ONEOK Rockies Midstream, L.L.C.

12” Cherry Creek Lateral
Pipeline Conversion Project

North Dakota Public Service Commission

Consolidated Application for

Certificate of Corridor Compatibility and Route Permit

December 2017

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49-22.1-07	Application for Route Permit	
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ACRONYMS AND ABBREVIATIONS

API	American Petroleum Institute
BA	Biological Assessment
BCF	billion cubic feet
BFFRIT	Black-footed Ferret Recovery Implementation Team
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practice
bpd	barrels per day
CFR	Code of Federal Regulations
CRP	Conservation Reserve Program
DOT	Department of Transportation
ERW	Electric Resistance Welded
ESA	Endangered Species Act
FBE	fusion bonded epoxy
FSA	U.S. Department of Agriculture’s Farm Service Agency
HDD	horizontal directional drilling
ICBM	intercontinental ballistic missile
IPaC	Information, Planning, and Conservation System
Juniper	Juniper LLC
MBTA	Migratory Bird Treaty Act
MCWRD	McKenzie County Water Resource District
Metcalf	Metcalf Archaeological Consultants
NDAC	North Dakota Administrative Code
NDDTL	North Dakota Department of Trust Lands
NDGFD	North Dakota Game and Fish Department
NDPRD	North Dakota Parks and Recreation Department
NDPSC	North Dakota Public Service Commission
NDSHPO	North Dakota State Historic Preservation Office
NDSWC	North Dakota State Water Commission
NGL	natural gas liquid
NRCS	U.S. Department of Agriculture’s Natural Resource Conservation District
NRHP	National Register of Historic Places
OBP	ONEOK Bakken Pipeline, L.L.C.
ONEOK	ONEOK Rockies Midstream, L.L.C.
Project	12” Cherry Creek Lateral Pipeline Conversion Project
ROW	right-of-way
USACE	U.S. Army Corps of Engineers
USDOD	U.S. Department of Defense

USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USNPS	U.S. National Park Service
WAWSA	Western Area Water Supply Authority
WMA	Wildlife Management Area
WNS	white nose syndrome

LIST OF EXHIBITS

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INTRODUCTION

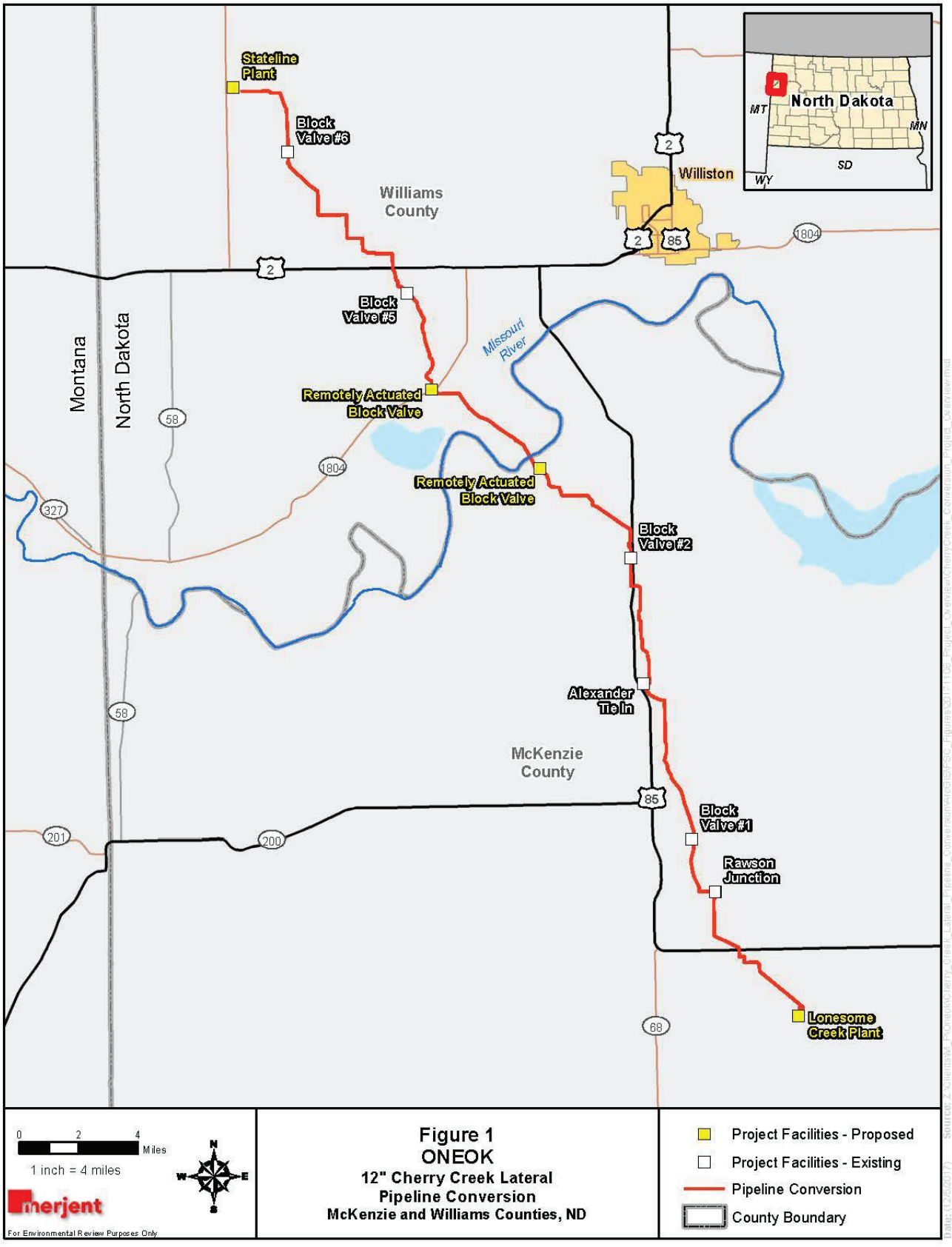
Two subsidiaries of ONEOK, Inc., ONEOK Rockies Midstream, L.L.C. (ONEOK) and ONEOK Bakken Pipeline, L.L.C. (OBP), own and operate natural gas and natural gas liquid (NGL) assets respectively in North Dakota. ONEOK is proposing to convert its existing Stateline to Rawson 12" Pipeline and a portion of its Cherry Creek to Rawson Pipeline, both natural gas gathering pipelines, into an NGL transmission pipeline (herein referred to as 12" Cherry Creek Lateral Pipeline Conversion Project or the "Project"). The pipeline originates at ONEOK's Lonesome Creek Plant and terminates at ONEOK's Stateline Plant where it will deliver into OBP's Bakken Pipeline. The Stateline to Rawson 12" Pipeline was built in 2011/2012 as an approximately 38-mile natural gas gathering pipeline; the full length of this pipeline would be converted to a NGL transmission pipeline as part of the Project. The Cherry Creek to Rawson Pipeline was built in 2012; approximately 6 miles of this pipeline extending from ONEOK's Lonesome Creek Plant to the Rawson Junction would be converted as part of the Project. The Project will result in up to 50,000 barrels per day (bpd) of incremental NGL takeaway volume from McKenzie and Dunn Counties.

In total, the pipeline being converted is approximately 45 miles in length. As a part of the pipeline conversion, ONEOK will install two new remote actuators at two of its existing above ground manually operated valve settings, one located approximately 1.7 miles north of the Missouri River and one 0.5 mile south of the Missouri River. Additionally, in-facility piping will be constructed at ONEOK's Lonesome Creek and Stateline plants to facilitate the product movement. See Figure 1 on the following page for an overview of the Project.

Construction activities for installing remote actuators on the existing block valves are currently proposed to begin and end in February 2018. Construction activities for the in-facility piping are currently proposed to begin in February 2018 and conclude in March 2018.

ONEOK submits to the North Dakota Public Service Commission (NDPSC) this 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 49-22.1;
- North Dakota Administrative Code (NDAC), Chapter 69-06-05, Transmission Facility Permit; and
- NDAC Chapter 69-06-08-02, Transmission Facility Corridor and Route Criteria


Stateline Plant
Block Valve #6
Williams County
Williston
North Dakota
MT
MN
SD
WY
Block Valve #5
Missouri River
Montana
North Dakota
Remotely Actuated Block Valve
Remotely Actuated Block Valve
Block Valve #2
Alexander Tie In
McKenzie County
Block Valve #1
Rawson Junction
Lonesome Creek Plant
2
85
1804
58
327
201
200
68
0 2 4 Miles
1 inch = 4 miles
N
W
E
S
For Environmental Review Purposes Only
Figure 1
ONEOK
12" Cherry Creek Lateral
Pipeline Conversion
McKenzie and Williams Counties, ND
Project Facilities - Proposed
Project Facilities - Existing
Pipeline Conversion
County Boundary

1.0 SIZE AND TYPE OF FACILITY

1.1 TYPE

The proposed Project will convert an existing 12-inch natural gas gathering pipeline to a Y-grade (a mixture of ethane, propane, butanes, iso-butane mix, pentanes, and natural gasoline) NGL transmission pipeline. The steel pipeline will meet applicable U.S. Department of Transportation (DOT) regulations as outlined in 49 Code of Federal Regulations (CFR) Part 195.

1.2 SIZE

The existing gas pipeline to be converted from natural gas gathering pipeline to NGL transmission pipeline is approximately 45 miles, and was built to the following specifications:

- 12-inch Outside Diameter Steel Pipe
- Mainline pipe is composed of:
  - 12-inch, 0.219-inch W.T. pipe, electric resistance welded (ERW), American Petroleum Institute (API) 5L X-60, coated with 14-16 Mils fusion bonded epoxy (FBE); and
  - 12-inch, 0.250-inch W.T. pipe, ERW, API 5L X-52, coated with 14-16 Mils FBE
- Road bores and creek bores, including the Missouri River horizontal directional drilling (HDD), are constructed with:
  - 12-inch, 0.312-inch W.T. pipe, ERW, API 5L X-52, coated with 14-16 Mils FBE and 30-40 mils Abrasion Resistant Overlay.

1.3 LENGTH

The converted pipeline will be approximately 45 miles in length.

1.4 ABOVEGROUND FACILITIES

The Project will begin at ONEOK's existing Lonesome Creek Plant and end at its Stateline Plant. The discussion below lists the above ground facilities associated with the pipeline conversion Project, presented in a south to north sequence. Locations are shown on Figure 1.

1. **Lonesome Creek Plant** is an existing ONEOK processing facility in McKenzie County. In order to deliver NGLs to the converted pipeline, 920 feet of in-facility piping will be installed.
2. **Rawson Junction** is an existing above ground fenced-in facility approximately 5 miles north of the Lonesome Creek Plant in McKenzie County, where the Project pipeline enters the facility, has two above ground block valves, and exits the facility. There is no option for the Project pipeline to flow to other pipelines, therefore, no new work is proposed at Rawson Junction.
3. **Block Valve #1** is an existing above ground fenced-in facility approximately 2 miles north of Rawson Junction. No new work is proposed at Block Valve #1.
4. **Alexander Tie In** is an existing above ground fenced-in facility in McKenzie County. The Project pipeline enters the facility, has an above ground block valve, and exits the facility. There is no

option for the Project pipeline to flow to other pipelines, therefore, no new work is proposed at the Alexander Tie In site.

5. **Block Valve #2** is an existing above ground fenced-in facility approximately 4.2 miles north of the Alexander Tie In. No new work is proposed at Block Valve #2.
6. **Remotely Actuated Block Valve – South River Valve Site** (referred to as "Site 695" on the Project Route Map in Exhibit A) is an existing above ground fenced-in facility located approximately 0.5 mile south of the Missouri River in McKenzie County.
    - New proposed work at the South River Valve Site includes installation of a remote actuator on the existing block valve. This will allow for remote isolation of the piping segment under the Missouri River.
7. **Remotely Actuated Block Valve – North River Valve Site** (referred to as "Site 696" on the Project Route Map in Exhibit A) is an existing above ground fenced-in facility located approximately 1.7 miles north of the Missouri River in Williams County.
    - New proposed work at the North River Valve Site includes installation of a remote actuator on the existing block valve. This will allow for remote isolation of the piping segment under the Missouri River.
8. **Block Valve #5** is an existing above ground fenced-in facility approximately 9 miles southeast of the ONEOK Stateline Plant. No new work is proposed at Block Valve #5.
9. **Block Valve #6** is an existing above ground fenced-in facility approximately 3 miles southeast of the ONEOK Stateline Plant. No new work is proposed at Block Valve #6.
10. **Stateline Plant** is an existing ONEOK processing facility in Williams County. One thousand and two hundred feet of in-facility piping will be installed to deliver barrels of NGL from the converted pipeline to OBP's Bakken Pipeline.

The following is included in the Engineering Documents (Exhibit A):

- Project Route Maps,
- Design drawings for the new Remotely Actuated Block Valves,
- Site drawings of the Rawson Junction and Alexander Tie In sites; and
- A typical drawing for Block Valves #1, #2, #5, and #6.

2.0 DESIGN OF THE FACILITY

2.1 DESIGN OF PROPOSED FACILITY

The Project is designed to convert an existing approximately 45-mile 12-inch diameter natural gas gathering pipeline into an NGL transmission pipeline extending from ONEOK's Lonesome Creek Plant to ONEOK's Stateline Plant where it will deliver into OBP's Bakken Pipeline. Natural gas mixed with NGLs from oil and gas fields south of the Missouri River are collected in gathering pipelines and delivered to the Lonesome Creek Plant for processing. NGLs produced at the Lonesome Creek Plant would be transported in the converted pipeline to the Stateline Plant location and delivered into OBP's Bakken Pipeline, an NGL transmission pipeline.

2.2 PURPOSE AND NEED OF THE FACILITY

The purpose of the Project is to provide an additional take-away option for NGLs at ONEOK's Lonesome Creek Plant allowing NGLs currently transported on ONEOK's pipeline system to be shipped to Stateline Plant for interconnection to OBP's Bakken Pipeline. By redirecting NGLs at Lonesome Creek Plant, additional NGLs from processing plants in Dunn and McKenzie Counties will have access to pipeline capacity to be transported for further processing.

As Williston Basin production increases, this converted pipeline will help offset the amount of flaring caused by increased production. The converted pipeline will provide incremental capacity of up to 50,000 barrels of NGLs per day to facilitate delivery of NGLs to facilities in the Mid-Continent and Gulf Coast for additional processing of the raw feedstock into commercial products prior to distribution to various markets.

2.3 GENERAL AREA TO BE SERVED

The Project will allow for the delivery of additional NGLs from the Bakken and Three Forks production areas to facilities in the Mid-Continent and Gulf Coast for additional processing of the raw feedstock into commercial products prior to distribution to various markets.

2.4 CAPACITY

The Project could transport up to 50,000 barrels of NGLs per day, based on customer demand.

2.5 TECHNOLOGY TO BE DEPLOYED/EMPLOYED

Where applicable, the Project is designed, constructed, maintained, and inspected to the DOT Pipeline and Hazardous Materials Safety Administration regulations utilizing industry standards and company policies. The system will be monitored 24 hours a day, 7 days a week, and 365 days a year by trained controls personnel. Additionally, the system will be set up with a monitoring and alarm system that continuously monitors the flow and pressure of the system and readily signifies anything outside normal operating conditions.

2.6 TYPE OF PRODUCT TO BE TRANSMITTED

Once converted, the proposed pipeline will transport Y-grade NGLs which is a mixture of ethane, propane, butanes, iso-butane mix, pentanes, and natural gasoline.

2.7 SOURCE OF PRODUCT TO BE TRANSMITTED

The sources of the NGLs are formations in the Williston Basin.

2.8 FINAL DESTINATION OF PRODUCT

NGLs would be shipped out of North Dakota via OBP's Bakken Pipeline for eventual processing at facilities in the Mid-Continent and Gulf Coast prior to distribution to various markets.

2.9 WIDTH OF RIGHT-OF-WAY

The pipeline was constructed utilizing a 100-foot construction right-of-way (ROW). Additional extra temporary workspace was needed adjacent to road crossings and sensitive environmental features. ONEOK will generally maintain a portion of the 100-foot construction ROW as a permanent 50-foot-wide ROW easement along the entire length of the Project except as restricted by environmental conditions, foreign lines, and landowner agreements. The previous construction ROW was reclaimed to near its pre-existing use once construction was complete.

2.10 REQUIREMENT FOR AND GENERAL LOCATION OF ANY NEW ASSOCIATED FACILITIES

The new facilities associated with the Project include interconnecting piping within the ONEOK Lonesome Creek and Stateline plants. Additionally, the installation of two remote actuators on the existing block valves on either side of the Missouri River (see Section 1.4), along with associated above ground appurtenances (see Section 2.18). The existing block valves nearest the Missouri River each measure approximately 40 feet by 40 feet in size, and each site would be increased to 40 feet by 70 feet in size to accommodate the installation of the remote actuators and associated equipment.

2.11 ESTIMATED DISTANCE BETWEEN SURFACE STRUCTURES FOR PIPELINE FACILITIES

A description of surface structures included in the Project is provided in Sections 1.4 and 2.10 of this application. The Project includes six block valves and two interconnection facilities. Distance between surface facilities varies between 2 to 5 miles apart. Appropriate locations for valves were based on an evaluation of maintenance and safety requirements, and potential future connection points with other pipelines.

2.12 MAXIMUM DESIGN OPERATING PRESSURE AND TEMPERATURE FOR PIPELINE FACILITIES

The Maximum Operating Pressure is 1,440 pounds per square inch gauge. The Maximum Operating Temperature is 120 degrees Fahrenheit. The Normal Operating Conditions are 90 degrees Fahrenheit at 800 pounds per square inch gauge.

2.13 MAXIMUM DESIGN FLOW RATE FOR PIPELINE FACILITIES

The maximum design throughput is up to 50,000 barrels of NGLs per day.

2.14 NUMBER AND GENERAL LOCATION FOR COMPRESSOR OR PUMPING STATIONS

No new compression or pumping stations will be required for this Project.

2.15 ESTIMATED TOTAL COST OF CONSTRUCTION

ONEOK will invest approximately $1,800,000 in North Dakota to construct this Project. Once in-service, the continued costs of maintenance and operation of the proposed pipeline are expected to average $200,000 per year.

2.16 PREFERRED LOCATION OF FACILITY

The Project is located in McKenzie and Williams Counties, North Dakota, originating at the existing Lonesome Creek Plant in Township 150N, Range 101W, Section 36 (McKenzie County), moving generally north and west, and terminating at ONEOK's Stateline Plant located in Township 155N, Range 103W, Section 21 (Williams County), approximately 12 miles northwest of Williston.

2.17 PREFERRED LOCATION OF CORRIDOR

The preferred location for the certificated pipeline corridor is a 150-foot-wide corridor centered on the pipeline route as depicted on the maps discussed in Section 7.0, and provided in Exhibit B.1-B.3.

2.18 DESCRIPTION OF ROW PREPARATION AND CONSTRUCTION AND RECLAMATION PROCEDURES

The construction ROW was cleared, grubbed, and graded to allow for pipeline construction. All topsoil was segregated from subsoil. Topsoil was removed and stored to the side for replacement in the affected area after construction. All trenching was performed mechanically with either an excavator or a ditching machine to a depth allowing a minimum of 4 feet from the top of the pipe to the top of the cover. When rock was present, an excavator with rock teeth was used. Boring and HDD pipe installation was performed when navigable waters were encountered or identified, or if crossing under a road, railroad, pipeline/utility, or areas where trenching was deemed unsafe or impractical. Casing of pipelines was not used as it leads to corrosion issues. Directional boring was used to cross roadways, railways, larger natural

drainages, and wetlands without causing disturbance to these areas. Typically, the ROW was continuously cleared of all construction material, uncovered rocks, and compacted areas. Holes and ruts were filled and graded. Revegetation of croplands was largely completed by farmers during the spring planting season. Revegetation of pasture/grazing land was completed at the end of the construction of the pipeline.

When converting the two manual valves north and south of the Missouri River to Remotely Actuated Block Valves, ONEOK will install a gravel road to each site, grade the necessary locations within the expanded 40-foot by 70-foot area, and install helical pier foundations to support a new 8-foot by 8-foot control building at each site. Using hydrovac, ONEOK will trench a cable from the control building to the Remotely Actuated Block Valve at each site. To finalize, ONEOK will gravel and install a chain link security fence around each site.

2.19 LANDOWNER NOTIFICATION, EASEMENT ACQUISITION, AND COMPENSATION

The Project involves the conversion of an existing gathering pipeline into an NGL transmission pipeline. New land acquisition and easement negotiations are limited to the two existing block valve sites that will be expanded to accommodate the two proposed Remotely Actuated Block Valves and associated access roads. ONEOK’s practice for determining landowner compensation for easements is based on research of comparable fair market pricing and prior experience negotiating easements locally. ONEOK has contacted these two landowners regarding the Project and is in the process of negotiating easement agreements with them.

3.0 SCHEDULE

3.1 OBTAINING CERTIFICATE OF CORRIDOR COMPATIBILITY

ONEOK seeks a Certificate of Corridor Compatibility by or before February 1, 2018.

3.2 OBTAINING ROUTE PERMIT

ONEOK seeks a Route Permit by or before February 1, 2018.

3.3 COMPLETING ROW ACQUISITION

ROW acquisition for the existing gathering pipeline was completed in 2011 and 2012. The need for new additional land is limited to the two existing valve facilities where ONEOK would install new Remotely Actuated Block Valves and associated access roads. ONEOK is currently completing ROW acquisition for these two locations.

3.4 STARTING CONSTRUCTION

ONEOK plans to begin construction at Stateline Plant, Lonesome Creek Plant, and the two block valve sites upon receipt of regulatory approval and applicable permits in February 2018, or earlier if approvals and weather conditions allow.

3.5 COMPLETING CONSTRUCTION

Construction of the existing pipeline was completed in 2012. Completion of converting the two manual block valves to Remotely Actuated Block Valves is anticipated to occur in February 2018. Completion of the in-facility connections at Lonesome Creek Plant and Stateline Plant is anticipated to occur in March 2018. Restoration activities may extend into Spring/Summer 2018, if needed.

3.6 TESTING OPERATIONS

The existing Project pipeline underwent successful maintenance hydrostatic testing in 2017, which would allow it to be operated as an NGL transmission pipeline in accordance with applicable regulations. The in-facility piping additions will be tested according to 49 CFR Part 195 after construction and prior to being placed into service.

3.7 COMMENCING OPERATIONS

ONEOK would commence operation of the Project as a NGL transmission pipeline as soon as possible after permit approvals are received.

4.0 ALTERNATIVES

The Project would allow for additional take-away capacity of up to 50,000 bpd of NGLs produced from the oil and gas fields south of the Missouri River. The amount of new facility construction needed to convert the existing gathering pipeline is minimal, and is a small fraction of the construction needed for other alternatives. ONEOK's proposed Project was found to be preferred to other alternatives considered because the other alternatives did not reasonably meet Project objectives or had greater potential environmental, financial, or social impacts. A brief discussion of other possible alternatives is provided below.

4.1 NO ACTION ALTERNATIVE

Under the no-action alternative, the existing gathering pipeline would not be converted to an NGL transmission pipeline. NGLs produced in the region and collected would not be efficiently transported to markets in other parts of the country.

4.2 TRUCK TRANSPORTATION ALTERNATIVE

NGLs could be transported by use of tanker truck services. However, due to the volumes of NGLs that are available to be produced and transported, this alternative is impracticable. Trucking NGLs would increase the volume of truck traffic on the area's road network, increasing the risk of highway related accidents, and increasing wear and tear on roads. Further, any disruption in the trucking capacity due to seasonal load restrictions on roads, inclement weather, or road repairs would result in a production shutdown and flaring of NGLs. Therefore, the trucking alternative was eliminated from further analyses.

4.3 RAIL TRANSPORTATION ALTERNATIVE

NGLs could be transported by use of railroad service. However, the lack of active railroad service within reasonable proximity to the Lonesome Creek Plant limited the viability of this alternative. The nearest rail service is located approximately 5 miles north of the Lonesome Creek Plant, near ONEOK's Rawson Junction. A rail alternative would require converting the 5 miles of gathering pipeline between Lonesome Creek Plant and Rawson Junction to an NGL transmission pipeline, plus require the design and construction of rail car loading and offloading facilities and ancillary facilities. This design would require land acquisition and permanent conversion of agricultural land to industrial, and require a third-party rail operator.

4.4 ROUTE/SEGMENT ALTERNATIVES

The proposed Project makes use of an existing pipeline, and no other existing NGL transmission pipeline is available to provide incremental capacity out of the region. The location of the existing pipeline provides a connection to an existing NGL transmission pipeline and requires only a small amount of new construction. The Route/Segment Alternative would require constructing a new NGL transmission pipeline. In pursuing this option, ONEOK would have been required to strike new easements with landowners and to pinpoint and gain access to existing corridors for collocation. In addition, this alternative would increase environmental impacts associated with construction activities, and carries a risk of encountering cultural and natural resources along the route. For these reasons, ONEOK rejected the Route/Segment Alternative.

5.0 ENVIRONMENTAL STUDIES

ONEOK has sponsored numerous environmental studies covering the Project route in support of the initial construction of the pipeline in 2011 and 2012, as well as surveys in 2017 to cover areas not included in the original survey efforts. Additionally, the pipeline route crosses approximately 4.4 miles of USACE land at the Missouri River and a Biological Assessment (BA) was completed by the USACE for the Stateline Plant to Rawson Junction portion of the Project, referred to as the Stateline to Rawson 12" Pipeline Project (see Exhibit C.4). Table 5.0-1 provides an overview of all field surveys which have been conducted. Overview maps providing a visual representation of the field surveys are included on Figures 5.1-1, 5.2-1, and 5.3-1.

Table 5.0-1
Environmental Field Survey Summary

Resource	Survey Type	Corridor Width[1]	Survey Year	Location	Figure
Cultural Resources	Class III Cultural Resource Inventory	300 feet	2011 and 2012	Stateline to Rawson except USACE land (~33 miles)	5.1-1
	Archaeological Monitoring during construction	Construction ROW	2012	USACE land (~4.4 miles)	
	Class III Cultural Resource Inventory	150 feet	2017	Lonesome Creek to Rawson, new Remotely Actuated Block Valves, minor reroutes (~8 miles)	
Wetlands and Waterbodies	Wetland and Waterbody Mapping	Variable	2012	Non-USACE lands (~33 miles)	5.2-1
	Wetland Delineation	200 feet	2012	USACE Land (~4.4 miles)	
	Wetland and Waterbody Delineation	150 feet on pipeline ROW, 0.75 acre at two new valve locations	2017	Lonesome Creek to Rawson, new Remotely Actuated Block Valves, minor reroutes (~8 miles)	
Biological Resources	BA	250 feet	2011 and 2012	Stateline to Rawson (~38 miles)	5.3-1
	Habitat Assessment[2]	150 feet on pipeline ROW, 0.75 acre at two new valve locations	2017	Lonesome Creek to Rawson, new Remotely Actuated Block Valves, minor reroutes (~8 miles)	
	Noxious/Invasive Weed Survey	0.75 acre at two new valve locations	2017	Two new Remotely Actuated Block Valves	N/A
Tree and Shrub Inventory	Desktop Analysis	Construction ROW	2017	~45 miles pipeline ROW	N/A

5.2 WETLAND AND WATERBODY INVENTORY

Wetland and waterbody surveys have been conducted in three separate mobilizations; two in 2012 prior to and during construction of the original pipeline, and one in 2017 to cover areas not included in the 2012 surveys. An overview map depicting the locations and years of each survey effort is included on Figure 5.2-1.

The first mobilization was conducted in Spring 2012 and consisted of a wetland and waterbody mapping exercise of the approximately 38-mile pipeline ROW between Stateline Plant and Rawson Junction, excluding approximately 4.4 miles of ROW on USACE land surrounding the Missouri River. As this effort was conducted shortly after installation of the pipeline was already completed, a formal delineation was not completed. Through a combination of data gathered via desktop review (soils, aerial imagery review, etc.) and observations made in the field, potential wetland and waterbody features were mapped. This survey effort identified seven wetlands and five waterbodies within the construction workspace.

The second mobilization was conducted in May 2012 on approximately 4.4 miles of the pipeline route located on land owned by the USACE near the Missouri River crossing. A 200-foot-wide survey corridor was utilized, and the delineation was completed according to the 1987 USACE Wetlands Delineation Manual and 2010 Great Plains Supplement. This survey effort identified four wetlands and six waterbodies (plus five ditches and the Missouri River) within the survey corridor.

A third mobilization was conducted in September 2017, and covered portions of the Project not included in the original 2012 mapping exercise and the 2012 formal delineation described above. This effort included a formal wetland delineation of approximately 8 miles of continuous pipeline ROW between Rawson Junction and Lonesome Creek Plant, the two new Remotely Actuated Block Valve locations, 1.75 miles of pipeline ROW on the northern end of the Project, and two minor reroutes which were not included in the 2012 surveys. With the exception of two properties where landowners requested a 50-foot-wide survey corridor, a 150-foot corridor was utilized. Two waterbodies and one wetland were delineated. This field survey also included a habitat assessment and noxious weed inventory of the two Remotely Actuated Block Valve sites (see Sections 5.3 and 5.5 respectively). Because the new in-facility piping at Stateline Plant and Lonesome Creek Plant is located in previously disturbed areas of the developed plants, these areas were not surveyed further in the field.

Formal reports with more details for the three field surveys referenced above are provided in Exhibit C.2. Mapped and delineated wetlands and waterbodies identified within the survey corridor are included in the Selection Criteria maps in Exhibit B.2.

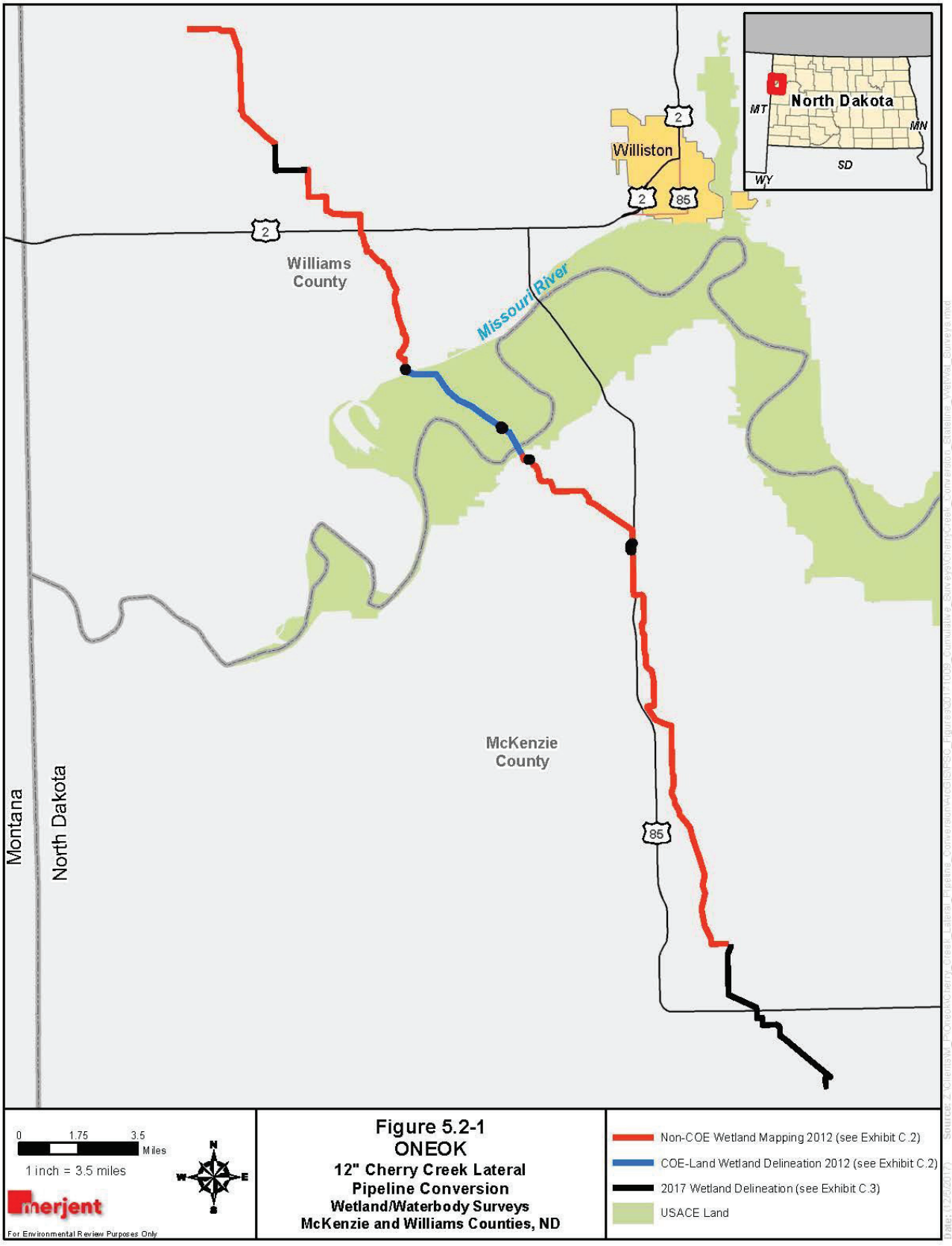

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Figure 5.2-1
ONEOK
12" Cherry Creek Lateral
Pipeline Conversion
Wetland/Waterbody Surveys
McKenzie and Williams Counties, ND
Non-COE Wetland Mapping 2012 (see Exhibit C.2)
COE-Land Wetland Delineation 2012 (see Exhibit C.2)
2017 Wetland Delineation (see Exhibit C.3)
USACE Land

5.3 WILDLIFE INVENTORY

Natural resource field studies were conducted along the proposed Project Corridor on August 25-27, 2011 and April 10 and 23, 2012 by Yellowfield Biological Surveys LLC in support of the BA prepared for the Stateline to Rawson 12” Pipeline Project. These surveys encompassed a 250-foot corridor centered upon the proposed alignment and included field studies of approximately 38 miles of the Project from the Stateline Plant to Rawson Junction. A total of approximately 1,122 acres were surveyed. The BA can be found in Exhibit C.4.

A field-based habitat assessment was conducted on September 26, 2017 concurrent with wetland and waterbody surveys (see Figure 5.3-1) on four segments of the ROW that were not previously surveyed in 2011 and 2012. The survey included a 150-foot-wide corridor centered upon the pipeline; per landowner request, the survey corridor was reduced to a 50-foot-wide corridor at two locations. In addition, two 0.75-acre locations were surveyed at the two new proposed Remotely Actuated Block Valve sites. Because the new in-facility piping at Stateline Plant and Lonesome Creek Plant is located in previously disturbed areas of the developed plants, these areas were not surveyed further in the field.

Wildlife species likely to be present in the vicinity of the Project would be those typically found in mixed-grass prairie, wetland, riparian, and prairie pothole and lake habitats. Mammals such as beaver (*Castor Canadensis*), muskrat (*Ondatra zibethicus*), eastern cottontail (*Sylvilagus floridanus*), mule deer (*Odocoileus hemionous*), whitetailed deer (*Odocorleus virginianus*) and pronghorn (*Antilocarpra Americana*); song birds; waterfowl species, such as mallard (*Anas platyrhynchos*) and Canada goose (*Branta canadensis*); upland birds, such as crows (*Corvus brachythynchos*), woodpeckers of various species, and sharp-tailed grouse (*Tympanuchus phasianellus*); water birds, such as grebes and plovers; and raptors, including the golden eagle (*Aquila chrysaetos*) and bald eagle (*Haliaeetus leucocephalus*) would be considered common inhabitants of the Missouri River floodplain and habitats along the Project route.

During field surveys in 2011 and 2012, wildlife observations were few and limited primarily to the Missouri River floodplain. Land cover along much of the route is cropland, and 2011 surveys were conducted in late summer; as such, species counts were low. Surveys in 2012 coincided with spring migration; species observed included raptors (e.g., northern harrier, red-tailed hawk), waterfowl and gulls (e.g., Canada goose, redhead, blue-winged teal, mallard, Franklin’s gull, ring-billed gull), and passerines (e.g., western kingbird, lark bunting, western meadowlark, crow), among others. No federally listed species or state species of concern were observed during the field surveys.

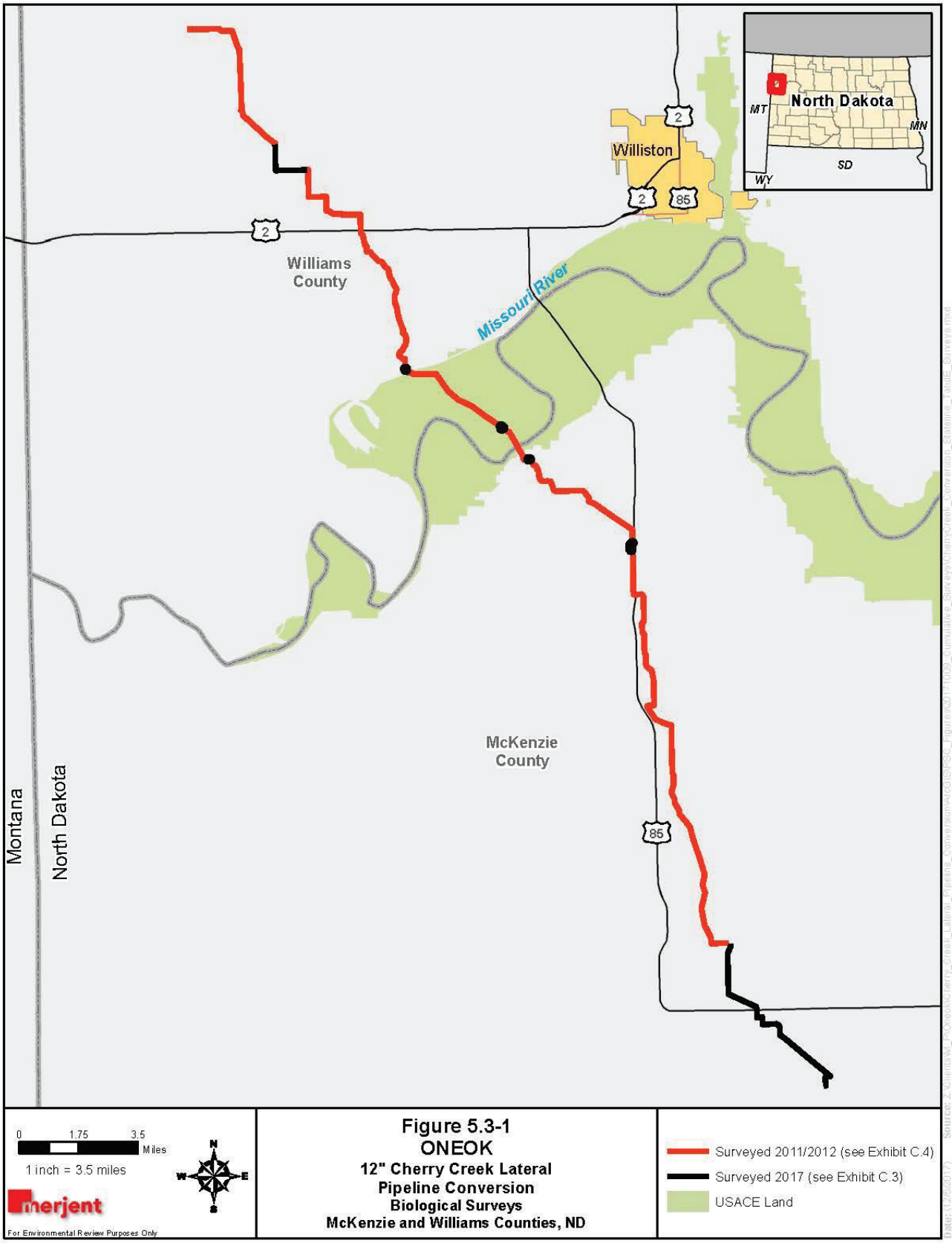
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Figure 5.3-1
ONEOK
12" Cherry Creek Lateral
Pipeline Conversion
Biological Surveys
McKenzie and Williams Counties, ND
Surveyed 2011/2012 (see Exhibit C.4)
Surveyed 2017 (see Exhibit C.3)
USACE Land

5.3.1 Federally Protected Species Review

The Endangered Species Act of 1973, as amended, (ESA) directs the U.S. Fish and Wildlife Service (USFWS) to identify and protect endangered and threatened species and their critical habitat. Section 9 of the ESA prohibits take of federally listed species. Take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct" (16 U.S. Code 1532). The term "harm" includes significant habitat alteration which kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). Projects involving federal lands, funding, or authorizations require consultation between the federal agency and the USFWS, pursuant to Section 7 of the ESA.

The Stateline to Rawson 12" Pipeline Project's crossing of the Missouri River constituted a federal nexus requiring Section 7 interagency consultation between the USACE and the USFWS. As such, a review of federally listed species and critical habitat potentially present in Williams and McKenzie Counties was conducted in 2011. The results of this review are provided in the BA prepared for the Stateline to Rawson 12" Pipeline Project (Exhibit C.4).

Project reviews and consultations are typically only valid for one year. As such, a new review for federally listed species was conducted in September 2017 for the Project to meet NDPSC requirements. ONEOK reviewed the USFWS Endangered Species Information, Planning, and Conservation System (IPaC) website to determine the potential for listed species and critical habitat that may be present in the Project area (USFWS 2017a).

Table 5.3-1 provides a summary of protected species in McKenzie and Williams Counties. A brief description of each species and their preferred habitat is also provided below. A summary of ONEOK's consultation with USFWS with respect to federally listed threatened and endangered species is included in Section 6.1 and in Exhibit D.

Table 5.3-1
Federally Listed Species Potentially Present in the Project Area

Common Name	Scientific Name	Status
Northern long-eared bat	*Myotis septentrionalis*	Threatened[1]
Gray wolf	*Canis lupus*	Endangered[2]
Black-footed ferret	*Mustela nigripes*	Endangered or experimental depending on location
Whooping crane	*Grus americana*	Endangered
Rufa red knot	*Calidris canutus rufa*	Threatened[3]
Piping plover (Northern Great Plains population)	*Charadrius melodus*	Threatened
Piping plover Critical Habitat	*Charadrius melodus*	Present at the Missouri River
Interior least tern	*Sterna antillarum*	Endangered
Sprague's pipit	*Anthus spragueii*	Candidate[4]
Pallid sturgeon	*Scaphirhynchus albus*	Endangered
Dakota skipper	*Hesperia dacotae*	Threatened[5]

[1] The northern long-eared bat was listed as threatened in 2015 (USFWS 2015a).
[2] The gray wolf was listed as endangered across North Dakota in a final rule published in 2015 (USFWS 2015b).
[3] The rufa red knot was listed as threatened in 2014 (USFWS 2014a).

Table 5.3-1 Federally Listed Species Potentially Present in the Project Area			
	Common Name	**Scientific Name**	**Status**
[4]	USFWS review determined the listing of Sprague's pipit was not warranted (USFWS 2016a). It is included here because it was part of the consultation for the Stateline to Rawson 12" Pipeline Project.		
[5]	The Dakota skipper was listed as threatened in 2014 (USFWS 2014b).		

Field surveys for listed species and a general habitat assessment of the Stateline to Rawson 12" Pipeline Project area were conducted August 25-27, 2011 and April 10 and 23, 2012. Habitat assessments for areas not previously surveyed and areas of new ground disturbance were conducted on September 26, 2017. No threatened or endangered species or critical habitats were observed at the time of the on-site assessments.

Northern long-eared bat

On April 1, 2015, the USFWS listed the northern long-eared bat as threatened under the ESA and simultaneously published an interim 4(d) rule; the final listing and interim 4(d) rule took effect as of May 4, 2015 (USFWS 2015a). On January 14, 2016, the USFWS published the final 4(d) rule identifying prohibitions that focus on protecting the bat's sensitive life stages in areas affected by white-nose syndrome (WNS) (USFWS 2016b).

The northern long-eared bat is a medium-sized bat of the Vespertilionidae family. Approximately 3.0 to 3.7 inches in length with a wingspan of 9 to 10 inches, the species is characterized by relatively long ears with a long, pointed tragus when compared to other members of the genus *Myotis* (USFWS 2015c). In summer, the species roosts in both live trees and snags, and can be found roosting alone or in colonies under loose bark or in crevices and hollows. A habitat generalist, roost tree selection appears to be opportunistic; the species uses a variety of tree sizes and species, typically greater or equal to 3 inches diameter at breast height (USFWS 2015c, USFWS 2016c). The species is generally associated with forested habitats, including mesic hardwood, floodplain, and fire-dependent forests, particularly those near water sources (Minnesota Department of Natural Resources 2017). However, males and non-reproductive females may also roost in cooler places such as caves and mines. The species overwinters in small crevices or cracks in hibernacula (e.g., caves and mines with constant temperatures, high humidity, and no air currents). Migration to summer habitat occurs between mid-March and mid-May (USFWS 2016c).

The primary threat to the northern long-eared bat is WNS (USFWS 2015a). Other sources of mortality such as collisions with wind turbines, loss of summer habitat, and changes which alter the microhabitat of hibernacula have not been observed to produce significant population declines; however, as WNS impacts more populations, impacts from these activities may become more pronounced (USFWS 2015c). The USFWS has developed a WNS zone map identifying counties containing hibernacula where bats have been found to exhibit WNS and/or have tested positive for the fungus that causes WNS. This map is updated periodically and was reviewed for this Project on September 12, 2017 (map dated June 30, 2017; USFWS 2017b).

The northern long-eared bat was not listed under the ESA at the time of the construction of the Stateline Plant to Rawson 12" Pipeline Project and the Cherry Creek to Rawson Pipeline Project; as such, Project impacts on this species were not evaluated.

Tree clearing will be conducted in 2018 near the Missouri River to enable aerial surveillance of the line. Tree clearing will not be necessary for construction activities associated with the two proposed Remotely Actuated Block Valves and in-facility piping at the Lonesome Creek and Stateline plants. The Project area falls outside of the USFWS-designated WNS buffer zone, and as such, incidental take of northern long-eared bats is not prohibited (USFWS 20116b, 2017b). Therefore, adverse impacts to this species are not anticipated.

Gray Wolf

The gray wolf is the largest of the wild dog species and is found in a variety of habitats throughout North America. They are typically distinguishable from coyotes by their larger size, shorter, more rounded ears, and broader muzzle (Mech 1974). Gray wolves prey primarily on large ungulates, including white-tailed deer (*Odocoileus virginianus*), elk (*Cervus elaphus*), moose (*Alces alces*), and bison (*Bison bison*), depending on location. They will occasionally take smaller prey, including beaver (*Castor canadensis*), insects, various small mammals, and domestic animals (USFWS 2017c). Additionally, wolves will usurp carcasses and scavenge carrion opportunistically from kills made by other carnivores (Ruth and Murphy 2010).

A habitat generalist, the gray wolf originally occupied most habitat types in North America. They show no preference for one cover type over another and successfully use alpine, forest, grassland, shrubland, and woodland habitats across their range (Mech 1974). Once thought to require wilderness areas with little to no human disturbance, recent range expansions have demonstrated the species' ability to tolerate higher rates of anthropogenic development than previously thought. Given abundant prey and low rates of human-caused mortality, wolves can survive in proximity to human-dominated environments (Fuller et al., 2003).

Observations of wolves in North Dakota are sporadic; the species is not believed to support a breeding population in the state, and individuals are likely dispersers from adjacent populations (i.e., Minnesota and Manitoba) (Licht and Fritts 1994). As dispersers, individual wolves are transient and highly mobile. Naturally curious, they may stray close to the Project area, but would likely retreat upon seeing or hearing construction activities. The BA determined that the Stateline to Rawson 12" Pipeline Project would have *no effect* on this species; the USFWS does not respond to concur with no effect determinations. Construction activities related to the Cherry Creek to Rawson Pipeline Project would not have had adverse impacts on the gray wolf, for the reasons noted above. Tree clearing associate with aerial surveillance of the line and construction activities associated with the two proposed Remotely Actuated Block Valves and in-facility piping at Lonesome Creek and Stateline plants are not expected to have adverse impacts on the gray wolf.

