipeline, Williams County, North Dakota

Prepared for

E3 Environmental, LLC

Prepared by

SWCA Environmental Consultants

May 2014



MANUSCRIPT DATA RECORD FORM

1. Manuscript Number:
2. SHPO Reference #:
3. Author(s): Matthew Cox and Craig Picka
4. Title: A Class I and Class III Cultural Resource Inventory of the Little Muddy Creek Pipeline, Williams County, North Dakota
5. Report Date: May 30, 2014
6. Number of Pages: 84
7. Type – I, T, E, O: I
8. Acres: 269.58
9. Legal Location(s) (no quarter sections) with Historic Context Study Unit(s):
Consult the township tables in *The North Dakota Comprehensive Plan for Historic Preservation: Archeological Component*, (SHSND 2009; available online at http://history.nd.gov/hp/stateplan_arch.html) for Study Unit assignments.
Study Units: LM, CB, KN, HE, SM, GA, JA, GR, NR, SR, SO, SH, YE

<u>COUNTY</u>	<u>TWP</u>	<u>RNG</u>	<u>SEC</u>	<u>SU</u>
Williams	155N	99W	1, 2, 3, 4, 5, 6	GA
Williams	156N	99W	30, 31	GA
Williams	156N	100W	17, 20, 21, 22, 23, 24, 25, 26, 27	GA

**A Class I and Class III Cultural Resource Inventory of the
Little Muddy Creek Pipeline, Williams County, North Dakota**

Submitted to:

State Historical Society of North Dakota

Prepared for:

E3 Environmental, LLC
871 Jefferson Avenue
St. Paul, Minnesota 55102

Prepared by:

Matthew Cox and Craig Picka

Principal Investigator:

William Harding

SWCA Environmental Consultants
116 North 4th Street, Suite 200
Bismarck, North Dakota 58501

SWCA Cultural Resource Report No. 14-223

May 30, 2014

ABSTRACT

SWCA Environmental Consultants (SWCA) conducted a Class I and Class III cultural resource inventory on behalf of E3 Environmental, LLC (E3) in support of the Little Muddy Creek Pipeline project. The proposed Little Muddy Creek Pipeline is approximately 14.6 miles long and would occur on privately owned and state trust lands in Williams County, North Dakota. The project is in Sections 17 and 20–27, Township (T) 156 North (N), Range (R) 100 West (W); Sections 30–31, T156N, R99W; and Sections 1–6, T155N, R99W.

The only regulatory agencies to be involved are 1) the North Dakota Public Service Commission (NDPSC) under the North Dakota Energy Conversion and Transmission Facility Siting Act (excluding any applicable county or local requirements), and 2) the U.S. Army Corps of Engineers (USACE) through Section 404 of the Clean Water Act (CWA), which regulates discharge into waters of the U.S. regulated by the USACE. Therefore, SWCA's Class I and III inventory of the project area assists E3 in meeting the cultural resource requirements within the NDPSC's Certificate of Corridor Compatibility and Route Permit application. Additionally, SWCA's inventory assisted E3 in achieving compliance with Section 404 of the CWA, including the Nationwide Permit General Conditions pertaining to Section 106 of the National Historic Preservation Act and the Endangered Species Act (ESA).

The Class I inventory was conducted for the Little Muddy Creek Pipeline on April 22, 2014. The Class III inventory was conducted for the Little Muddy Creek Pipeline on April 23–25, 2014. The pipeline was surveyed with a 150-foot-wide survey corridor centered on the proposed pipeline centerline. SWCA surveyed 14.15 miles (254.13 acres) for the Little Muddy Creek Pipeline. In addition to the proposed pipeline alignment, SWCA also conducted an inventory of the proposed Epping Compressor Station at the eastern terminus of the Little Muddy Creek Pipeline, consisting of a 15.45-acre survey block. In total, 269.58 acres were inventoried for the proposed pipeline location.

During the inventory, SWCA attempted to relocate one previously recorded isolated find (32WIX572); and newly recorded an isolated piece of farm equipment (32WIX627) and an undocumented segment of the Great Northern Railroad (32WI481). The newly recorded isolated find, 32WIX627, is the remains of a Deering harvester.

By definition, isolated finds are considered to lack integrity and are not eligible for the National Register of Historic Places (NRHP); therefore, 32WIX572 and 32WIX627 are not eligible for inclusion to the NRHP. 32WI481 had previously been determined eligible for listing to the NRHP. SWCA recommends project disturbance avoid all potentially eligible and unevaluated resources by 50 feet. 32WI481 will be avoided through the use of a horizontal directional drill beneath the site. With the above stipulations, it is recommended that a determination of *No Significant Sites Affected* and *No Historic Properties Affected* be granted for the project to proceed as planned.

Appendix F

10-Year Plan

Meadowlark Midstream Company, LLC (“Meadowlark”) hereby submits its ten-year plan pursuant to North Dakota Century Code § 49-22-04.