Black-footed ferret

The black-footed ferret is a small member of the Mustelidae family native to the North American shortgrass and mixed grass prairie. Prairie dogs make up approximately 90 percent of the black-footed ferret diet and as such, the species is associated almost exclusively with large complexes of prairie dog towns (USFWS 2013a, Black-footed Ferret Recovery Implementation Team [BFFRIT] 2011). Black-footed ferrets are fossorial, nocturnal predators, spending much of their time underground in prairie dog burrows, leaving only to hunt (Defenders of Wildlife 2014, BFFRIT 2011). Once thought to be extirpated in the wild, captive-born individuals have been reintroduced to 21 sites in Wyoming, Montana, South Dakota, Colorado, Utah, Kansas, New Mexico, and Arizona since 1991 (USFWS 2013a, BFFRIT 2011).

The BA determined that the Stateline to Rawson 12" Pipeline Project would have *no effect* on the black-footed ferret; suitable habitat for the species was not present in the Stateline to Rawson 12" Pipeline Project. The USFWS does not respond to concur with no effect determinations. The field-based habitat assessment conducted in 2017 confirmed the absence of suitable black-footed habitat in the vicinity of the Cherry Creek to Rawson Pipeline Project area. As such, construction activities associated with the two proposed Remotely Actuated Block Valves and in-facility piping at Lonesome Creek and Stateline plants are not expected to have adverse impacts on the species.

The updated IPaC review conducted for the Project in September 2017 did not identify the black footed ferret as potentially present in the Project area; as such, impacts to this species do not require further evaluation.

Whooping crane

The whooping crane is the tallest bird in North America; adults stand nearly 5 feet tall with a wing span that averages 7.5 feet. Adult plumage is primarily white with black primary feathers on the wings, with a red crown and red facial skin often apparent (Canadian Wildlife Service [CWS] and USFWS 2007).

Whooping cranes embark on a bi-annual migration from summer nesting and breeding grounds in Wood Buffalo National Park in northern Alberta to the barrier islands and coastal marshes of the Aransas National Wildlife Refuge on the Gulf Coast of Texas. The migratory corridor is approximately 2,400 miles in length, 220 miles wide, and includes eastern Montana and portions of North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and eastern Texas. During migration, birds stop to feed daily and primarily forage for waste grains in agricultural fields but will also eat frogs, fish, crayfish, insects, and plant tubers. They also utilize upland freshwater sites and forage for acorns, crayfish, insects, and snails. Migrating cranes also use riverine habitats and more open roosting sites in wetlands, sandbars, and shallow river channels (USFWS 2017d). The birds arrive in Texas in the weeks between late October and mid-November, and will remain in the wintering grounds until late March. Spring migration begins between March 25 and April 15, with the last birds leaving the Texas coast by May 1 and arriving in the Wood-Buffalo nesting grounds a few weeks later (CWS and USFWS 2007).

The Project area falls within the 95 percent migration corridor (i.e., the 220-mile band where 95 percent of all whooping crane sightings have occurred), and suitable stopover habitat (i.e., open landscape wetlands and croplands) is present in the vicinity of the Project area. Construction activities associated with the two proposed Remotely Actuated Block Valves and in-facility piping at Lonesome Creek and Stateline plants are planned for early 2018, and are not expected to coincide with the whooping crane's spring migration period (late April to June 15); as such, impacts to this species are not anticipated. However, the two proposed Remotely Actuated Block Valves and plants occur in the vicinity of suitable whooping crane stopover habitat (wetlands and croplands). As such, if construction coincides with the spring migration season, ONEOK would conduct environmental training with the contractor and construction crews as part of pre-construction activities, and provide information to assist in identification of the species. Should a whooping crane be sighted within 1-mile of the Project area, ONEOK would suspend construction at that location and contact the USFWS immediately.

Rufa red knot

The rufa red knot is a large sandpiper known for its long-distance migration between breeding grounds in the Canadian Arctic and several wintering areas in the Southern Hemisphere. Some rufa red knots

wintering in the northwestern Gulf of Mexico migrate through the interior of North America during both spring and fall migration and utilize stopover sites in the Northern Great Plains (USFWS 2013b, 2014a).

The occurrence of rufa red knots in North Dakota is unpredictable, and the number of migrating shorebirds documented in the interior can vary dramatically due to high inter-annual availability in water levels and habitat quality at mid-continental wetlands (USFWS 2014a). Suitable stopover habitat is defined as open landscape wetlands and croplands. These habitat types are present in the Project area.

Construction activities associated with the two proposed Remotely Actuated Block Valves and in-facility piping at Lonesome Creek and Stateline plants are planned for early 2018, and are not expected to coincide with the rufa red knot's spring migration period (mid-May to June 15); as such, impacts to this species are not anticipated. However, Project activities associated with the two proposed Remotely Actuated Block Valves and plants occur in the vicinity of suitable rufa red knot stopover habitat (wetlands and croplands). As such, if construction coincides with the spring migration season, ONEOK would conduct environmental training with the contractor and construction crews as part of pre-construction activities, and provide information to assist in identification of the species. Should a rufa red knot be sighted within 1-mile of the Project area, ONEOK would suspend construction at that location and contact the USFWS immediately.

Piping plover

The piping plover is a small, stocky migratory shorebird which nests in three locations in North America: the shorelines of the Great Lakes, the shores of rivers and lakes in the Northern Great Plains, and along the Atlantic Coast (USFWS 2016d). In the Great Plains, piping plovers inhabit barren sand and gravel shores of rivers and lakes, and avoid dense vegetation. Nearly all natural lakes used by plovers in North Dakota are alkaline in nature and have salt-encrusted, white beaches. Such alkali lakes probably are selected due to their sparse vegetation. Piping plovers will also utilize wide beaches and barren river sandbars. In North Dakota, this habitat type is most often found on the Missouri and Yellowstone Rivers (USFWS 2016e).

Mitigation measures were employed during construction of the Stateline to Rawson 12" Pipeline Project to prevent adverse impacts to the piping plover. Boring under the Missouri River via HDD minimized impacts to suitable plover habitat. ONEOK also conducted pre-construction surveys to confirm the presence or absence of active nest sites within 0.5 mile of the Project area; surveys conducted on May 23 and 24, 2012 confirmed the absence of suitable nesting habitat at the Missouri River crossing. The USFWS concurred with the determination in the BA that the Stateline to Rawson 12" Pipeline Project *may affect, but is not likely to adversely affect* the piping plover.

Construction activities associated with the two proposed Remotely Actuated Block Valves and in-facility piping at Lonesome Creek and Stateline plants are planned for early 2018, and are not expected to coincide with the piping plover breeding and nesting period (April 1 to August 31); as such, these activities will have no impact on piping plovers. ONEOK will also continue to work with the USFWS to implement conservation measures (e.g., construction timing windows, pre-construction surveys, etc.) to ensure tree-clearing activities will not have adverse impacts on piping plovers.

Piping plover critical habitat

In North Dakota, critical habitat for the piping plover has been designated on alkali lakes and wetlands, and along the Yellowstone and Missouri Rivers. The primary constituent elements (i.e., the physical and

biological features that are essential to the conservation of the species) require special consideration for protection. In riverine habitat, these elements include sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and island margins that interface with the river channel, all protected from disturbance.

Construction activities related to the Stateline to Rawson 12" Pipeline Project intersected designated piping plover critical habitat at the Missouri River crossing. As such, mitigation measures were employed to prevent adverse impacts to these areas. ONOEK employed HDD methods to bore the Missouri River, avoiding disturbance to sandbars and shorelines. Construction activities associated with the two proposed Remotely Actuated Block Valves and in-facility piping at Lonesome Creek and Stateline plants are a minimum of 0.35 mile from the Missouri River; as such, impacts on piping plover critical habitat are not anticipated. ONEOK will also continue to work with the USFWS to ensure tree-clearing activities will not have adverse impacts on piping plover critical habitat.

Interior least tern

The interior least tern is the smallest of the terns found in North America (USFWS 2016f). The species is characterized by a black "crown" on their head, a snowy white underside and forehead, grayish back and wings, orange legs, and a yellow bill with a black tip. The least tern can be found in sandy, sparsely vegetated areas along large, slow-moving rivers. The species is a colony nester, and pairs nest and raise young on barren river sandbars. In North Dakota, nesting activity is primarily along the Missouri River (USFWS 2016g).

Mitigation measures were employed during construction of the Stateline to Rawson 12" Pipeline Project to prevent adverse impacts to the least tern. Boring under the Missouri River via HDD minimized impacts to suitable least tern habitat. ONEOK also conducted pre-construction surveys to confirm the presence or absence of active nest sites within 0.5 mile of the Project area; surveys conducted on May 23 and 24, 2012 confirmed the absence of suitable nesting habitat at the Missouri River crossing. The USFWS concurred with the determination in the BA that the Stateline to Rawson 12" Pipeline Project *may affect, but is not likely to adversely affect* the least tern.

Construction activities associated with the two proposed Remotely Actuated Block Valves and in-facility piping at Lonesome Creek and Stateline plants are planned for early 2018, and are not expected to coincide with the least tern breeding and nesting period (April 1 to August 31); as such, these activities will have no impact on least terns. ONEOK will also continue to work with the USFWS to implement conservation measures (e.g., construction timing windows, pre-construction surveys, etc.) to ensure tree-clearing activities will not have adverse impacts on least terns.

Sprague's pipit

The Sprague's pipit is a small ground-dwelling songbird of open landscapes, one of two North American members of the genus. Grassland natives that breed in the Northern Great Plains, pipits migrate through the Central Great Plains and overwinter in the southern U.S and northern Mexico. The species prefers dry, mixed-grass habitats dominated by native vegetation of sparse or intermediate density for breeding, but they have also been less-commonly observed performing territorial displays in non-native grasslands and nesting in non-native hayfields in part of their range (Robbins and Dale 1999, Dechant et al. 2003, Jones 2010, USFWS 2013c). Overall, vegetation structure appears to be an important predictor of species occurrence (USFWS 2013c).

On September 15, 2010, the Sprague’s pipit became a candidate for listing as threatened or endangered under the ESA (USFWS 2010). However, in 2016, the USFWS issued a finding stating the listing of Sprague’s pipit as threatened or endangered was not warranted (USFWS 2016a). As a candidate species, the Sprague’s pipit was not afforded protection from take under the ESA. Although the species is no longer being considered for protection under the ESA, it is still protected under the Migratory Bird Treaty Act (MBTA). See Section 5.3.2 for a discussion of Project conservation measures designed to avoid impacts to migratory birds.

Pallid sturgeon

The pallid sturgeon is a large, slow-growing fish found in the Missouri and Mississippi Rivers from Montana to Louisiana (USFWS 2016h). The pallid sturgeon’s 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. The species is usually found in main-channel habitat with a sand or gravel bottom (USFWS 2017e). Wild pallid sturgeon have been noted in the Missouri River downstream from the Fort Peck Dam in Montana to the headwaters of Lake Sakakawea, North Dakota, and downstream from Garrison Dam, North Dakota to the headwaters of Lake Oahe, South Dakota (USFWS 2016i).

The Stateline to Rawson 12” Pipeline Project bored the crossing of the Missouri River via HDD, avoiding direct impacts to the pallid sturgeon and its habitat. The USFWS concurred with the determination in the BA that the Stateline to Rawson 12” Pipeline Project *may affect, but is not likely to adversely affect* the pallid sturgeon. No in-water work will be performed for construction of the two proposed Remotely Actuated Block Valves and in-facility piping at Lonesome Creek and Stateline plants. Therefore, impacts to this species are not anticipated.

Dakota skipper

The Dakota skipper is a small-to-medium sized butterfly characterized by a short, sturdy body and a quick, skipping flight. Adult males are tawny-orange to brown on dorsal surfaces with lighter, dusty yellow-orange ventral surfaces; forewings display conspicuous dark markings (Royer and Marrone 1992). The species is an obligate of untilled, high-quality native prairie containing a variety of wildflowers and grasses (McCabe 1981, Royer and Marrone 1992). The preferred wetland habitat is associated with plant species consisting of bluestem grasses, wood lily, and harebell; the preferred upland habitat contains bluestem grasses, needlegrass, purple coneflower, and blanketflower. Dakota skipper adults have a lifespan of only 1 to 2 weeks and can also be seen during the breeding and egg-laying season between mid-June and mid-July (USFWS 2014b). In North Dakota, the skipper typically occupies wet-mesic habitat in the eastern portion of its range, and may be found in higher concentrations there than in the dry-mesic prairie in the west (Royer and Marrone 1992, Cochrane and Delphey 2002).

The Dakota skipper was not listed under the ESA at the time of the construction of the pipeline; as such, impacts on this species did not require evaluation. However, the species was included in the BA for the Stateline to Rawson 12” Pipeline Project; the USFWS noted that the location was outside of what was understood to be the westernmost populations of Dakota skipper (i.e., eastern McKenzie County). The field-based habitat assessment conducted in 2017 confirmed the absence of suitable Dakota skipper habitat in the vicinity of the remainder of the pipeline, the Cherry Creek to Rawson Pipeline Project area. As such, construction of the existing pipeline would not have had adverse impacts on the species.

Construction activities associated with the two proposed Remotely Actuated Block Valves require minimal ground disturbing work and are limited to active agricultural lands immediately adjacent to the existing valve locations. Field surveys conducted on September 25 and 26, 2017 in these areas determined that suitable habitat for the Dakota skipper is not present in these areas. Construction activities associated with the new in-facility piping at the Lonesome Creek and Stateline plants is limited to disturbed areas within the developed plants. Therefore, impacts to this species are not anticipated.

5.3.2 Migratory Bird Treaty Act

Migratory birds are federally protected by the MBTA, which prohibits the taking, killing, possession, and transportation of migratory birds, their eggs, parts, and nests, except when specifically permitted by regulations. In North Dakota, both native prairie and non-native grasslands provide breeding, nesting, foraging, brood-rearing, and dispersal habitat for many species of migratory birds. The migratory bird nesting season in North Dakota is February 1 to July 15.

Construction activities associated with the two proposed Remotely Actuated Block Valves and in-facility piping at Lonesome Creek and Stateline plants are planned for early 2018, and may coincide with the migratory bird breeding and nesting season. If construction begins after February 1, 2018, and continues into early April, ONEOK will implement its Migratory Bird Plan at the proposed Remotely Actuated Block Valve sites and plants. As such, adverse impacts on migratory birds due to Project activities are not anticipated. ONEOK will also continue to work with the USFWS to implement conservation measures (e.g., construction timing windows, pre-construction surveys, etc.) to ensure tree-clearing activities will not have adverse impacts on migratory birds.

5.3.3 Bald and Golden Eagle Protection Act

Bald and golden eagles are protected by both the MBTA and the Bald and Golden Eagle Protection Act (BGEPA). The BGEPA prohibits the take of a bald or golden eagle adults, juveniles, or chicks including their parts, nests, or eggs without a permit. Take is defined by the BGEPA as to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The BGEPA also addresses impacts resulting from human-induced alterations occurring around previously used nesting sites.

Bald eagles breed throughout North Dakota and commonly nest in trees near large bodies of water, but may also nest in other tall structures, such as rocky outcrops, cliffs, utility poles, and communication towers (USFWS 2007). Golden eagles are uncommon in North Dakota but may breed in the far western portions of the state, nesting between early April and late July. They typically nest in incised landscapes, including the badlands and buttes overlooking grassland and prairie habitat, but may also nest in large trees (North Dakota Game and Fish Department [NDGFD] 2016). The eagle nesting season in North Dakota is February 1 to July 31.

Construction activities associated with the two proposed Remotely Actuated Block Valves and in-facility piping at Lonesome Creek and Stateline plants are planned for early 2018, and may overlap with the beginning of the eagle nesting season. Based upon desktop review, suitable nesting habitat is not present within 660 feet (0.125 mile) of ground-disturbing activities associated with the proposed Remotely Actuated Block Valve installations and plants. As such, impacts to nesting bald and golden eagles are not anticipated. ONEOK will also continue to work with the USFWS to implement conservation measures (e.g.,

construction timing windows, pre-construction surveys, etc.) to ensure tree-clearing activities will not have adverse impacts on nesting bald eagles.

5.4 TREE /SHRUB INVENTORY

Field surveys conducted for wetlands and biological resources in 2017 confirmed that there are no trees or shrubs located at the two Remotely Actuated Block Valve locations which will be constructed as part of this Project (refer to Exhibit C.3). Additionally, there are no trees or shrubs located within the previously disturbed plants where new piping will be installed.

Because construction of the original pipeline was completed prior to the pipeline being under the jurisdiction of the NDPSC, ONEOK did not conduct a pre-construction inventory of trees and shrubs, and impacts to trees and shrubs during construction were not recorded. Tree rows and woody areas occur in limited amounts as isolated islands or rows throughout the Project area. Impacts to trees were largely avoided; however, it was necessary to clear some trees and shrubs during construction. Based on a comparative analysis of high-resolution aerial imagery from 2009 and 2010 against similar 2014 and 2017 imagery, an estimated 25 shrubs and trees were removed within the construction ROW during the original construction of the Project.

To allow for aerial surveillance of the pipeline, ONEOK plans to remove additional trees and shrubs along the pipeline route. Tree and shrub removal along the existing gathering pipeline will occur upon receipt of applicable permits. ONEOK will perform mitigation for all trees and shrubs removed, as described in the NDPSC's Orders, or a Tree and Shrub Mitigation Plan submitted at a later date to the NDPSC for approval prior to implementation. Where additional permits may apply, and mitigation requirements may differ from the NDPSC's Orders (e.g., USACE-owned land), ONEOK will work with the appropriate permitting agency to determine acceptable mitigation.

5.5 NOXIOUS WEEDS INVENTORY

North Dakota law (North Dakota Century Code § 4.1-47-02) requires every person to do all things necessary and proper to control the spread of noxious weeds and makes it illegal for any person to distribute, sell, or offer for sale within this state a noxious weed. The North Dakota Department of Agriculture lists 11 species of noxious weed and invasive species:

- Absinth Wormwood (*Artemisia absinthium*)
- Canada Thistle (*Cirsium arvense*)
- Dalmatian Toadflax (*Linaria genistifolia*)
- Diffuse Knapweed (*Centaurea diffusa*)
- Leafy Spurge (*Euphorbia esula*)
- Musk Thistle (*Carduus nutans*)
- Purple Loosestrife (*Lythrum salicaria*)
- Russian Knapweed (*Acroptilon repens*)
- Saltcedar (*Tamarix chinensis, T. parviflora, T. ramosissima*)
- Spotted Knapweed (*Centaurea maculosa*)
- Yellow Toadflax (*Linaria vulgaris*)

In addition to the North Dakota Department of Agriculture noxious weed and invasive species list, localized weed boards within each county manage noxious weeds and invasive species and may develop a list of additional weeds for enforcement within their jurisdiction. McKenzie County has designated the additional species as noxious weeds (Williams County has not designated any additional):

- Common burdock (*Arctium minus*)
- Houndstongue (*Cynoglossum officinale*)
- Black henbane (*Hyoschyamus niger*)
- Yellow toadflax (*Linaria vulgaris*)

A formal noxious weed inventory was not conducted prior to the original construction of the pipeline. The 2017 wetland delineation described above in Section 5.2 included a noxious weed inventory of the two new Remotely Actuated Block Valve sites. No noxious weeds were identified at the southern valve location (McKenzie County). The northern valve location in Williams County also did not have any listed noxious species; however, one common burdock plant (listed in McKenzie County, but not in Williams County) was identified.

It is ONEOK’s intent to minimize the potential introduction and/or spread of undesirable species (i.e., invasive species and noxious weeds) along its ROW during pipeline construction activities and the revegetation timeframe. ONEOK will minimize the potential for the establishment of undesirable species by minimizing the time duration between final grading and permanent seeding or gravel. ONEOK will also require that construction equipment be cleaned prior to arriving at the workspace to prevent the introduction of undesirable species to the Project area.

6.0 AGENCY NOTIFICATIONS AND PERMITTING

In September and October 2017, ONEOK initiated consultation and coordination with federal, state, and local agencies within the 1-mile study area that may be affected by the Project. Letters and/or emails were submitted with an accompanying mapset of the Project. A summary of these consultations is provided in Table 6.0-1 below, and further details on each consultation are included in the following sections.

Table 6.0-1
Summary of Agency Notifications[1]

Agency	Applicable Resource/Program	Date Submitted	Response Received
USFWS – Ecological Services Office	Federally listed threatened and endangered species, MBTA and BGEPA consultation	October 5, 2017	Pending
USACE	USACE-owned land	Ongoing	Ongoing
U.S. Department of Defense (USDOD)	USDOD intercontinental ballistic missile and launch facility assets	September 29, 2017	October 2, 2017
U.S. Department of Agriculture – Natural Resources Conservation District (NRCS)	NRCS-administered lands and programs	September 29, 2017	October 2, 2017
U.S. Department of Agriculture – Farm Service Agency (FSA)	FSA-administered lands and programs	September 29, 2017	October 2, 2017
NDSHPO	Cultural Resources Consultation	December 5, 2017	Pending
NDGFD	State Conservation Priority Species, Game Refuges, Game Management Areas and Private Land Open to Sportsmen	September 29, 2017	October 30, 2017
North Dakota Department of Parks and Recreation	North Dakota Natural Heritage Inventory system, State Parks Recreation areas, Natural areas, and Land and Water Conservation Fund projects	September 29, 2017	October 10, 2017
North Dakota Department of Trust Lands (NDDTL) – Mineral Trust Lands	Identification of impacts to Mineral Trust lands	September 29, 2017	October 2, 2017
NDDTL – School Trust Lands	Identification of impacts to School Trust lands	September 29, 2017	October 4, 2017
McKenzie County Water Resource District	Ditches, drains, drainage in the County	September 28, 2017	Pending
McKenzie County Weed Resource Board	Control of the growth and spread of noxious weeds in the County	September 29, 2017	October 2, 2017
Williams County Water Resource Board	Ditches, drains, drainage in the County	September 29, 2017	Pending
Williams County Weed Control Department	Control of the growth and spread of noxious weeds in the County	September 29, 2017	Pending

[1] Copies of agency consultations are included in Exhibit D.

6.1 U.S. FISH AND WILDLIFE SERVICE

The USFWS administers several programs designed to identify and protect plant and animal species listed under the ESA, critical habitats for listed species, migratory birds, bald and golden eagles, as well as wetland and grassland easements. ONEOK provided the USFWS with a Project notification letter on October 5, 2017, which included a description of the Project, and an assessment of its impacts on federally listed threatened and endangered species. See to Exhibit D for a copy of the correspondence. A formal written response has not yet been received.

6.2 U.S. ARMY CORPS OF ENGINEERS

The USACE owns land adjacent to the Missouri River, and the previously constructed 12-inch pipeline crosses that land. ONEOK worked with the USACE to obtain an easement to cross the land in 2011 and 2012, and has since engaged the USACE in a face-to-face meeting held on September 13, 2017 to discuss the Project and the potential removal of trees for aerial surveys. Further consultation and discussions with the USACE regarding the Project are ongoing.

6.3 DEPARTMENT OF DEFENSE – AIR FORCE CABLE AFFAIRS

The U.S. Department of Defense possesses assets associated with intercontinental ballistic missiles and launch facilities in North Dakota. U.S. Air Force Cable Affairs confirmed the absence in the Project area on October 2, 2017. See Exhibit D for a copy of the correspondence.

6.4 U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE

The U.S. Natural Resource Conservation Service (NRCS) administers the Wetland Reserve Program, whereby landowners receive annual rental payments and cost-sharing assistance to establish long-term, resource conserving covers, such as grasslands and wetlands. Following a consultation email submitted to the NRCS as well as the McKenzie County and Williams County Soil Conservation Districts, the NRCS confirmed on October 2, 2017 that there are no NRCS stewardship land easement areas impacted by the Project. See Exhibit D for a copy of the correspondence.

6.5 U.S. DEPARTMENT OF AGRICULTURE, FARM SERVICE AGENCY

Lands enrolled in the U.S. Department of Agriculture’s Farm Service Agency (FSA) administered Conservation Reserve Program (CRP) and Grassland Reserve Program are privately owned; however, FSA has administrative responsibilities to ensure the provisions of CRP or Grassland Reserve Program are maintained throughout the contract period. The programs stipulate that lands enrolled may not have the vegetative cover disturbed during the Primary Nesting and Brood Rearing Season (April 15 to August 1) unless disturbance of the existing cover is minimal and a waiver of this provision is granted by the FSA.

FSA’s response dated October 2, 2017 indicated that ONEOK will have to work with landowners to identify the presence of CRP-enrolled lands within the proposed new valve construction sites and any other areas in which land disturbance may occur. ONEOK’s contact and easement negotiation with landowners provided landowners with the opportunity to disclose any CRP lands for the construction of the original

pipeline, and ONEOK has confirmed the absence of CRP land at the new Remotely Actuated Block Valve sites in Williams County and McKenzie County.

6.6 NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE

According to the North Dakota Energy Conversion and Transmission Facility Siting Act, among the "*factors to be considered [by the Commission] in evaluating applications and designation of sites, corridors, and routes,"* is the effect of the proposed site or route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites. The repository in North Dakota for this information is the NDSHPO, which acts as a technical resource during identification and evaluation of areas, sites, and structures and during reviews of Project effects. The Commission tasks the Proponent to coordinate identification and effects discussions with the NDSHPO.

On December 5, 2017, Project notification including a summary of cultural resource studies conducted along the Project route between 2012 and 2017 was submitted to the NDSHPO requesting concurrence with the findings. A response is pending and will be submitted to the NDPSC upon receipt.

6.7 NORTH DAKOTA GAME AND FISH DEPARTMENT

The NDGFD has oversight of the State's game species. On September 29, 2017, ONEOK provided Project notification to the NDGFD requesting information regarding the presence or absence of State Conservation Priority Species, game refuge and game management lands, and Private Land Open to Sportsmen lands within the Project Corridor.

Response from the NDGFD was received on October 30, 2017. NDGFD indicated that their primary concerns pertaining to wildlife are: impacts to the Lewis & Clark Wildlife Management Area (WMA), avoidance of impacts to native prairie and wooded draws to the extent possible, a request to incorporate pressure sensing valves on both sides of the Missouri River/Lake Sakakawea to minimize impacts to the high-valued fishery, the avoidance of the spread of Aquatic nuisance species, the avoidance, minimization and mitigation of wetland impacts, and the completion of aerial surveys for raptor nests prior to construction. The NDGFD indicated that their belief is that that Project will not have significant adverse effects on wildlife or wildlife habitat provided their recommendations are followed.

6.8 NORTH DAKOTA PARKS AND RECREATION DEPARTMENT

The North Dakota Parks and Recreation Department (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 identifying 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 September 29, 2017, Project notification was initiated with the NDPRD seeking confirmation regarding the presence or absence of managed lands, ecological resources, and rare species or their critical habitats within the Project Corridor. Response from the NDPRD was received October 10, 2017, and confirms that the Project, as defined, does not affect state park lands or Land and Water Conservation Fund sites managed by the NDPRD. The response letter indicates there are aquatic species of concern within or adjacent to the Project areas (the Missouri River) and defers additional information regarding the species

to the USFWS and NDGFD. NDPRD also recommends that the Project be accomplished with minimal impacts and that all efforts be made to ensure that critical habitats are not disturbed to help with rare species conservation.

6.9 NORTH DAKOTA DEPARTMENT OF TRUST LANDS – MINERAL TRUST LANDS

On September 29, 2017, ONEOK provided Project notification to the North Dakota Department of Trust Lands (NDDTL) Mineral Trust Lands requesting comments regarding the presence of Mineral Trust Lands in the Project area. The NDDTL responded on October 4, 2017, confirming the presence of Mineral Trust land tracts within the Project Corridor as depicted in the notification map. See Exhibit D for a copy of the correspondence.

6.10 NORTH DAKOTA DEPARTMENT OF TRUST LANDS – SCHOOL TRUST LANDS

On September 29, 2017, ONEOK provided Project notification to the NDDTL School Trust Lands requesting comments regarding the presence of School Trust Lands in the Project area. The NDDTL responded on October 2, 2017, confirming that neither the existing pipeline nor the proposed Remotely Actuated Block Valves involve surface acres managed by the Department of Trust Lands. See Exhibit D for a copy of the correspondence.

6.11 MCKENZIE COUNTY WATER RESOURCE DISTRICT

The McKenzie County Water Resource District (MCWRD) manages rural water distribution projects and supports water interests throughout the county[1]. On September 29, 2017, ONEOK provided Project notification to the MCWRD requesting a Project review regarding ditches/drains, drainage, permits or other matters that may relate to the Project. A response from the MCWRD is pending.

6.12 MCKENZIE COUNTY WEED BOARD

The McKenzie County Weed Board has a goal to manage the spread of noxious weeds while developing an effective long-term integrated weed management plan, to increase awareness and educate citizens about the impact of noxious weeds, and to build and implement programs that foster cooperative efforts between groups, agencies, and individuals on noxious weed control issues.[2] In response to ONEOK's September 29, 2017 request for Project review regarding the locations of weeds and weed control recommendations, the McKenzie County Weed Board responded that a Weed Management Plan is required for the new valve construction areas. ONEOK will work with the County to have a Weed Management Plan in place prior to the commencement of construction activities at the Remotely Actuated Block Valve in McKenzie County.

[1] McKenzie County Water Resource District: https://county.mckenziecounty.net/Department/Water/Water-Resource-District
[2] McKenzie County Weed Board: https://county.mckenziecounty.net/Department/Weeds/Weed-Board

6.13 WILLIAMS COUNTY WATER RESOUCE BOARD

The Williams County Water Resource Board manages drainage issues, regulatory water usage, lease site interests, and stormwater in Williams County.[3] On September 29, 2017, ONEOK provided Project notification to the Williams County Water Resource Board requesting a Project review regarding ditches/drains, drainage, permits, or other matters that may relate to the Project. A response from the Williams County Water Resource Board is pending.

6.14 WILLIAMS COUNTY WEED CONTROL DEPARTMENT

On September 29, 2017, ONEOK provided Project notification to the Williams County Weed Control Department requesting a Project review regarding the location of weeds and weed control recommendations as they relate to the Project. A response from the Williams County Weed Control Department is pending.

[3] Williams County Water Resource Board: http://www.williamsnd.com/Department/Water-Resource-Board

7.0 CRITERIA

The information presented in this section was developed to demonstrate conformance with the NDPSC's siting criteria for transmission facilities. ONEOK has conducted a thorough inventory of the Project Corridor and evaluated the resources within it to assess the compatibility of the Project with the NDPSC's siting criteria. The following sections identify and discuss the presence or absence of siting criteria within the Project Corridor and Route. Where siting criteria are identified, the location of each is shown on the maps in Exhibits B.1 and B.2.

7.1 EXCLUSION AREAS

Exclusion areas are geographic areas that may not be impacted by the routing of a transmission facility unless it is shown there is no reasonable alternative under the circumstances. A route may contain an exclusion area; however, exclusion areas may not encompass more than 50 percent of the Project Corridor width at any point, unless there is no reasonable alternative. The following text and Table 7.1-1 identify and discuss exclusion areas within the Project Corridor, or crossed by the Project Route.

Table 7.1-1
Exclusion Areas
NDPSC Certificate of Corridor Compatibility and Route Permit

Exclusion Area	Located within the Project Corridor[1]	Crossed by Project Route	Administering Agency
National Parks, Memorial Parks, Historic Sites and Landmarks, Natural Landmarks, Monuments, and Wilderness Areas	No	No	U.S. National Park Service (USNPS); U.S. Forest Service (USFS)
State Parks, Historic Sites, Monuments, Historical Markers, Archaeological Sites, Nature Preserves	Yes	Yes	NDPRD; NDGFD; NDSHPO
County Parks and Recreation Areas, Municipal Parks, Parks Administered by other Governmental Subdivisions	No	No	Various
Areas Critical to the Life Stages of Threatened or Endangered Animal or Plant Species	Yes	Yes	USFWS
Areas Where Animal or Plant Species Unique or Rare to the State Would be Irreversibly Damaged	No	No	Various
Areas Within 1,200 Feet of an Intercontinental Ballistic Missile (ICBM) Launch or Launch Control Facility	No	No	USDOD
Areas Within 30 Feet of a Direct Line Between ICBM Launch or Launch Control Facilities to Avoid Microwave Interference	No	No	USDOD

[1] Project Corridor is defined in Section 2.17.

7.1.1 Federal Resource Review

Review of digital data[4] available from the U.S. National Park Service (USNPS), the U.S. Forest Service (USFS), and the USFWS shows that there are no national parks, national memorial parks, national historic

[4] http://www.nps.gov/state/nd/index.htm,

sites and landmarks, national wilderness areas, or national monuments located within the Project Corridor or crossed by the Project Route. The nearest federally managed park land is the Theodore Roosevelt National Park (North Unit) located approximately 11 miles southeast of the Project. Therefore, there will be no direct impacts to national parks, sites, monuments, or wilderness.

7.1.2 State Resource Review

Review of digital data[5] available from the NDPRD indicates that there are no designated or registered state parks, historic sites, monuments, historical markers, or nature preserves within the Project Corridor, or crossed by the Project Route. As indicated in Section 5.1, the original construction of the Project pipeline did not adversely affect cultural resources eligible for inclusion on the NRHP, and no historic properties will be affected at the new Remotely Actuated Block Valve sites or by installing in-facility piping at the Lonesome Creek or Stateline plants. The Lewis and Clark State Park is the nearest such area and is located approximately 6 miles northeast of the Project. Therefore, there will be no direct impacts to state parks, historic sites, monuments, historical markers, or nature preserves.

7.1.3 County Resource Review

Review of publicly available data shows that there are no county parks and recreational areas, municipal parks, or parks owned or administered by other governmental subdivisions within the Project Corridor, or crossed by the Project Route. The nearest such areas are located in the vicinity of Watford City approximately 11 miles northeast of the Project. Therefore, no direct impacts are anticipated.

7.1.4 Areas of Critical Habitat

ONEOK commissioned natural resource surveys of the Project 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. The results of these field studies are detailed in Section 5.3.1. USFWS-designated critical habitat along the Missouri River for piping plover was identified during desktop analysis of the Project Corridor. However, due to the installation of the pipe via HDD, impacts to the critical habitat areas were avoided.

New ground disturbing activities associated with the new proposed Remotely Actuated Block Valve construction and in-facility piping at the Lonesome Creek and Stateline plants will be minimal and limited to grazed and crop fields immediately adjacent to existing valves. Field surveys conducted September 25 and 26, 2017 determined that suitable habitat for protected species is not present in the areas associated with new valve construction.

http://www.nps.gov/lecl/planyourvisit/loader.cfm?csModule=security/getfile&PageID=76427, and http://www.wilderness.net/NWPS/stateView?state=ND

[5] http://www.parkrec.nd.gov/parks/parks.html

7.1.5 Areas where Unique or Rare Species Would Be Irreversibly Damaged

Based upon agency correspondence and field surveys, the proposed Project will not result in irreversible impacts that are detrimental to sensitive plant and animal species or their habitats (see Section 7.1.4 above).

7.1.6 Areas within 1,200 Feet of Intercontinental Ballistic Missile Facility or 30 Feet of Direct Line of Intercontinental Ballistic Missile Launch Facility

As confirmed with the Minot Air Force Base in Minot, ND, the Air Force has no ICBM launch or launch control assets within the Project area.

7.2 AVOIDANCE AREAS

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

Table 7.2-1
Avoidance Areas
NDPSC Certificate of Corridor Compatibility and Route Permit

Avoidance Area	Located within the Project Corridor	Crossed by Project Route	Administering Agency
National Historic Districts, Wildlife Areas, Wild, Scenic, or Recreational Rivers, Wildlife Refuges, Grasslands	No	No	USFWS, USNPS, National Wild and Scenic Rivers System, USFS
State Wild, Scenic or Recreational Rivers, Game Refuges, Game Management Areas, Management Areas, Forests, Forest Management Lands, Grasslands	Yes	Yes	NDGFD, State Forest Service, State of North Dakota Legislative Assembly
Historical Resources not specifically designated as Exclusion or Avoidance Areas	Yes	Yes	NDSHPO
Geologically Unstable Areas	Yes	Yes	State Geological Survey
Within 500 Feet of a Residence, School, or Place of Business	Yes	Yes	Landowner
Reservoirs and Municipal Water Supplies	Yes	Yes	USACE; North Dakota State Water Commission (NDSWC); Western Area Water Supply Authority (WAWSA)
Water Sources for Organized Rural Water Districts	Yes	Yes	NDSWC; WAWSA

Table 7.2-1 Avoidance Areas NDPSC Certificate of Corridor Compatibility and Route Permit			
Avoidance Area	**Located within the Project Corridor**	**Crossed by Project Route**	**Administering Agency**
Irrigated Land	NA	NA	NDSWC
Areas of Recreational Significance Not Designated as Exclusion Areas	No	No	Various

7.2.1 Federal Resource Review

ONEOK conducted a comprehensive review of publicly available information and field studies of the Study Area, Project Corridor, or Project Route. This review confirmed the absence of designated or registered national historic districts, wildlife areas, wild, scenic or recreational rivers, wildlife refuges, or grasslands within the Project Corridor or crossed by the Project Route.

7.2.2 State Resource Review

ONEOK conducted a review of publicly available resources and concluded no designated or registered state wild, scenic or recreational rivers, forests, forest management lands, or grasslands are within the Project Corridor or crossed by the Project Route.

The previously-installed portion of the pipeline crosses the Missouri River, and crosses the Trenton WMA and the Lewis and Clark WMA. ONEOK bored the river using HDD methods in order to place the pipeline under the river without disturbance to the surrounding habitat, and in doing so, avoided impacts to either WMA. The new proposed ground disturbance for valve construction does not take place within any WMAs.

7.2.3 Historical Resources Not Designated as Exclusion/Avoidance Areas

As indicated in Section 5.1, the original construction of the Project pipeline did not adversely affect cultural resources eligible for inclusion on the NRHP, and no historic properties will be affected at the new Remotely Actuated Block Valve sites or where in-facility piping is installed at the Lonesome Creek and Stateline plants. Section 5.1 provides a discussion of historical resource desktop and field studies conducted for cultural resource reports, and Section 6.6 provides a discussion of agency consultations conducted with the NDSHPO regarding the Project.

7.2.4 Geologically Unstable Areas

A desktop review of the North Dakota Geological Survey landslide mapping data was completed. Review of landslide deposit data from the North Dakota Geological Survey confirmed that the Project Corridor of the previously-constructed pipeline intersected two landslide prone landscape areas in McKenzie County. The location of each area is described below.

Landslide deposit #1: Intersects the Route for approximately 414 feet in the NW ¼ of the NE ¼ of Section 31, Township 153N, Range 101W.

Landslide deposit #2: Intersects the Route for approximately 150 feet in the NE ¼ of the SE ¼ of Section 20, Township 151N, Range 101W.

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. According to review of NDPSC abandoned mine data, no mining activities are located within the Project Corridor.

7.2.5 Areas within 500 Feet of a Residence, School, or Place of Business

Aerial photography and field verification by ONEOK's ROW Department allowed for the identification of structures located within 500 feet of the proposed Project Route. Prior to the construction of the 12-inch pipeline in 2012, there were five potentially occupied structures located within 500 feet of the Project Route. Currently, 36 occupied structures are located within 500 feet of the Project Route.

ONEOK is in the process of obtaining landowner waivers for those dwellings/businesses that are occupied and located within 500-feet of the Project alignment. ONEOK has obtained waivers for twelve of the structures to date (Exhibit E). ONEOK will file the remaining waivers once received.

7.2.6 Reservoirs and Municipal Water Supplies

At the crossing of the Missouri River by the previously constructed pipeline, the river is categorized by the USACE as a part of the Lake Sakakawea Reservoir. The crossing is also within the Williston Wellhead Protection Area, which forms a portion of the Western Area Water Supply Authority (WAWSA), the entity that supplies drinking water for 70,000 people in the five-county area that includes the cities of Williston, Watford City, Ray, Tioga, Stanley, Wildrose, Crosby, Fortuna, Noonan, Columbus, and Ross[6] (see Section 7.2.7).

The crossing of the Missouri River by the previously constructed pipeline, which is collocated within a previously existing pipeline corridor, was directionally drilled nearly 6 river miles upstream of WAWSA's water intake structures, thus effectively avoiding direct impacts to the Missouri River and WAWSA. Any new ground disturbance associated with the construction of the new valve sites will not impact groundwater in the Williston Wellhead Protection Area or surface waters of the Missouri River, and there will be no impacts to WAWSA water quality or quantity.

7.2.7 Water Sources for Organized Rural Water Districts

WAWSA (see Section 7.2.6) also provides drinking water throughout a 6,800-square mile area in northwestern North Dakota, including to multiple rural water districts including Burke-Divide-Williams

[6] http://wawsp.com/

Rural Distributions System, McKenzie County Water Resources District, R&T Water Supply Commerce Authority, and Williams Rural Water District.

As noted above under Section 7.2.6, since the crossing of the Missouri River was directionally drilled nearly 6 river miles upstream of WAWSA's water intake structures, and the new ground disturbance associated with the construction of the new valve sites will not impact surface waters of the Missouri River, there will be no impacts to WAWSA or any of the rural water districts.

7.2.8 Irrigated Land

Irrigated land does not apply to underground transmission facilities. ONEOK has confirmed the absence of known irrigated land within the vicinity of proposed areas of aboveground ground disturbance.

7.2.9 Areas of Recreational Significance but Not Designated Exclusion Areas

No NDPRD-designated Scenic Byways or Backways are crossed by the Project, and the NDPRD did not refer to any other non-designated exclusion areas of recreational significance in their response to ONEOK's agency consultation letter. Because the previously constructed pipeline primarily resulted in short-term visual effects related to the presence of heavy equipment, staging areas, and removal of vegetation within the construction workspace, disturbed areas were returned to preconstruction elevations and contours, and the pipeline is not visible, the pipeline does not negatively impact recreational areas. No aboveground facilities were constructed within recreational areas, and there are no plans for construction within recreational areas.

7.3 SELECTION CRITERIA

The State of North Dakota Rules specify selection criteria considered in designating a pipeline corridor or route. These criteria are used to determine whether adverse effects from the location, construction, and maintenance of the facility will be at an acceptable minimum or whether these effects will be managed and maintained at an acceptable minimum.

The selection criteria that were considered for the Project include:

- Agricultural Production
- Family Farms and Ranches
- Land Suitable for Irrigation
- Surface Drainage and Groundwater Flow Patterns
- Sound Sensitive Areas
- Visual Effects
- Extractive and Storage Resources
- Wetlands, Woodlands and Wooded Areas
- Communication or Electric Control Facilities
- Human Health and Safety
- Animal Health and Safety
- Plant Life

Potential impacts and measures to avoid and minimize these impacts, as they relate to each of the selection criteria, are discussed in the following subsections.

7.3.1 Agricultural Impacts

Agricultural Production, Family Farms, and Ranches: The previously constructed pipeline Project Route temporarily affected an estimated 485 acres of private land, and 46 acres of USACE-owned land in North Dakota. Of the 531 acres of total impacts, approximately 268 acres of impacts occurred on privately owned agricultural land and just over 19 acres of impacts occurred on agricultural land on USACE-owned land. Whereas pipeline construction resulted in temporary impacts only, the construction of the aboveground block valves accounted for permanent impacts to agricultural lands totaling approximately 0.25 acre in both Williams and McKenzie Counties. The majority of the impacts were to land that is characterized as either agricultural or natural vegetative cover. Upon completion of construction, nearly all land (with the exception of the aboveground facilities) was restored to its pre-construction elevations, contours, and land use.

Impacts to agricultural production, and family farms and ranches were minimized the greatest extent practicable in consultation with landowners. ONEOK negotiated easements with all affected landowners, and provided settlements to landowners for crop loss, and to family farm/ranch operations for losses incurred during Project construction and operation.

Construction at the new valve sites will consist of a small amount of permanent impacts to agricultural land as a result of incremental expansion of the existing valve sites nearest the Missouri River, along with permanent gravel access roads. Impacts will total approximately 0.15 acre for valve site expansion and with an access road in Williams County and 0.17 acre for valve site expansion with an access road in McKenzie County.

The location of pipeline markers is defined under 49 CFR part 195 for pipelines. ONEOK 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 (NDAC 69-06-08-02(2)(h)), and no impacts to irrigated land will occur as a part of the work on the new valve sites or in-facility piping installed at the plants.

Surface Drainage: Standard pipeline construction techniques employed during the construction of the original pipeline did not modify existing surface drainage patterns. During restoration, those areas that were disturbed during construction were restored, the local topography was restored to its original contours, vegetation was re-established, and impacts were minimal and temporary. For the construction of the new valve sites and in-facility piping at the plants, best management practices (BMPs) will be implemented to protect local resources, and permanent impacts to surface drainage will be minimized to the maximum extent possible.

Ground Water: Well data from the NDSWC and the U.S. Geological Survey indicates that groundwater throughout the Project area is sufficiently below the surface, such that impacts to groundwater as a result of any previous or new construction are not anticipated.

7.3.2 Sound-sensitive Land Uses

Temporary increases in ambient sound will occur in the areas immediately surrounding active construction. The Project is located in a rural setting away from major population centers. Construction activities are expected to be short-term (4 to 8 weeks) and generally limited to daylight hours. The use of heavy equipment or trucks will be the primary noise during construction and excavation. The level of impact may vary by equipment type, duration of construction activity, and the distance between the noise source and the receptor. Once constructed and in-service, normal pipeline operations are not audible. Construction and operation of the Project is expected to comply with applicable noise requirements.

7.3.3 Visual Effect on Adjacent Areas

The only aboveground structures associated with the pipeline, including the new Remotely Actuated Block Valve construction, are typically enclosed with fences which are padlocked shut against vandalism and accidental activation. The location will be clearly marked with a small placard that details ownership and contact information. The visual piping and equipment will be finished and maintained with a tan or white painted surface. These features are common throughout the landscape and are not obtrusive. No other permanent aboveground features are proposed as a part of the Project.

7.3.4 Extractive and Storage Resources

This Project will not affect any known extractive or storage resources. Impacts on future extractive development would not constitute a substantial loss of resource availability because of the narrow, linear nature of the pipeline ROW relative to the expanse of areas with resource potential.

7.3.5 Wetlands, Woodlands, and Wooded Areas

A comprehensive desktop review of published data, including aerial photography and National Wetlands Inventory data, was conducted to assess the presence or absence of wetlands, woodlands, and wooded areas. ONEOK commissioned field surveys to further identify and record the locations of these resources along the Project Route for the previously constructed pipeline as well as at the proposed new valve sites. Wetlands and waterbodies were generally avoided through routing or bore/HDD during construction of the pipeline to minimize impacts and constructability or landowner concerns. Land use and land cover information is shown in Exhibit B.3. Detailed survey results can be found in Exhibit C.

7.3.6 Radio and TV Reception and Other Communication or Electronic Facilities

Based on review of publicly available information, no radio and TV reception and other communication or electronic facilities are located within the Project Corridor (Exhibit B.2). The proposed Project is a buried, underground utility. No impacts on television or radio reception or communication or electronic control facilities are anticipated to occur as a result of the Project.

7.3.7 Human Health and Safety

During construction of the new Remotely Actuated Block Valve sites and in-facility piping at the Lonesome Creek and Stateline plants, residences and businesses in proximity to construction activities may be exposed to short-term increases in construction-related noise and dust. The construction ROW, access roads, and spoil piles near residential and commercial areas will be watered down as needed to control fugitive dust during construction. Following construction, measures to stabilize and revegetate the ROW will be taken promptly to minimize further dust emissions. Heavy construction equipment required for valve construction will generate unavoidable short term increases in sound levels. Increases in noise levels due to equipment operation will be limited to the period of active construction and will primarily be avoided during night-time hours (10pm to 7am). Twenty-four-hour construction activities are not anticipated for the construction of the valve sites.

The DOT’s pipeline standards are published in 49 CFR Part 195. The regulations are intended to ensure adequate protection of the public and to prevent accidents and failures. Part 195 addresses petroleum pipeline safety issues, specifying material selection and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion.

Actual installation of the pipeline and all construction and testing records are subject to inspection. All pipe installed along the Project was externally coated with FBE to resist corrosion. Since installation, internal inspections have been and will continue to be conducted on the pipeline at regular intervals using in-line inspection technology. The pipeline underwent hydrostatic testing above maximum allowable operating pressure to ensure its integrity and was placed into service only after successful completion and commissioning to verify compliance with all construction standards and requirements. As discussed in Section 3.6, the existing pipeline and facility connections at the Lonesome Creek and Stateline plants underwent successful maintenance hydrostatic testing in 2017, which would allow it to be operated as an NGL transmission pipeline in accordance with applicable regulations. The two new Remotely Actuated Block Valves and in-facility piping at the Lonesome Creek and Stateline plants will be tested prior to installation.

ONEOK will continue to ensure that its public education and outreach program continues to promote public awareness of pipelines and pipeline safety in accordance with DOT requirements. Proper signage and warnings at road and highway crossings, railroad crossings, navigable rivers, and other locations will alert the public to the presence of underground lines and to provide information, contact numbers, and emergency data.

7.3.8 Animal Health and Safety

The wildlife currently inhabiting the Route is common and is generally mobile. The local wildlife inhabitants would not be permanently displaced by the Project and as such there would be 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.

7.3.9 Plant Life

Field surveys conducted for the Project did not identify any sensitive plant species or critical habitat affected by the Project (see Exhibit C). All areas disturbed by construction of the Project will be revegetated in accordance with applicable county agency standards and landowner requests.

7.4 POLICY CRITERIA

7.4.1 Location and Design

ONEOK selected the route for the Project to avoid and minimize environmental and human impacts to the extent possible. The Project will meet or exceed state and federal safety requirements and will be designed in accordance with 49 CFR Part 195.

7.4.2 Training and Utilization of In-State Labor

Construction of the pipeline portion of the Project required approximately 120 workers in North Dakota, and construction for the valve modifications will require approximately 20 workers.

7.4.3 Economies of Construction and Operation

ONEOK invested approximately $29 million for the construction of the existing pipeline, and approximately $165,000 of additional property tax revenues have been generated annually since the pipeline’s installation. ONEOK will invest another $1,800,000 in North Dakota to construct the 12” Cherry Creek Lateral Pipeline Conversion Project, with the continued costs of maintenance and operation expected to average $200,000 per year.

Annual wages and salaries for North Dakota employees to support operation and maintenance of the Project are not anticipated to change from current levels. ONEOK estimates that the gross NGL product value transported through the Project has the potential to be $300 million annually, generating significant producer, royalty, and state tax revenues in the most efficient and minimally intrusive way possible.

7.4.4 Use of Citizen Coordinating Committees

ONEOK has established and maintains a good relationship with the local residents through its long-term regional presence operating various assets in the area. Through these relationships, ONEOK has maintained several grassroots communication channels to inform local residents regarding the developments associated with the Project. ONEOK will continue to maintain contact with local government officials. Through this contact, Project-related information will be exchanged and should concerns arise, ONEOK will work with officials to resolve those issues.

7.4.5 Commitment of Portion of Transmitted Product For Use in State

The proposed Project will interconnect with an existing facility. The NGLs will be delivered to markets located out of the state, where refining operations are located.

7.4.6 Labor Relations

ONEOK maintains positive labor relations with its staff and contract work force and did not encounter any adverse labor relations on this Project. ONEOK is an equal opportunity employer committed to diversity and inclusion. Additionally, the labor market in the region is generally supportive of the oil and gas industry.

7.4.7 Coordination of Facilities

ONEOK and its affiliates own and operate the Stateline Plant, Lonesome Creek Plant, Rawson Junction, Alexander Tie In, and other facilities associated with the Project. Coordination of the proposed Project is anticipated to be seamless as the proposed Project will provide critical takeaway transport of NGLs allowing the Stateline and Lonesome Creek plants to operate more efficiently.

7.4.8 Monitoring Impacts

ONEOK has established and maintained positive landowner and community relationships throughout the region through its open communication and commitment to corporate citizenship standards that are based on integrity. ONEOK monitors landowner concerns through its ROW department and responds to all reasonable requests. In a similar manner, ONEOK monitors community concerns and responds to all reasonable concerns brought to its attention by local community leaders. ONEOK monitored its contractor during construction of the gathering pipeline to uphold its corporate commitments to environmental respect and protection.

During operation, pipeline control personnel provide 24-hour electronic surveillance of ONEOK pipeline operations. In addition, ONEOK uses a number of inspection methods and processes to mitigate corrosion and minimize the potential for third-party damage to the pipelines. These include regular ROW patrols, inspections of cathodic protection equipment, and coordination with the State One-Call Centers to mark the pipeline or to be present during excavation to ensure the public’s safety and the integrity of the pipeline.

ONEOK designs, constructs, operates, and maintains its pipeline systems to ensure safety and reliability. If a leak were detected, the company has the ability to stop the flow of product remotely from its control center. ONEOK continues to establish and maintain contact with appropriate fire, police, and other public officials. This communication establishes the responsibility and resources of each government organization that may respond to a pipeline emergency. ONEOK also acquaints officials with the abilities of the pipeline operator when responding to an emergency. In all cases, emergency responders are directed to protect people first, the environment next, and then property.

7.4.9 Using Existing and Proposed Rows and Corridors

ONEOK selected the pipeline route for the Project in an effort to maximize the use of existing utility corridors. Of the 45-mile route, approximately 60.5 percent (23 miles) of the Project is co-located with existing pipeline corridors.

7.4.10 Other Existing or Proposed Transmission Facilities

ONEOK is one of the largest publicly traded master limited partnerships and is a leader in the gathering, processing, storage, and transportation of natural gas and natural gas liquids in the U.S. The company operates natural gas liquids systems connecting NGL supply in the Rocky Mountain and Mid-Continent regions with key market centers. In addition, the company owns and operates:

- 37,000 miles of NGL and natural gas pipelines.
- 1,830 million cubic feet per day gas processing capacity (1.83 billion cubic feet [BCF] per day)
- 57.8 BCF natural gas storage capacity
- 26.2 million barrels NGL storage capacity
- 840,000 bpd fractionation capacity

ONEOK, Inc., has owned and operated natural gas pipelines since 1906. While ONEOK actively markets in the region, no other projects are currently being planned in the region.

8.0 OTHER FACTORS CONSIDERED

8.1 PUBLIC HEALTH, WELFARE, NATURAL RESOURCES, AND THE ENVIRONMENT

Refer to Sections 5.0, 6.0, and 7.0.

8.2 NEW TRANSMISSION TECHNOLOGIES AND SYSTEMS DESIGNED TO MINIMIZED ADVERSE ENVIRONMENTAL EFFECTS

The Project does not include new transmission technologies. The Project design is consistent with existing pipeline technologies, including conventional trenching and trenchless construction (i.e., HDD, bores).

8.3 BENEFICIAL USES OF WASTE ENERGY FROM A PROPOSED ENERGY CONVERSION FACILITY

The Project does not involve construction of an energy conversion facilities; as such, the potential for beneficial uses of waste energy from a proposed energy conversion facility does not apply to the Project.

8.4 UNAVOIDABLE ADVERSE DIRECT AND INDIRECT ENVIRONMENTAL EFFECTS

Unavoidable adverse direct and indirect environmental effects included temporary construction related effects on vegetation, wildlife, agricultural operations, transportation, and noise levels, as described in Sections 5.0 and 7.0. Impacts to agricultural operations were minimal and impacts to transportation were short term. Impacts on vegetation and wildlife were also minimized. Wildlife may have temporarily avoided the ROW during construction, but no long-term impacts are anticipated. Temporary noise level increases were associated only with construction, and the Project does not generate noise while in operation.

8.5 CORRIDOR OR ROUTE ALTERNATIVES DEVELOPED DURING THE HEARING THAT MINIMIZE ADVERSE EFFECTS

ONEOK designed the initial route to co-locate the pipeline with existing linear infrastructure (e.g., pipeline, utility, road, and railroad corridor) to the extent practicable. ONEOK then developed several route alternatives during its more detailed planning process to minimize adverse effects. The route alternatives were designed to consider landowner preferences, and avoid impacts to residential areas, wetlands, trees, grassland, other resources.

8.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF NATURAL RESOURCES IF DESIGNATED

The Project required minimal irreversible or irretrievable commitments of natural resources. Steel was utilized for the pipeline and petroleum fuel was required for construction equipment. The focus on co-location for the design minimized irreversible or irretrievable commitments of land due to conversion of

greenfield to industrial uses and minimized further fragmentation. With the exception of aboveground facilities, all areas impacted by pipeline construction were returned to their previous land use.

8.7 DIRECT AND INDIRECT ECONOMIC IMPACTS OF THE FACILITY

Estimated total spending for construction of the Project is approximately $31 million, $29 million for the original pipeline installation, plus $1.8 million for the conversion work. This estimate includes construction of the pipeline, architectural, engineering and real estate services, easement payments, and other support services. Construction outputs for the Project include employment, labor income, and production spending. Construction of the pipeline portion of the Project required approximately 120 workers in North Dakota, and construction for the valve modifications will require approximately 20 workers. These economic impacts were realized during construction in 2011 and 2012, and will also be realized in 2018.

North Dakota imposes taxes on sales, use, gross receipts and lodging, and individual income. Local governments may impose taxes on the same tax bases; however, most unincorporated areas do not impose local option sales taxes. The Project will contribute directly and indirectly to tax bases at the state and local levels.

Construction of this Project would provide additional take-away capacity of up to 50,000 bpd of NGL and provide a critical transportation link between the producing fields near the Lonesome Creek Plant and the mid-continent refineries.

8.8 EXISTING PLANS FOR OTHER DEVELOPMENTS IN THE VICINITY

ONEOK is the largest independent operator of natural gas gathering and processing facilities in the Williston Basin, with a natural gas gathering system of more than 6,500 miles and more than 3 million net acres where production is dedicated to its systems. ONEOK actively markets in the region and continually assesses whether additional infrastructure, both jurisdictional and non-jurisdictional, as its customer needs may dictate.

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

The pipeline route did not affect scenic areas, registered historic sites and structures, or paleontological sites. The Class III Cultural Resources Inventory reports prepared by Juniper Environmental Services and Metcalf are discussed under Section 5.1 of this Application. The NDSHPO was provided with a complete version of the Class III Cultural Resource Inventory reports. A letter of concurrence with a finding of "No Significant Sites" was received from NDSHPO dated May 8, 2012 for the surveys conducted by Juniper Environmental Services, and a response is pending for the 2017 surveys conducted by Metcalf which will be filed with the NDPSC upon receipt. Based on the available information, it appears that construction of the Project pipeline presented no adverse effects to NRHP-eligible cultural resources. The current Project should therefore proceed under a No Historic Properties Affected as surveyed, mapped, and described herein.

Cultural resource location details will not be publicly available per request of the North Dakota State Historic Society.

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

Routing and installation of the pipeline did not have adverse impacts on suitable habitat for rare and endangered species or on areas of biological wealth. Designated critical habitat for the piping plover is present at the Missouri River; however, the installation of the pipeline via HDD avoided impacts to these areas. Suitable habitat for rare and endangered species is absent throughout much of the Project area, and no additional unique biological areas were identified along the route by regulatory agencies, or through ONEOK’s biological field surveys. Please refer to additional discussions of biological resources in Section 5.3.

Construction activities related to the installation of the new Remotely Actuated Block Valves and in-facility piping at the Lonesome Creek and Stateline plants are not expected to have adverse impacts on habitat for rare and endangered species or on areas of biological wealth.

8.11 PROBLEMS RAISED BY FEDERAL, STATE, AND LOCAL AGENCIES

ONEOK provided Project-specific notification to various federal, state, and local agencies (see Section 6.0). No problems or concerns have been raised by federal, state, or local entities.

8.12 POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

ONEOK is committed to conducting its business in compliance with all applicable environmental laws and regulations. ONEOK was committed to protecting the environment during all phases of construction of the Project. ONEOK conducts 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 ONEOK 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.

9.0 MITIGATION MEASURES

ONEOK utilized BMPs and implemented plans during construction of the existing pipeline in accordance with applicable permits or regulations, such as implementing a construction stormwater pollution prevention plan, and spill prevention, containment, and countermeasure plan. Construction was completed in a manner which minimized environmental impacts; for example, topsoil was segregated and lower impact construction techniques (i.e., bore/HDD installation) were used at sensitive resources such as waterbodies.

Similarly, ONEOK will develop and implement plans to minimize and mitigate impacts to environmental resources for the Project. The following plans will be utilized during construction of the two new Remotely Actuated Block Valves and in-facility piping at Lonesome Creek and Stateline plants. These plans will be incorporated into contract documents and enforced by ONEOK:

- MBTA Plan (if construction occurs after February 1)
    - Protection of federally protected migratory birds and eagles/raptors.
- Spill Prevention, Containment, and Countermeasure Plan
    - Outlines spill prevention and BMPs and provides details on spill response and notification procedures in the event of a spill.
- Unanticipated Discoveries Plan
    - Response measures to be followed in the event of a discovery of cultural resources or human remains.
- Weed Control Plan
    - This plan addresses control of noxious and invasive weeds.

10.0 DEVELOPMENT

10.1 PRESENT AND FUTURE NATURAL RESOURCE DEVELOPMENT IN THE AREA

As described in Section 6.0, ONEOK has consulted with and solicited comments from numerous federal, state, and local agencies regarding the Project. None of the agencies we consulted with have identified any new development projects in the area. ONEOK is not aware of any other development in the area that will affect the operation of the converted pipeline, or the installation of the two new Remotely Actuated Block Valves and in-facility piping at the Lonesome Creek and Stateline plants.

11.0 QUALIFICATIONS OF PREPARERS

Andrew McVey
Project Manager
ONEOK, Inc.

Degree: B.S. Mechanical Engineering, Kansas State University

Mr. McVey has been managing pipeline related projects in various regions in which ONEOK operates for the past 2 years. As project manager for the Cherry Creek/Rawson Gas Line Conversion Project, Mr. McVey manages and coordinates activities of the project team. Mr. McVey is responsible for oversight of the entire planning, siting, construction, and restoration process. He is tasked with meeting the commercial objectives and schedule of the project while maintaining strict compliance with all federal, state, and local regulations.

Kevin Windstrup
Environmental Project Manager
ONEOK Partners

Degree: B.S. Mechanical Engineering, Marquette University; M.S. Environmental Engineering Marquette University

Mr. Windstrup is an environmental specialist with 20 years of environmental planning experience in a wide range of development projects. He has both performed and managed the assessment, siting, permitting, and construction of a wide range of infrastructure projects throughout Kansas, Oklahoma, Kentucky, and North Dakota. Mr. Windstrup manages ONEOK’s third party environmental consultants and serves as a coordinator for environmental and other necessary project permits.

Madeline Krumwiede, PMP, EIT
Senior Environmental Analyst/Project Manager
Merjent, Inc. (Merjent)

Degree(s): M.B.A, North Dakota State University; B.S. Civil Engineering, North Dakota State University

Ms. Krumwiede is a Project Manager and Senior Analyst with Merjent and has excelled in her 6 years of experience in the water resources and environmental regulation fields. Her experience in the environmental field includes project management, interpretation and analysis of project related data/maps to evaluate permit needs and form strategies during the planning stages of projects, coordinating environmental field surveys, conducting environmental training, performing compliance inspections, and environmental inspector coordination. Ms. Krumwiede has a variety of permitting experience including preparation of federal, state, and local permit applications, National Pollutant Discharge Elimination System applications and stormwater pollution prevention plans, preparation of Environmental Assessments, and coordination with local, state, and federal units of government.

Chad Anderson
Senior Environmental Analyst
Merjent

Degree: M.S., Water Resources Science, University of Minnesota - Twin Cities

Mr. Anderson is a Senior Analyst at Merjent with more than 15 years of project management experience in the environmental arena. Specializing in water resources, he is an established technical lead for sediment and erosion control, stormwater, and surface water issues. A Certified Inspector of Sediment and Erosion Control and Designer of Construction Stormwater Pollution Prevention Plans, he has managed National Pollutant Discharge Elimination System permitting and active construction and restoration inspection services for several projects in multiple states. His wide-ranging experience has allowed for the procurement of federal, state, and local environmental permits on behalf of clients across multiple sectors in a timely, efficient, and cost-effective manner. Mr. Anderson’s project management experience in the natural and water resources fields includes the management of and coordination with local units of government, the development and administration of environmental permitting programs, procurement of and compliance with local, state and federal grants and contracts, and considerable efforts in public engagement and outreach.

Bill Regan
Senior Environmental Analyst
Merjent

Degree: B.S. Biology, University of Minnesota - Twin Cities

Mr. Regan has 37 years as an environmental analyst with 28 years of experience as an environmental consultant providing project management on natural gas and petroleum pipeline construction projects regulated by state Public Service Commissions and the Federal Energy Regulatory Commission. Mr. Regan prepares Environmental Assessment reports, agency permit applications, and directs environmental field surveys. Mr. Regan worked for the MPCA as an environmental specialist for 9 years prior to moving to consulting work.

Paul Hartzheim
Senior Environmental Analyst
Merjent

Degree: M.S. Water Resources Science, University of Minnesota - Twin Cities, B.S. Environmental Science, University of Minnesota - Twin Cities

Mr. Hartzheim is a Senior Analyst and Project Manager with 11 years of environmental consulting experience serving the pipeline and renewables industries. Paul has served as project manager, deputy project manager, and resource specialist on numerous projects in over 20 states. Mr. Hartzheim’s responsibilities have included preparation of federal, state, and local permit applications, State Public Utility Commission filings, construction and Industrial Stormwater Pollution Prevention Plans, National Pollutant Discharge Elimination System applications, Soil Erosion and Sediment Control Plans, Environmental Mitigation Plans; and coordination of state and federal agency consultations. Mr. Hartzheim has also assisted in data collection, interpretation and analysis, developing and conducting environmental training modules, and coordinating and managing field survey efforts and environmental inspectors.

Andrea Sampson
Senior Environmental Analyst
Merjent

Degree: M.S. Conservation Biology, University of Minnesota – Twin Cities, B.A. Environmental Studies, University of St. Thomas

Ms. Andrea Sampson is a Senior Analyst and Threatened and Endangered Species Specialist at Merjent with 20 years of experience in the environmental and conservation fields and 4.5 years of experience in environmental permitting in the energy industry. Ms. Sampson is a compliance specialist offering clients a diverse set of skills in the environmental regulatory field, providing expertise on threatened and endangered species issues as they pertain to energy projects. Ms. Sampson supports energy clients by providing regulatory review, permitting, and siting support services. Her experience includes capital projects and other natural gas, natural gas liquids, and petroleum pipeline projects across the Upper Midwest.

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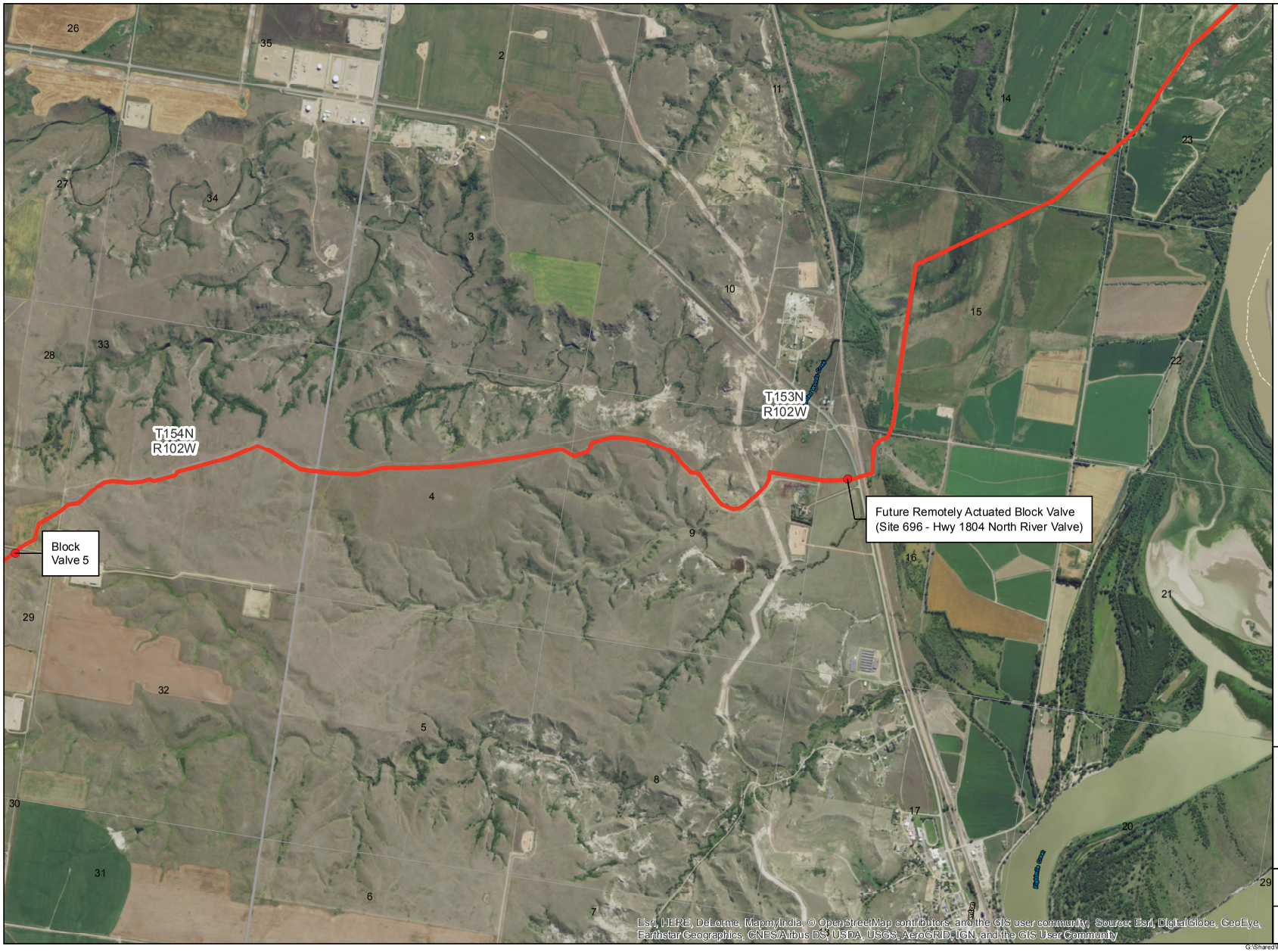

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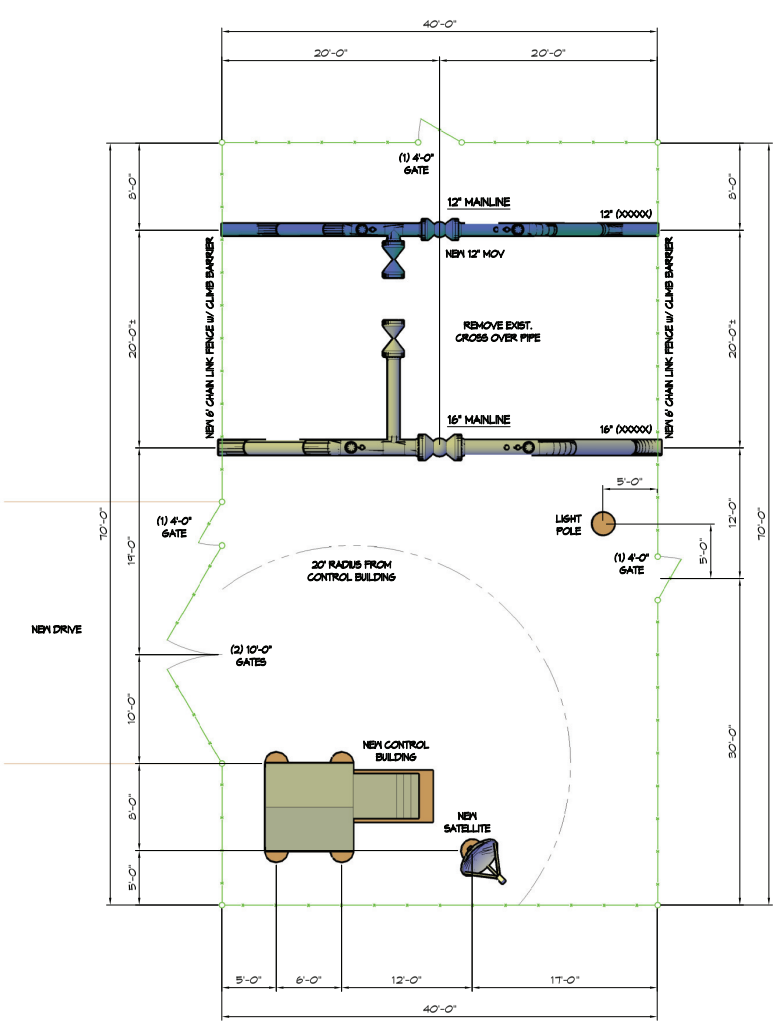

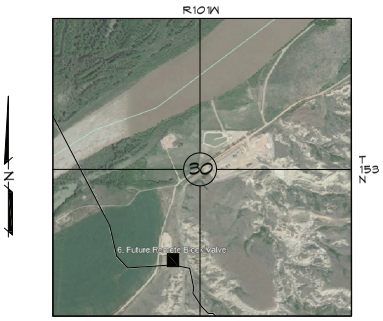

MCKENZIE COUNTY, NORTH DAKOTA
SEC.30, T153N, R101W
48° 2'29.11"N, 103°43'30.18"W
GENERAL LOCATION
SCALE: 1" = 1000'

MK	DATE	REVISIONS	BY	AP.	MK	DATE	REVISIONS	BY	AP.
1	10/25/17	REVISED BUILDING LOCATION	MBC	TDS	8				
2	11/6/17	GENERAL REVISIONS	MBC	TDS	9				
3					10				
4					11				
5					12				
6					13				
7					14				

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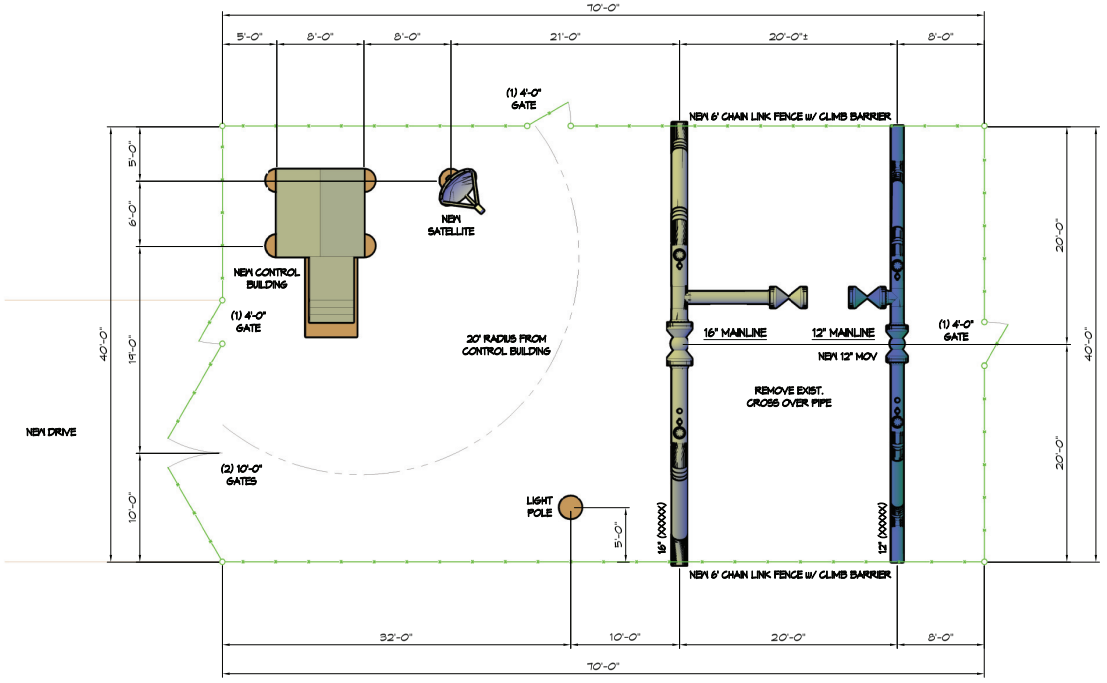
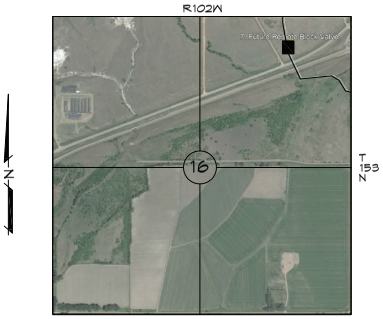
ONEOK
NGL PIPELINE, L.L.C.
P.O. BOX 29
MEDFORD, OK 73759

42nd STREET SOUTH RIVER VALVE SITE# 695
OVERALL SITE LAYOUT

DES.:	AFE#:	DATE: 10/24/17	
DR.: MBC		DWG. NO.: 695-0-001	REV. 2
CH.:	SCALE: 3/16"=1'		
AP.:	CAD#: 695-0-001		





WILLIAMS COUNTY, NORTH DAKOTA
SEC.16, T153N, R102W
48° 4'50.25"N, 103°48'11.05"W
GENERAL LOCATION
SCALE: 1" = 1000'

MK	DATE	REVISIONS	BY	AP.	MK	DATE	REVISIONS	BY	AP.
1	10/25/17	REVISED BUILDING LOCATION	MBC	TDS	8				
2	11/6/17	GENERAL REVISIONS	MBC	TDS	9				
3					10				
4					11				
5					12				
6					13				
7					14				

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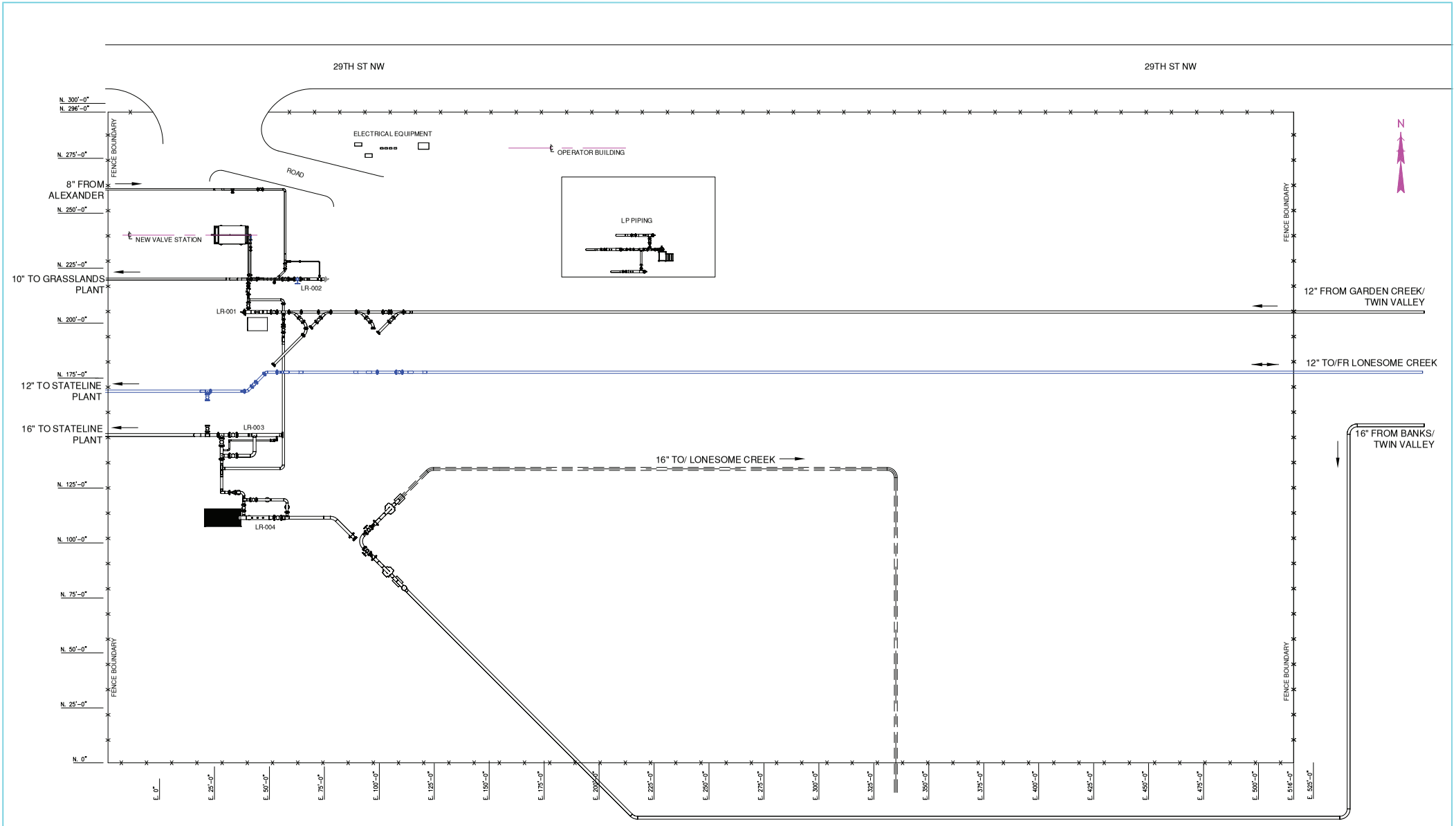
P.O. BOX 29
MEDFORD, OK 73759

HWY. 1804 NORTH RIVER VALVE SITE# 696
OVERALL SITE LAYOUT

DES.:	AFE#:	DATE: 10/24/17	
DR.: MBC		DWG. NO.:	REV.
CH.:	SCALE: 3/16"=1'	696-0-001	2
AP.:	CAD#: 696-0-001		



NOTES:
1. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION
2. ALL PIPING DIMENSIONS ARE TO CENTERLINES UNLESS OTHERWISE NOTED

"FOR CONSTRUCTION"
AUGUST 27, 2015

REVISIONS

NO.	DATE	DESCRIPTION	BY	CHD	APRD
0	1/28/13	ISSUED FOR CONSTRUCTION	AMK	GWD	GWD
1	5/12/13	ISSUED FOR AS-BUILT	AMK	GWD	GWD
2	07/09/15	ISSUED FOR CONSTRUCTION	DB		JY
3	08/27/15	ISSUED FOR CONSTRUCTION – REVISED PER ENGINEERING	DB		
4	10/26/17	GENERAL REVISIONS ON 16" TO STATELINE	MBC	TDS	

QTR / TWNSP | RNGE | SEC | INITIAL POINT | BLK NAME | BLK No
SURVEY NAME | SURV No | ABSTRACT NAME | ABSTRACT No
DRW BY: | DRW DATE | DES BY | APRD BY: | SURVEY BY:
PROJECT NAME | SCALE: NONE
AFE NO.: | CAD. NO.:

ORIGINAL DWG BY:
ORIGINAL DWG #: RAWS-PP-3000

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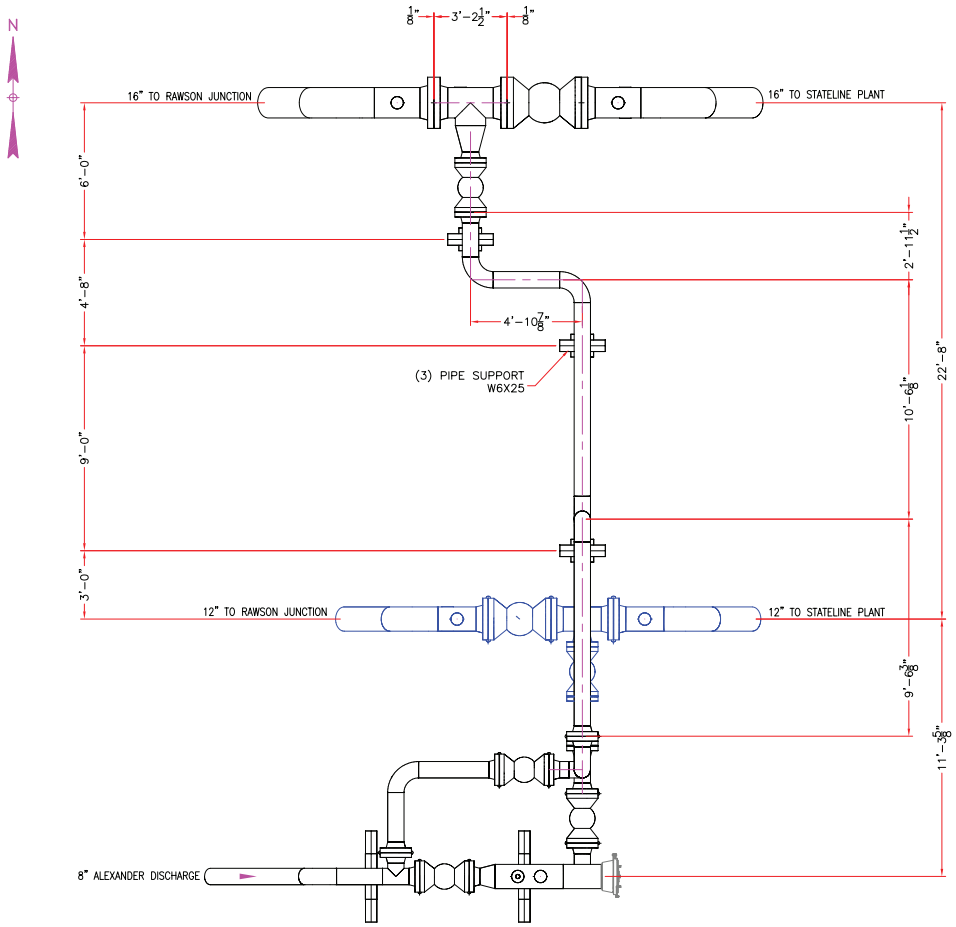
DWG. NO.: 698-0-001
REV.: 4

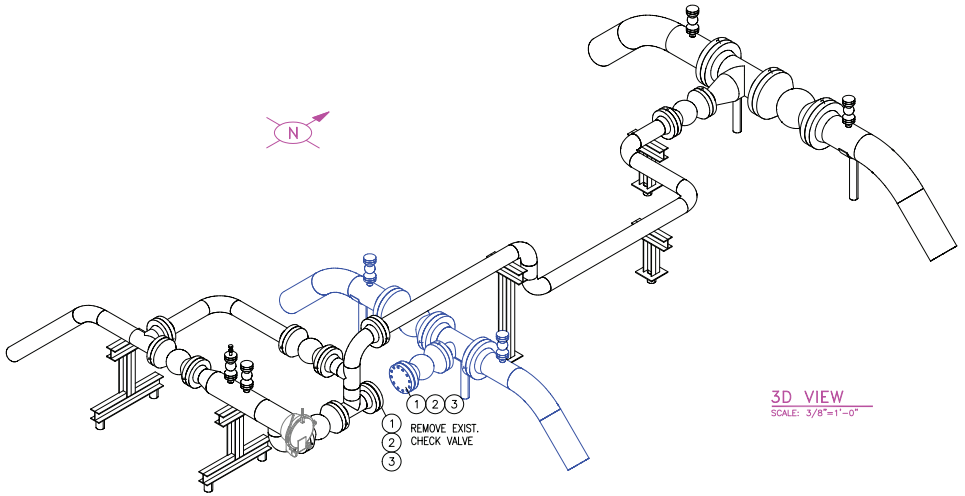
ONEOK PARTNERS
ONEOK ROCKIES MIDSTREAM
PLOT PLAN
RAWSON INTERCONNECT
RAWSON JUNCTION SITE# 698
CO., ND

A:\ONEOK\OKLAHOMA\17-2692 Bakken Tie-Ins\Lonesome Creek _ Stateline project\Rawson\Rawson\698-0-001.dwg Nov 06, 2017 - 11:35am Destech

BILL OF MATERIAL				
MARK	QTY	SIZE	DESCRIPTION	LENGTH
1	2	8"	FLANGE, ANSI 600, RF BLIND, SCH STD, ASTM A-105	
2	2	8"	GASKET, 1/8 THK, 600#, RF TYPE 304, 1/8 CENT RING, FLEXITALLIC CGI OR =	
3	24	1 1/8"	STUD BOLTS, ANSI 16.5, GRADE B-7 w/ 2 HVY HEX HEAD NUTS (8"-600#)	8"



PLAN VIEW
SCALE: 3/8"=1'-0"



3D VIEW
SCALE: 3/8"=1'-0"

NOTES:

1) CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION
2) FIELD TO DETERMINE SUPPORTS AND LOCATIONS AS NEEDED

"ISSUED FOR CONSTRUCTION" DEC. 21, 2015 ONEOK ROCKIES MIDSTREAM

REVISIONS					
NO.	DATE	DESCRIPTION	BY	CHD	APRD
0	12/3/15	ISSUED FOR CONSTRUCTION	MPS	PS	PS
1	12/14/15	16" TEE & 16"X8" CONC. REDUCER REPLACED 16"X8" RED. TEE	MPS	JP	JP
2	12/21/15	8" FLANGES ADDED	MPS	JD	
3	11/6/17	GENERAL REVISIONS	MBC	TDS	TDS

QTR: SE/4 | TWNSHP: 152N | RNGE: 101W | SEC: 31 | INITIAL POINT | BLK NAME | BLK No
SURVEY NAME | SURV No | ABSTRACT NAME | ABSTRACT No

DRW BY: MPS | DRW DATE: 12/3/15 | DES BY | APRD BY | SURVEY BY:

PROJECT NAME | SCALE: AS NOTED

AFE NO.: | CAD. NO.: 6990001

ORIGINAL DWG BY:
ORIGINAL DWG #:

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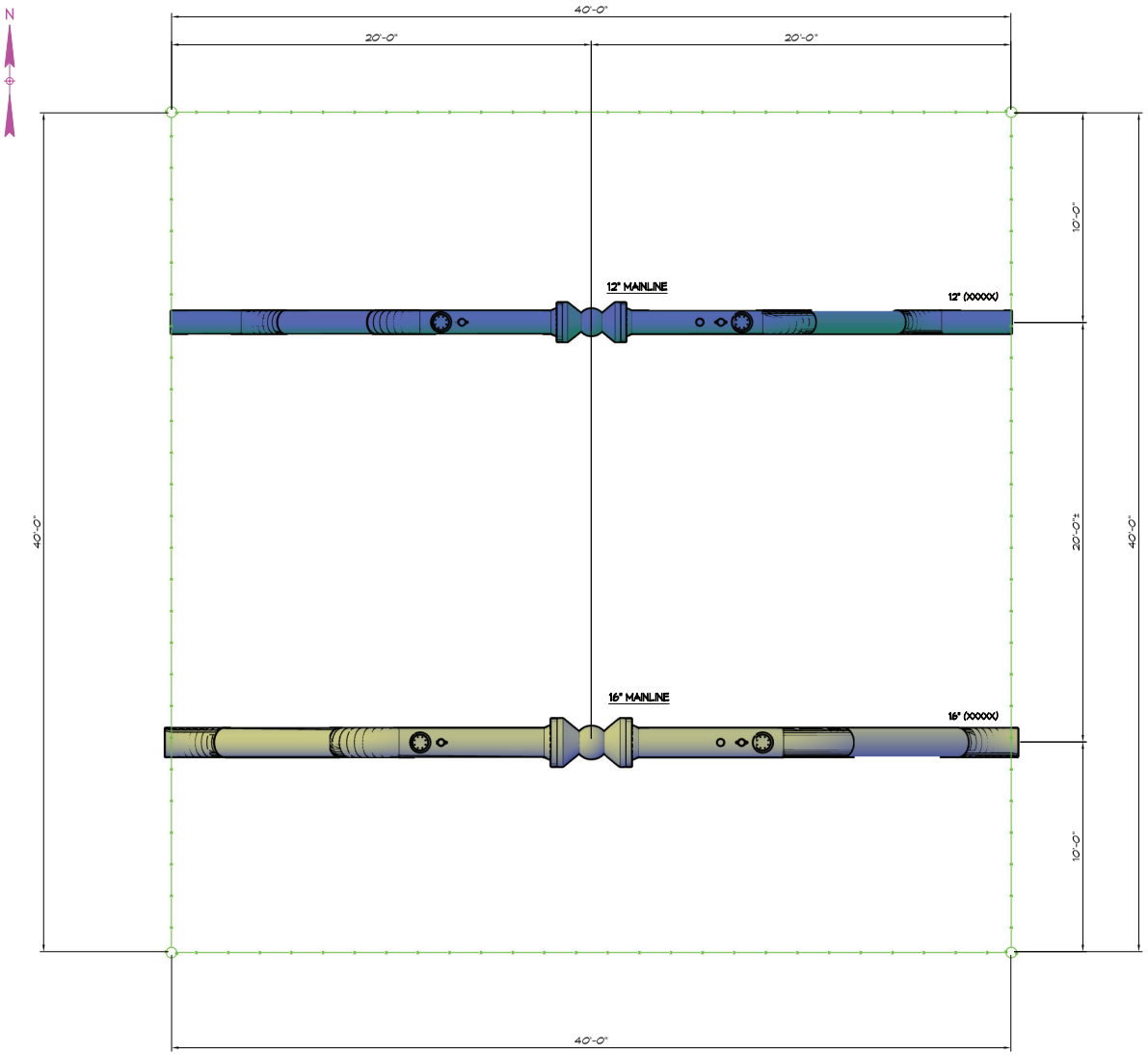
DWG. NO.: 699-0-001 | REV.: 3

ONEOK PARTNERS
ONEOK ROCKIES MIDSTREAM

PLAN AND ELEVATION VIEWS
8" TIE ACROSS
ALEXANDER JUNCTION SITE# 699 McKENZIE CO., ND

A:\ONEOK\OKLAHOMA\17-2692 Bakken Tie-Ins\Lonesome Creek _ Stateline project\Alexander\699-0-001.dwg Nov 06, 2017 - 11:34am Destech



MK	DATE	REVISIONS	BY	AP.	MK	DATE	REVISIONS	BY	AP.
1					8				
2					9				
3					10				
4					11				
5					12				
6					13				
7					14				

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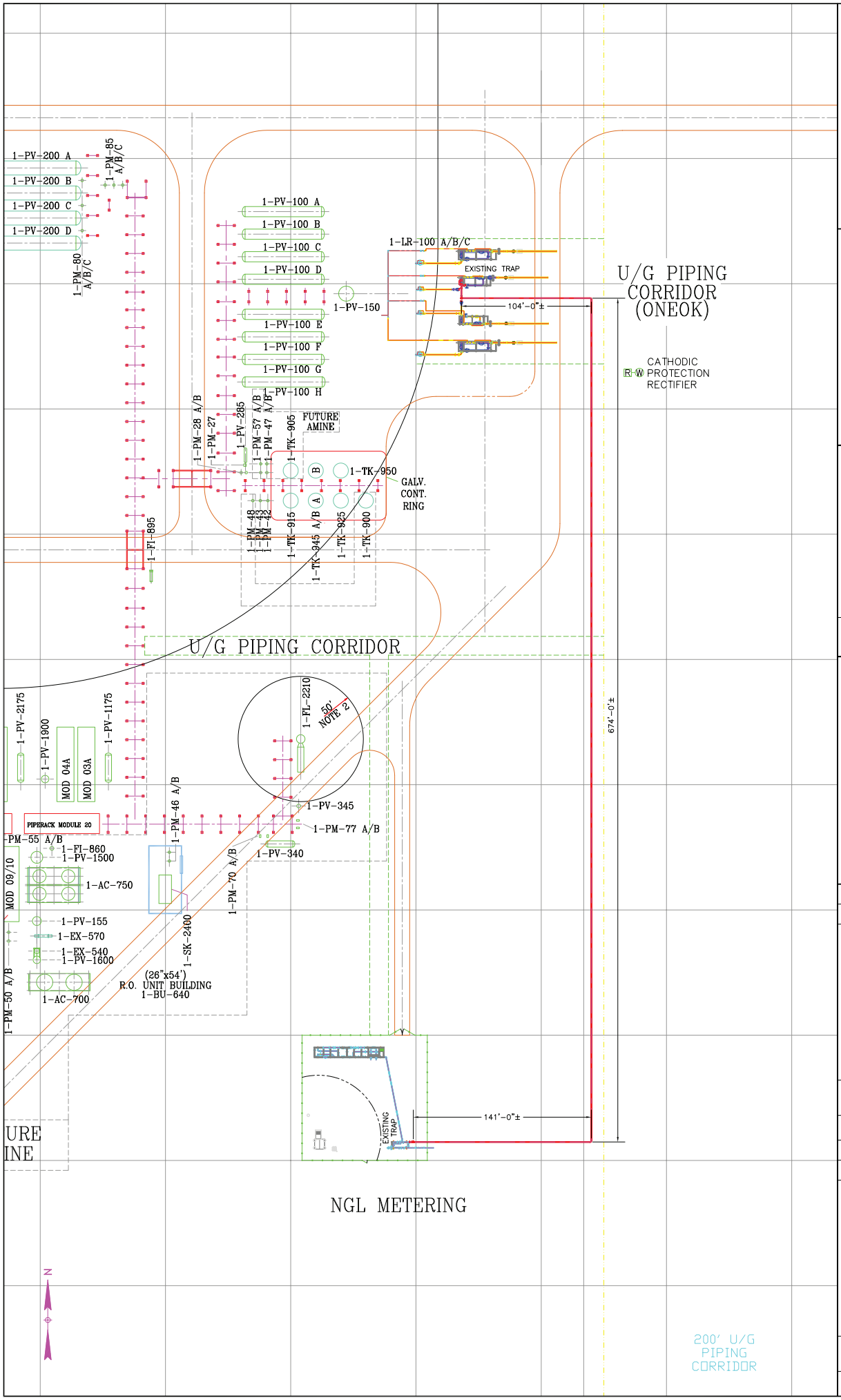
DWG. NO.	REFERENCE DRAWINGS