Introduction

Meadowlark plans to convert the existing Divide Lateral Oil Pipeline (described below) from a gathering pipeline to a transmission pipeline in conjunction with the addition of the Divide Pump Station (described below) to the Divide Lateral Oil Pipeline, which will cause the length of the Divide Lateral Pipeline downstream of the new Divide Pump Station to be a liquid transmission facility under North Dakota Century Code § 49-22-03.12. Installation of the Divide Pump Station is necessary to address demands for service from new customers by increasing the volume of crude oil that can be transported via the Divide Lateral Oil Pipeline. Once the Divide Pump Station is installed, the Divide Lateral Oil Pipeline will be Meadowlark’s first transmission facility in North Dakota subject to the provisions of North Dakota Century Code § 49-22-04.

SECTION A: Existing Facilities¹

Divide Lateral Oil Pipeline

1. **Location:** Originates in Divide County at the Divide Pump Station site, which is approximately 17 miles northwest of Alamo, North Dakota. From that location, the Divide Lateral Oil Pipeline extends in a south/southeasterly direction into Williams County to its terminus at the existing Colt Rail Terminal (“Colt Hub”) located north of Epping, North Dakota. A map showing the location of the Divide Lateral Oil Pipeline is attached hereto as **EXHIBIT “A.”**
2. **Type and Capacity:**
 - a. Product Type: Crude oil
 - b. Length of Facility: 43.5 miles
 - c. Pipe Size: 8.625” diameter, 0.322” wall thickness
 - d. Maximum Design Operating Pressure: 1440
 - e. Maximum Design Flow Rate: 45,000 barrels per day
 - f. Pump Station Specifications: Field gathering injection pumps move product to Colt Hub.
 - g. Minimum Cover Over Pipe: 36”
 - h. In Service Date: October 2013.

The Divide Lateral Oil Pipeline is not committed to be retired in the next ten years.

SECTION B: Intended Construction of Transmission Facilities During the Next Five Years

Little Muddy Interconnection Pipeline

¹ The Divide Lateral Oil Pipeline currently exists, but will not qualify as a transmission facility under North Dakota Century Code § 49-22-03.12 until installation of the Divide Pump Station.

1. **Location:** Meadowlark intends to construct, and will seek a route permit for, an approximately 15 mile long pipeline (the “Little Muddy Interconnection Pipeline”) beginning in close proximity to the Colt Hub and ending at North Dakota Pipeline Company LLC’s (“NDPC”) Little Muddy Station located approximately 10.5 miles northwest of Epping, North Dakota, where it will interconnect with NDPC’s interstate pipeline. A map showing the anticipated location of the Little Muddy Interconnection Pipeline is attached hereto as **EXHIBIT “A.”**

SECTION C: Proposed Transmission Facilities During the Next Ten-Year Time Period

See Section B, above.

SECTION D: Regional Coordination

While Meadowlark coordinates with producers in North Dakota by discussing potential connections with planned and existing wells, Meadowlark has very limited regional coordination with other midstream companies in North Dakota due to confidentiality concerns and potential antitrust issues.