ONEOK
NGL PIPELINE, L.L.C.
P.O. BOX 29
MEDFORD, OK 73759

LONESOME CREEK & STATLINE
12" BLOCK VALVE SITES
OVERALL PLAN VIEW

DES.:	AFE#:	DATE: 11/9/17	
DR.: MBC		DWG. NO.: ORM-P-001	REV. –
CH.:	SCALE: 3/8"=1'-0"		
AP.:	CAD#: ORM-P-001		



LONESOME CREEK SITE# 657
NEW 8"-600# TIE-IN TO PLANT
OVERALL PLAN VIEW

DES.:		AFE#:	DATE: 7/10/17	DWG. NO.:	REV.
DR.:	MBC			657-O-001a	3
CH.:	TDS	SCALE: 1/32"=1'			
AP.:		CAD#: 657-O-001a			

ONEOK
NGL PIPELINE, L.L.C.
P.O. BOX 29
MEDFORD, OK 73759

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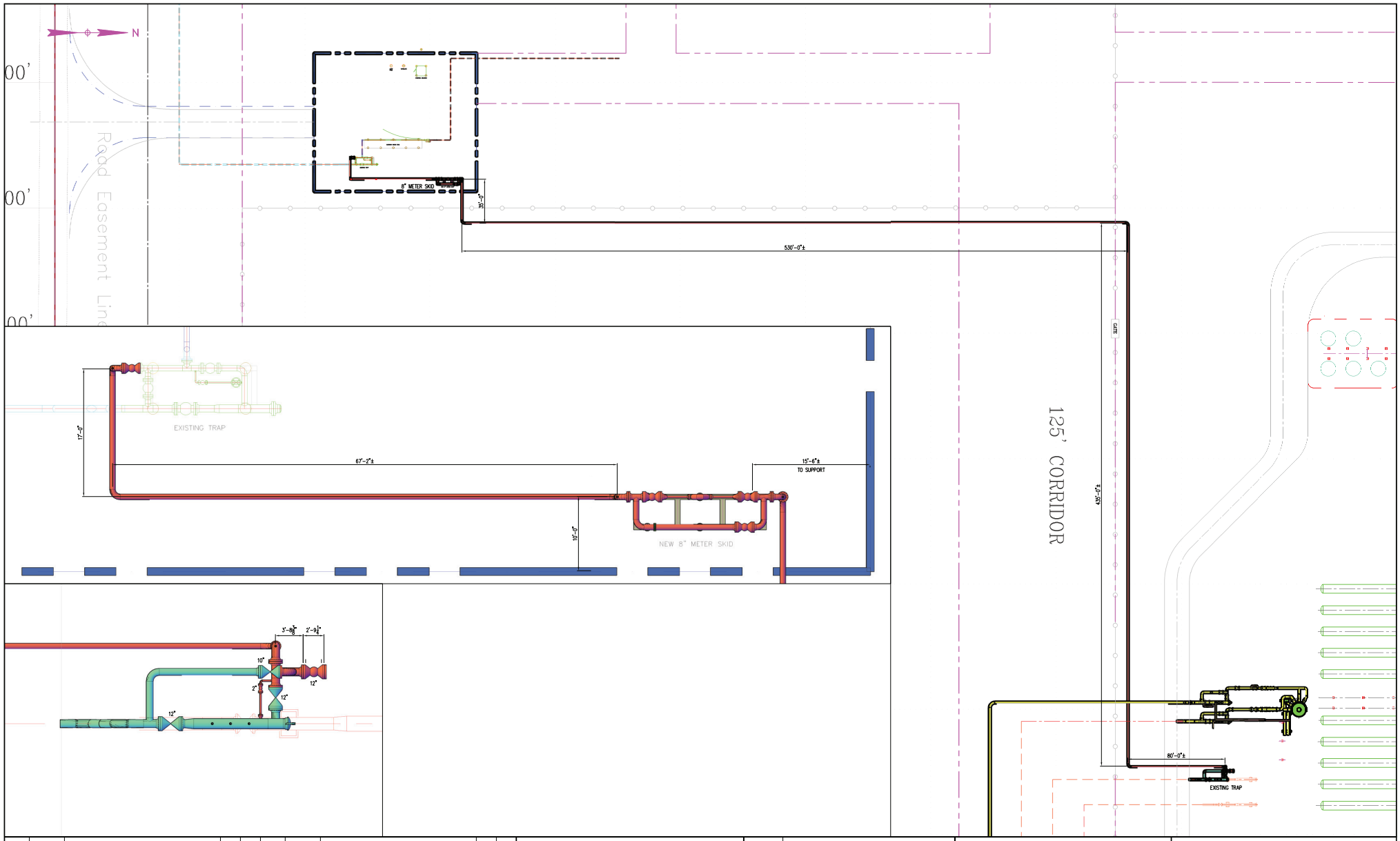
MK	DATE	REVISIONS	BY	AP.
1	7/7/17	FOR REVIEW	MBC	TDS
2	8/28/17	GENERAL REVISIONS	MBC	TDS
3	10/12/17	GENERAL REVISIONS	MBC	TDS
4	10/26/17	REVISED PIPING FOR PIG	MBC	TDS
5				
6				
7				

MK	DATE	REVISIONS	BY	AP.
8				
9				
10				
11				
12				
13				
14				

Destech Thursday, October 12, 2017 9:26:37 AM



MK	DATE	REVISIONS	BY	AP.	MK	DATE	REVISIONS	BY	AP.
1	7/7/17	FOR REVIEW	MBC	TDS	8				
2	8/28/17	GENERAL REVISIONS	MBC	TDS	9				
3	8/30/17	REVISED EXISTING TRAP PER AS-BUILT	MBC	TDS	10				
4	9/22/17	REVISED TO 10" METER SKID	MBC	TDS	11				
5	9/25/17	REVISED METER LOCATION	MBC	TDS	12				
6	10/12/17	REVISED METER SKID SIZE	MBC	TDS	13				
7	10/26/17	REVISED PIPIG FOR PIG	MBC	TDS	14				

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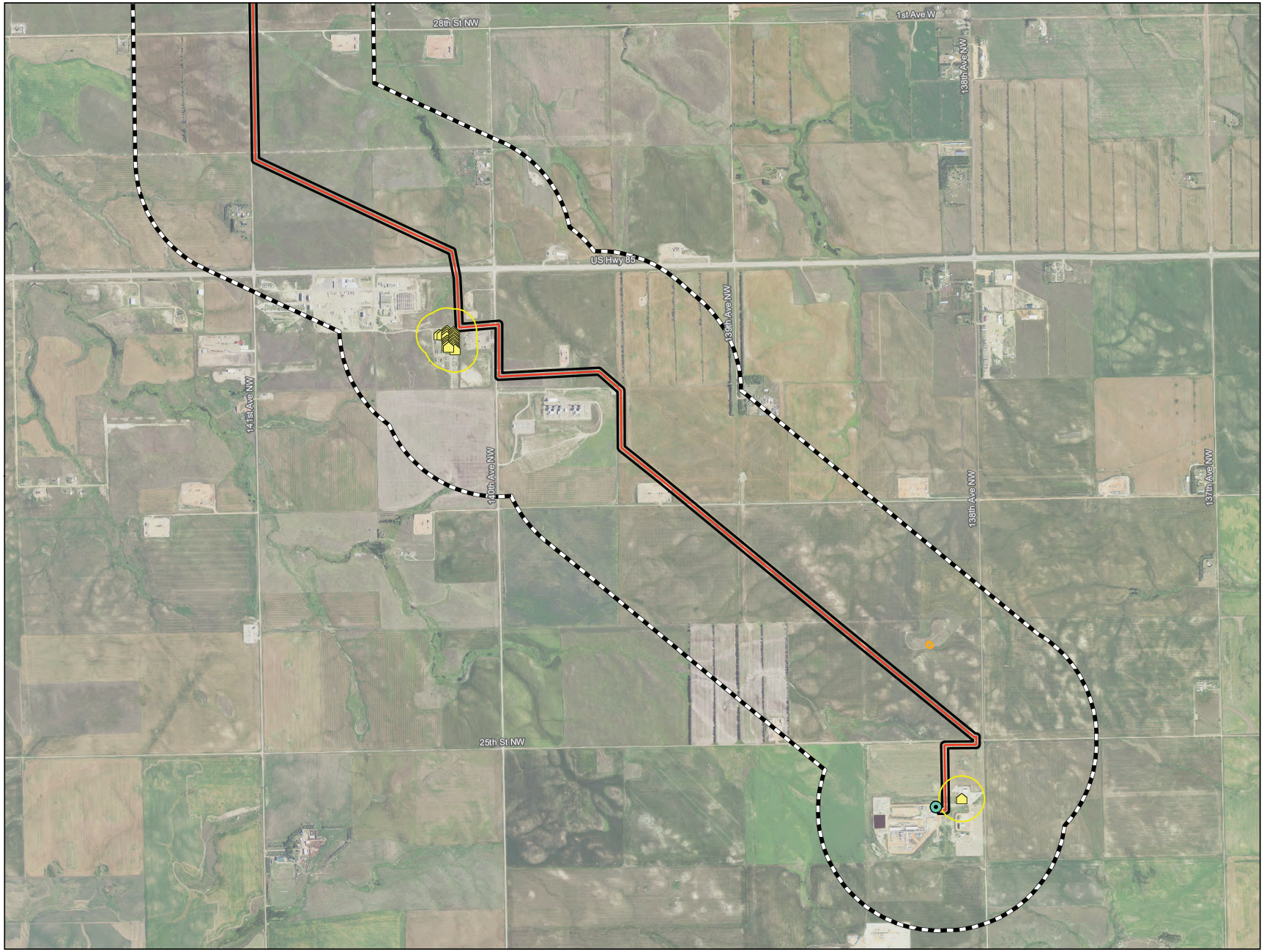
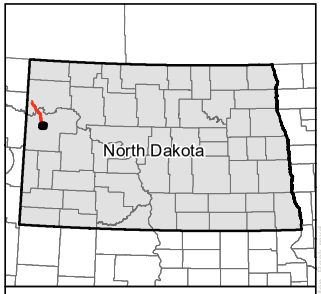
DWG. NO.	REFERENCE DRAWINGS

ONEOK
NGL PIPELINE, L.P.
P.O. BOX 29
MEDFORD, OK 73759

STATELINE SITE# 569
NEW TIE-IN TO PLANT
OVERALL PLAN VIEW

DES.:	AFE#:	DATE: 7/10/17	
DR.: MBC		DWG. NO.:	REV.
CH.: TDS	SCALE: 1/2"=1'-0"	569-0-001a	7
AP.:	CAD#: 569-0-001a		





0 1,000 2,000 Feet

1 inch = 2,000 feet

Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2016

N
W E
S

- Proposed Remotely Actuated Block Valve
- Proposed In-Facility Piping
- Pipeline Conversion
- Project Corridor
- 1-mile Study Area

Avoidance Areas

- Abandoned Mine
- Occupied Structure within 500' of Route
- Occupied Structure (500' Buffer)
- Landslide Deposits
- Wellhead Community Protection Area
- COE Reservoir
- Wildlife Management Area
- COE Land

Exclusion Areas

- Piping Plover Critical Habitat

Exhibit B.1
ONEOK
12" Cherry Creek Lateral Pipeline Conversion

Avoidance and Exclusion Maps

Page 1 of 9
McKenzie County

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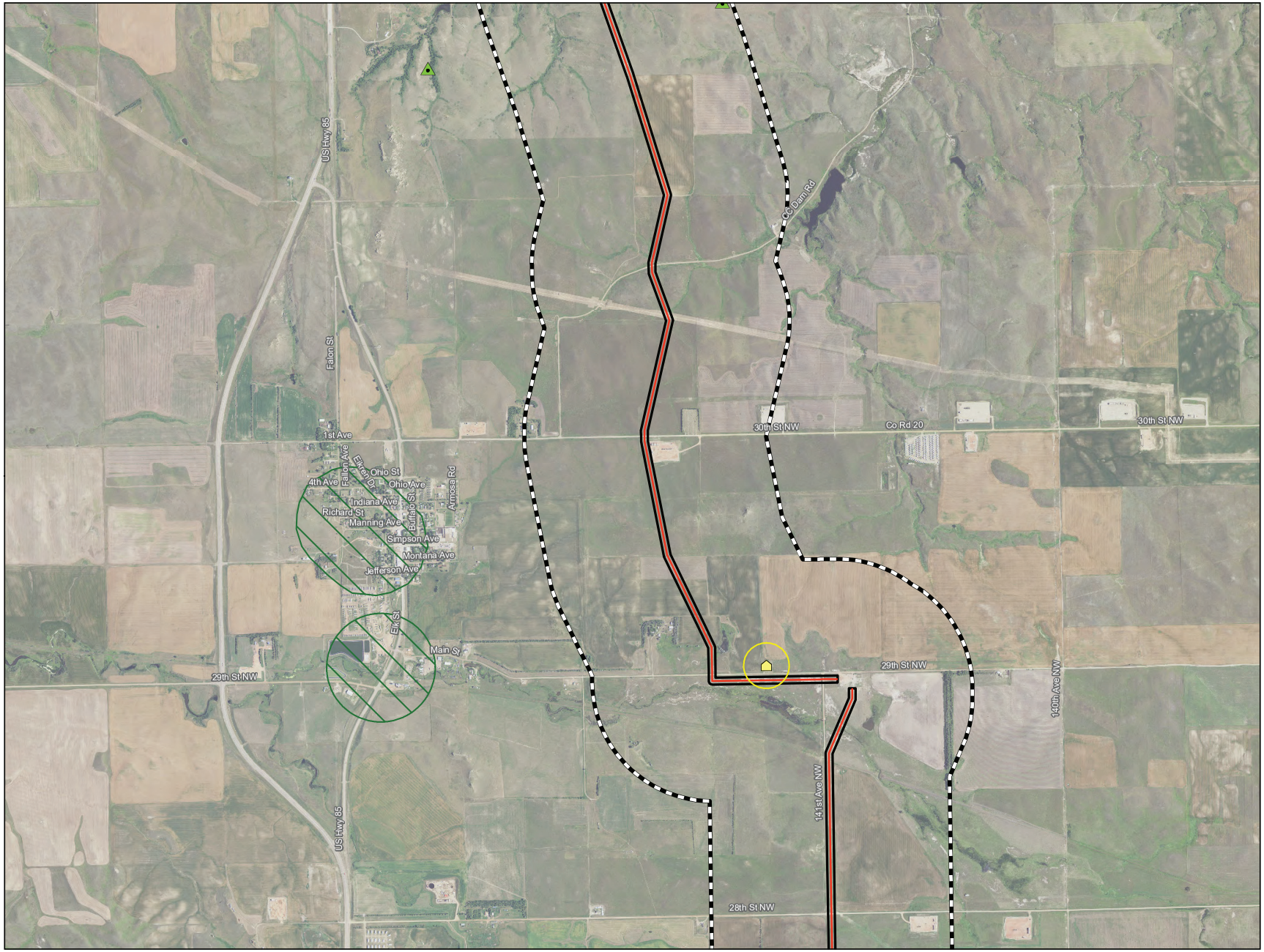
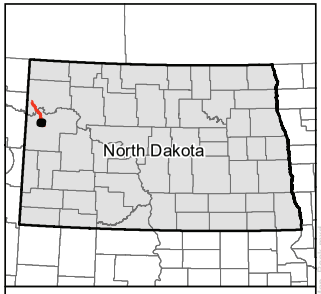
12/5/2017





- Proposed Remotely Actuated Block Valve
- Proposed In-Facility Piping
- Pipeline Conversion
- Project Corridor
- 1-mile Study Area

Avoidance Areas

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Exclusion Areas

- Piping Plover Critical Habitat

Exhibit B.1
ONEOK
12" Cherry Creek Lateral
Pipeline Conversion

Avoidance and Exclusion Maps

Page 2 of 9
McKenzie County

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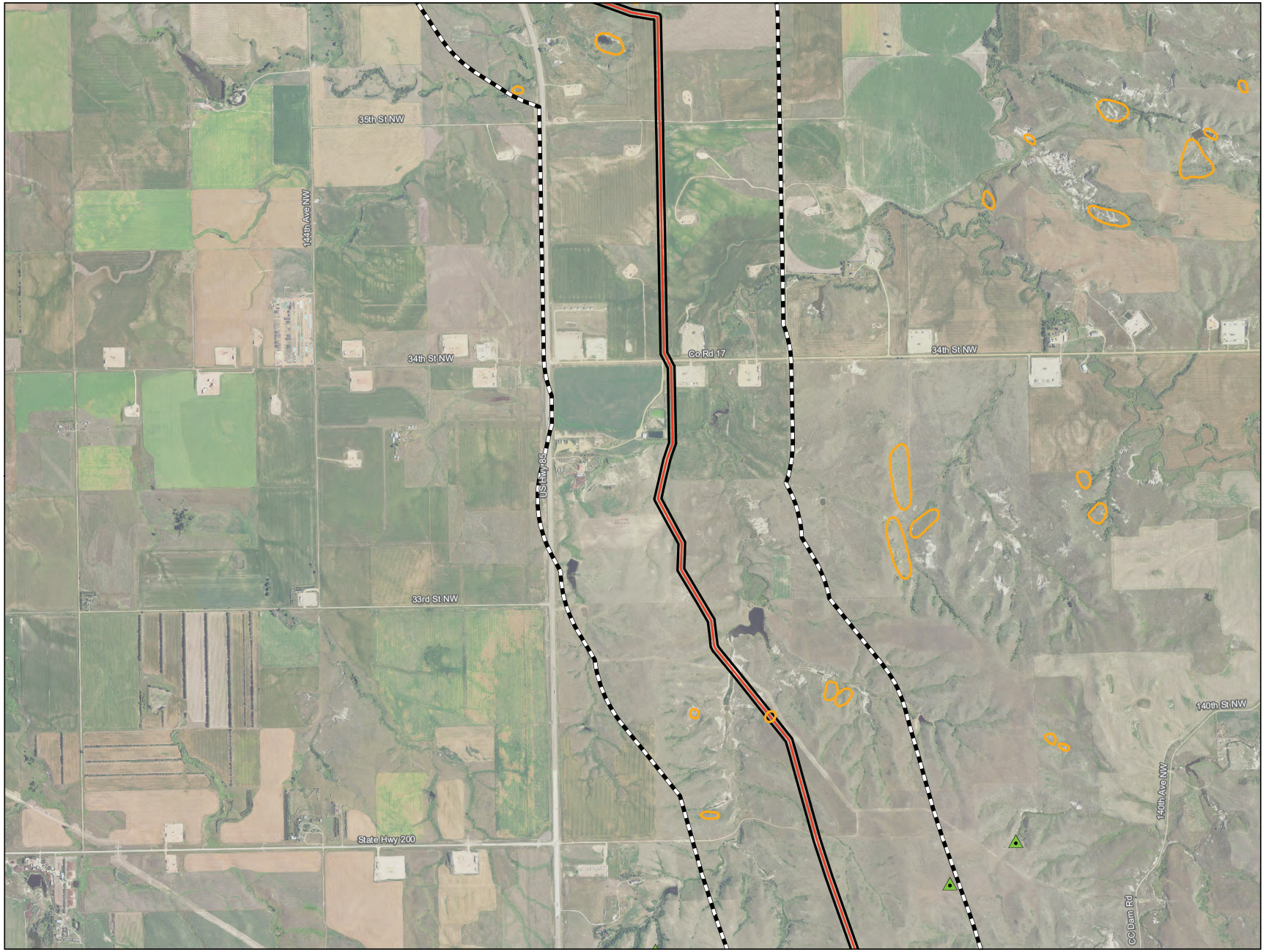



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1 inch = 2,000 feet

Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2016

N W E S

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ONEOK
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Page 3 of 9
McKenzie County

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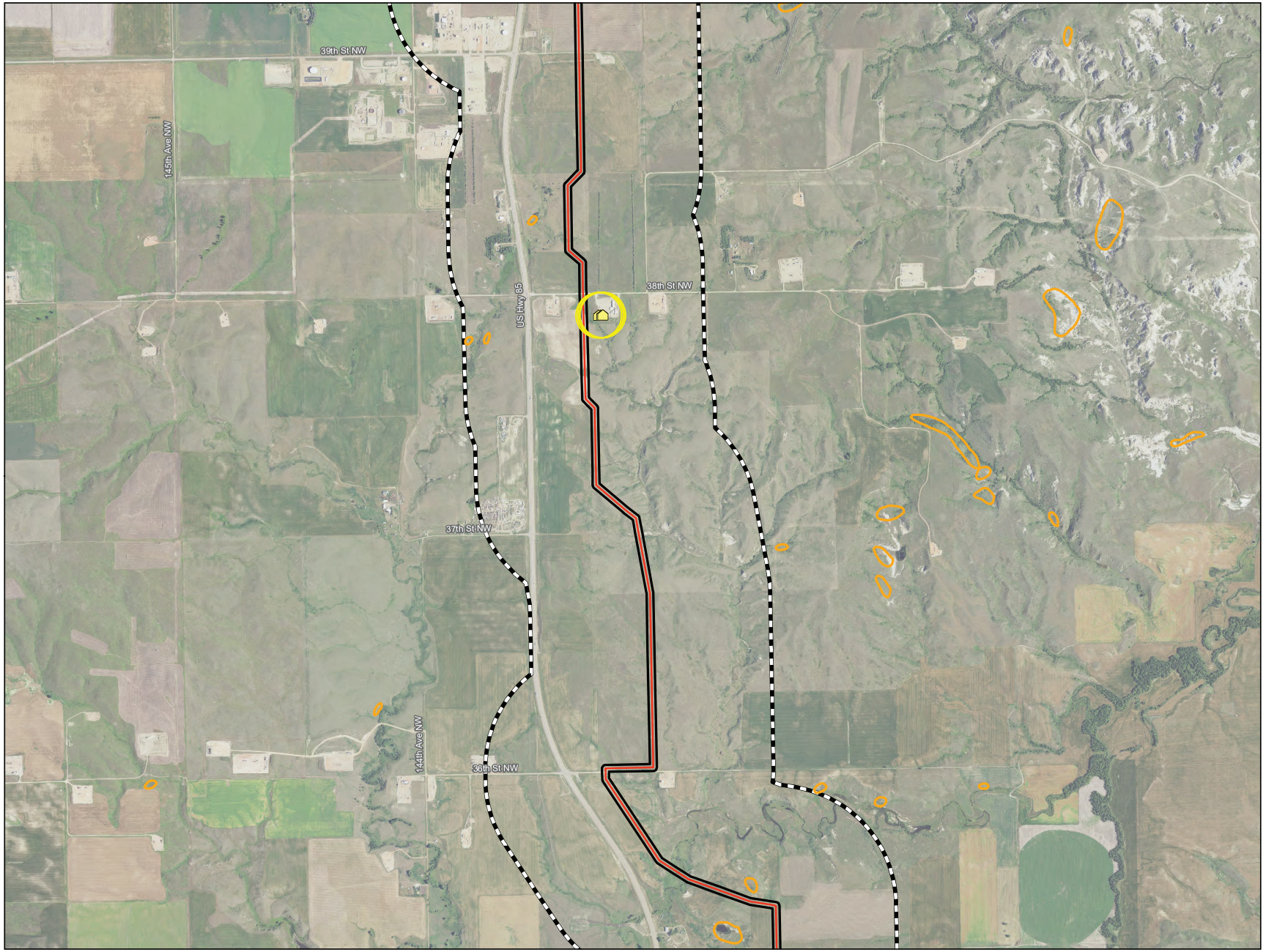

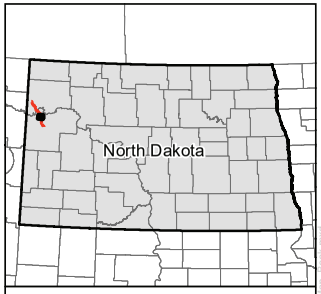

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Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2016

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Exclusion Areas

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Exhibit B.1
ONEOK
12" Cherry Creek Lateral Pipeline Conversion

Avoidance and Exclusion Maps

Page 4 of 9
McKenzie County

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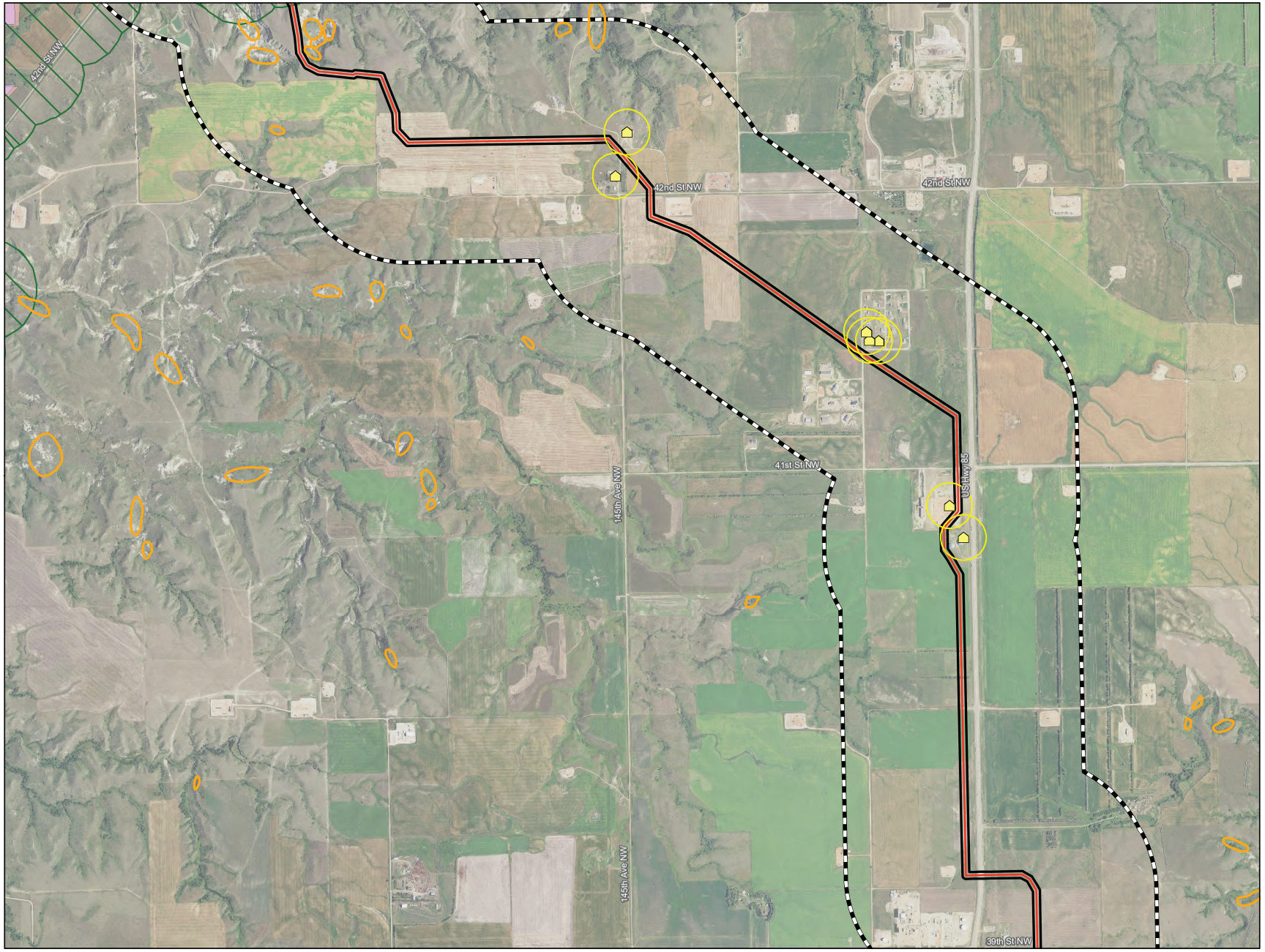

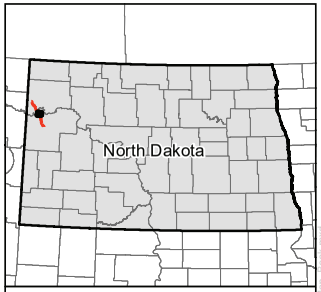

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Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2016

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Exhibit B.1
ONEOK
12" Cherry Creek Lateral
Pipeline Conversion

Avoidance and Exclusion Maps

Page 5 of 9
McKenzie County

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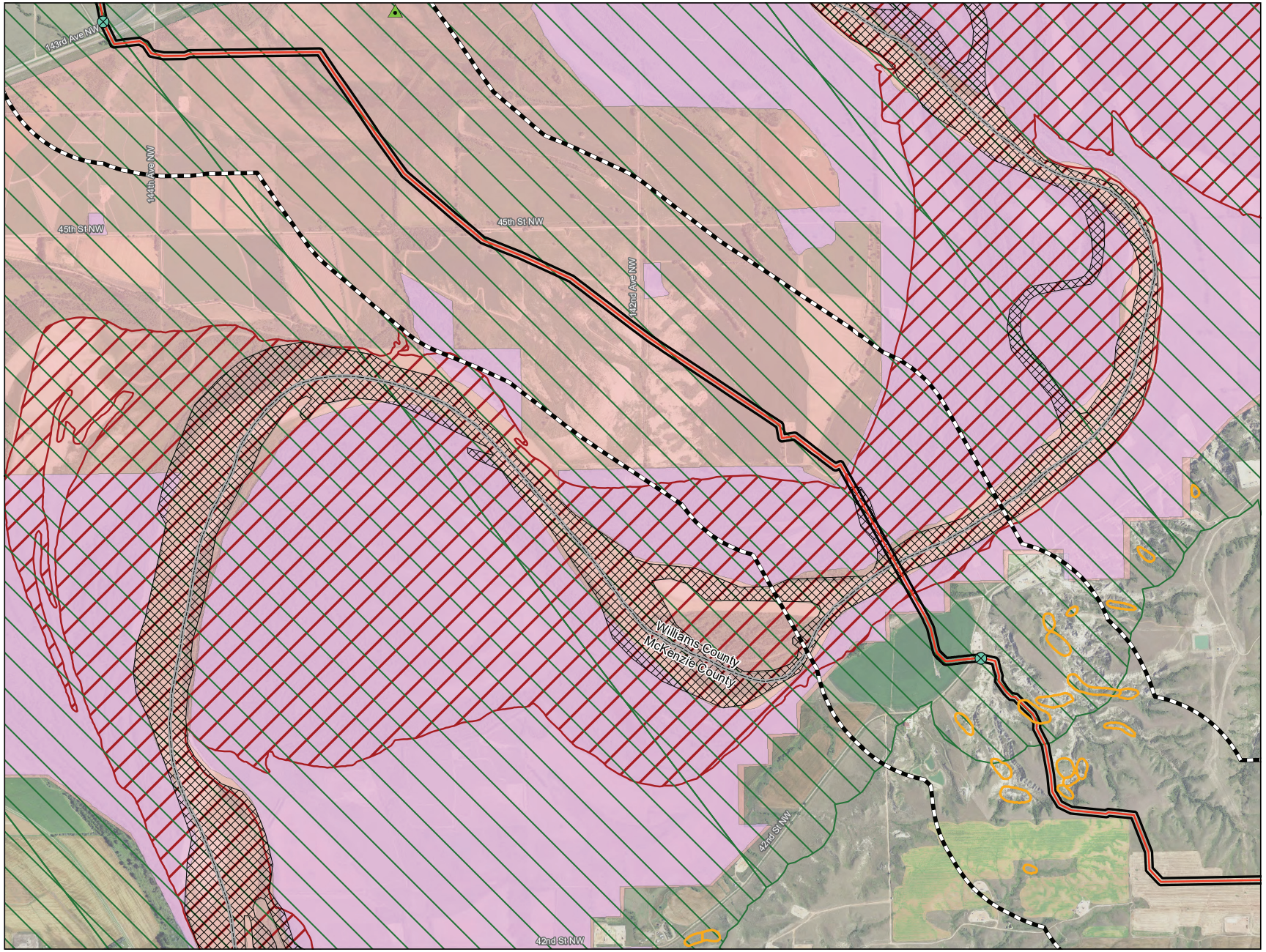
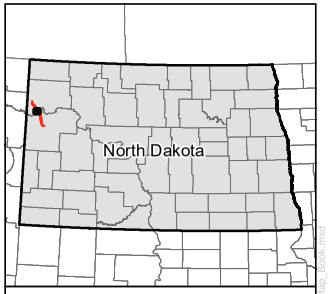
12/5/2017





0 1,000 2,000 Feet

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Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2016

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Exhibit B.1
ONEOK
12" Cherry Creek Lateral
Pipeline Conversion

Avoidance and Exclusion Maps

Page 6 of 9
Williams County

Emerjent

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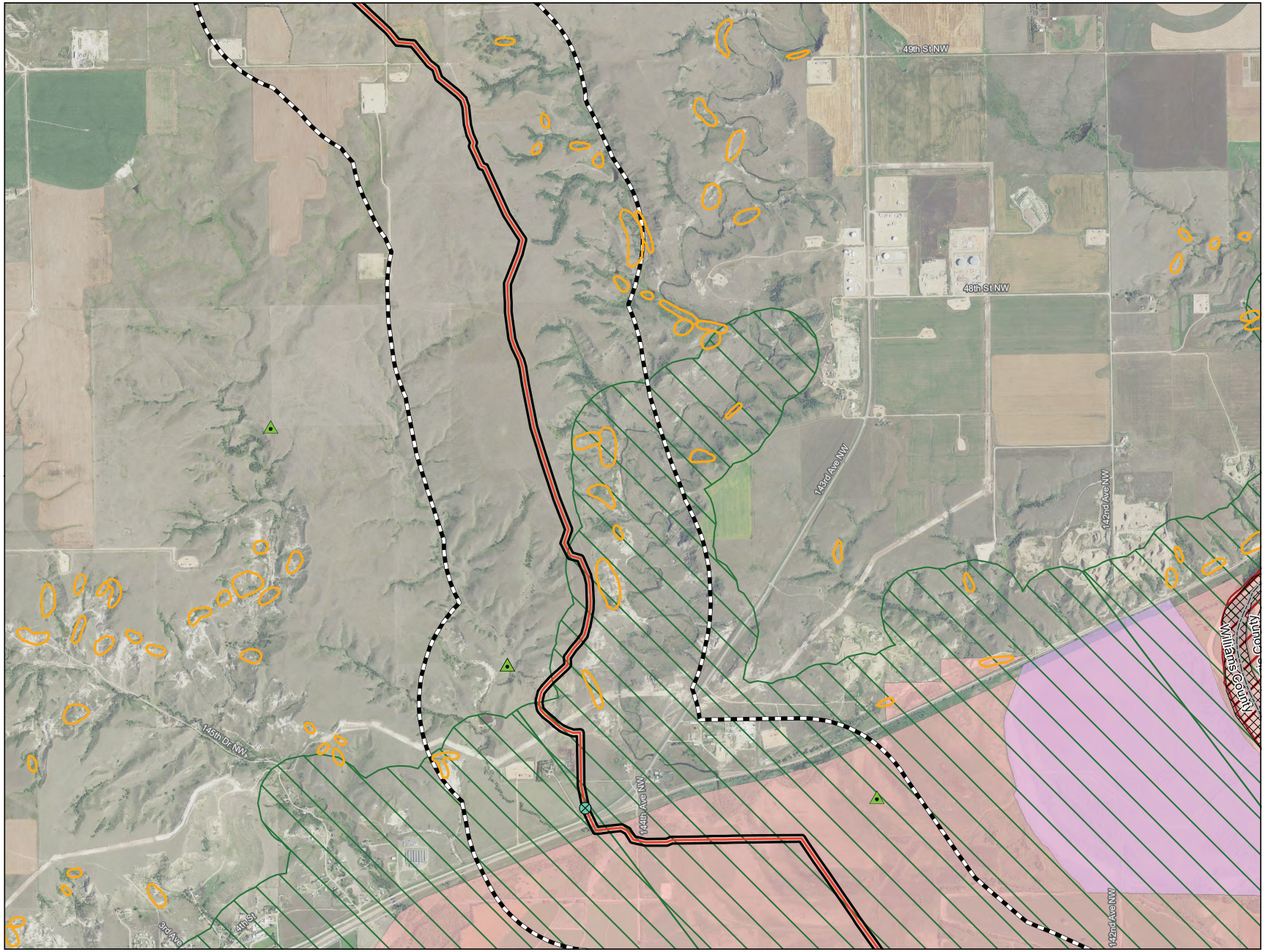

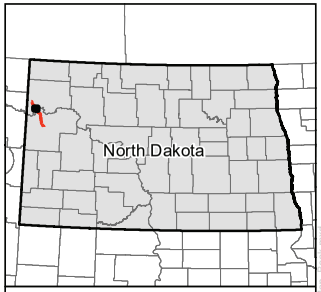

0 1,000 2,000 Feet

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Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2016

N W E S

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Exhibit B.1
ONEOK
12" Cherry Creek Lateral
Pipeline Conversion

Avoidance and Exclusion Maps

Page 7 of 9
Williams County

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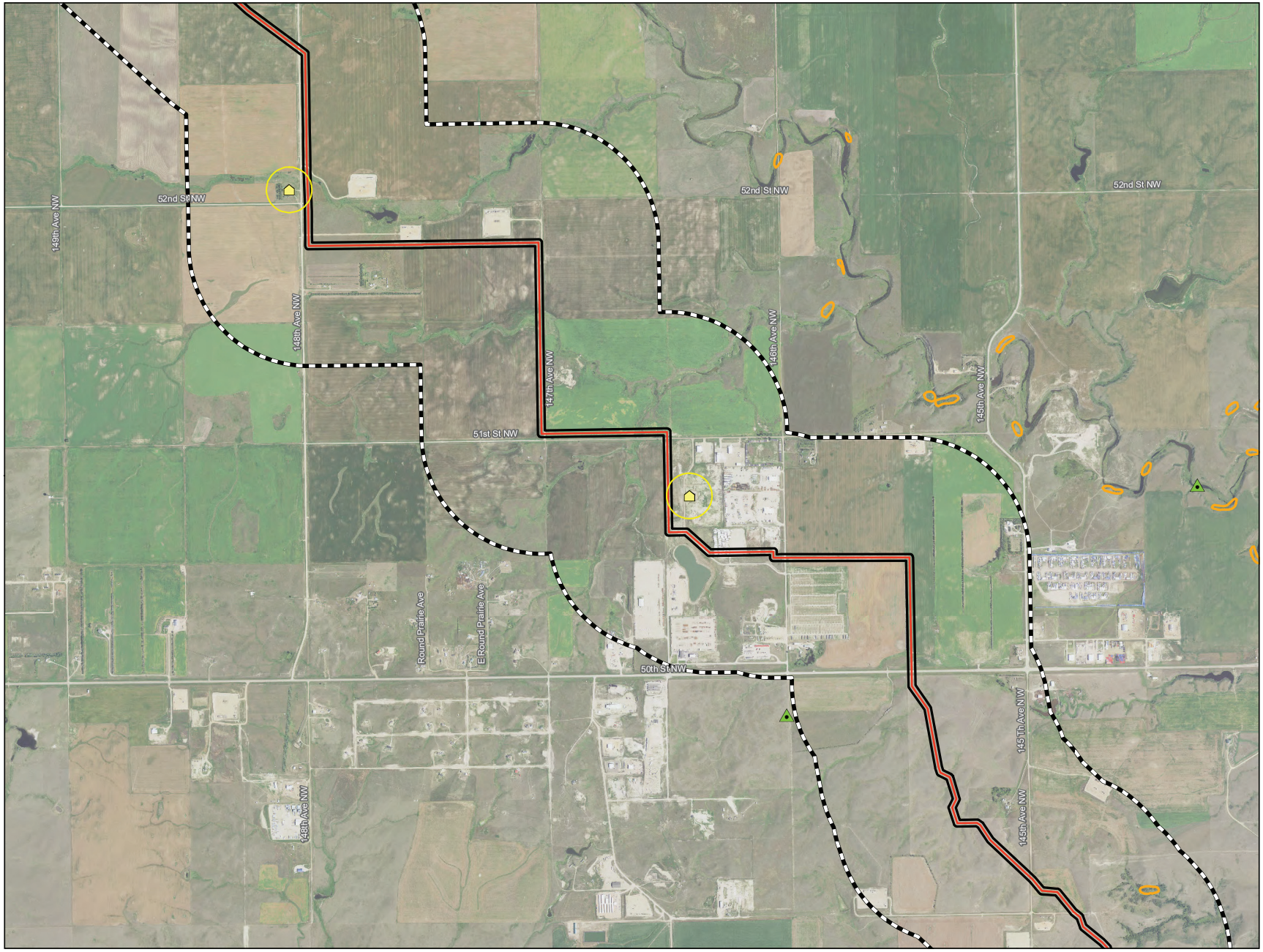
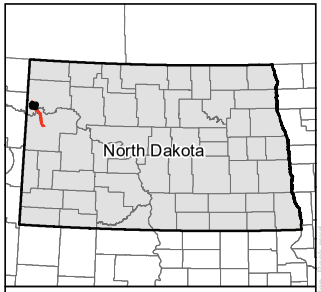
For Environmental Review Purposes Only

12/5/2017





0 1,000 2,000 Feet

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Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2016

N W E S

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Exhibit B.1
ONEOK
12" Cherry Creek Lateral Pipeline Conversion

Avoidance and Exclusion Maps

Page 8 of 9
Williams County

Enerjent

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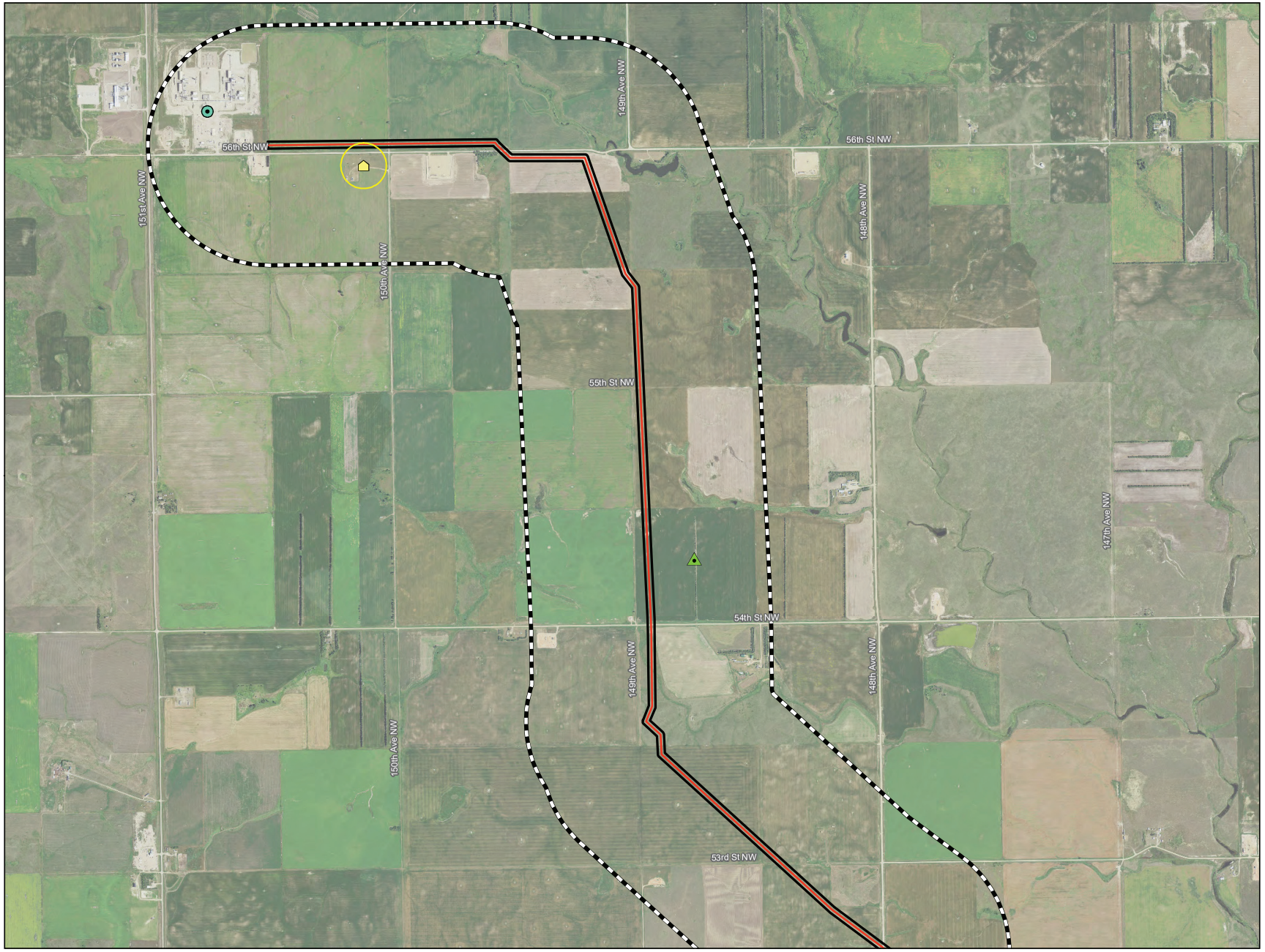

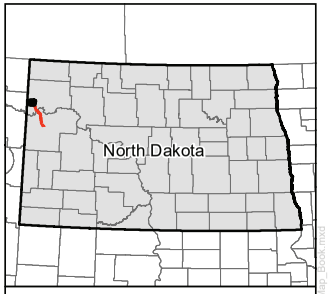

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Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2016

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- Proposed Remotely Actuated Block Valve
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Avoidance Areas

- Abandoned Mine
- Occupied Structure within 500' of Route
- Occupied Structure (500' Buffer)
- Landslide Deposits
- Wellhead Community Protection Area
- COE Reservoir
- Wildlife Management Area
- COE Land

Exclusion Areas

- Piping Plover Critical Habitat

Exhibit B.1
ONEOK
12" Cherry Creek Lateral
Pipeline Conversion

Avoidance and Exclusion Maps

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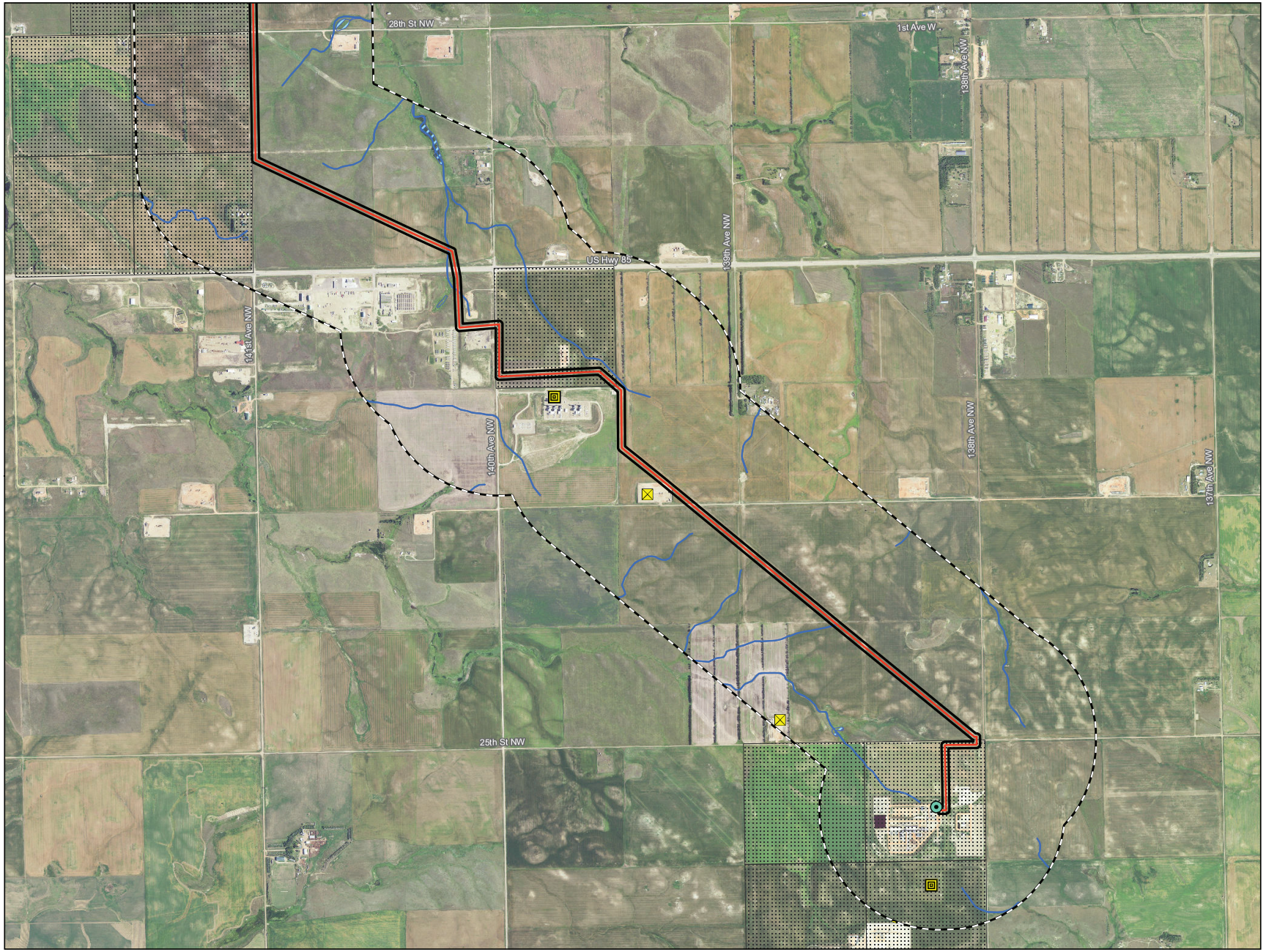

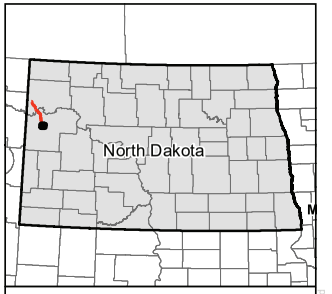

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Exhibit B.2
ONEOK
12" Cherry Creek Lateral
Pipeline Conversion

Selection Criteria Maps

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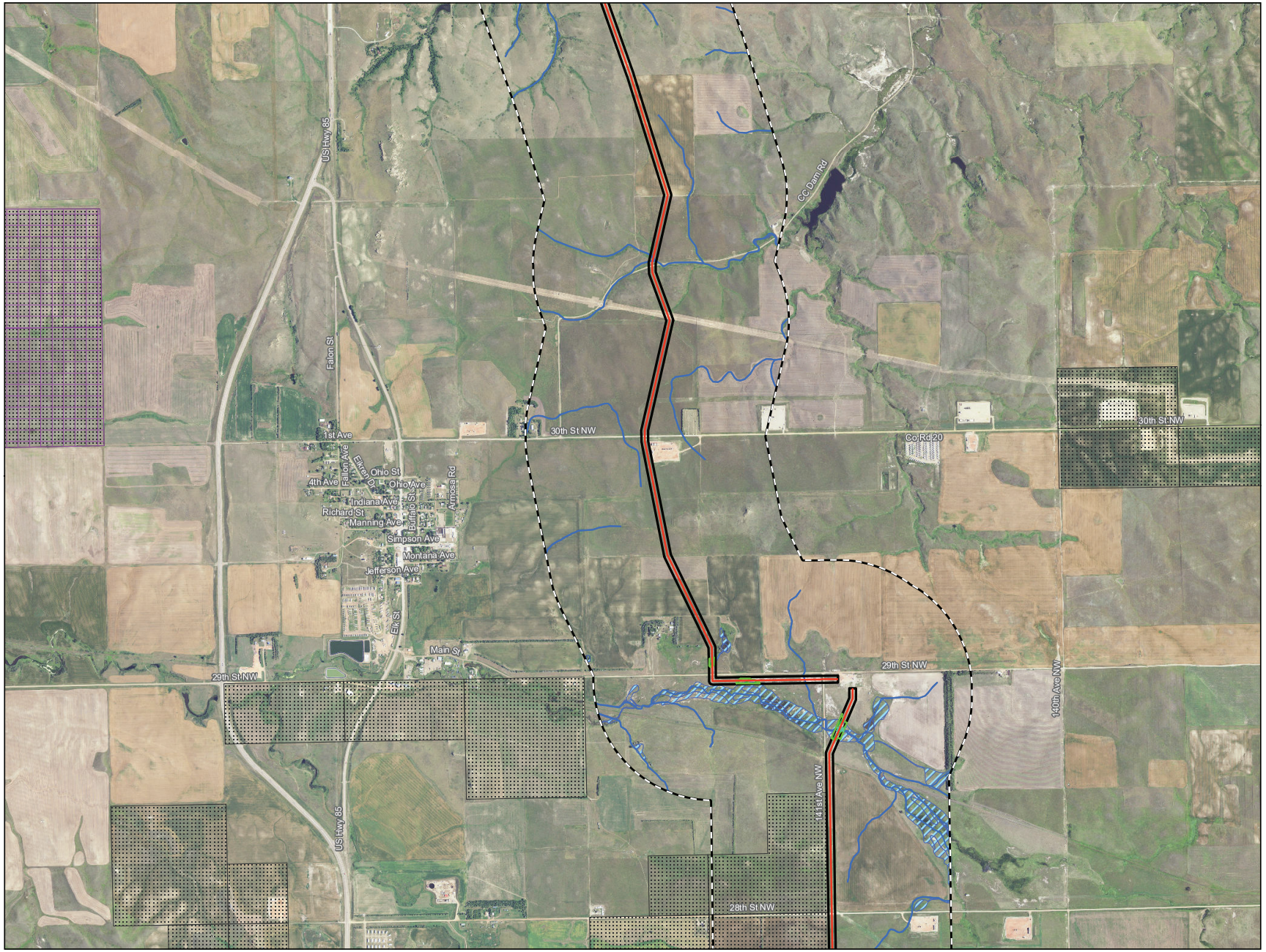

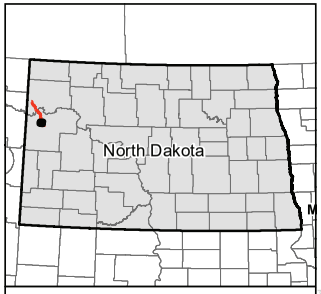

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ONEOK
12" Cherry Creek Lateral Pipeline Conversion

Selection Criteria Maps

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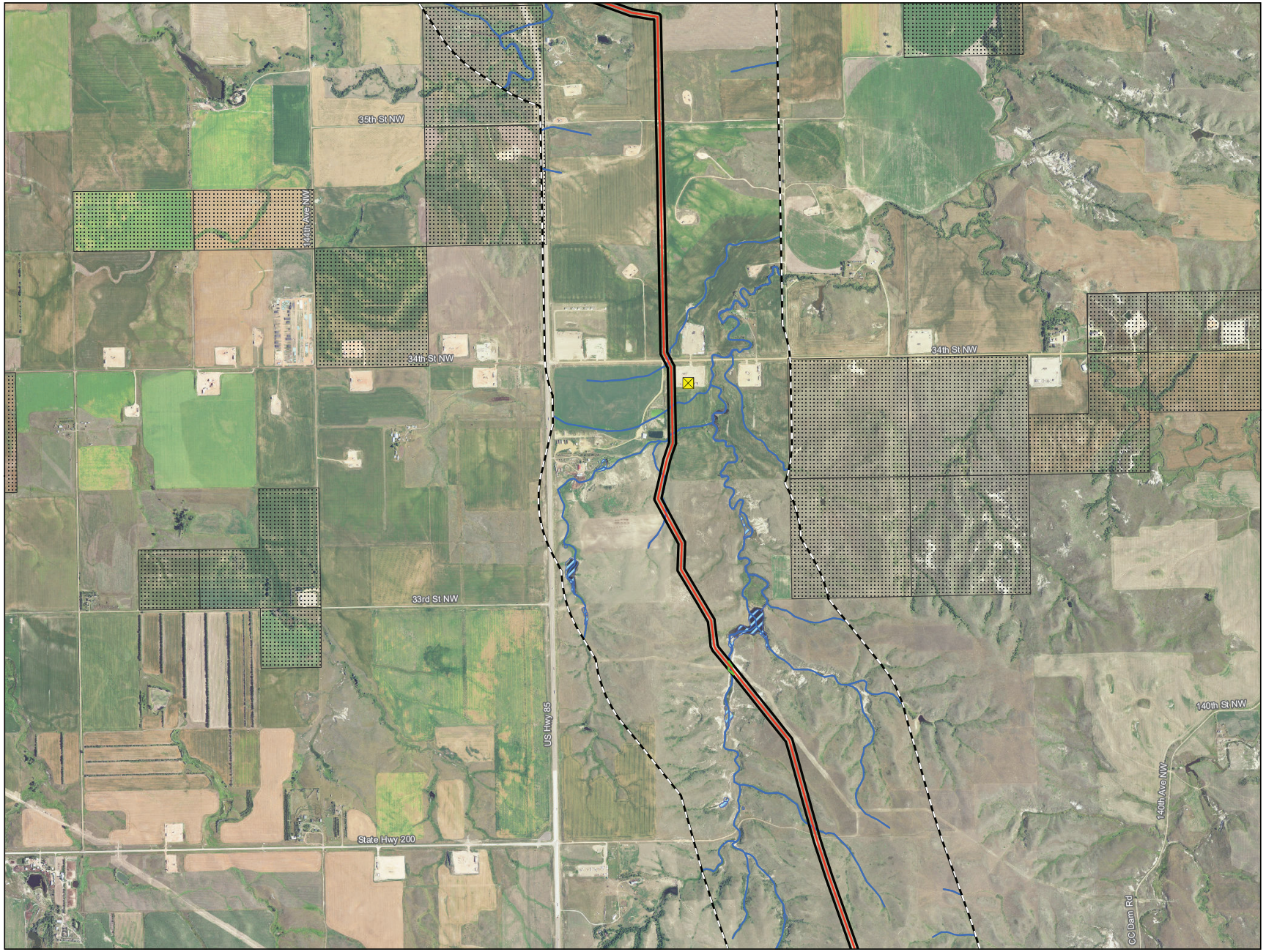

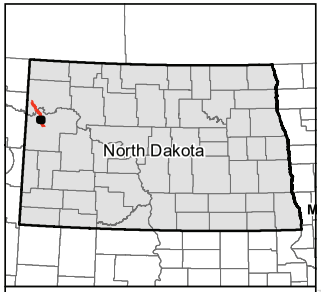

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12" Cherry Creek Lateral Pipeline Conversion

Selection Criteria Maps

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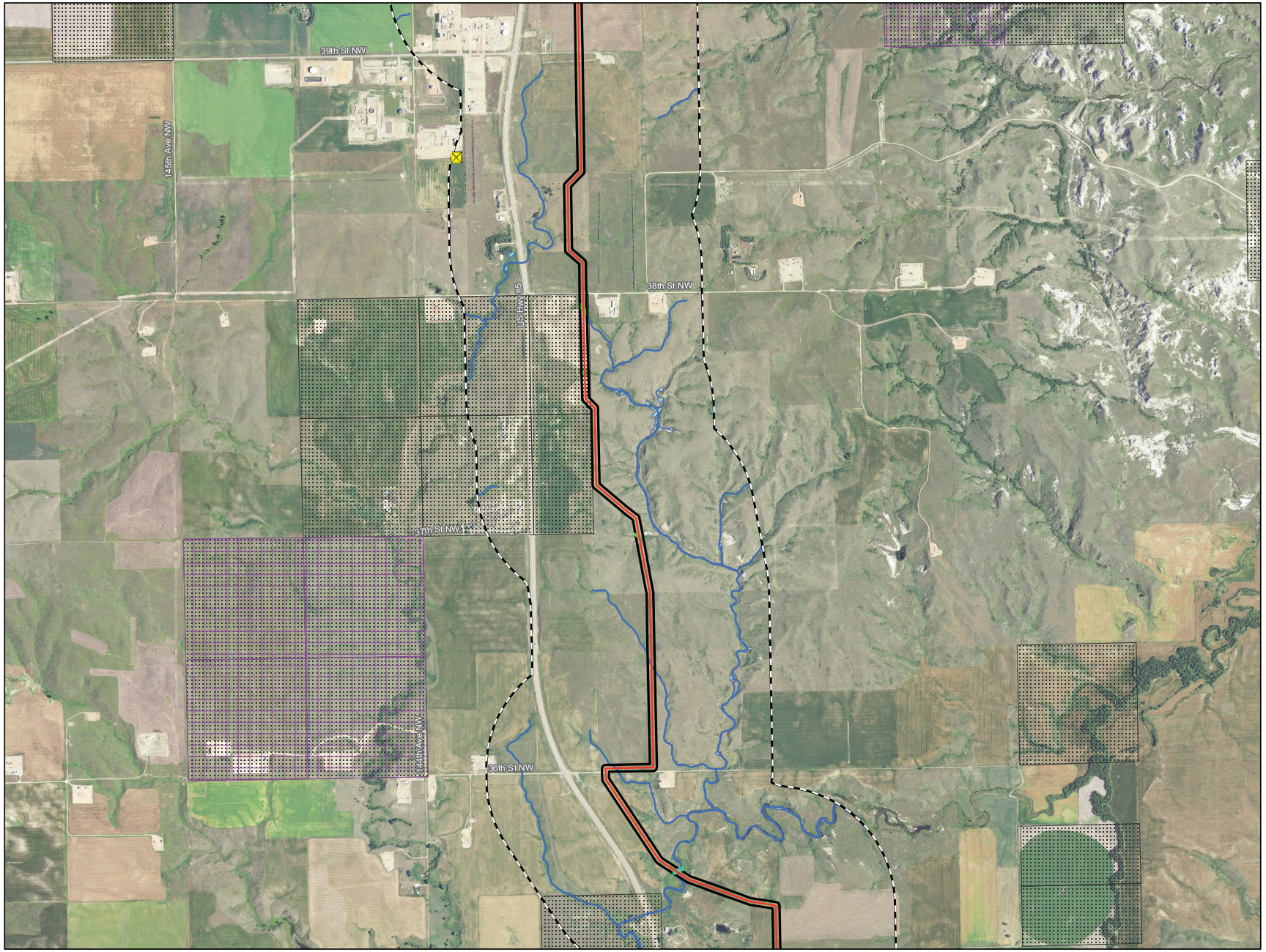

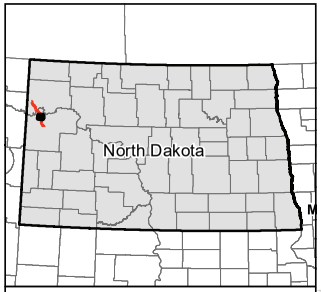

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ONEOK
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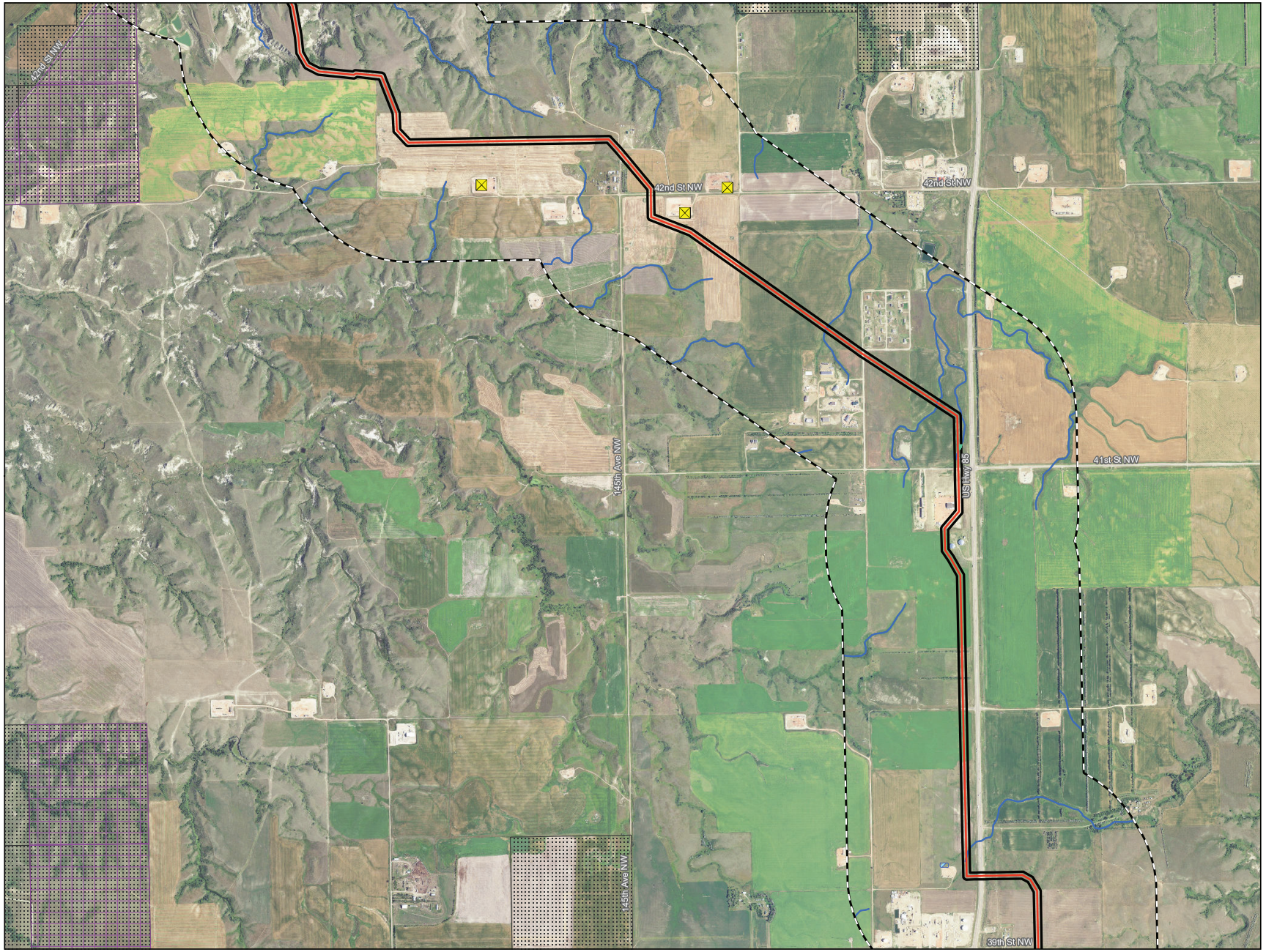

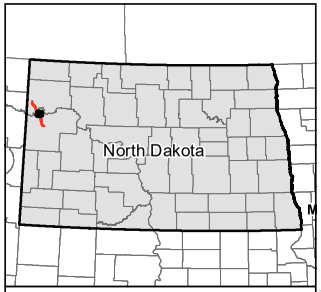

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ONEOK
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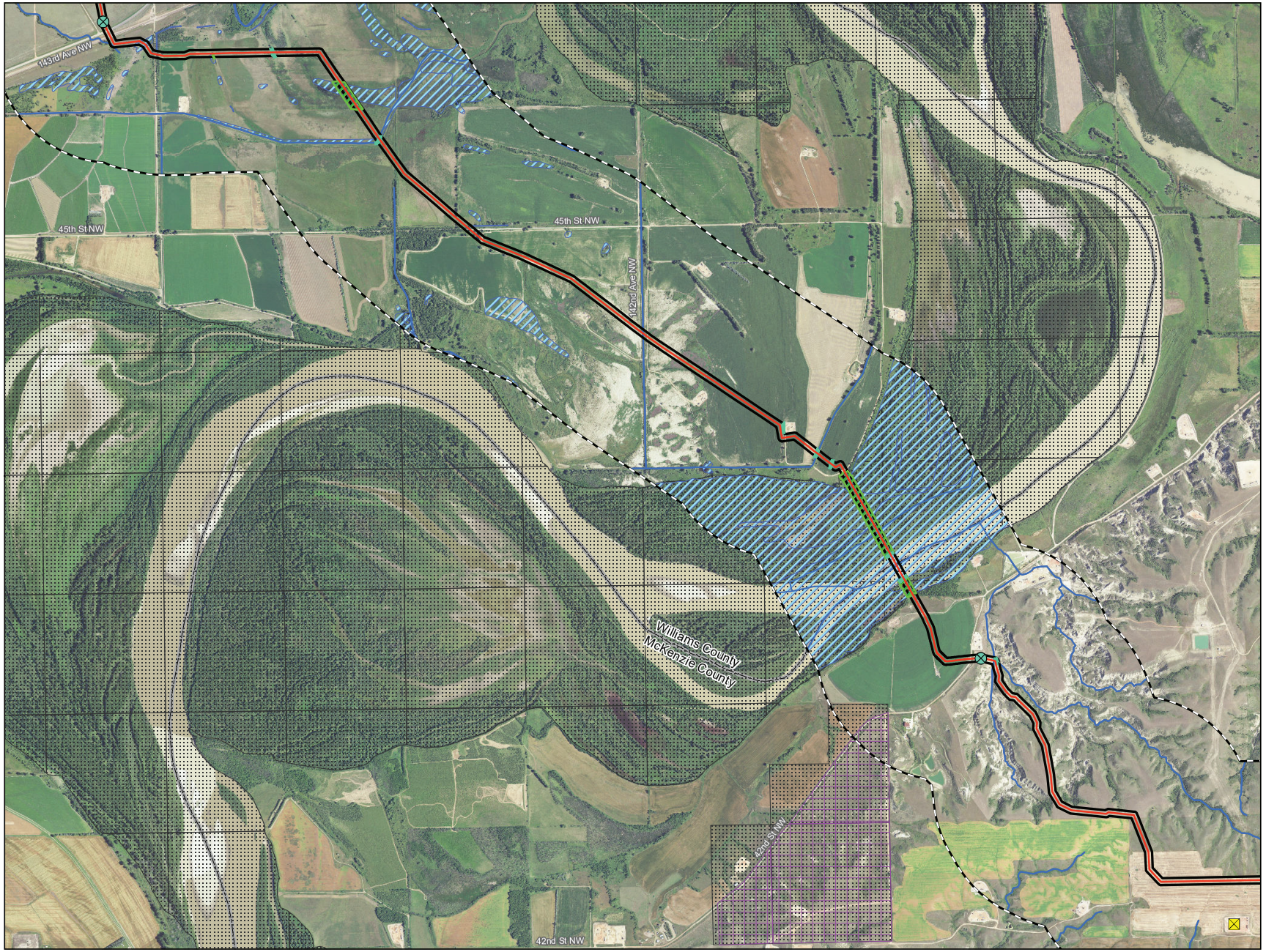

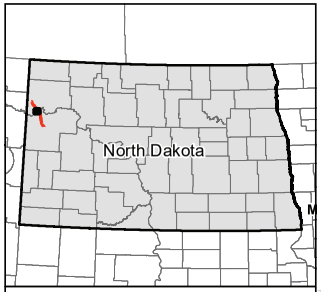

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Exhibit B.2
ONEOK
12" Cherry Creek Lateral
Pipeline Conversion

Selection Criteria Maps

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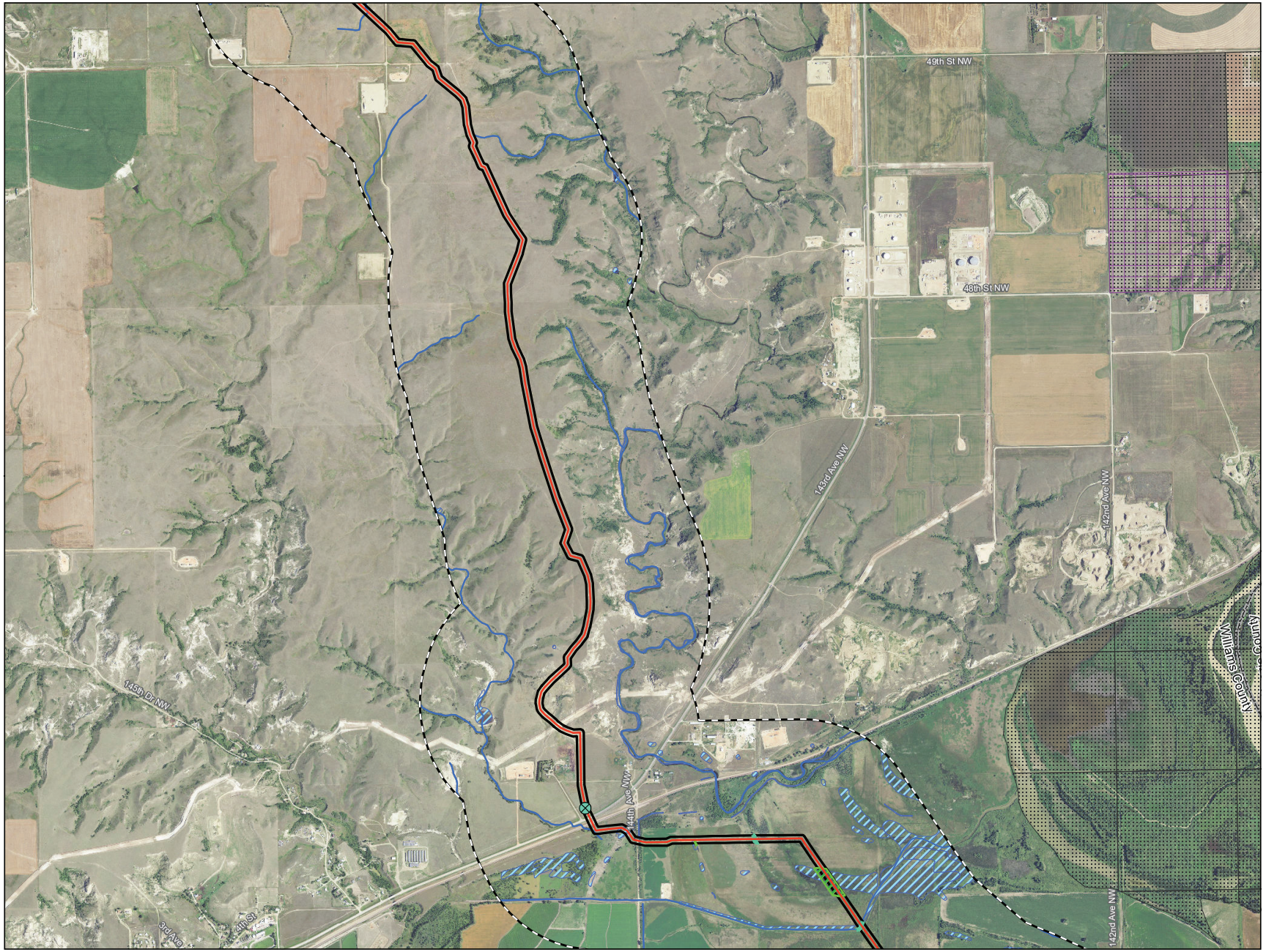

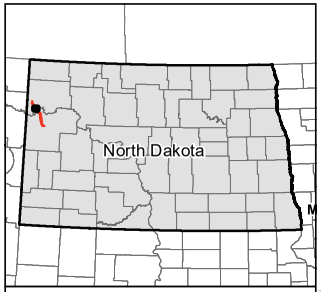

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Exhibit B.2
ONEOK
12" Cherry Creek Lateral Pipeline Conversion

Selection Criteria Maps

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Williams County

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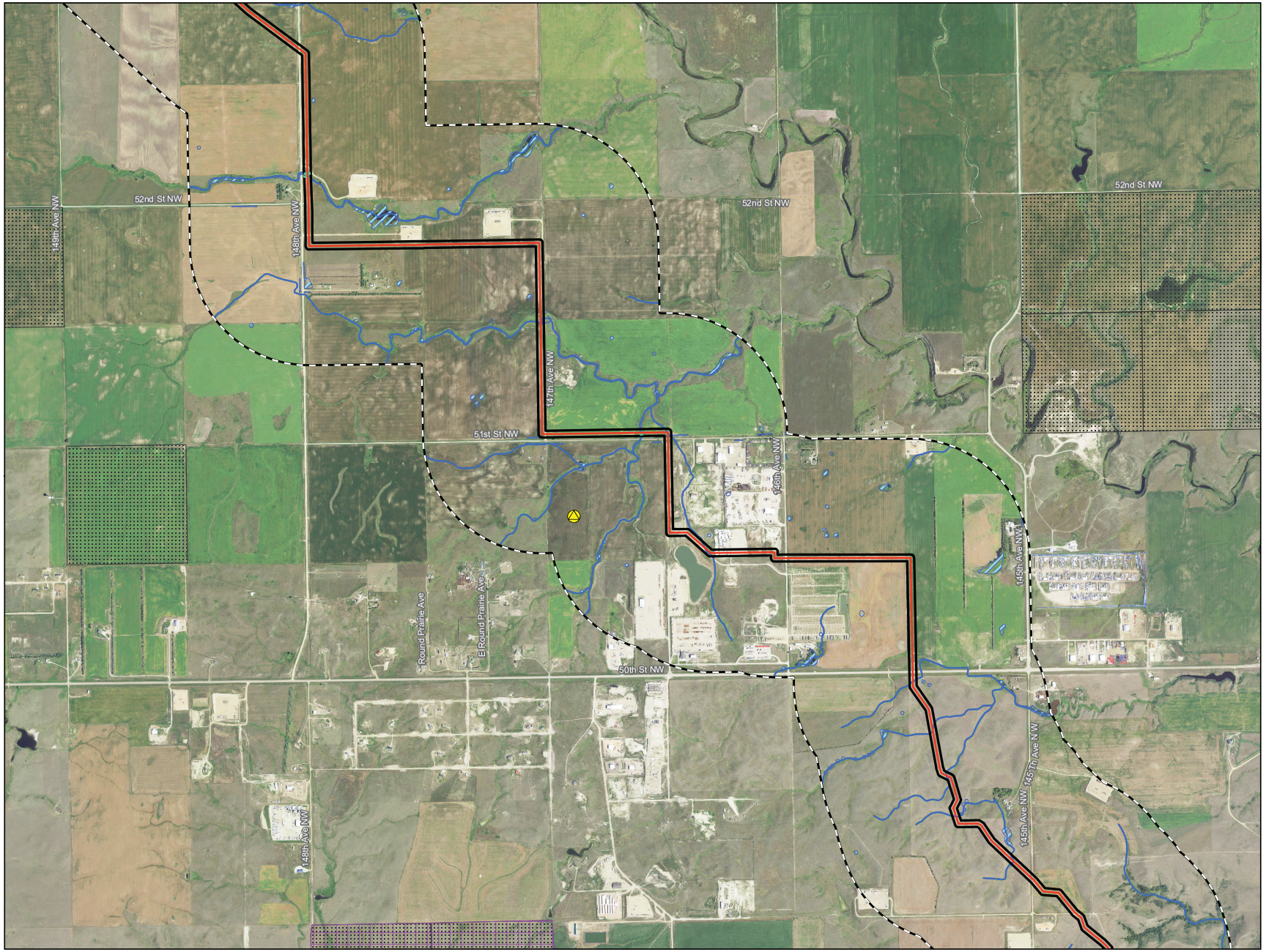

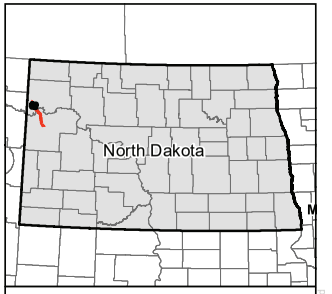

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Exhibit B.2
ONEOK
12" Cherry Creek Lateral
Pipeline Conversion

Selection Criteria Maps

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Williams County

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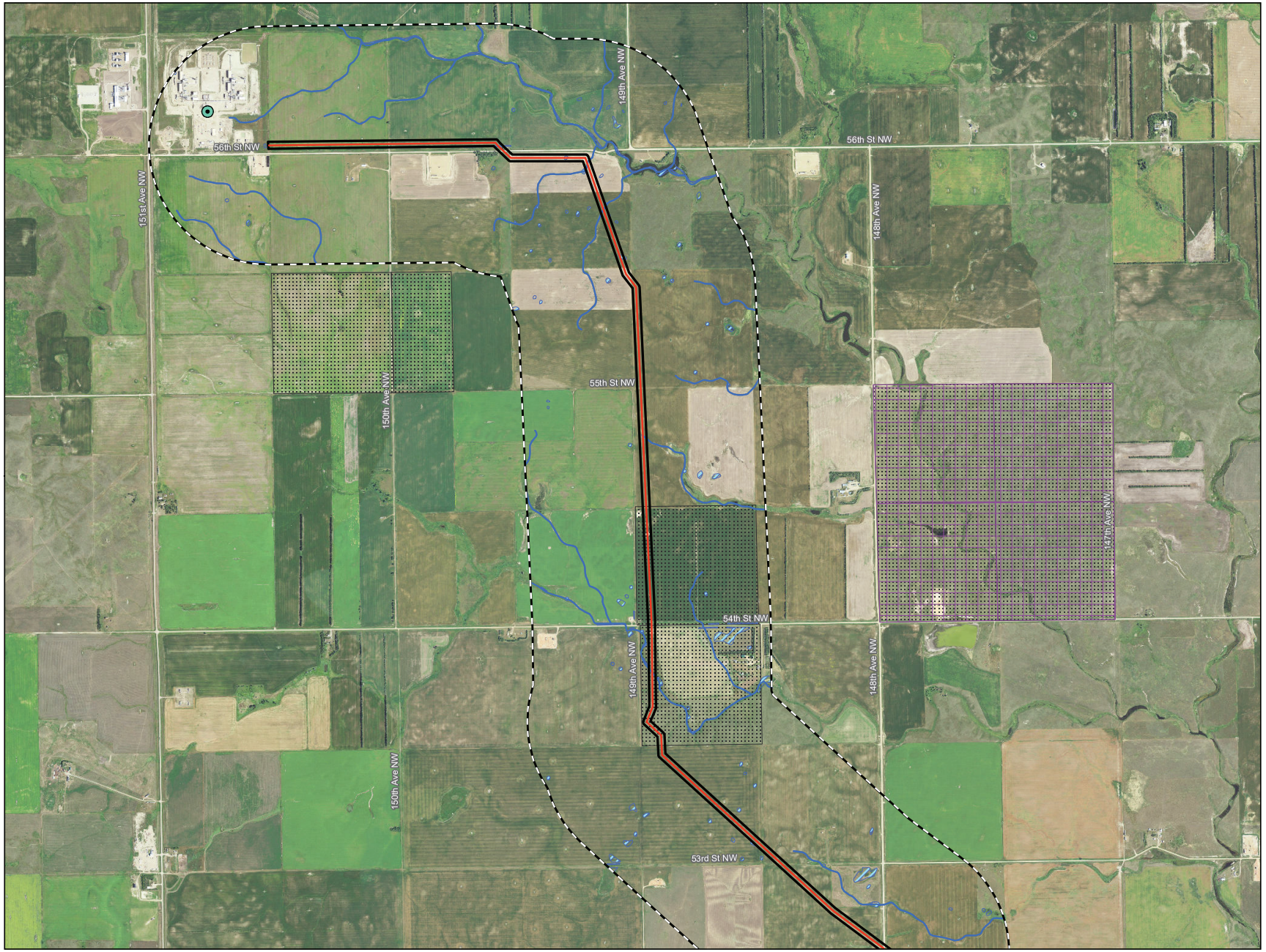

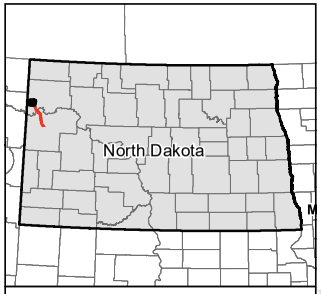

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Exhibit B.2
ONEOK
12" Cherry Creek Lateral
Pipeline Conversion

Selection Criteria Maps

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Williams County

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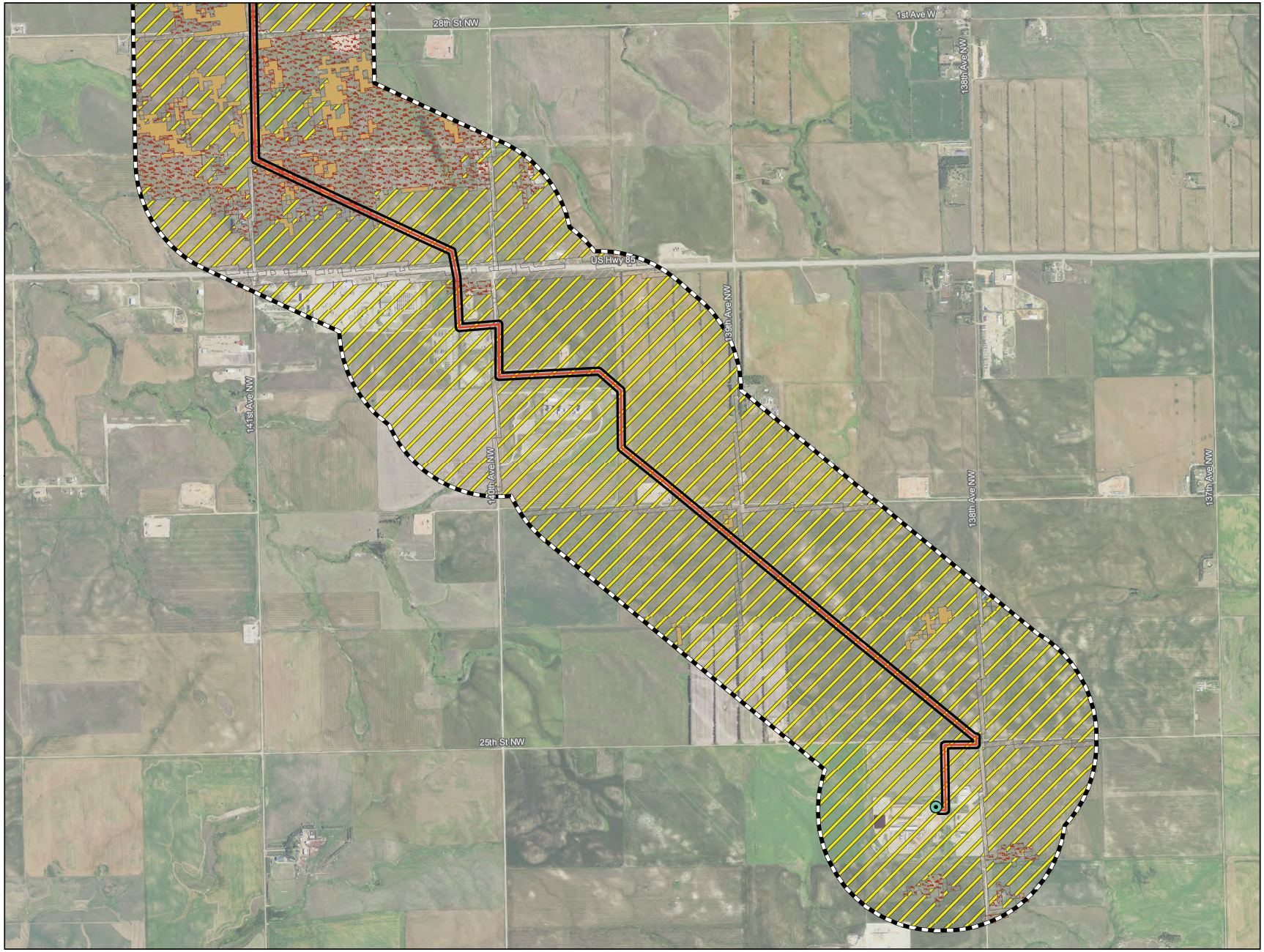

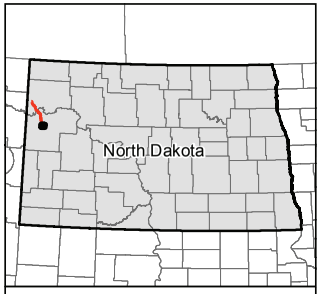

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LULC Classification

- Barren Land
- Cultivated Crops
- Forested
- Developed
- Emergent Herbaceous Wetlands
- Grassland/Herbaceous
- Hay/Pasture
- Open Water
- Shrub/Scrub
- Woody Wetlands

Exhibit B.3
ONEOK
12" Cherry Creek Lateral
Pipeline Conversion

Land Use/Land Cover Maps

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McKenzie County

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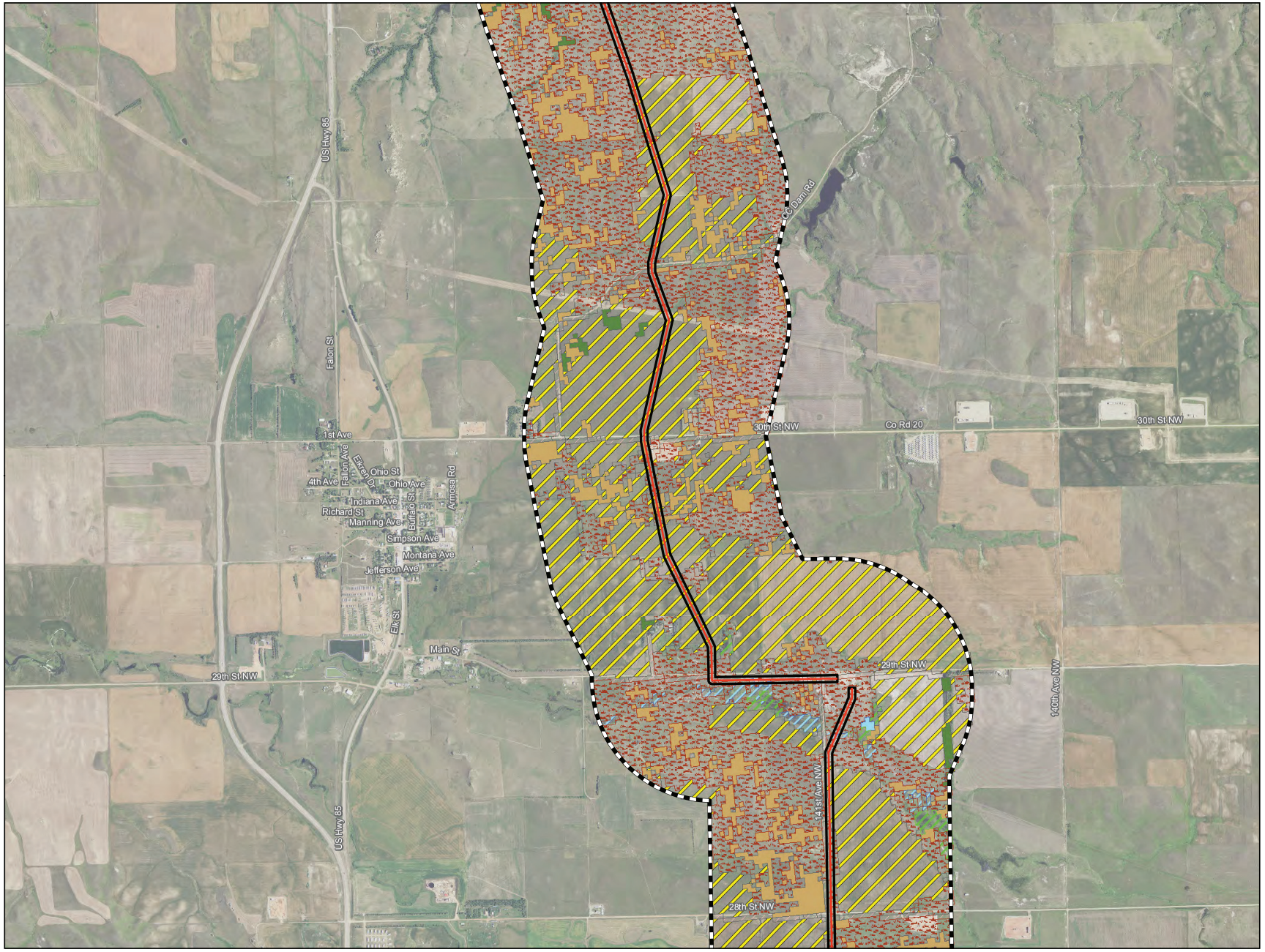

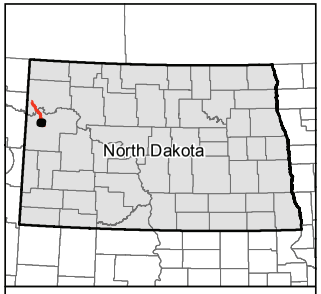

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Exhibit B.3
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12" Cherry Creek Lateral Pipeline Conversion