SECTION E: Environmental Information

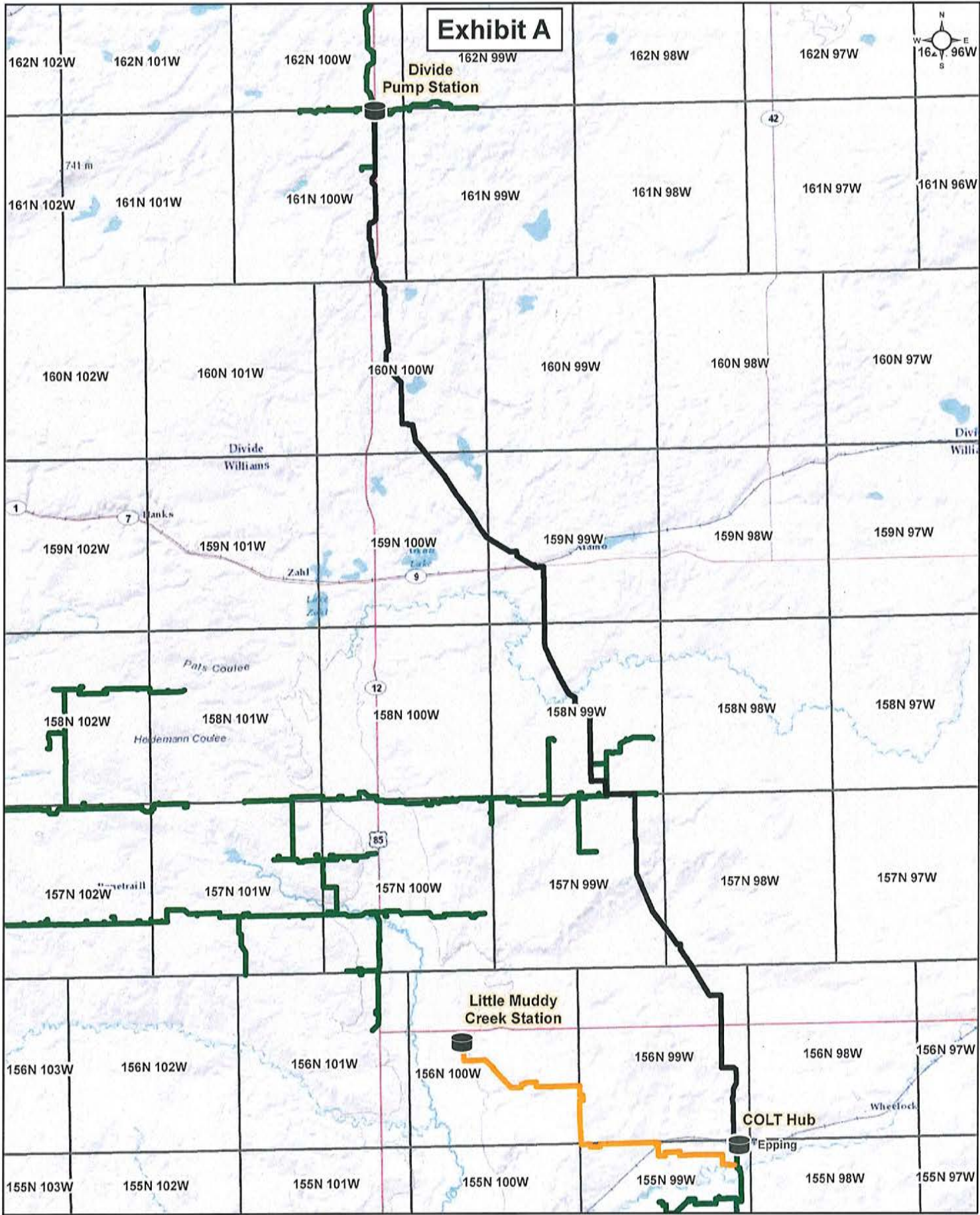
Meadowlark monitors regulatory developments and has developed working relationships with the U.S. Fish and Wildlife Service, the Bureau of Land Management, the North Dakota Industrial Commission, the North Dakota Public Service Commission, and the North Dakota Department of Health, in an effort to ensure regulatory compliance. Meadowlark continues to develop detailed risk collaborations with local emergency planning groups.

Meadowlark selects pipeline corridors and routing to minimize impact as required by the statutes and rules and regulations of the Public Service Commission. When desirable, Meadowlark may employ local environmentalists and archaeologists to assist with planning. Meadowlark is well prepared to meet any emergency and mitigate the impact of a pipeline failure.




SECTION F: Projected Demand for Service

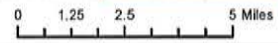
Drilling activity in the counties where Meadowlark has gathering facilities (Williams and Divide Counties) has dramatically increased, and Meadowlark estimates that gas and crude oil production will increase, resulting in an increased demand for both gas and crude oil gathering services.

Exhibit A



Legend

-  Little Muddy Interconnection Pipeline
-  Divide Lateral Oil Pipeline
-  Meadowlark Gathering Lines



Appendix G

Landowner Waivers



Meadowlark Midstream Company, LLC
999 18th Street, Suite 3400S
Denver, CO 80202

Phone: 720.452.6225
Fax: 720.452.6232
www.summitmidstream.com

Sep 24th, 2014

Craig and Danielle Moen
12565 59th St NW
Epping, ND 58843

RE: Meadowlark Midstream Company, LLC and Epping Transmission Company, LLC – Little Muddy Pipeline

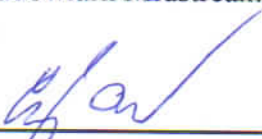
Mr. and Mrs. Moen,

Please review the attached site map noting the proposed location of an underground pipeline and associated facilities that are included in the Little Muddy Pipeline Application that Meadowlark Midstream Company, LLC and Epping Transmission Company, LLC intend to jointly file with the North Dakota Public Service Commission (“Pipeline Project”). The Pipeline Project involves installation of a 14.75 mile long 10 inch crude oil pipeline as well as construction of an aboveground tank on the eastern end of the pipeline. Of the 14.75 miles of underground pipeline, approximately 10 miles will involve modifications to various portions of crude oil gathering lines that will already be in service at the time of modification. The remaining approximately 5 miles will consist of entirely new construction. The attached site map indicates that the Pipeline Project will be located within 500 feet of your residence or business.


By signing below you are confirming that you have no objection to the Pipeline Project, or the future operation and maintenance of the Pipeline Project. Your cordial cooperation in this manner is greatly appreciated.

Respectfully,

Brad French
Contract ROW Agent
Meadowlark Midstream Company, LLC



Craig Moen
Date: 9-24-14



Danielle Moen
Date: 9-24-14