Land Use/Land Cover Maps

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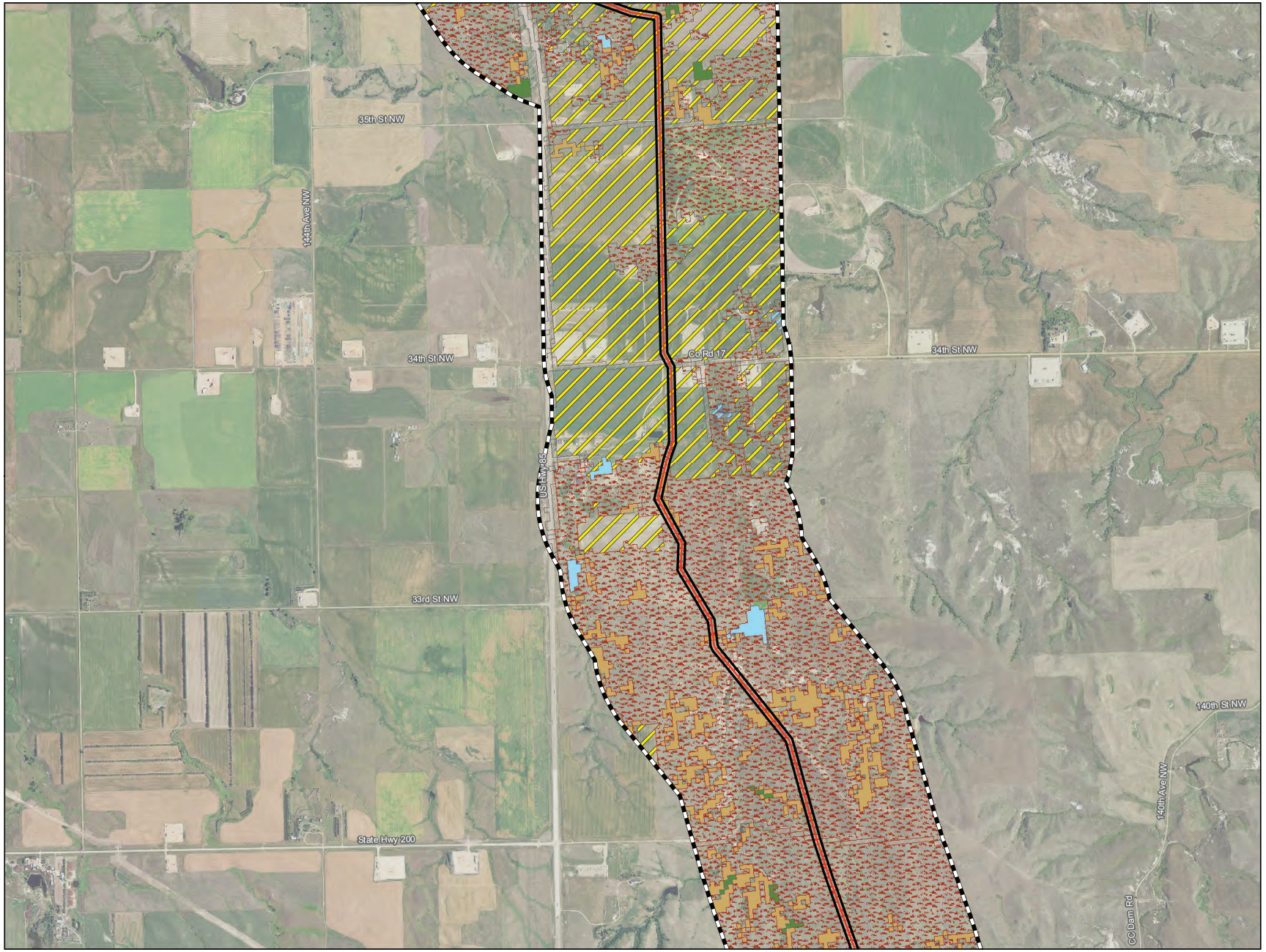

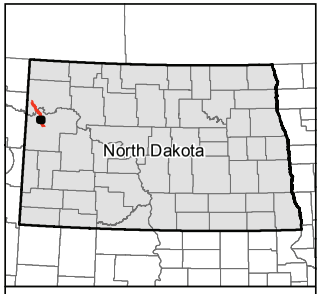

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Exhibit B.3
ONEOK
12" Cherry Creek Lateral Pipeline Conversion

Land Use/Land Cover Maps

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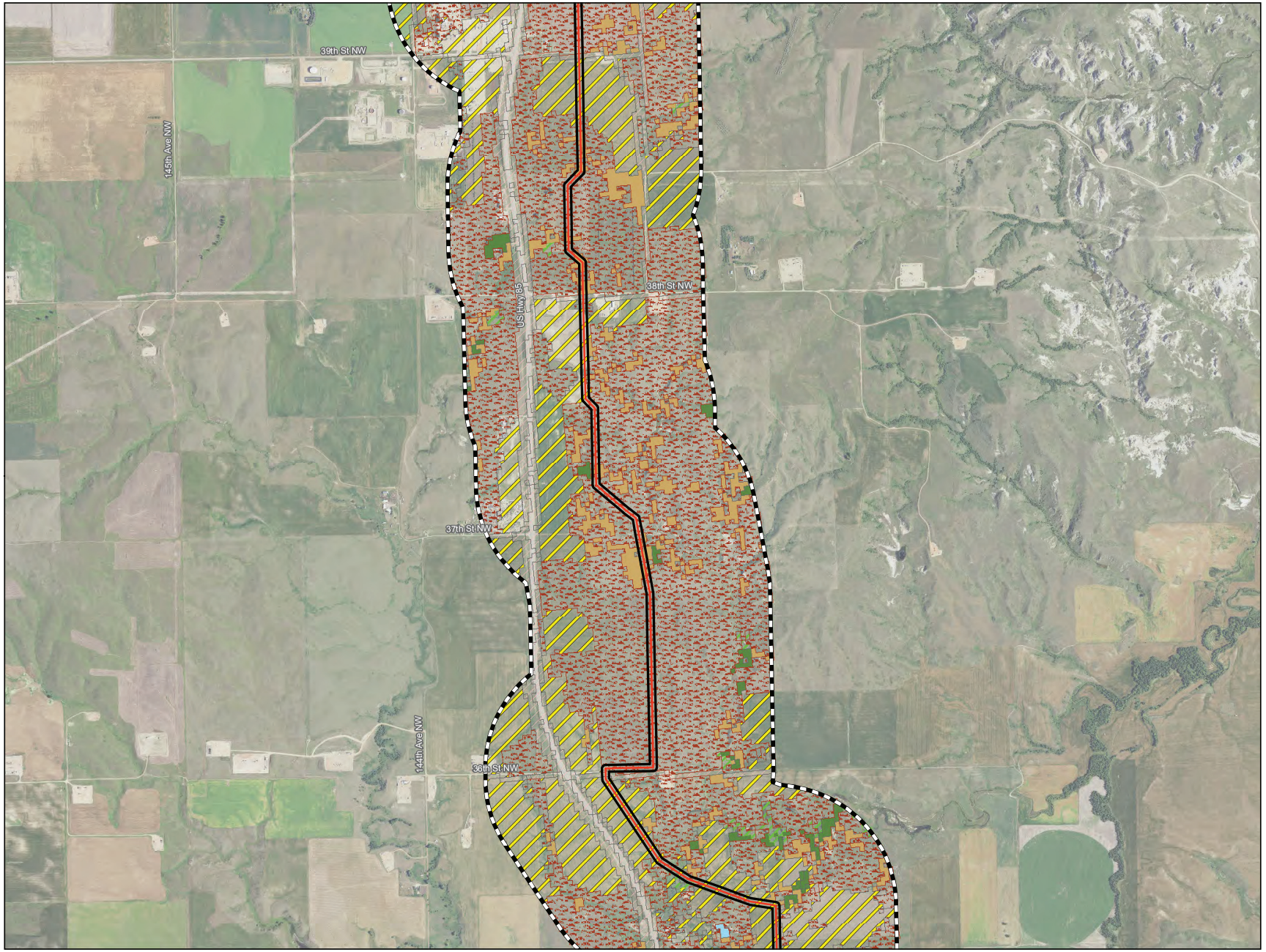

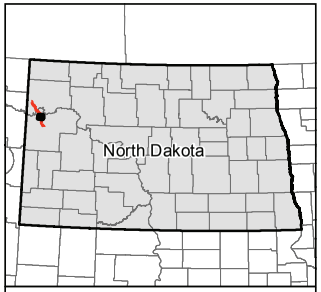

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Land Use/Land Cover Maps

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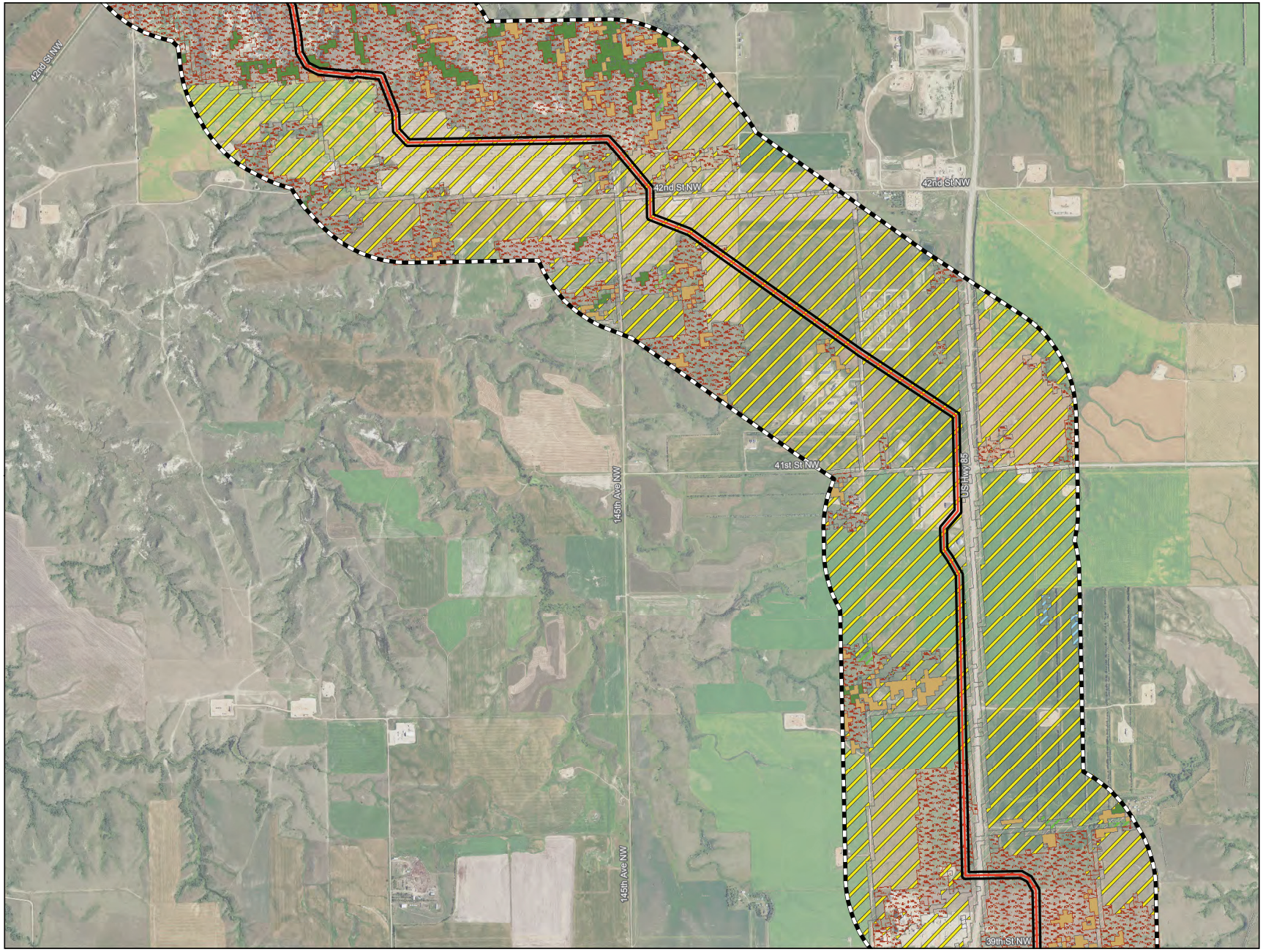

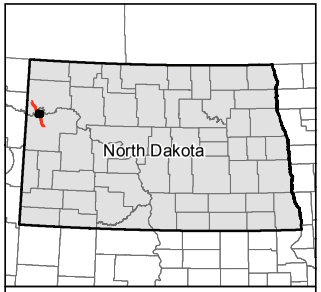

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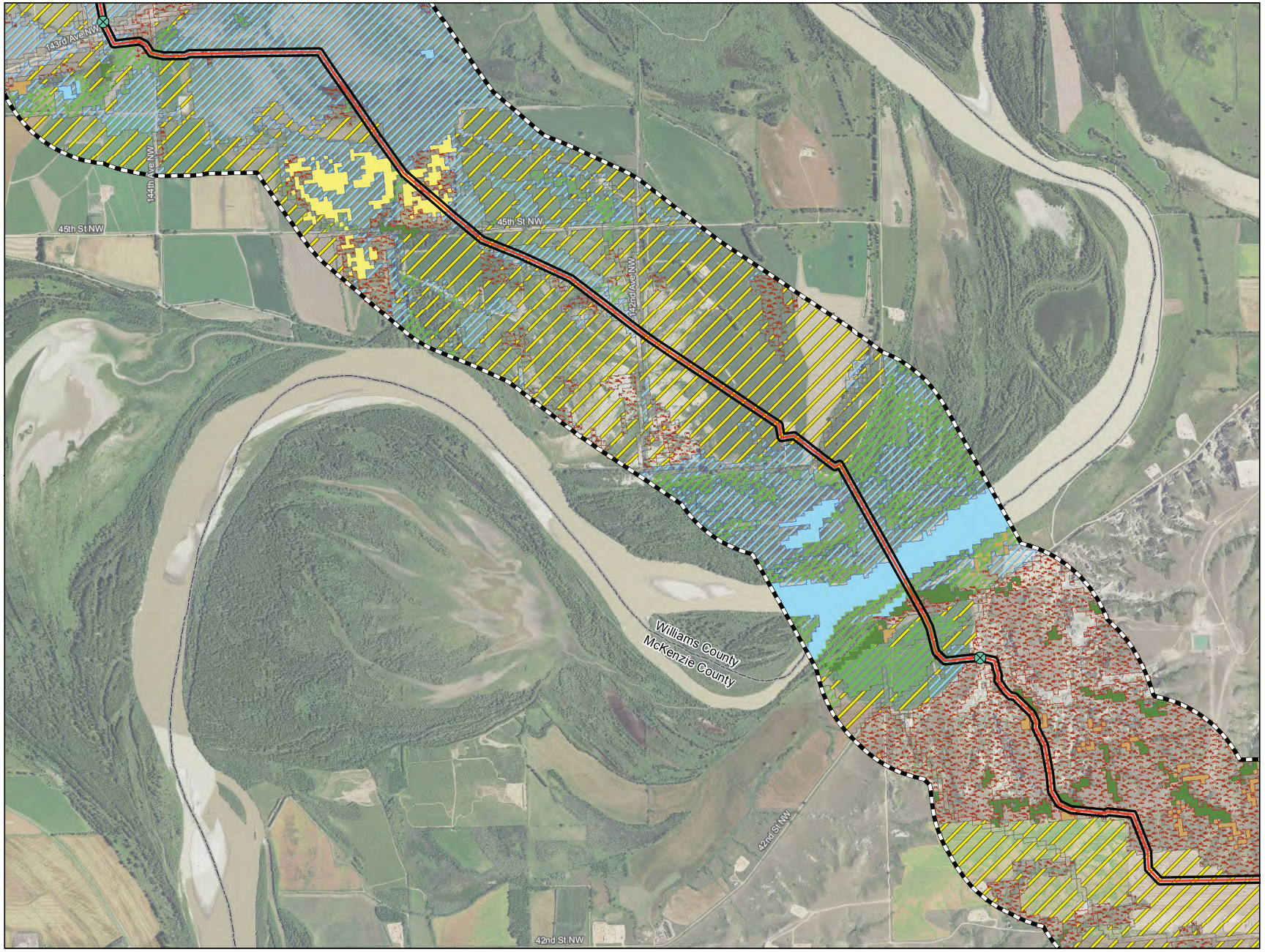

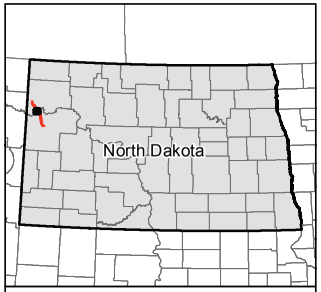

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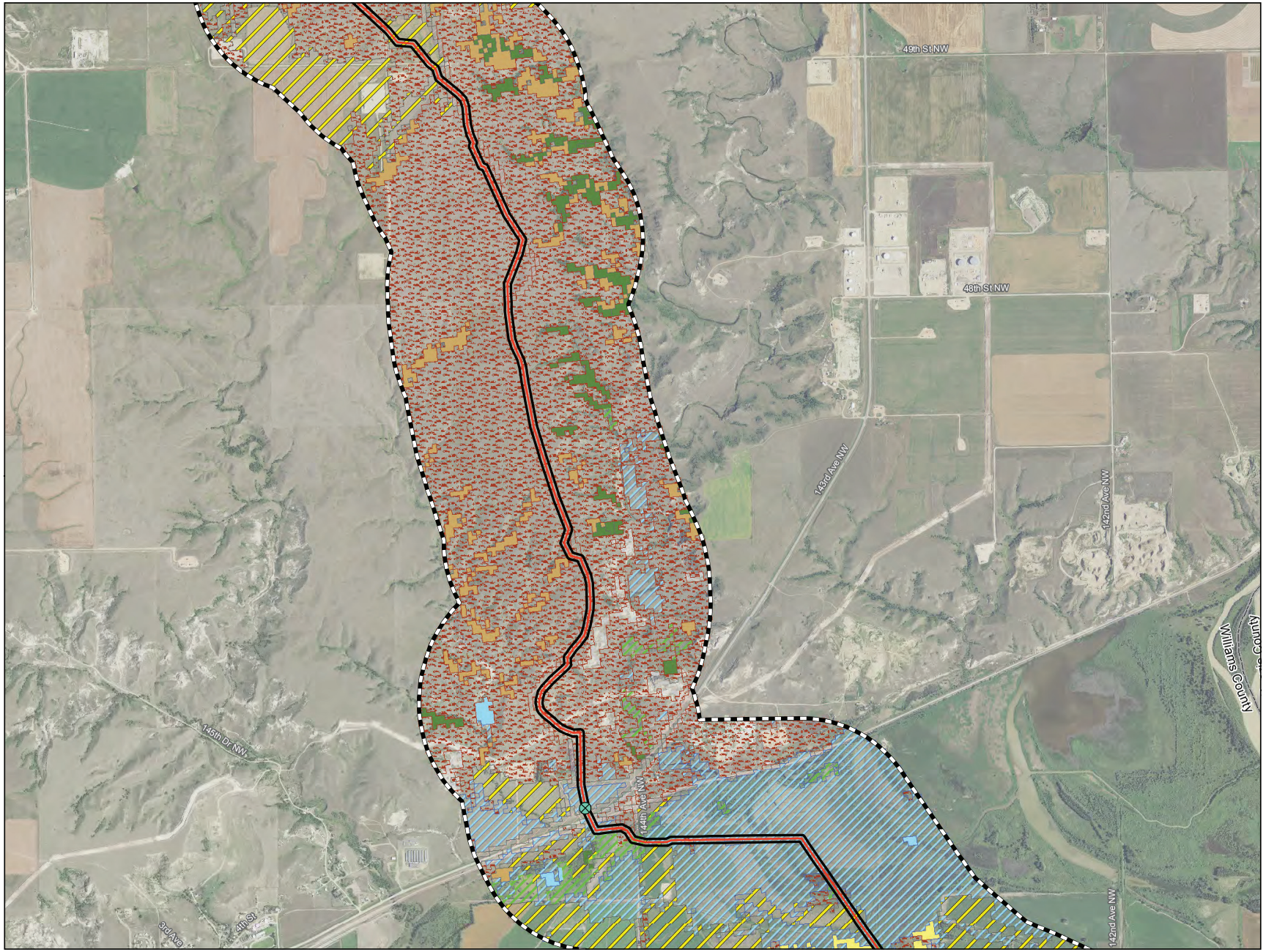
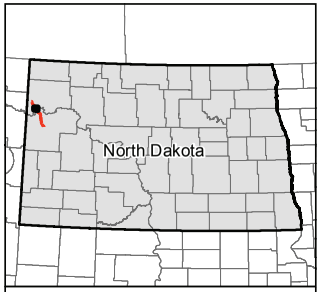
12/5/2017





0 1,000 2,000 Feet

1 inch = 2,000 feet

Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2016

N W E S

- Proposed Remotely Actuated Block Valve
- Proposed In-Facility Piping
- Pipeline Conversion
- Project Corridor
- 1-mile Study Area

LULC Classification

- Barren Land
- Cultivated Crops
- Forested
- Developed
- Emergent Herbaceous Wetlands
- Grassland/Herbaceous
- Hay/Pasture
- Open Water
- Shrub/Scrub
- Woody Wetlands

Exhibit B.3
ONEOK
12" Cherry Creek Lateral Pipeline Conversion

Land Use/Land Cover Maps

Page 7 of 9
Williams County

Merjent

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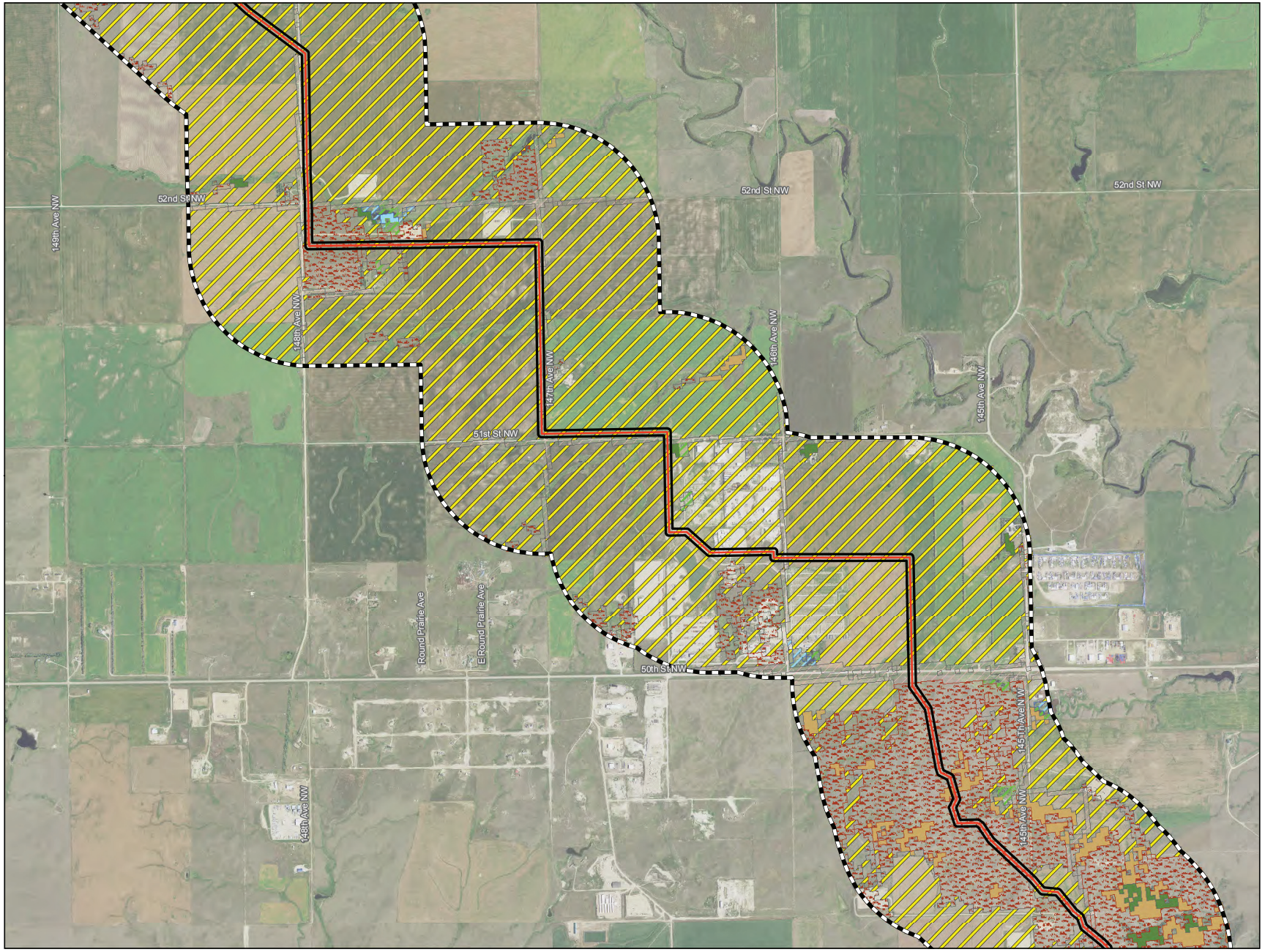
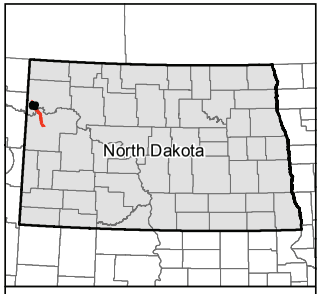
12/5/2017





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12" Cherry Creek Lateral
Pipeline Conversion

Land Use/Land Cover Maps

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Williams County

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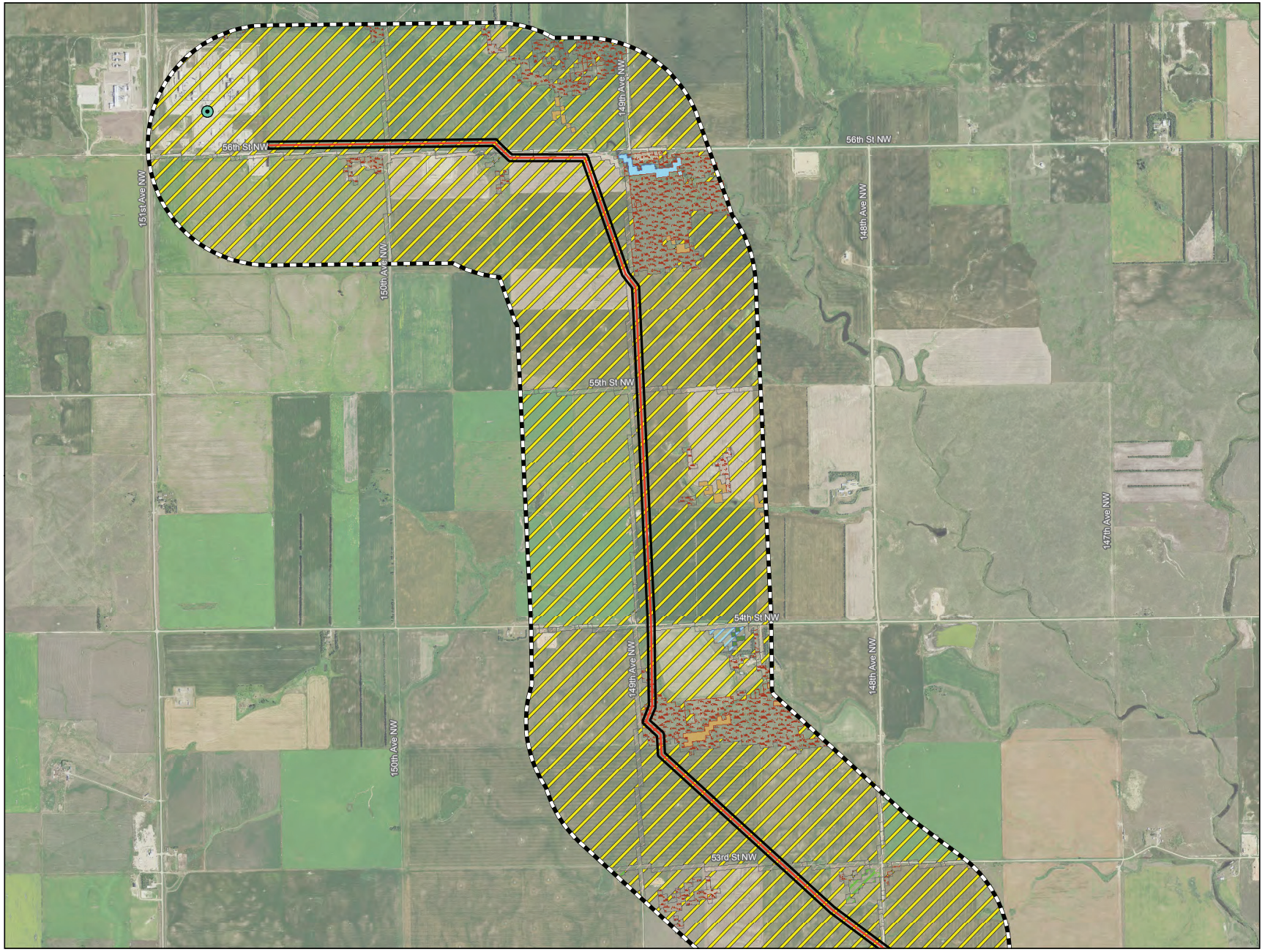

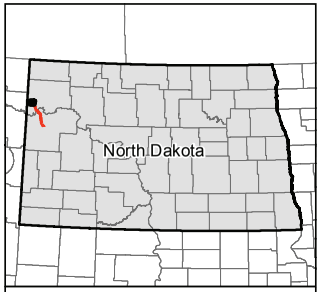

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Imagery Source: USDA-FSA Aerial Photography Field Office, NAIP 2016

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12" Cherry Creek Lateral
Pipeline Conversion

Land Use/Land Cover Maps

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Williams County

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12/5/2017

ONEOK

December 5, 2017

Mr. Paul Picha
Ms. Susan Quinnell
North Dakota State Historic Preservation Office
612 East Boulevard Ave
Bismarck, ND 58505

Re: ONEOK Rockies Midstream, L.L.C. – 12" Cherry Creek Lateral Pipeline Conversion Project
Project Notification and Request for Review

The ONEOK, Rockies Midstream, L.L.C. (ONEOK) 12" Cherry Creek Lateral Pipeline Conversion Project (Project) is proposing to convert ONEOK's existing Stateline to Rawson 12" Pipeline and a portion of ONEOK's Cherry Creek to Rawson Pipeline, which are 12-inch-diameter natural gas gathering pipelines, into an NGL transmission pipeline. The Project extends approximately 45 miles in length from ONEOK's Lonesome Creek Facility in McKenzie County, North Dakota to its Stateline Facility in Williams County, North Dakota (see enclosed Project location maps). As part of the pipeline conversion, two valves along the existing Stateline to Rawson 12" Pipeline, on either side of the Missouri River cut, will also be expanded.

The conversion of these gathering lines into a transmission pipeline places the Project under the purview of the North Dakota Public Service Commission (NDPSC or Commission); as such, ONEOK will submit to the Commission a single consolidated application for a Certificate of Corridor Compatibility and Route Permit for the Project. The application will provide information as required by *North Dakota Century Code, Energy Conversion and Transmission Facility Siting Act, Chapter 49-22-08.1* and *PCS Administrative Code, Chapter 69-06-05, Transmission Facility Permit*. Information regarding cultural resources is one of the required data sets. Therefore, ONEOK determined to collect and analyze the available cultural resources information, and identify and survey gaps along either project corridor not previously surveyed. This analysis, prepared by Merjent, Inc. and Metcalf Archaeological Consultants LLC (Metcalf), is attached to this letter and summarized below.

Stateline to Rawson 12" Pipeline

ONEOK constructed the Stateline to Rawson 12" Pipeline in 2011/2012 as an approximately 38-mile-long natural gas gathering pipeline; the full length of this pipeline will be converted to a NGL transmission pipeline as part of the Project. ONEOK contracted with Juniper LLC (Juniper) in 2011 to conduct Class III surveys for the Stateline to Rawson 12" Pipeline Project (North Dakota State Historic Preservation Office [NDSHPO] Ref.: 12-0731), with the survey occurring in August 2011 and April 2012. Juniper did not review U.S. Army Corps of Engineers (USACE) property in the Missouri River bottomlands during the 2011/2012 surveys due to flooded conditions and recommended archaeological monitoring during construction. Juniper reviewed 40 sites in the survey corridor, which encompassed the entire construction workspace outside USACE lands. NDSHPO commented that if ONEOK adhered to the report recommendations, the Stateline to Rawson 12" Pipeline Project represented a No Historic

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Tulsa, OK 74103
www.oneok.com

Properties Affected determination. This determination was adopted by the USACE for the Missouri River bottomlands, contingent upon the completion of archaeological monitoring during construction as recommended in the survey report. ONEOK conducted archaeological monitoring on the USACE lands during construction as recommended and submitted results to the USACE. The USACE consulted with Native American Tribes, most notably the Standing Rock Sioux Tribe. Based on the available documentation, the Stateline to Rawson 12" Pipeline Project did not adversely affect cultural resources eligible for inclusion on the National Register of Historic Places (NRHP).

Cherry Creek to Rawson Pipeline

The Cherry Creek to Rawson Pipeline was built in 2012, and approximately 6 miles of the pipeline from ONEOK's Lonesome Creek facility to the Rawson Junction will be converted as part of this Project. Our records indicate that no archaeological inventory of the Cherry Creek to Rawson Pipeline was completed.

Archaeological Resource Review Gap Analysis and 2017 Inventory

ONEOK reviewed the materials related to the Project and the previously constructed pipelines to identify any inventory and consultation/coordination gaps in the cultural resources documentation. Metcalf initiated a new Class I review of the entire Project alignment and subsequently conducted Class III surveys of select segments. The segments selected for Class III inventory in 2017 included areas where the natural gas gathering pipelines may have either deviated slightly from previous archaeological survey corridors or were not surveyed previously. Metcalf conducted archaeological survey of those areas in fall 2017 and did not identify any cultural resources eligible for inclusion on the NRHP. With this letter ONEOK provides the results of the 2017 Class I and Class III surveys to the NDSHPO and requests concurrence that the Project warrants a *No Historic Properties Affected* determination. ONEOK will provide this letter and subsequent communication to the NDPSC. Additionally, the results of the survey will be used to support the environmental studies included in ONEOK's application to the NDPSC.

ONEOK appreciates your review of this letter and the attached information. If you have any questions or comments please contact me at 918-246-4728 or Kevin.Windstrup@oneok.com, or Merjent Archaeologist Michael Madson at 612-834-3074 or mmadson@merjent.com.

Sincerely,

Kevin Windstrup
Environmental Project Manager
ONEOK Partners

Attachments: Metcalf Archaeological Consultants 2017 Class I and Class III Reports
Juniper 2012 USACE Monitoring Report

Cc: Loretta Earnest, ONEOK
Michael Madson and Maddy Krumwiede, Merjent, Inc.

Stateline Plant to Rawson Pipeline Project
2012 Wetland and Waterbody Surveys

Prepared for:

ONEOK Rockies Midstream, LLC

and

E3 Environmental, LLC
817 Vandalia Street
St. Paul, MN 55114

Prepared by:

Clayton Derby and Ann L. Dahl
Western EcoSystems Technology, Inc.
4007 State Street, Suite 109
Bismarck, North Dakota 58503

June 12, 2012



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Appendix B: Waterbodies Surveyed Along the Stateline Plant to Rawson Pipeline Project Corridor

Appendix C: Aerial Photographs with Stateline Plant to Rawson Pipeline Project Delineated Wetland and Waterbody Locations

Appendix D: Datasheets and Photographs for Stateline Plant to Rawson Pipeline Project Wetland and Waterbody Delineations

I. INTRODUCTION

E3 Environmental LLC (E3) is assisting ONEOK Rockies Midstream, LLC (ONEOK) with various aspects of the Stateline Plant to Rawson Pipeline Project (Project) development, including agency consultations, environmental surveys, and environmental permits necessary for the Project. The Project is an approximately 37 mile long pipeline located west of Williston, North Dakota, including a crossing of the Missouri River (Figure 1). E3 has contracted with Western EcoSystems Technology, Inc. (WEST) to conduct field surveys and delineations for the Project. The primary purpose of the work discussed in this report was to identify the extent and location of water resources (wetlands, waterbodies, and springs) located within the Project boundary where the Project crosses lands owned by the US Army Corps of Engineers (ACOE) and State of North Dakota near the Missouri River crossing.

This report summarizes the 2012 wetland and waterbody surveys conducted along approximately 4 miles of the proposed Project near the Missouri River crossing on May 24-26, 2012. A summary of the wetland and waterbody delineation methodology and results is provided below.

II. METHODS

Field surveys for potentially jurisdictional wetlands and waterbodies described in this report were conducted on May 24 and 26, 2012. Survey areas included a survey corridor 200-foot wide (100 feet either side of the centerline) through lands owned by the ACOE and State of North Dakota, known as the Lewis and Clark State Wildlife Management Area. Personnel involved in the delineation include Klarissa Lawrence and Jeanette Flaig. Both individuals have had wetland delineation training as well as several years experience conducting wetland delineations across 100's of miles of pipelines and other projects in several states, including North Dakota. Per direction from E3 and due to the need to expedite field surveys, a soil scientist was not utilized for this project.

Wetlands and waterbodies on the remaining approximately 33 miles of the Project, which have largely been constructed, were mapped as possible but not delineated. This information will be provided to E3 in a separate report.

II.A. Wetlands

Wetlands were delineated in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), along with additional information as provided in the *Great Plains Supplement* (U.S. Army Corps of Engineers 2010). The manual emphasizes a three-parameter approach to identify wetlands that may be federally regulated, including the presence of hydrophytic vegetation, hydric soils, and wetland hydrology. These criteria were applied to establish the presence and extent of wetlands by documenting paired upland and wetland sample points at delineated wetlands. The delineated wetlands were

classified according to methodologies set forth in *Wetlands and Deepwater Habitats of the United States* (Cowardin *et al*. 1979).

Vegetation. Plants observed at a given survey location were identified to species using standard floras appropriate for North Dakota. Such floras included *Flora of the Great Plains* (Great Plains Flora Association 1986), *Handbook of North Dakota Plants* (Stevens 1963), and *Midwestern Wetland Flora, Field Office Guide to Plant Species* (USDA No Date). Plant species nomenclature and indicator status were assigned according to the *National List of Plant Species that Occur in Wetlands: National Summary* (Reed 1988) and the *National List of Plant Species that Occur in Wetlands: Northwest Supplement (Region 9)* (Reed 1993). A list of species was then compiled for the survey area and an assessment of the dominant species was made. It was then determined if the survey area supported wetland vegetation.

Wetland indicator status for a species is designated according to the estimated frequency of occurrence in wetlands. For instance, a species with a presumed estimated frequency of occurrence of 67 to 99 percent in wetlands is designated a facultative wetland indicator species. Table 1 includes wetland indicator categories, the indicator symbol, and the frequency of occurrence within wetlands for each category.

Table 1. Plant Wetland Indicator Status Categories*

Indicator Category	Symbol	Frequency of Occurrence
OBLIGATE	OBL	Greater than 99%
FACULTATIVE WETLAND	FACW	67-99%
FACULTATIVE	FAC	34-66%
FACULTATIVE UPLAND	FACU	1-33%
UPLAND	UPL	Less than 1%

* Based upon information contained in the 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987).

Obligate and facultative wetland indicator species are hydrophytes that occur “in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present” (Environmental Laboratory 1987). Facultative indicator species may be considered wetland indicator species when found growing in hydric soils that experience periodic saturation. A plus (+) or minus (-) designation following an indicator status for the Great Plains Supplement specifies that a particular species occupies the higher or lower part of that frequency range. An asterisk (*) following an indicator status signifies that the indicator status for a particular species was designated based on limited ecological information.

Soils. Where possible and needed, the top 20 inches or more of the soil profile was examined for hydric characteristics. Such characteristics include the presence of organic soils (Histosols), histic epipedons, aquic or peraquic moisture regime, presence of a soil series on a hydric soil list, or mottling indicated by the presence of gleyed or bright spots of colors (in the former case, blue grays; in the latter case, orange red, or red brown) within the soil horizons observed.

Mottling of soils usually indicates presence of anaerobic conditions typically caused by poor drainage. Munsell Soil Notations (Kollmorgen Instruments Corp. 1990) were recorded for the soil matrix for each soil sample. The last digit of the Munsell Soil Notation refers to the chroma of the sample. This notation consists of numbers beginning with 0 for neutral grays and increasing at equal intervals to a maximum of about 20. Chroma values of the soil matrix, which are one (1) or less, or two (2) or less when mottling is present, are typical of soils that have developed under anaerobic conditions. In sandy soils, such as alluvial deposits in the bottom of drainage channels, hydric soil indicators include high organic matter content in the surface horizon and streaking of subsurface horizons by organic matter.

Hydrology. Each of the survey areas was examined for positive field indicators of wetland hydrology. Examples of hydrology indicators include visual observation of inundation and/or soil saturation, watermarks, drift lines, water-borne sediment deposits, water-stained leaves, and drainage patterns in wetlands.

Wetland boundaries were recorded with a Global Positioning System (GPS) unit capable of sub-foot accuracy with real-time differential correction. The location of each sample point (wetland and upland) was also recorded with the GPS unit.

II.B. Waterbodies

Waterbody surveys were conducted in conjunction with wetland delineations. Waterbodies include landscape features that potentially hold or convey water such as rivers, all “blue lines” depicted on a U.S. Geological Survey topographic map as well as other ephemeral streams, irrigation ditches, drainage ditches, canals, and other surface water features such as ponds (including stock ponds), lakes, playas, and saline flats.

Since identification of some waterbodies can be difficult in semi-arid environments in the western U.S., the guidance document for determining waterbody resources in the arid southwest was consulted (U.S. Army Corps of Engineers, South Pacific Division, 2001). Based on this guidance and experience in similar environments, the following guidelines were used to identify waterbodies:

- Presence of a defined bed and bank;
- Surface connection to another waterbody.; and
- Evidence of periodic flow (*e.g.*, litter, debris, natural scour line, shifted gravel, eroded banks).

Intermittent and ephemeral channels with an abundance of upland vegetation, channels with an indistinct or discontinuous channel bed were not recorded as a waterbody.

Each waterbody was mapped using a GPS unit capable of sub-meter accuracy. For small linear waterbody features, the length of the waterbody within the survey corridor was recorded with the GPS unit. For other waterbody features, such as rivers, ponds or impoundments, the ordinary

high water mark was recorded using the GPS unit. Maps of each waterbody were made using ArcView™.

Each waterbody in the survey corridor was described based on its position relative to the centerline (*e.g.*, whether it crossed the centerline or if it did not cross, its approximate distance and direction from the centerline). Flow type was recorded as intermittent or perennial. Additional information collected to describe the waterbodies includes:

- identification of the ordinary high water mark (OHWM), as defined in 33 CFR 328.3(e);
- approximate channel width (water-edge to water-edge);
- approximate bank width (top-of-bank to top-of-bank);
- approximate channel depth;
- bank vegetation/cover;
- approximate bank slope;
- approximate bank height;
- presence of riparian vegetation (*e.g.*, willows, cottonwood, wetland plants)
- adjacent land use;
- special features (*e.g.*, dikes, riprap);
- subjective measure of flow and velocity;
- photographs and a brief description of each feature; and
- waterbody substrate.

All waterbody data were estimated visually and recorded on a data sheet. Photos of waterbodies were also taken.

III. RESULTS

A total of four wetlands and six waterbodies were identified and delineated within the Project survey boundaries. In addition, one area identified as a potential wetland on NWI maps was investigated and found to not be a wetland, documentation of this investigation is included on the maps and dataforms. A summary of all wetlands and waterbodies delineated along the pipeline corridor is provided in Appendix A and B, respectively. Maps in Appendix C contain both the delineated wetlands and waterbodies. For referencing, mileposts were established by WEST for the maps starting with zero on the south end of the project and are shown on the maps. The wetlands are denoted as green, cross-hatched polygons or lines with the unique wetland identification number (identified starting with a “w” for wetland, then an abbreviation for the county, crew, and assigned number). Datasheets for wetlands, corresponding upland sample points and photographs recorded as well as waterbody datasheets and photos are included in Appendix D.

No springs were located during the delineations.

Waterbodies are denoted with a blue line or polygon with the unique waterbody identification number (identified starting with an “s” for stream or “o” for open water, then an abbreviation for

the county, crew, and assigned number). While the majority of the waterbodies by number were intermittent canals or ditches, the main waterbody feature of the survey effort was the Missouri River. For the Missouri River a line feature was captured on both the north and south bank.

Wetlands delineated along the pipelines corridor were Palustrine Emergent (PEM) wetlands or Palustrine Scrub Shrub (PSS) according to the Cowardin Wetland Classification (Cowardin *et al*. 1979). The PEM wetlands were found set back from the river crossing whereas the PSS wetlands were found along either bank of the Missouri River, extending approximately 0.4 mile north of the river and 0.1 mile to the south. A brief description of these wetland types is included below with detailed information on each wetland found on the datasheets in Appendix D.

Palustrine Emergent

Vegetation in this group consists of graminoid and/or herbaceous dominated communities with saturated soil from natural (*e.g.*, high water table, drainage feature, seep) and/or artificial (*e.g.*, irrigation) hydrology which may or may not be present during the entire growing season. Wetlands documented for the Project as PEM occurred north of the Missouri River crossing and included one area associated with a drainage feature and another a low, wet area that was flooded during the high water conditions in 2011. Vegetation in this area is composed of a combination of native, emergent vegetation as well as scattered tree or shrub species.

Palustrine Scrub-Shrub

Vegetation within this wetland group consists of shrub dominated wetland communities (primarily willow) that occur along the Missouri River. This type of wetland group, in general, also occurs within or adjacent to wet meadows typically including hydrophytic shrub species with a minimum of 50 percent cover and often supporting a sparse to dense herbaceous understory. The PSS wetlands found in the Project area occurred adjacent to the Missouri River, both north and south of the banks. The dominant hydrophytic shrub species documented was willow (*Salix spp*, OBL).

IV. LITERATURE CITED

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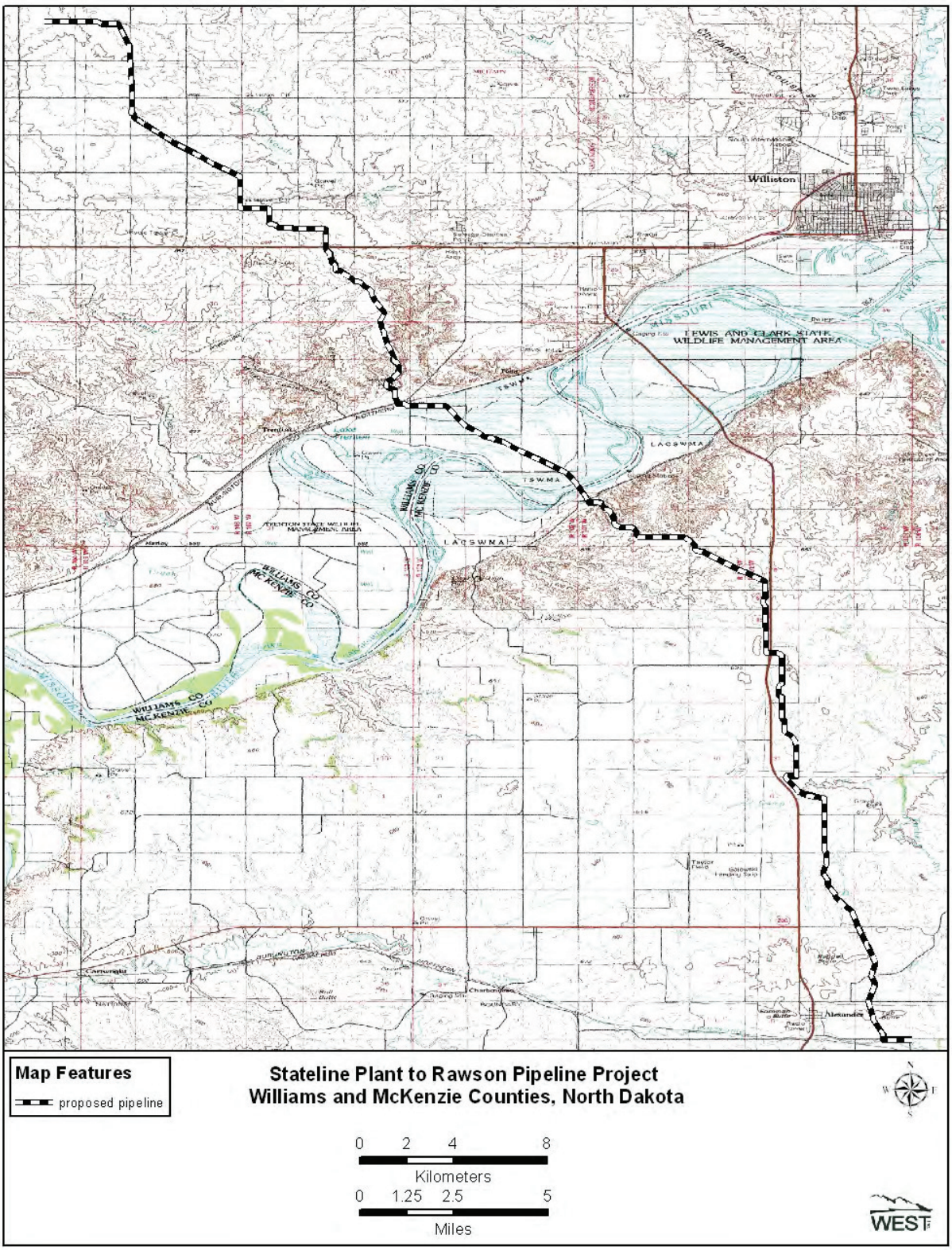


Figure 1. General Project area for the Stateline Plant to Rawson Pipeline Project.

Appendix A: Wetlands Delineated along the Stateline Plant to Rawson Pipeline Project Corridor

Appendix A. Wetlands Delineated Along the Stateline Plant to Rawson Pipeline Project Corridor[a]

Unique ID	Cowardin Wetland Classification[b]
w-mc-a-006	PSS
w-wi-a-001	PSS
w-wi-a-003	PEM
w-wi-a-004	PEM

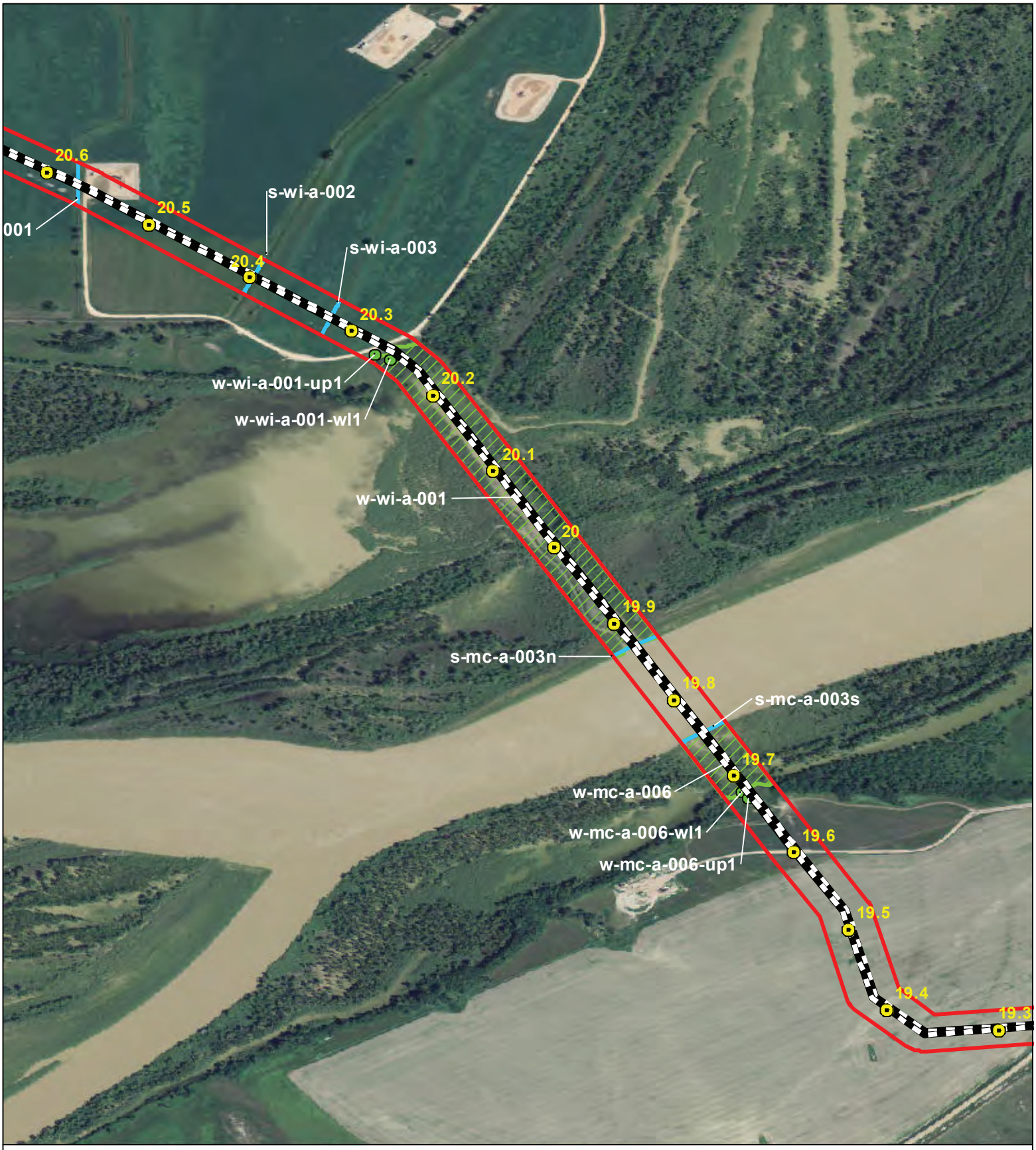
[a] Area delineated within 200-foot survey corridor.
[b] Cowardin Classification (Cowardin *et al*. 1979)
PEM=Palustrine Emergent Wetland
PFO=Palustrine Forested Wetland – *none identified*
PSS=Palustrine Scrub-Shrub Wetland

Appendix B: Waterbodies Surveyed Along the Stateline Plant to Rawson Pipeline Project Corridor

Appendix B
Waterbodies Surveyed along the Stateline Plant to Rawson Pipeline Project Corridor

Waterbody Name	Unique ID	Type	Width (Feet)	
			Channel Width	Bank to Bank Width
ditch/canal	s-wi-a-001	Ditch	1	4
ditch/canal	s-wi-a-002	Ditch	1	20
ditch/canal	s-wi-a-003	Ditch	1	3
ditch/canal	s-wi-a-005	Intermittent	3	3
ditch/canal	s-wi-a-006	Intermittent	15	25
Missouri River	s-mc-a-003 n, s	Perennial	300	300

Appendix C: Aerial Photographs with Stateline Plant to Rawson Pipeline Project Delineated Wetland and Waterbody Locations



Map Features

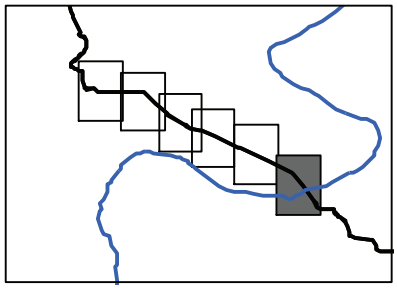
- proposed pipeline
- survey corridor
- non-Waters of the US
- waterbody line
- wetland sample point
- wetland polygon

Stateline Plant to Rawson Pipeline Project
Williams and McKenzie Counties, North Dakota

0 95 190 380
Meters

0 112.5 225 450
Yards

WEST





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Meters
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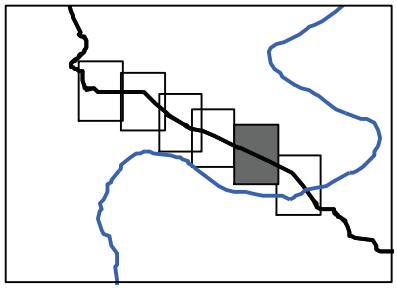
WEST





Map Features

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Stateline Plant to Rawson Pipeline Project
Williams and McKenzie Counties, North Dakota

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Meters

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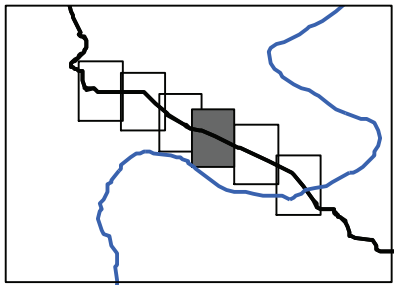
Yards

WEST





Map Features

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- waterbody line
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Stateline Plant to Rawson Pipeline Project
Williams and McKenzie Counties, North Dakota

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Meters
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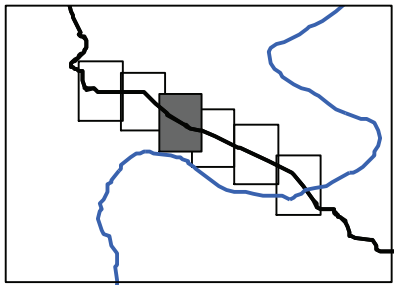
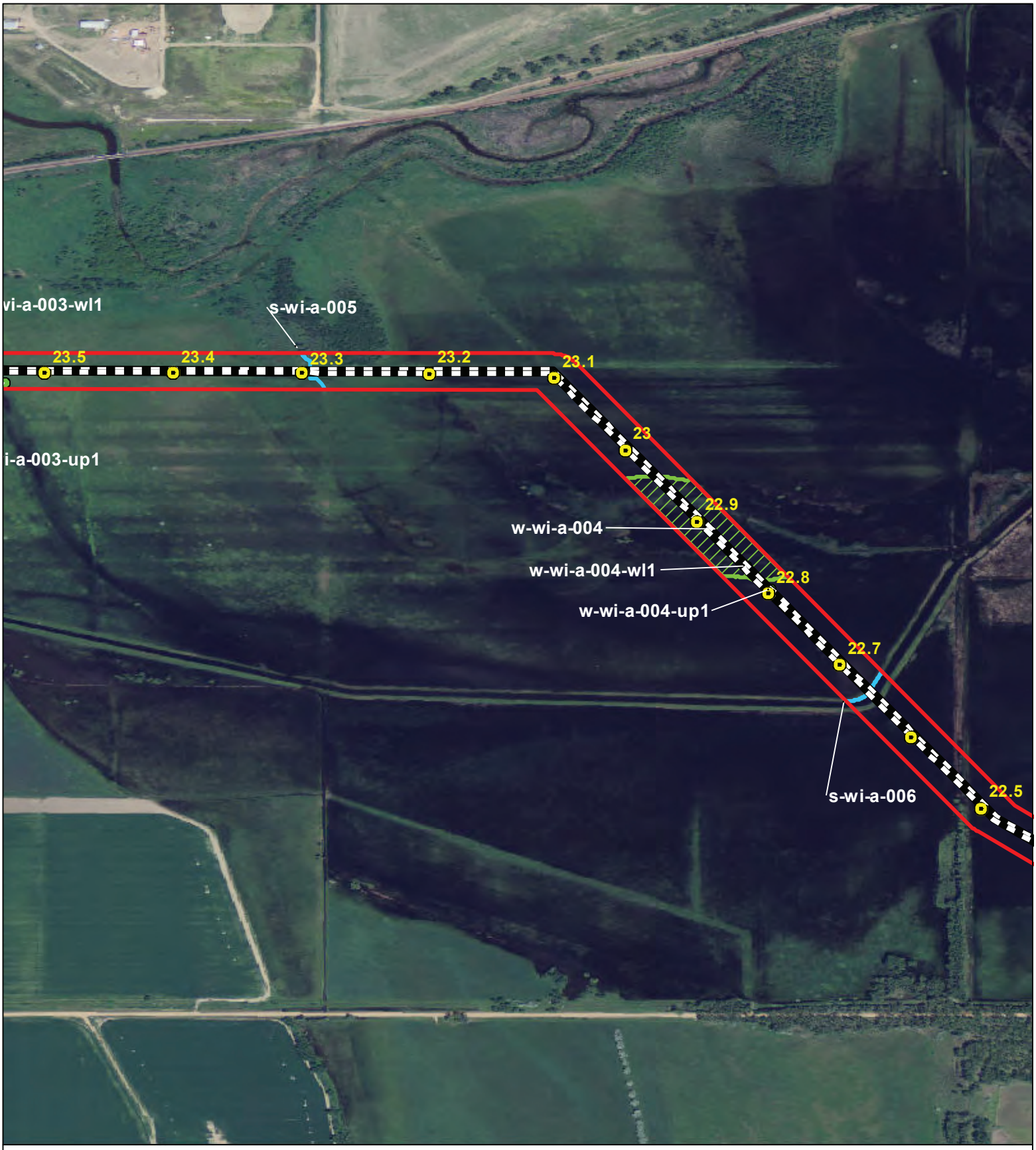
Yards

WEST





Map Features

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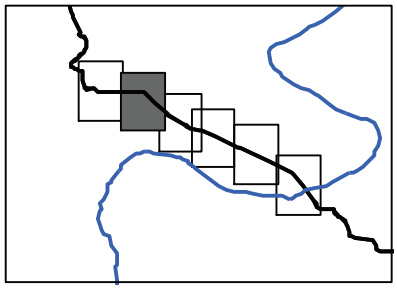
- waterbody line
- wetland sample point
- wetland polygon

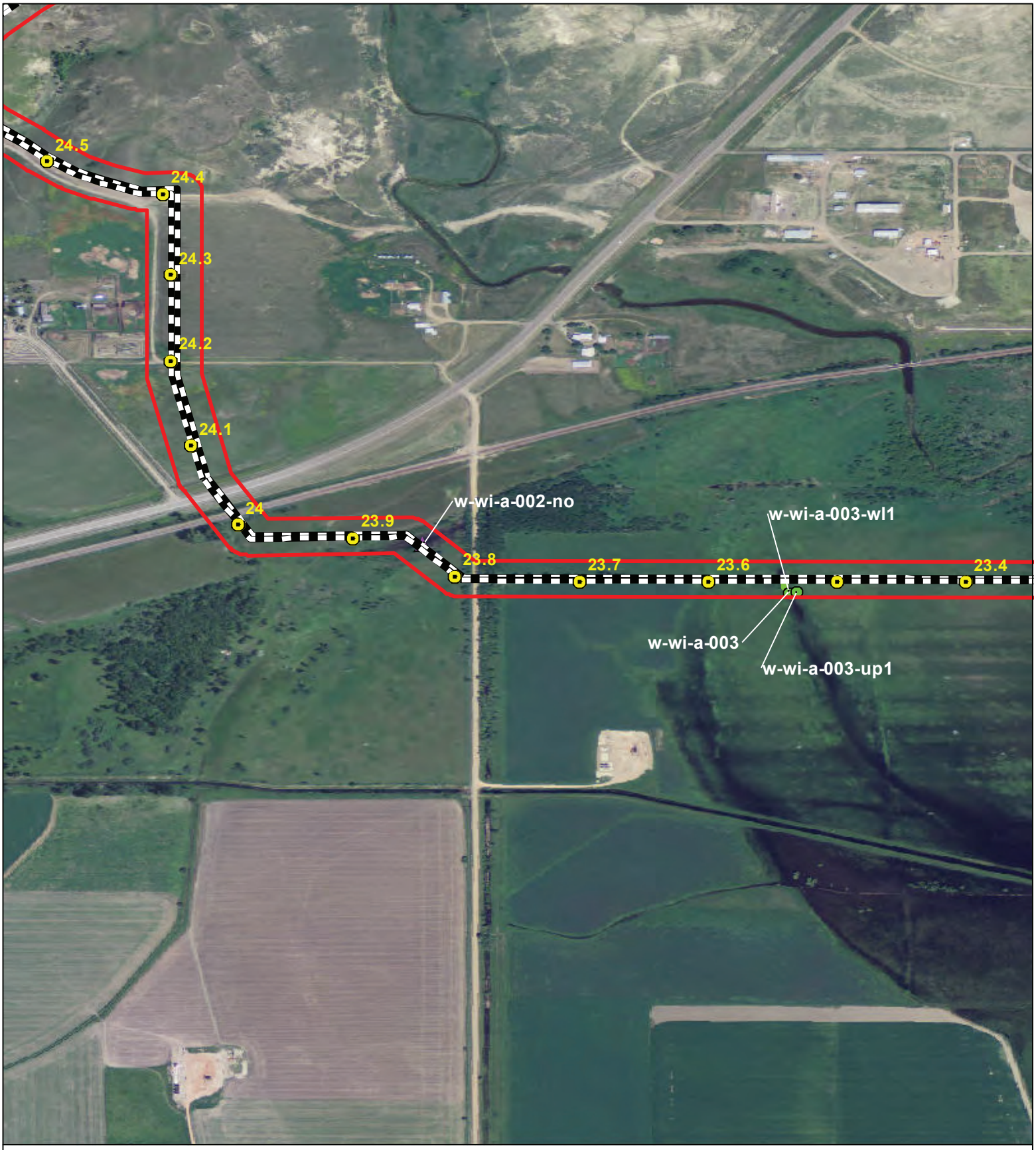
Stateline Plant to Rawson Pipeline Project
Williams and McKenzie Counties, North Dakota

0 95 190 380
Meters

0 112.5 225 450
Yards

WEST





Map Features

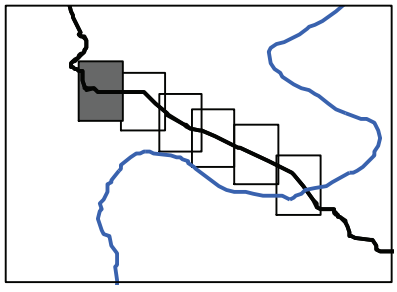
- proposed pipeline
- survey corridor
- non-Waters of the US
- waterbody line
- wetland sample point
- wetland polygon

Stateline Plant to Rawson Pipeline Project
Williams and McKenzie Counties, North Dakota

0 95 190 380
Meters

0 112.5 225 450
Yards

WEST



Appendix D: Datasheets and Photographs for Stateline Plant to Rawson Pipeline Project Wetland and Waterbody Delineations

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Rockies PL **City/County:** McKenzie **Sampling Date:** 26-May-12

Applicant/Owner: ONEOK **State:** ND **Pt:** w-mc-a-006-up1

Investigator(s): KL, JF **Section, Township, Range:** S 30 T 153 R 101

Landform (hillslope, terrace, etc.): Backslope **Local relief (concave, convex, none):** concave **Slope:** 3.0% / 1.7 °

Subregion (LRR): LRR F **Lat.:** 48.0452 **Long.:** -103.7312 **Datum:** WGS84

Soil Map Unit Name: McKeen Loam, 0-1% slopes **NWI classification:** UPL

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ○ No ◉

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ○ No ◉

Is the Sampled Area within a Wetland? Yes ○ No ◉

Remarks:
785

VEGETATION - Use scientific names of plants

FWS Region: -?-

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
3.	0	☐		
4.	0	☐		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10 m sq.)				
1. Symphoricarpos occidentalis	10	☑	100.0%	UPL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	10	= Total Cover		
Herb Stratum (Plot size: 5 m sq.)				
1. Bromus inermis	20	☑	42.6%	UPL
2. Cirsium arvense	20	☑	42.6%	FACU
3. Mentha arvensis	2	☐	4.3%	FACW
4. poa sewnda	5	☐	10.6%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	47	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
	0	= Total Cover		

% Bare Ground in Herb Stratum 60

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	0	x 3 =	0
FACU species	20	x 4 =	80
UPL species	30	x 5 =	150
Column Totals:	52 (A)		234 (B)

Prevalence Index = B/A = 4.5

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0[1]**
- ☐ **4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation[1] (Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

Doesn't meet criteria for veg.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Pt. w-mc-a-006-up1

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-13	2.5YR	4/2	92	10YR	5/6	8	C	M	Loamy Sand	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR F)
- ☐ 1 cm Muck (A9) (LRR F,G,H)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ☐ Sandy Gleyed Matrix S4
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ High Plains Depressions (F16) **(MLRA 72 and 73 of LRR H)**

Indicators for Problematic Hydric Soils[3] :

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coastal Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16) **(LRR H outside of MLRA 72 and 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Meets criteria for hydric soil

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-neutral Test (D5)
- ☐ Frost Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

Doesn't meet criteria for hydrology



Photo File: **DSCN0785.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: **0** Lat/Northing: **0**

Description:

No Photo

Photo File: **None.bmp** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Rockies PL **City/County:** McKenzie **Sampling Date:** 26-May-12

Applicant/Owner: ONEOK **State:** ND **Pt:** w-mc-a-006-wl1

Investigator(s): KL, JF **Section, Township, Range:** S 30 T 153 R 101

Landform (hillslope, terrace, etc.): Oxbow **Local relief (concave, convex, none):** none **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR F **Lat.:** 48.0453 **Long.:** -103.7313 **Datum:** WGS84

Soil Map Unit Name: McKeen Loam, 0-1% slopes **NWI classification:** PSS

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
783, 784. S bank Missouri River

VEGETATION - Use scientific names of plants

FWS Region: R4

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 20 m sq.)				
1. Salix amygdaloides	5	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	5	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10 m sq.)				
1. Salix exigua	20	☑	100.0%	FACW+
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	20	= Total Cover		
Herb Stratum (Plot size: 5 m sq.)				
1. Carex praegracilis	25	☑	50.0%	FACW
2. alisma triviale	2	☐	4.0%	
3. Potentilla norvegica	5	☐	10.0%	FAC
4. Phalaris arundinacea	15	☑	30.0%	FACW+
5. Toxicodendron rydbergii	3	☐	6.0%	FACU
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	50	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
	0	= Total Cover		

% Bare Ground in Herb Stratum 60

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	5	x 3 =	15
FACU species	3	x 4 =	12
UPL species	0	x 5 =	0
Column Totals:	73 (A)		157 (B)

Prevalence Index = B/A = 2.1507

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0**[1]
- ☐ **4 - Morphological Adaptations**[1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation**[1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Meets criteria for veg.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR	4/1	80%	7.5YR	4/6	20%	C	M	Sandy Loam	
5-12	10YR	3/1	80%	7.5YR	4/6	20%	C	M	Loamy Sand	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR F)
- ☐ 1 cm Muck (A9) (LRR F,G,H)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ☐ Sandy Gleyed Matrix S4
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ High Plains Depressions (F16) **(MLRA 72 and 73 of LRR H)**

Indicators for Problematic Hydric Soils[3] :

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coastal Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16) **(LRR H outside of MLRA 72 and 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Meets criteria for hydric soil

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☑ FAC-neutral Test (D5)
- ☐ Frost Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Meets criteria for hydrology



Photo File: **DSCN0783.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: Lat/Northing: **0**

Description:



Photo File: **DSCN0784.JPG** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Rockies PL **City/County:** Williams **Sampling Date:** 24-May-12

Applicant/Owner: ONEOK **State:** ND **Pt:** w-wi-a-001-wl1

Investigator(s): KL, JF **Section, Township, Range:** S 25 T 153 R 102

Landform (hillslope, terrace, etc.): River oxbow **Local relief (concave, convex, none):** none **Slope:** 2.0% / 1.1 °

Subregion (LRR): LRR F **Lat.:** 48.0525 **Long.:** -103.7372 **Datum:** WGS84

Soil Map Unit Name: McKeen Loam, 0-1% slopes **NWI classification:** PSS

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
a-756, 757

VEGETATION - Use scientific names of plants

FWS Region: R4

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
3.	0	☐		
4.	0	☐		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10 m sq.)				
1. Salix exigua	80	☑	100.0%	FACW+
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	80	= Total Cover		
Herb Stratum (Plot size: 5 m sq.)				
1. Carex atherodes	15	☑	48.4%	OBL
2. Phalaris arundinacea	10	☑	32.3%	FACW+
3. Rumex crispus	2	☐	6.5%	FACW
4. asclepias sp.	3	☐	9.7%	
5. Glycyrrhiza lepidota	1	☐	3.2%	FACU
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	31	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
	0	= Total Cover		

% Bare Ground in Herb Stratum 65

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	15	x 1 =	15
FACW species	92	x 2 =	184
FAC species	0	x 3 =	0
FACU species	1	x 4 =	4
UPL species	0	x 5 =	0
Column Totals:	108 (A)		203 (B)

Prevalence Index = B/A = 1.8796

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0[1]**
- ☐ **4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation[1] (Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Meets criteria for hydrophytic veg.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Pt. w-wi-a-001-wl1

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5YR	2.5/1	50%	10YR	4/1	30%	D	M	Silty Clay	
				7.5YR	4/6	20%	C	M		
8-18	2.5YR	4/1	70%	10YR	4/6	30%	C	M	silty loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR F)
- ☐ 1 cm Muck (A9) (LRR F,G,H)
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ☐ Sandy Gleyed Matrix S4
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ High Plains Depressions (F16) **(MLRA 72 and 73 of LRR H)**

Indicators for Problematic Hydric Soils[3] :

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coastal Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16) **(LRR H outside of MLRA 72 and 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Meets criteria for hydric soil. 1" drift/litter deposit on top of soil.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☑ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☑ FAC-neutral Test (D5)
- ☐ Frost Heave Hummocks (D7) (LRF F)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Meets criteria for hydrology. Water marks and drift deposits appear to be from last year (2011)



Photo File: **DSCN0756.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: Lat/Northing: **0**

Description:



Photo File: **DSCN0757.JPG** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Rockies PL **City/County:** Williams **Sampling Date:** 24-May-12

Applicant/Owner: ONEOK **State:** ND **Pt:** w-wi-a-001-up1

Investigator(s): KL, JF **Section, Township, Range:** S 25 T 153 R 102

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** none **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR F **Lat.:** 48.0526 **Long.:** -103.7375 **Datum:** WGS84

Soil Map Unit Name: McKeen Loam, 0-1% slopes **NWI classification:** UPL

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ○ No ◉

Hydric Soil Present? Yes ○ No ◉

Wetland Hydrology Present? Yes ○ No ◉

Is the Sampled Area within a Wetland? Yes ○ No ◉

Remarks:
758

VEGETATION - Use scientific names of plants

FWS Region: -?-

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
3.	0	☐		
4.	0	☐		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
3.	0	☐		
4.	0	☐		
5.	0	☐		
	0	= Total Cover		
Herb Stratum (Plot size: 5 m sq.)				
1. Bromus inermis	35	☑	58.3%	UPL
2. Cirsium arvense	20	☑	33.3%	FACU
3. Plantago major	1	☐	1.7%	FAC
4. Glycyrrhiza lepidota	2	☐	3.3%	FACU
5. descurainia sp.	1	☐	1.7%	
6. lactuca sp.	1	☐	1.7%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	60	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
	0	= Total Cover		

% Bare Ground in Herb Stratum 50

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	1	x 3 =	3
FACU species	22	x 4 =	88
UPL species	35	x 5 =	175
Column Totals:	58 (A)		266 (B)

Prevalence Index = B/A = 4.5862

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0[1]**
- ☐ **4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation[1] (Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

Doesn't meet criteria for veg.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Pt. w-wi-a-001-up1

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR	3/2	100%						Loam	
4-14	10YR	3/2	97	7.5YR	4/6	3%	C	M	Clay Loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR F)
- ☐ 1 cm Muck (A9) (LRR F,G,H)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ☐ Sandy Gleyed Matrix S4
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ High Plains Depressions (F16) **(MLRA 72 and 73 of LRR H)**

Indicators for Problematic Hydric Soils[3] :

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coastal Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16) **(LRR H outside of MLRA 72 and 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

Doesn't meet criteria for hydric soil

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-neutral Test (D5)
- ☐ Frost Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

Doesn't meet criteria for hydrology



Photo File: **DSCN0758.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: Lat/Northing: **0**

Description:

No Photo

Photo File: **None.bmp** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Rockies PL **City/County:** Williams **Sampling Date:** 24-May-12

Applicant/Owner: ONEOK **State:** ND **Pt:** w-wi-a-004-up1

Investigator(s): KL, JF **Section, Township, Range:** S 15 T 153 R 102

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR F **Lat.:** 48.0749 **Long.:** -103.7801 **Datum:** WGS84

Soil Map Unit Name: Lohler silty clay, saline, 0-1% slopes **NWI classification:** UPL

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ○ No ◉

Hydric Soil Present? Yes ○ No ◉

Wetland Hydrology Present? Yes ○ No ◉

Is the Sampled Area within a Wetland? Yes ○ No ◉

Remarks:
767

VEGETATION - Use scientific names of plants

FWS Region: -?-

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
3.	0	☐		
4.	0	☐		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
3.	0	☐		
4.	0	☐		
5.	0	☐		
	0	= Total Cover		
Herb Stratum (Plot size:)				
1. chenopodium sp.	1	☐	100.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	1	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
	0	= Total Cover		

% Bare Ground in Herb Stratum 100

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = 0

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0[1]**
- ☐ **4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation[1] (Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

Doesn't meet criteria for veg. Only 1% of Chenopodium - not dominant!

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR	3/2	100%						Loam	
4-18	10YR	3/2	50%	10YR	2/2	47			Clay Loam	
				7.5YR	4/6	3%	C	M		

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR F)
- ☐ 1 cm Muck (A9) (LRR F,G,H)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ☐ Sandy Gleyed Matrix S4
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ High Plains Depressions (F16) **(MLRA 72 and 73 of LRR H)**

Indicators for Problematic Hydric Soils[3] :

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coastal Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16) **(LRR H outside of MLRA 72 and 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

Doesn't meet criteria for hydric soil

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-neutral Test (D5)
- ☐ Frost Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

Doesn't meet criteria for hydrology



Photo File: **DSCN0767.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: Lat/Northing: **0**

Description:

No Photo

Photo File: **None.bmp** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Rockies PL **City/County:** Williams **Sampling Date:** 24-May-12

Applicant/Owner: ONEOK **State:** ND **Pt:** w-wi-a-004-wl1

Investigator(s): KL, JF **Section, Township, Range:** S 15 T 153 R 102

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** none **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR F **Lat.:** 48.0753 **Long.:** -103.7805 **Datum:** WGS84

Soil Map Unit Name: Lohler silty clay, saline, 0-1% slopes **NWI classification:** PEM

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
755, 766

VEGETATION - Use scientific names of plants

FWS Region: R4

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
3.	0	☐		
4.	0	☐		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
3.	0	☐		
4.	0	☐		
5.	0	☐		
	0	= Total Cover		
Herb Stratum (Plot size: 5 m sq.)				
1. Phragmites australis	30	☑	60.0%	FACW
2. Scirpus acutus	20	☑	40.0%	OBL
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	50	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
	0	= Total Cover		

% Bare Ground in Herb Stratum 60

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	20	x 1 =	20
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	50 (A)		80 (B)

Prevalence Index = B/A = 1.6

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0[1]**
- ☐ **4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation[1] (Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Meets criteria for veg.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Pt. w-wi-a-004-wl1

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-3	5YR	4/2	95%	10YR	4/6	5%	C	PL	Silty Clay	
3-16	10YR	3/1	85%	10YR	5/4	15%	C	M	Clay	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR F)
- ☐ 1 cm Muck (A9) (LRR F,G,H)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ☐ Sandy Gleyed Matrix S4
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ High Plains Depressions (F16) **(MLRA 72 and 73 of LRR H)**

Indicators for Problematic Hydric Soils[3] :

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coastal Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16) **(LRR H outside of MLRA 72 and 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Meets criteria for hydric soil. Very thin (less than .25") muck between soil layers-appears the top soil layer (0-3") was deposited during last year's flood (2011).

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☑ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☑ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☑ FAC-neutral Test (D5)
- ☐ Frost Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 3

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Meets criteria for hydrology. Soil saturated below thin mucky layer.



Photo File: **DSCN0755.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: Lat/Northing: **0**

Description:



Photo File: **DSCN0766.JPG** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Rockies PL **City/County:** Williams **Sampling Date:** 24-May-12

Applicant/Owner: ONEOK **State:** ND **Pt:** w-wi-a-003-up1

Investigator(s): KL, JF **Section, Township, Range:** S 15 T 153 R 102

Landform (hillslope, terrace, etc.): Hayfield **Local relief (concave, convex, none):** flat **Slope:** 0.0% / 0.0 °

Subregion (LRR): LRR F **Lat.:** 48.0784 **Long.:** -103.7929 **Datum:** WGS84

Soil Map Unit Name: Scorio silty clay, saline, 0-1% slopes **NWI classification:** UPL

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

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

Remarks:
763

VEGETATION - Use scientific names of plants

FWS Region: R4

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size:)			
1. Alopecurus arundinaceus	100	☑ 100.0%	NI
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
	0	**= Total Cover**	

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = 0

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0[1]**
- ☐ **4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation[1] (Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:
Doesn't meet criteria for veg.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Pt. w-wi-a-003-up1

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR	3/2	95%	10YR	4/6	5%	C	M	Clay Loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR F)
- ☐ 1 cm Muck (A9) (LRR F,G,H)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ☐ Sandy Gleyed Matrix S4
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ High Plains Depressions (F16) **(MLRA 72 and 73 of LRR H)**

Indicators for Problematic Hydric Soils[3] :

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coastal Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16) **(LRR H outside of MLRA 72 and 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

Doesn't meet criteria for hydric soil

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-neutral Test (D5)
- ☐ Frost Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

Doesn't meet criteria for hydrology



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Lat/Long or UTM : Long/Easting: Lat/Northing: **0**

Description:

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Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Rockies PL **City/County:** Williams **Sampling Date:** 24-May-12

Applicant/Owner: ONEOK **State:** ND **Pt:** w-wi-a-003-wl1

Investigator(s): KL, JF **Section, Township, Range:** S 15 T 153 R 102

Landform (hillslope, terrace, etc.): Swale/drainage **Local relief (concave, convex, none):** concave **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR F **Lat.:** 48.0784 **Long.:** -103.7931 **Datum:** WGS84

Soil Map Unit Name: Scorio silty clay, saline, 0-1% slopes **NWI classification:** PEM

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:
761, 762

VEGETATION - Use scientific names of plants

FWS Region: -?-

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 10x30)				
1. Salix amygdaloides	5	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	5		= Total Cover	
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
3.	0	☐		
4.	0	☐		
5.	0	☐		
	0		= Total Cover	
Herb Stratum (Plot size: 5 m sq.)				
1. Scirpus acutus	15	☑	65.2%	OBL
2. Alopecurus pratensis	5	☑	21.7%	FACW
3. chenopodium sp.	1	☐	4.3%	
4. carex sp.	2	☐	8.7%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	23		= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
	0		= Total Cover	

% Bare Ground in Herb Stratum 80

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	15	x 1 =	15
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	25 (A)		35 (B)

Prevalence Index = B/A = 1.4

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0[1]**
- ☐ **4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation[1] (Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

Meets criteria for veg.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5YR	3/1	85%	2.5YR	5/4	15%	C	M	Clay	
12-18	10YR	3/2	95%	2.5YR	5/6	5%	C	M	Clay	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR F)
- ☐ 1 cm Muck (A9) (LRR F,G,H)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ☐ Sandy Gleyed Matrix S4
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ High Plains Depressions (F16) **(MLRA 72 and 73 of LRR H)**

Indicators for Problematic Hydric Soils[3] :

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coastal Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16) **(LRR H outside of MLRA 72 and 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☑ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☑ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☑ FAC-neutral Test (D5)
- ☐ Frost Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Meets criteria for hydrology



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Lat/Long or UTM : Long/Easting: Lat/Northing: **0**

Description:



Photo File: **DSCN0762.JPG** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Rockies PL **City/County:** Williams **Sampling Date:** 24-May-12

Applicant/Owner: ONEOK **State:** ND **Pt:** w-wi-a-002-no

Investigator(s): KL, JF **Section, Township, Range:** S 16 T 153 R 102

Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** concave **Slope:** 1.0% / 0.6 °

Subregion (LRR): LRR F **Lat.:** 48.0791 **Long.:** -103.7992 **Datum:** WGS84

Soil Map Unit Name: Lohler silty clay, slightly wet, 0-2% slopes **NWI classification:**

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, et

Hydrophytic Vegetation Present? Yes ◉ No ○

Hydric Soil Present? Yes ○ No ◉

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? Yes ○ No ◉

Remarks:
Did not dig soil pit-no hydrophytic veg. Many trees in area are dead, likely due to inundation from last year's flood. 759

VEGETATION - Use scientific names of plants

FWS Region: -?-

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30 m sq.)				
1. Fraxinus pennsylvanica	2	☐	100.0%	FAC
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	2	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
3.	0	☐		
4.	0	☐		
5.	0	☐		
	0	= Total Cover		
Herb Stratum (Plot size: 10 m sq.)				
1. no veg.	0	☐		
2.	0	☐		
3.	0	☐		
4.	0	☐		
5.	0	☐		
6.	0	☐		
7.	0	☐		
8.	0	☐		
9.	0	☐		
10.	0	☐		
	0	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐		
2.	0	☐		
	0	= Total Cover		

% Bare Ground in Herb Stratum 100

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	2	x 3 =	6
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	2 (A)		6 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0[1]**
- ☐ **4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation[1] (Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:
Only 2% of Fraxinus - no dominant veg! Doesn't meet criteria for veg.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Pt. w-wi-a-002-no

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR F)
- ☐ 1 cm Muck (A9) (LRR F,G,H)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ☐ Sandy Gleyed Matrix S4
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ High Plains Depressions (F16) **(MLRA 72 and 73 of LRR H)**

Indicators for Problematic Hydric Soils[3] :

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coastal Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16) **(LRR H outside of MLRA 72 and 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Did not dig sample pit

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☑ Drift deposits (B3)
- ☑ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-neutral Test (D5)
- ☐ Frost Heave Hummocks (D7) (LRR F)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Drift deposits and algal mat look to be from last year (2011). Meets criteria for hydrology.



Photo File: **DSCN0759.JPG** Orientation: -facing

Lat/Long or UTM : Long/Easting: Lat/Northing: **0**

Description:

No Photo

Photo File: **None.bmp** Orientation: -facing

Lat/Long or UTM: Long/Easting: **0** Lat/Northing: **0**

Description:

Waterbody Survey Data Sheet

- **COLLECT ALL DATA FROM THE CENTER LINE (if otherwise collect GPS point)**
- **Collect GPS data on both sides for major waterbodies**

Unique Site ID: s-wi-a-001			
Date: 5/24/2012	State: ND	County: Williams	Crew Chief: KL, JF
Tract Number(s):USACE		Milepost Range (Entry-Exit):	

Waterbody Characteristics

Open Water classification:	X Intermittent	Perennial	Ephemeral
Approx. Water edge to water edge width (ft): 0, dry		Approx. ave. water depth (ft): 0, dry	
Approx. Top of bank width (ft): 4		Approx. Upstream slope (degrees; 0-90): 2	
Approx. OHWM to OHWM width (ft): 1 Approx. downstream slope (degrees; 0-90) 2		Approx. Bank height/slope (ft): 2	
Approximate water velocity (fps): N/A		Riparian Forest (Present/Absent): Absent	
Riparian Corridor (describe veg. communities w/ riparian corridor, list dominant species in each community): 95% bare			

Stream bottom composition:		X silt	clay	sand
gravel	cobble	boulders	bedrock	muck
Unique features:	seeps	gravel beds	erosion	bank collapse
	riprap road	bedrock	wells	adjacent wetlands
	buildings	cut-off channels	riffles/runs	steep side slopes

If a seep is present please describe (e.g. seep out of west bank 10 feet up bank):
Where was GPS Data Taken (Bank, OHWM, Water edge): Thalweg

Notes

s-wi-a-001 photograph



Waterbody Survey Data Sheet

- **COLLECT ALL DATA FROM THE CENTER LINE (if otherwise collect GPS point)**
- **Collect GPS data on both sides for major waterbodies**

Unique Site ID: s-wi-a-002			
Date: 5/24/2012	State: ND	County: Williams	Crew Chief: KL, JF
Tract Number(s):USACE		Milepost Range (Entry-Exit):	

Waterbody Characteristics

Open Water classification:	X Intermittent	Perennial	Ephemeral
Approx. Water edge to water edge width (ft): 0, dry		Approx. ave. water depth (ft): 0, dry	
Approx. Top of bank width (ft): 20		Upstream Bank height/slope (ft.): 7	
Approx. OHWM to OHWM width (ft): 1		Downstream Bank height/slope (ft): 7	
Approximate water velocity (fps): dry		Riparian Forest (Present/Absent): Absent	
Riparian Corridor (describe veg. communities w/ riparian corridor, list dominant species in each community): Cirsium arvense, Rumex crispus			

Stream bottom composition:		X silt	clay	sand
gravel	cobble	boulders	bedrock	muck
Unique features:	seeps	gravel beds	erosion	bank collapse
	riprap road	bedrock	wells	adjacent wetlands
	buildings	cut-off channels	riffles/runs	steep side slopes

If a seep is present please describe (e.g. seep out of west bank 10 feet up bank):
Where was GPS Data Taken (Bank, OHWM, Water edge):

Notes

752 jpg. Ditch; mostly vegetated bank/bed.

s-wi-a-002 Photograph



Waterbody Survey Data Sheet

- **COLLECT ALL DATA FROM THE CENTER LINE (if otherwise collect GPS point)**
- **Collect GPS data on both sides for major waterbodies**

Unique Site ID: s-wi-a-003			
Date: 5/24/2012	State: ND	County: Williams	Crew Chief: KL, JF
Tract Number(s):USACE		Milepost Range (Entry-Exit):	

Waterbody Characteristics

Open Water classification:	X Intermittent	Perennial	Ephemeral
Approx. Water edge to water edge width (ft): 0, dry		Approx. ave. water depth (ft): 0, dry	
Approx. Top of bank width (ft): 3		Approx. Upstream slope (degrees; 0-90): 2	
Approx. OHWM to OHWM width (ft): 1 Approx. downstream slope (degrees; 0-90) 2		Approx. Bank height/slope (ft): 4	
Approximate water velocity (fps): dry		Riparian Forest (Present/Absent): Absent	
Riparian Corridor (describe veg. communities w/ riparian corridor, list dominant species in each community): Cirsium arvense			

Stream bottom composition:		X silt	clay	sand
gravel	cobble	boulders	bedrock	muck
Unique features:	seeps	gravel beds	erosion	bank collapse
	riprap road	bedrock	wells	adjacent wetlands
	buildings	cut-off channels	riffles/runs	steep side slopes

If a seep is present please describe (e.g. seep out of west bank 10 feet up bank):
Where was GPS Data Taken (Bank, OHWM, Water edge):

Notes

753 jpg. Ditch

s-wi-a-003 Photograph



Waterbody Survey Data Sheet

- **COLLECT ALL DATA FROM THE CENTER LINE (if otherwise collect GPS point)**
- **Collect GPS data on both sides for major waterbodies**

Unique Site ID: s-wi-a-005			
Date: 5/24/2012	State: ND	County: Williams	Crew Chief: KL, JF
Tract Number(s):USACE		Milepost Range (Entry-Exit):	

Waterbody Characteristics

Open Water classification:	X Intermittent	Perennial	Ephemeral
Approx. Water edge to water edge width (ft): 2		Approx. ave. water depth (ft): .5	
Approx. Top of bank width (ft): 3		Approx. Upstream slope (degrees; 0-90): 2	
Approx. OHWM to OHWM width (ft): 3 Approx. downstream slope (degrees; 0-90) 2		Approx. Bank height/slope (ft): 1	
Approximate water velocity (fps): slow		Riparian Forest (Present/Absent): Absent	
Riparian Corridor (describe veg. communities w/ riparian corridor, list dominant species in each community): Alopecurus arundinaceus			

Stream bottom composition:		X silt	clay	sand
gravel	cobble	boulders	bedrock	muck
Unique features:	seeps	gravel beds	erosion	bank collapse
	riprap road	bedrock	wells	adjacent wetlands
	buildings	cut-off channels	riffles/runs	steep side slopes

If a seep is present please describe (e.g. seep out of west bank 10 feet up bank):
Where was GPS Data Taken (Bank, OHWM, Water edge): Bank

Notes

764 jpg. Drainage opening up into flat area.

s-wi-a-005 Photograph



Waterbody Survey Data Sheet

- **COLLECT ALL DATA FROM THE CENTER LINE (if otherwise collect GPS point)**
- **Collect GPS data on both sides for major waterbodies**

Unique Site ID: s-wi-a-006			
Date: 5/24/2012	State: ND	County: Williams	Crew Chief: KL, JF
Tract Number(s):USACE		Milepost Range (Entry-Exit):	

Waterbody Characteristics

Open Water classification:	intermittent	X Perennial	Ephemeral
Approx. Water edge to water edge width (ft): 15		Approx. ave. water depth (ft): 2	
Approx. Top of bank width (ft): 25		Approx. Upstream slope (degrees; 0-90): 1	
Approx. OHWM to OHWM width (ft): Approx. downstream slope (degrees; 0-90) 1		Approx. Bank height/slope (ft): 5 from water surface	
Approximate water velocity (fps): slow		Riparian Forest (Present/Absent): Absent	
Riparian Corridor (describe veg. communities w/ riparian corridor, list dominant species in each community): Glycyrrhiza lepidota, Asclepias sp., Rumex crispus			

Stream bottom composition:		X silt	clay	sand
gravel	cobble	boulders	bedrock	muck
Unique features:	seeps	gravel beds	erosion	bank collapse
	riprap road	bedrock	wells	adjacent wetlands
	buildings	cut-off channels	riffles/runs	Xsteep side slopes

If a seep is present please describe (e.g. seep out of west bank 10 feet up bank):
Where was GPS Data Taken (Bank, OHWM, Water edge): Bank

Notes

768 jpg; canal.

s-wi-a-006 Photograph



Waterbody Survey Data Sheet

- **COLLECT ALL DATA FROM THE CENTER LINE (if otherwise collect GPS point)**
- **Collect GPS data on both sides for major waterbodies**

Unique Site ID: s-mc-a-003n			
Date: 5/24/2012	State: ND	County: McKenzie	Crew Chief: KL, JF
Tract Number(s):USACE		Milepost Range (Entry-Exit):	

Waterbody Characteristics

Open Water classification:	intermittent	X Perennial	Ephemeral
Approx. Water edge to water edge width (ft): 300		Approx. ave. water depth (ft): 10+	
Approx. Top of bank width (ft): 325		Approx. Upstream slope (degrees; 0-90): 1	
Approx. OHWM to OHWM width (ft): 1 Approx. downstream slope (degrees; 0-90) 1		Approx. Bank height/slope (ft): 5 ft., from water level	
Approximate water velocity (fps): moderate		Riparian Forest (Present/Absent): Present	
Riparian Corridor (describe veg. communities w/ riparian corridor, list dominant species in each community): Salix exigua			

Stream bottom composition:		silt	clay	X sand
gravel	cobble	boulders	bedrock	muck
Unique features:	seeps	gravel beds	erosion	bank collapse
	riprap road	bedrock	wells	X adjacent -
	wetlands	buildings	cut-off channels	riffles/runs
X steep side slopes				

If a seep is present please describe (e.g. seep out of west bank 10 feet up bank):
Where was GPS Data Taken (Bank, OHWM, Water edge): Bank

Notes

754 jpg, 755 jpg. North bank of Missouri River. Unable to extend WB feature on GPS to include entire corridor to the west due to very thick shrub cover (Salix exigua).

s-mc-a-003n Photographs





Waterbody Survey Data Sheet

- **COLLECT ALL DATA FROM THE CENTER LINE (if otherwise collect GPS point)**
- **Collect GPS data on both sides for major waterbodies**

Unique Site ID: s-mc-a-003s			
Date: 5/26/2012	State: ND	County: McKenzie	Crew Chief: KL, JF
Tract Number(s):USACE		Milepost Range (Entry-Exit):	

Waterbody Characteristics

Open Water classification:	intermittent	X Perennial	Ephemeral
Approx. Water edge to water edge width (ft): 300		Approx. ave. water depth (ft): 10+	
Approx. Top of bank width (ft): 325		Approx. Upstream slope (degrees; 0-90): 1	
Approx. OHWM to OHWM width (ft): Approx. downstream slope (degrees; 0-90) 1		Approx. Bank height/slope (ft): 5 ft., from water level	
Approximate water velocity (fps): moderate		Riparian Forest (Present/Absent): Present	
Riparian Corridor (describe veg. communities w/ riparian corridor, list dominant species in each community): Salix exigua, Phalaris arundinacea			

Stream bottom composition:		silt	clay	X sand
gravel	cobble	boulders	bedrock	muck
Unique features:	seeps	gravel beds	erosion	bank collapse
	riprap road	bedrock	wells	X adjacent -
	wetlands	buildings	cut-off channels	riffles/runs
X steep side slopes				

If a seep is present please describe (e.g. seep out of west bank 10 feet up bank):
Where was GPS Data Taken (Bank, OHWM, Water edge):

Notes

786 jpg, 787 jpg. South bank of Missouri River

s-mc-a-003s Photgraphs





ENVIRONMENTAL & STATISTICAL CONSULTANTS
4007 State Street, Suite 109, Bismarck, ND 58503
Phone: 701-250-1756 ◆ www.west-inc.com ◆ Fax: 701-250-1761

June 12, 2012

Bill McCarthy
E3 Environmental, LLC
817 Vandalia Street
St. Paul, MN 55114

RE: ONEOK Pipeline Wetland and Waterbody Mapping

Dear Mr. McCarthy

On behalf of Western EcoSystems Technology, Inc. (WEST), I am please to provide the following information regarding the wetland and waterbody mapping effort for the proposed Stateline Plant to Rawson Pipeline Project (Project). E3 Environmental LLC (E3) is assisting ONEOK Rockies Midstream, LLC (ONEOK) with various aspects of the Project development, including agency consultations, environmental surveys, and environmental permits necessary for the Project. The Project is an approximately 37 mile long pipeline located west of Williston, North Dakota, including a crossing of the Missouri River (see attached figure). E3 has contracted with Western EcoSystems Technology, Inc. (WEST) to conduct field surveys for the Project. The primary purpose of the work discussed in this memo was to identify and map water resources (wetlands, waterbodies, and springs) that were apparent in approximately 33 miles of the Project that were previously constructed. In general, the portion of the pipeline for this mapping effort consisted of the privately owned parcels outside of the Missouri River bottom, which is owned by the US Army Corps of Engineers and State of North Dakota. A separate report was provided that summarizes the 2012 wetland and waterbody delineations conducted along approximately 4 miles of the proposed Project near the Missouri River.

WEST personnel drove or walked the approximately 33 miles of pipeline evaluated for this mapping effort. During the survey, wetland experts looked for evidence of wetlands within the pipeline right-of-way (ROW) or immediately adjacent to the pipeline ROW. This evidence included saturated soils, salt on soil surface, wetland vegetation or standing water adjacent to ROW, or other factors as observed in the field. When potential or actual wetlands or waterbodies were identified, a GPS was used to collect a point, line or polygon feature to identify the location and approximate boundary (if possible). The same naming convention used for the wetland and waterbody delineations were used for this mapping. The numbering included a “w” for wetland or “s” for stream (i.e., waterbody), then an abbreviation for the county, the crew letter, and unique assigned number. Field photographs were also taken of each feature located. As this was only a mapping exercise, wetland or waterbody datasheets were not recorded.

ENVIRONMENTAL & STATISTICAL CONSULTANTS
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Phone: 701-250-1756 ◆ www.west-inc.com ◆ Fax: 701-250-1761

A total of 11 potential wetlands or waterbodies were located and mapped during this effort (see field notes below). Photographs of each feature are attached. Shapefiles of all features will be provided to E3 to assist in Project permitting and planning. It is possible that some wetlands were completely within the constructed right-of-way and would not have been detected.

Observation notes:

w-mc-a-001 PEM, surface water, dominated by Phalaris arundinacea and Phragmites australis; wetland extended onto ROW.

s-mc-a-001 waterbody,

w-mc-a-002 PEM, salt crust on ROW, surface water south of ROW, dominated by Triglochin sp. and Carex sp.; wetland extended onto ROW.

w-mc-a-003 PEM, salt crust/ saturated, dominated by Juncus sp. and Carex sp.; wetland extended across ROW.

w-mc-a-004 PEM, surface water in areas/ saturated, dominated by Phragmites australis, Phalaris arundinacea and Typha latifolia; wetland extended across ROW.

w-mc-a-005 PEM, surface water in areas/saturated, dominated by Phragmites australis and Salix amygdaloides; wetland extended across ROW.

s-mc-a-002 some wetland vegetation but not dominant

w-mc-a-007 PEM, surface water in areas/ saturated, dominated by Eleocharis palustris and Poa palustris; wetland extended across ROW.

s-mc-a-004 drainage with areas of ponding on & off ROW, no adjacent wetland

w-mc-a-008 PEM, surface water (spring uphill?), dominated by Phalaris arundinacea and Poa palustris; wetland extended across ROW.

s-wi-a-007 waterbody

Sincerely,

Clayton Derby
Senior Manager

Attachments:
Project area map
Photographs

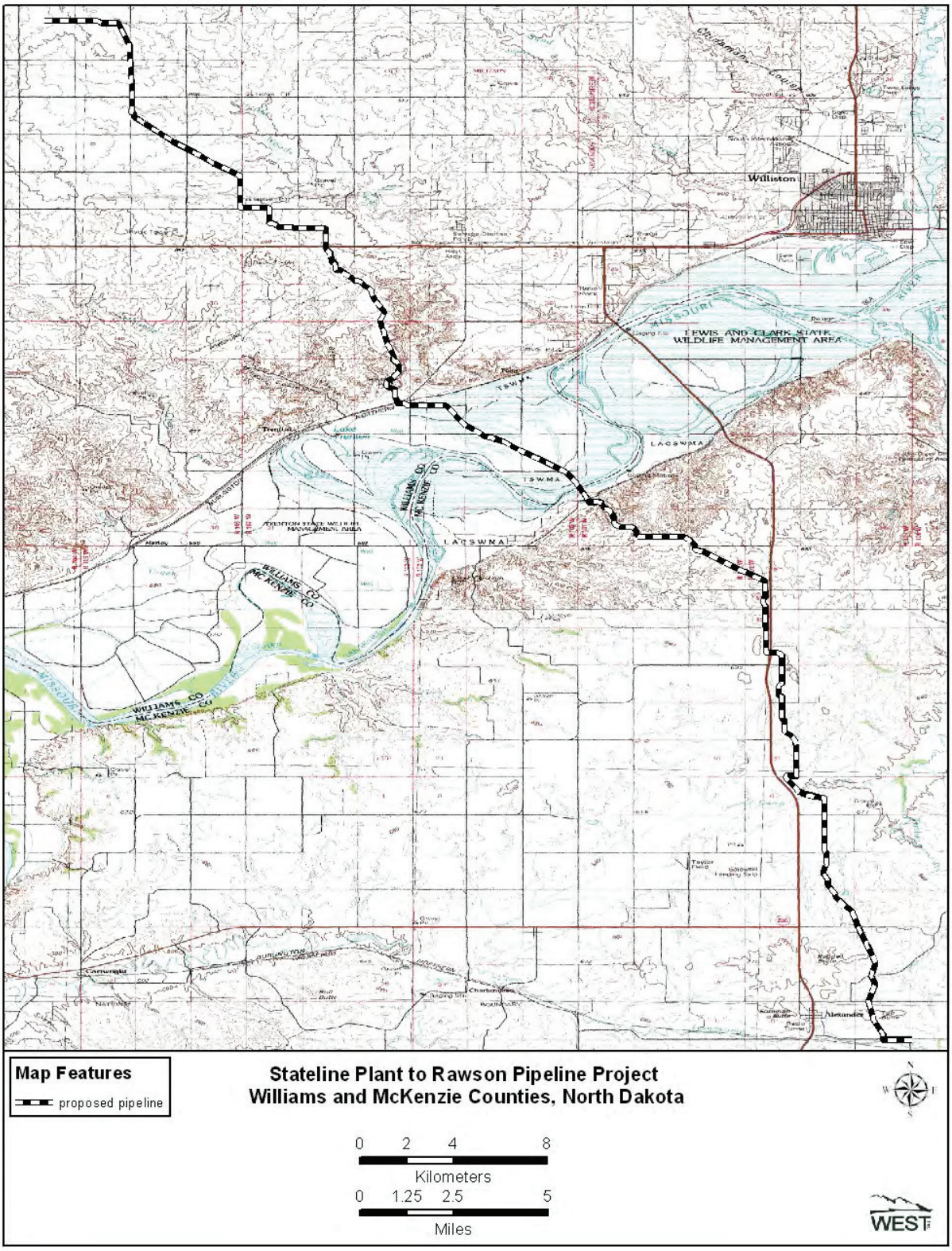

Figure 1. General Project area for the Stateline Plant to Rawson Pipeline Project.



w-mc-a-001



w-mc-a-001



s-mc-a-001



w-mc-a-002



w-mc-a-002



w-mc-a-002



w-mc-a-003



w-mc-a-003



w-mc-a-003



w-mc-a-004



w-mc-a-004



w-mc-a-005



s-mc-a-002



w-mc-a-007



s-mc-a-004



w-mc-a-008



s-we-a-007

merjent

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Wetland, Waterbody, and Habitat Assessment

Lonesome Creek to Stateline 12" Pipeline Conversion Project

Merjent, Inc. completed a wetland, waterbody, and habitat survey for the Lonesome Creek to Stateline 12" Pipeline Conversion Project (Project) near Williston, North Dakota (Figure 1). The following summarizes surveys that were conducted on September 26 and 27, 2017.

Existing Data

The study area includes a 150-foot-wide corridor centered along the pipeline right-of-way. Four segments of the right-of-way were surveyed as depicted on Figure 1. On two properties, the survey corridor was reduced to a 50-foot-wide corridor per landowner requests. Additionally, two proposed control valve sites were also evaluated. An approximate 0.75-acre study corridor was evaluated at each of the future valve facility sites (see Figures 6 and 7).

The survey area is in the northern Great Plains region within the main watershed drainage of the Missouri River. The landscape includes rolling hills in the upper elevations, which transition to deeper ravines and bluffs near the Missouri River. Land use includes agricultural land, pasture, remnant prairie, and oil and gas development.

Prior to conducting the field review, Merjent staff evaluated existing data including historic aerial photography, county soil data, National Wetlands Inventory (NWI) data, and National Hydrography Data (Figures 2 and 3).

Methodology

Waterbodies were delineated where a defined bed and bank and/or evidence of surface water flow was present. Flow, bed and bank, substrate, and vegetation characteristics were documented, and representative photographs were taken, at each delineated waterbody.

Wetlands were delineated utilizing the Routine "Onsite" Determination Method contained in the U.S. Army Corps of Engineers Regional Supplement of the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0). The wetland boundaries were determined based on the evaluation of the three parameters (hydric soils, hydrophytic vegetation, and wetland hydrology) required for an area to be defined as a jurisdictional wetland. The site investigation was conducted on September 26, 2017, by Jeff Mackenthun of Merjent, Inc.

At identified wetlands, a representative transect was placed in an area transitioning from upland to wetland. Because of the presence of a buried pipeline, test pits were dug on the edge of the right-of-way to minimize the potential for encountering disturbed soils from the pipeline installation process. The dominant floral species were visually estimated for each sample point by using areal percent cover. Hydrologic indicators were evaluated, e.g. the presence or absence of inundated and/or saturated soils, drift lines, drainage patterns, water marks, etc. Finally, the delineated wetland was classified based using the Cowardin and Eggers and Reed methodologies. All wetlands and waterbody boundaries were recorded using a sub-meter global positioning system unit (Trimble® GeoXT) instead of the use of flagging in the field.

A review of the U.S. Fish & Wildlife Service Endangered Species Information, Planning, and Conservation System website was conducted for a list of species and critical habitat that may be present in the Project area. According to this review, the following federally-listed species and designated critical habitat may occur in the Project area:

Common Name	Scientific Name	Status
Northern long-eared bat	*Myotis septentrionalis*	Threatened
Gray wolf	*Canis lupus*	Endangered
Whooping crane	*Grus americana*	Endangered
Rufa red knot	*Calidris canutus rufa*	Threatened
Piping plover (Northern Great Plains population)	*Charadrius melodus*	Threatened
Piping plover Critical Habitat	*Charadrius melodus*	Present at the Missouri River
Interior least tern	*Sterna antillarum*	Endangered
Pallid sturgeon	*Scaphirhynchus albus*	Endangered
Dakota skipper	*Hesperia dacotae*	Threatened

The presence of invasive and/or noxious plants was also documented at the future valve facility sites. Per North Dakota Century Code 4.1-47-02 and the North Dakota Department of Agriculture, the following weeds are noxious in North Dakota:

- Russian knapweed (*Acroptilon repens*)
- Absinth wormwood (*Artemisia absinthium*)
- Musk thistle (*Carduus nutans*)
- Diffuse knapweed (*Centaurea diffusa*)
- Yellow starthistle (*Centaurea solstitialis*)
- Spotted knapweed (*Centaurea stoebe var. masculosa*)
- Canadian thistle (*Cirsium arvense*)
- Field bindweed (*Convolvulus arvensis*)
- Leafy spurge (*Euphorbia esula*)
- Dalmation toadflax (*Linaria dalmatica var. genistifolia*)
- Purple loosestrife (*Lythrum salicaria*)
- Purple loosestrife (*Lythrum virgatum*)
- Saltcedar (*Tamarix chinensis*)
- Saltcedar (*Tamarix parviflora*)
- Saltcedar (*Tamarix parviflora*)

Additionally, the following noxious species are also listed in McKenzie County:

- Common burdock (*Arctium minus*)
- Houndstongue (*Cynoglossum officinale*)
- Black henbane (*Hyoscyamus niger*)
- Yellow toadflax (*Linaria vulgaris*)

Results and Discussion

Wetlands and Waterbodies

In total, two waterbodies and one wetland were delineated (Figures 4 and 5). Field datasheets that describe each feature, along with representative photographs 1 through 4, can be found in the Appendix.

Habitat Assessments

Pipeline Corridor (N1/2, NE1/4, Section 13, T154N, R103W)
This segment of pipeline corridor is used as cattle pasture. Vegetation was dominated by grasses including wheatgrass, bluegrass, and brome. A few scattered forbs were observed, including sage, alfalfa, and aster. No noxious weeds were observed along this segment of the pipeline corridor. This segment of the corridor did not contain suitable habitat for sensitive species. Photograph 7 presents the vegetation and landscape of this pipeline segment. The remaining segment of the pipeline corridor adjacent to the grazed cattle pasture was planted in row crop (wheat).

Proposed Control Valve (northwest); (NE1/4, NE1/4, Section 16, T153N, R102W)
The site is located on the northern side of County Road 1804 at the following coordinates: latitude 48.080573, longitude -103.802966 (see Figure 6). The site and adjacent land is currently used as horse pasture. An electric transmission line is located on the north side of the site, paved road to the south of the site, a driveway to the west of the site, and pasture to the east of the site. Vegetation was heavily grazed; however, based on vegetation just outside the fenced pasture along the highway right-of-way, vegetation within the site consists of wheatgrass, bluegrass, brome grass, and sage. No noxious weeds were observed; although one common burdock plant, a noxious weed of neighboring McKenzie County, was observed. Based on historic aerial photographs, the site has been grazed for over 10 years. Based upon existing vegetation and land use, the site does not provide suitable habitat for sensitive species. Photographs 8 and 9 presents the vegetation and landscape of proposed control valve.

Pipeline Corridor (SW1/4, SE1/4, Section 24, T153N, R102W)
This 570-foot segment of the pipeline corridor was planted in row crop and is adjacent to an existing oil well pad. This segment of the corridor is located adjacent to designated piping plover critical habitat along the Missouri River; however, suitable habitat for the piping plover or other sensitive species is not present in this segment of the pipeline corridor. Photograph 10 presents an aerial photograph of this pipeline corridor in relation to the Missouri River.

Proposed Control Valve (southeast); (SE1/4, SW1/4, Section 30, T153N, R101W)
The site is located on the south/east side of 42nd Street NW at the following coordinates: latitude 48.041419, longitude -103.725411 (see Figure 7). The site and adjacent land is currently used as horse pasture and oil production. A gravel county road is on the west side of the site, an oil drill pad to the north of the site, a dry wash ravine to the east of the site, and pasture to the south of the site. Vegetation at the site consists of wheatgrass, brome grass, aster, and sage. No noxious weeds were observed. Based on historic aerial photographs, the site has been grazed for over 20 years. Based upon existing vegetation and land use, the site does not provide suitable habitat for sensitive species. Photographs 11 and 12 presents the vegetation and landscape of proposed control valve.

Pipeline Corridor (NE1/2, NW1/4, Section 7, T152N, R101W)
Historically, this segment of the pipeline corridor was planted in row crop. Between 2011 and 2017, two 400,000-gallon water storage tanks and an oil development business have been constructed within and adjacent to the pipeline corridor. The land consists of gravel and mowed grass. No noxious weeds were observed along this segment of the pipeline corridor. This segment of the corridor did not contain suitable habitat for sensitive species. Photograph 13 presents the vegetation and landscape of this pipeline segment.

Pipeline Corridor (Sections 10,15, 22, 23, 25, 26, 36; T150N; R101W)
This 6.2-mile section of the pipeline corridor was predominantly fallow field consisting of mixed low-quality grasses and scattered forbs that pioneered the landscape after it was left idle. The most diverse assemblage of vegetation was found on the south side of U.S. Highway 85 and east of 140th Avenue NW. In this area, vegetation included yellow sweet clover, alfalfa, aster species, yellow goat's-beard, foxtail, brome, bluegrass, green bristlegrass, and foxtail barley. No noxious weeds were documented in this pipeline segment; however, based on historical surveys completed in western North Dakota, the landscape could support Canada thistle.

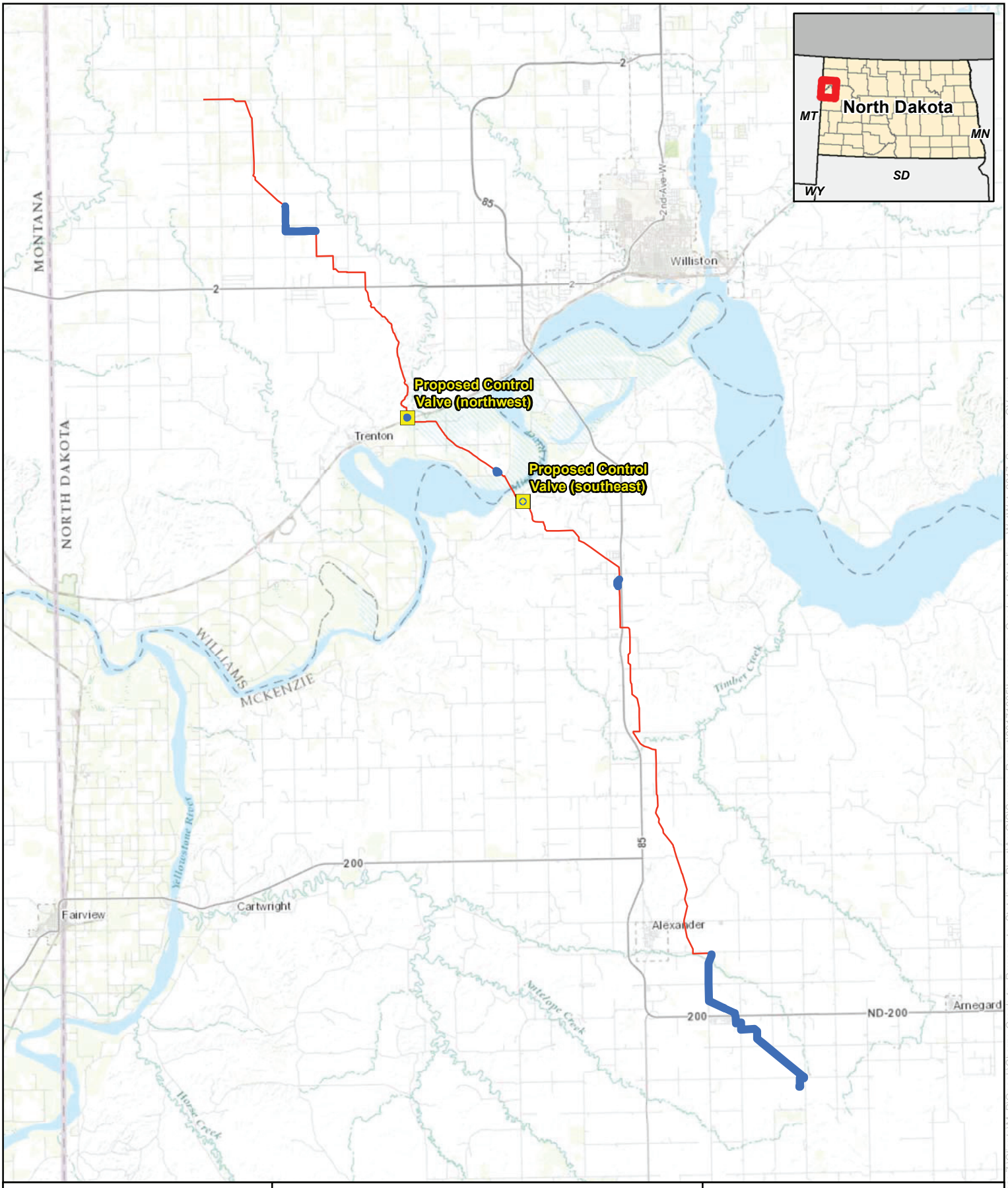
This Project area contains large tracts (e.g., greater than 200 acres) of low quality, fallow grassland. Suitable habitat for sensitive species is not present along this segment of the pipeline corridor. Photographs 14 through 18 presents the vegetation and landscape along this portion of pipeline corridor.

Respectfully submitted,



Jeff Mackenthun, PWS
Wetland Scientist
Merjent, Inc

Enclosures: Maps and Figures
Waterbody and Wetland Data Sheets
Wetland Photograph



0 2 4 Miles

1 inch = 4 miles

N W E S

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For Environmental Review Purposes Only

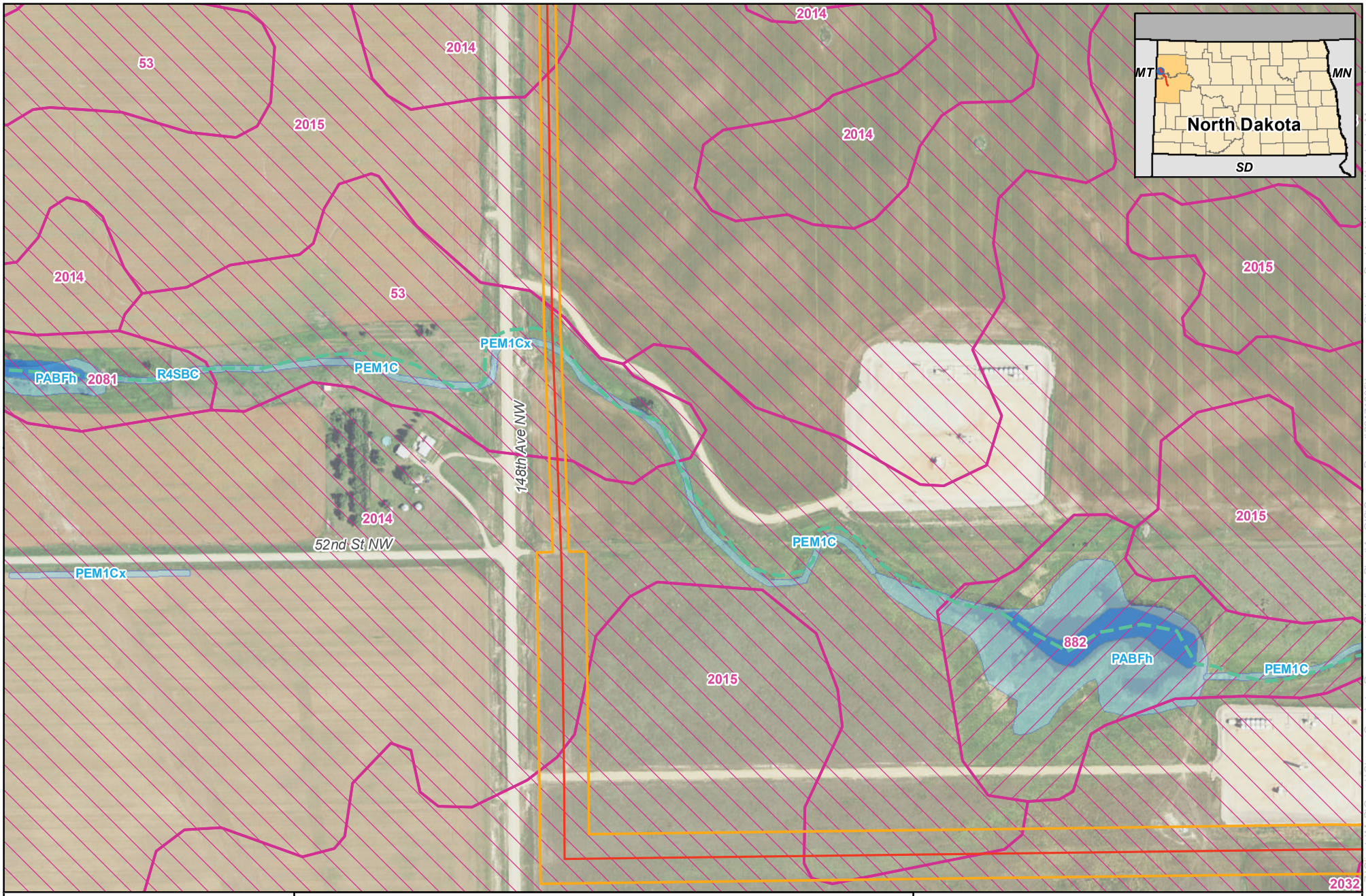
Figure 1

ONEOK Bakken Pipeline
Lonesome Creek to Stateline
Wetland/Waterbody Survey Overview
McKenzie and Williams County, ND

- Proposed Control Valve
- Centerline
- Survey Corridor

Source: Z:\Clients\M_P\ONEOK\Cherry_Creek_to_Rawson_to_Stateline_Plant\ArcGIS\Survey_Report\20171005\Lonesome_Creek_to_Stateline_WetWat_2017_Surveys_OV.mxd

Date: (10/9/2017)



0 200 400 Feet

1 inch = 400 feet

N W E S

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For Environmental Review Purposes Only

Figure 2
ONEOK Bakken Pipeline
Lonesome Creek to Stateline 12" Pipeline Conversion
Desktop Environmental Features
McKenzie and Williams Counties, ND

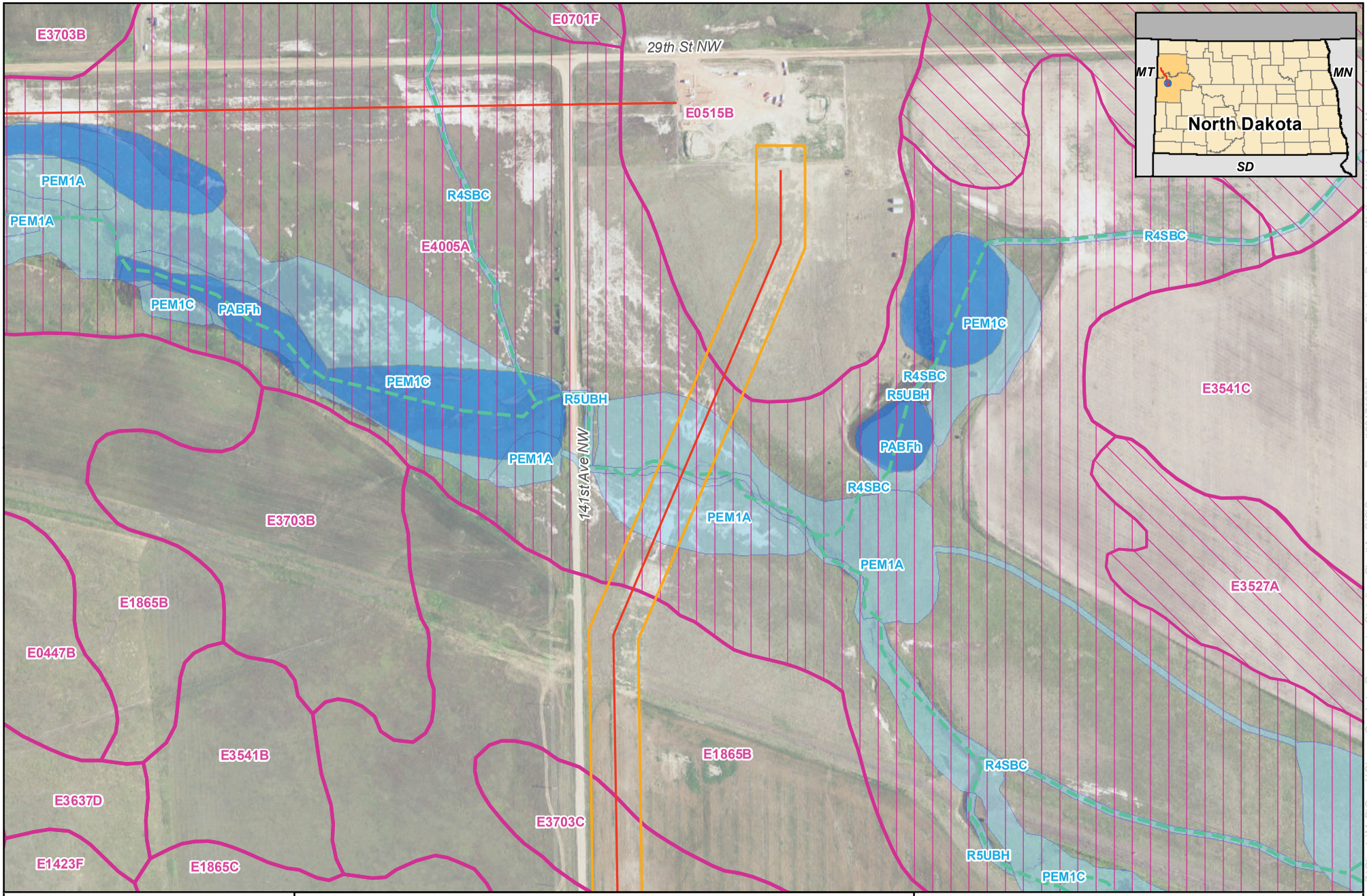
- Centerline
- Survey Corridor
- NHD Flowline
- NHD Waterbody
- NWI Wetlands

Hydric Soils - (SSURGO)

- Hydric (33 to 65%)
- Hydric (1 to 32%)

Source: Z:\Clients\M_P\Oneok\Cherry_Creek_to_Rawson_to_Stateline_Plant\ArcGIS\Survey_Report\20171005\Lonesome_Stateline_Desktop_Wetland_Waterbody_Maps.mxd

Date: (10/6/2017)



0 200 400 Feet

1 inch = 400 feet

N W E S

merjent

For Environmental Review Purposes Only

Figure 3
ONEOK Bakken Pipeline
Lonesome Creek to Stateline 12" Pipeline Conversion
Desktop Environmental Features
McKenzie and Williams Counties, ND

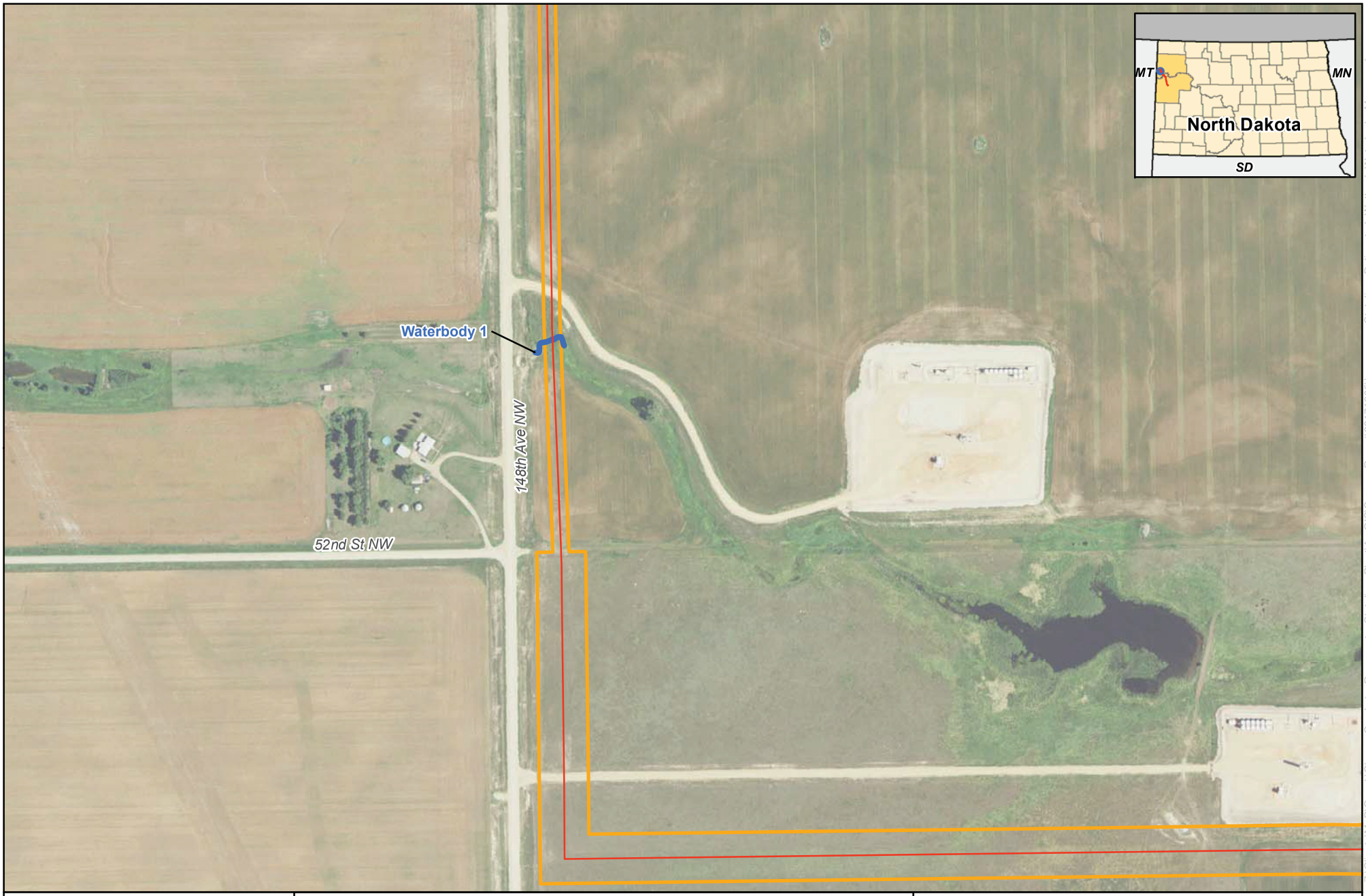
- Centerline
- Survey Corridor
- NHD Flowline
- NHD Waterbody
- NWI Wetlands

Hydric Soils - (SSURGO)

- Hydric 66 to 99%
- Hydric (1 to 32%)
- Not Hydric (0%)

Source: Z:\Clients\M_P\Oneok\Cherry_Creek_to_Rawson_to_Stateline_Plant\ArcGIS\Survey_Report\20171005\Lonesome_Stateline_Desktop_Wetland_Waterbody_Maps.mxd

Date: (10/6/2017)



0 200 400 Feet

1 inch = 400 feet

N W E S

merjent

For Environmental Review Purposes Only

Figure 4
ONEOK Bakken Pipeline
Lonesome Creek to Stateline 12" Pipeline Conversion
Wetland/Waterbody Survey Results
McKenzie and Williams Counties, ND

Centerline
Survey Corridor
Transect Points
Field Delineated Waterbody
Field Delineated Wetland

Source: Z:\Clients\M_P\Oneok\Cherry_Creek_to_Rawson_to_Stateline_Plant\ArcGIS\Survey_Report\20171005\Lonesome_Stateline_Delineated_Wetland_Waterbody_Maps.mxd

Date: (10/6/2017)



0 200 400 Feet

1 inch = 400 feet

N W E S

merjent

For Environmental Review Purposes Only

Figure 5
ONEOK Bakken Pipeline
Lonesome Creek to Stateline 12" Pipeline Conversion
Wetland/Waterbody Survey Results
McKenzie and Williams Counties, ND

Centerline

Survey Corridor

Transect Points

Field Delineated Waterbody

Field Delineated Wetland

Source: Z:\Clients\M_P\Oneok\Cherry_Creek_to_Rawson_to_Stateline_Plant\ArcGIS\Survey_Report\20171005\Lonesome_Stateline_Delineated_Wetland_Waterbody_Maps.mxd

Date: (10/6/2017)



0 100 200 Feet

1 inch = 200 feet

N W E S

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For Environmental Review Purposes Only

Figure 6
ONEOK Bakken Pipeline
Lonesome Creek to Stateline
12" Pipeline Conversion
Proposed Control Valve Survey Results
McKenzie and Williams Counties, ND

Centerline
Valve Workspace
Survey Corridor

Source: Z:\Clients\M_P\ONEOK\Cherry_Creek_to_Rawson_to_Stateline_PlantArcGIS\Survey_Report\20171005Lonesome_Stateline_Proposed_Valves_Bio_Survey.mxd

Date: (10/9/2017)



0 100 200 Feet

1 inch = 200 feet

N W E S

merjent

For Environmental Review Purposes Only

Figure 7
ONEOK Bakken Pipeline
Lonesome Creek to Stateline
12" Pipeline Conversion
Proposed Control Valve Survey Results
McKenzie and Williams Counties, ND

Centerline
Valve Workspace
Survey Corridor

Source: Z:\Clients\M_P\ONEOK\Cherry_Creek_to_Rawson_to_Stateline_Plant\Arcd\S\Survey_Report\2017\1005\Lonesome_Stateline_Proposed_Valves_Bio_Survey.mxd

Date: (10/9/2017)

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Lonesome Creek Pipeline Conversion City/County: McKenzie Co, North Dakota Sampling Date: 9/26/2017

Applicant/Owner: Oneok State: ND Sampling Point: wet1

Investigator(s): Jeff Mackenthun, Merjent, Inc. Section, Township, Range: Section 10, T150N, R101W

Landform (hillslope, terrace, etc.): Lowland drainageway, salt flat Local relief (concave, convex, none): concave Slope (%): <5

Subregion (LRR): Northern Great Plains (F) Lat: 47.830938 Long: -103.603241 Datum: _____

Soil Map Unit Name: E4005A, Harriet loam, 0 to 2 % slopes, occasionally flooded NWI classification: PEM1C

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

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

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

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

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

Remarks:

Transect is located on the northern side of the wetland. The sample is representative of entire wetland, save the bed and banks of Lonesome Creek. There are scattered areas dominated (80%) by saltwort and bare soils outside this transect, as can be seen on aerials. Classified as a PEM1C.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 400 sq ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 400 sq ft)			
1. None			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 400 sq ft)			
1. Poa pratensis	25	yes	FACU
2. Carex praegracilis	25	yes	FACW
3. Juncus interior	25	yes	FACW
4. Salicornia rubra	20	yes	OBL
5. Lactuca serriola	5	no	NA
6.			
7.			
8.			
9.			
10.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: 400 sq ft)			
1. None			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 5%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Noticeable increase in topo defines wetland boundary, there is a rather distinct vegetation shift along this incline break. Area is used to graze cattle.

SOIL

Sampling Point: wet1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/1	80					FSL	
6-15	10YR 4/2	70	10YR 5/6	5	D	M	SCL	
>15	10YR 5/1	70	10YR 5/6	5	D	M	SCL	Clay content increase

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ✓ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Clay

Depth (inches): 10

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ✓ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ✓ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 6

Wetland Hydrology Present? Yes X No ___

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

NWI=PEM1C

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Lonesome Creek Pipeline Conversion City/County: McKenzie Co, North Dakota Sampling Date: 9/26/2017

Applicant/Owner: Oneok State: ND Sampling Point: Upl1

Investigator(s): Jeff Mackenthun, Merjent, Inc. Section, Township, Range: Section 10, T150N, R101W

Landform (hillslope, terrace, etc.): Linear footslope Local relief (concave, convex, none): concave Slope (%): 5-8

Subregion (LRR): Northern Great Plains (F) Lat: 47.831319 Long: -103.602923 Datum: _____

Soil Map Unit Name: E0515B, Rhoades-Daglum complex, 0-6% slopes NWI classification: None

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

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

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

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

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

Remarks:

Transect is located on the north side of the wetland boundary on the west side of the survey corridor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 200 sq ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 200 sq ft)			
1. None			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 200 sq ft)			
1. Poa pratensis	30	yes	FACU
2. Agropyron cristatum	30	yes	NA
3. Bromus inermis	20	yes	UPL
4. Bouteloua gracilis	10	no	NA
5. Artemisia biennis	5	no	NA
6.			
7.			
8.			
9.			
10.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: 400 sq ft)			
1. None			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Area is used to graze cattle.

SOIL

Sampling Point: Upl1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	80					SCL	
6-12	10YR 4/3	70					SCL	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

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

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

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

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

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

Remarks:

Waterbody Data Sheet

FEATURE ID: WATERBODY 1

WATERBODY NAME: UNNAMED TRIBUTARY TO PAINTED WOODS CREEK

SURVEY DATE: SEPTEMBER 26, 2017

INVESTIGATOR: JEFF MACKENTHUN; MERJENT, INC.

FLOW CHARACTERISTICS

[X] EPHEMERAL
[ ] INTERMITTENT
[ ] PERENNIAL

COMMENTS:

CURRENT WATER WIDTH AT CROSSING (FT): NONE

CURRENT WATER DEPTH AT CROSSING (FT): NONE

SUBSTRATE

[ ] BEDROCK
[ ] GRAVEL
[X] SAND
[ ] OTHER _____
[X] SILT
[X] CLAY

[ ] RUNS
[ ] POOLS
[ ] RIFFLES

COMMENTS:

STREAM CHARACTERISTICS

LEFT BANK HEIGHT (FT): (WHEN FACING DOWNSTREAM)	RIGHT BANK HEIGHT (FT): (WHEN FACING DOWNSTREAM)
SLOPE [X] 0 - 30^0 [ ] 31 - 45^0 [ ] 46 - 60^0 [ ] 61 - 90^0	SLOPE [X] 0 - 30^0 [ ] 31 - 45^0 [ ] 46 - 60^0 [ ] 61 - 90^0

TOP OF BANK WIDTH: 30 FEET

OHWM WIDTH: 15 FEET

OHWM HEIGHT: 1 FOOT

EVIDENCE OF SCOUR OR EROSION: NONE

RIPARIAN HABITAT

RIPARIAN VEGETATION [X] YES [ ] NO

DOMINANT RIPARIAN SPECIES:

INVASIVES/NOXIOUS VEGETATION [ ] YES [X] NO

IF YES, SPECIES PRESENT:

ADJACENT WETLAND [ ] YES [X] NO

SENSITIVE SPECIES PRESENT [ ] YES [X] NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

[ ] CLEAR, NATURAL LINE IMPRESSED ON BANK
[ ] VEGETATION MATTED DOWN, BENT OR ABSENT
[ ] LEAF LITTER DISTURBED OR WASHED AWAY
[ ] DESTRUCTION OF TERRESTRIAL VEGETATION
[ ] ABRUPT CHANGE IN PLANT COMMUNITY
[ ] CHANGES IN SOIL CHARACTER
[ ] SEDIMENT DEPOSITION
[ ] SEDIMENT SORTING
[X] PRESENCE OF LITTER OR DEBRIS
[ ] PRESENCE OF WRACK LINE
[ ] SHELVING
[ ] SCOUR
[ ] WATER STAINING
[ ] OTHER:

PHOTOGRAPHS



Photo 1. Grass debris deposited on vegetation at ground level.



Photo 2. No defined bed or bank of the waterbody within or adjacent to the pipeline crossing. Functions more as a shallow swale.

Waterbody Data Sheet

FEATURE ID: WATERBODY 2

WATERBODY NAME: LONESOME CREEK

SURVEY DATE: SEPTEMBER 26, 2017

INVESTIGATOR: JEFF MACKENTHUN; MERJENT, INC.

FLOW CHARACTERISTICS

[X] EPHEMERAL
[ ] INTERMITTENT
[ ] PERENNIAL

COMMENTS:

CURRENT WATER WIDTH AT CROSSING (FT): NONE

CURRENT WATER DEPTH AT CROSSING (FT): NONE

SUBSTRATE

[ ] BEDROCK
[ ] GRAVEL
[ ] SAND
[ ] OTHER LOAM
[X] SILT
[X] CLAY

[ ] RUNS
[ ] POOLS
[ ] RIFFLES

COMMENTS: 60% VEGETATED STREAMBED; 40% DROWN-OUT

STREAM CHARACTERISTICS

LEFT BANK HEIGHT (FT): (WHEN FACING DOWNSTREAM)	RIGHT BANK HEIGHT (FT): (WHEN FACING DOWNSTREAM)
SLOPE [ ] 0 - 30^0 [X] 31 - 45^0 [ ] 46 - 60^0 [ ] 61 - 90^0	SLOPE [ ] 0 - 30^0 [X] 31 - 45^0 [ ] 46 - 60^0 [ ] 61 - 90^0

TOP OF BANK WIDTH: 15 FEET

OHWM WIDTH: 8 FEET

OHWM HEIGHT: 2 FEET

EVIDENCE OF SCOUR OR EROSION: NONE

RIPARIAN HABITAT

RIPARIAN VEGETATION [X] YES [ ] NO

DOMINANT RIPARIAN SPECIES:

INVASIVES/NOXIOUS VEGETATION [ ] YES [X] NO

IF YES, SPECIES PRESENT:

ADJACENT WETLAND [X] YES [ ] NO

SENSITIVE SPECIES PRESENT [ ] YES [X] NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

[ ] CLEAR, NATURAL LINE IMPRESSED ON BANK
[ ] VEGETATION MATTED DOWN, BENT OR ABSENT
[ ] LEAF LITTER DISTURBED OR WASHED AWAY
[ ] DESTRUCTION OF TERRESTRIAL VEGETATION
[ ] ABRUPT CHANGE IN PLANT COMMUNITY
[ ] CHANGES IN SOIL CHARACTER
[ ] SEDIMENT DEPOSITION
[ ] SEDIMENT SORTING
[X] PRESENCE OF LITTER OR DEBRIS
[ ] PRESENCE OF WRACK LINE
[ ] SHELVING
[ ] SCOUR
[ ] WATER STAINING
[ ] OTHER:

PHOTOGRAPHS



Photo 3. Fully vegetated bed and bank of Lonesome Creek.



Photo 4. Bare soil, Lonesome Creek.



Photo 5.

Wet1 Transect. Salt flat areas intermixed with sedge/spike rush communities.

Photo coordinates:

latitude 47.830972

longitude -103.603248



Photo 6.

Looking to Upl1 Transect. Salt flat area transitioning to brome, bluegrass, and topography begins to increase.

Photo coordinates:

latitude 47.830877

longitude -103.603280



Photo 7.

View of the pipeline corridor looking to the east from County Highway 1A.

Photo coordinates:

latitude 48.166520

longitude -103.882386



Photo 8.

Proposed Control Valve (northwest). Grazed horse pasture. An electric transmission corridor crosses the north side of the survey area.

Photo coordinates:

latitude 48.080213

longitude -103.802810



Photo 9.

Proposed Control Valve (northwest). Plains prickly pear growing outside the horse pasture in the road right-of-way.

Photo coordinates:

latitude 48.080197

longitude -103.802969

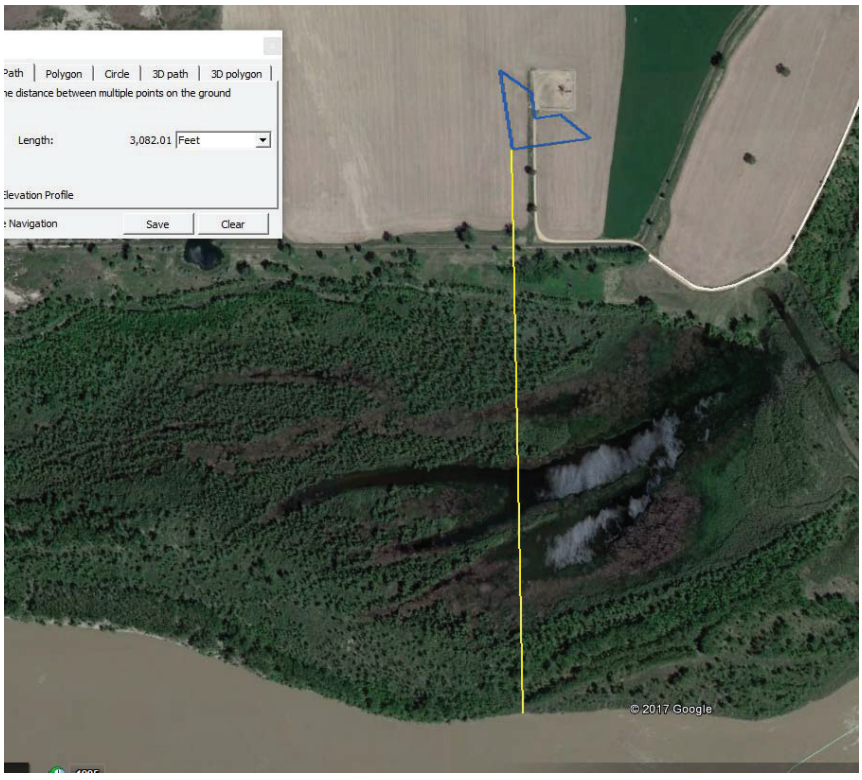


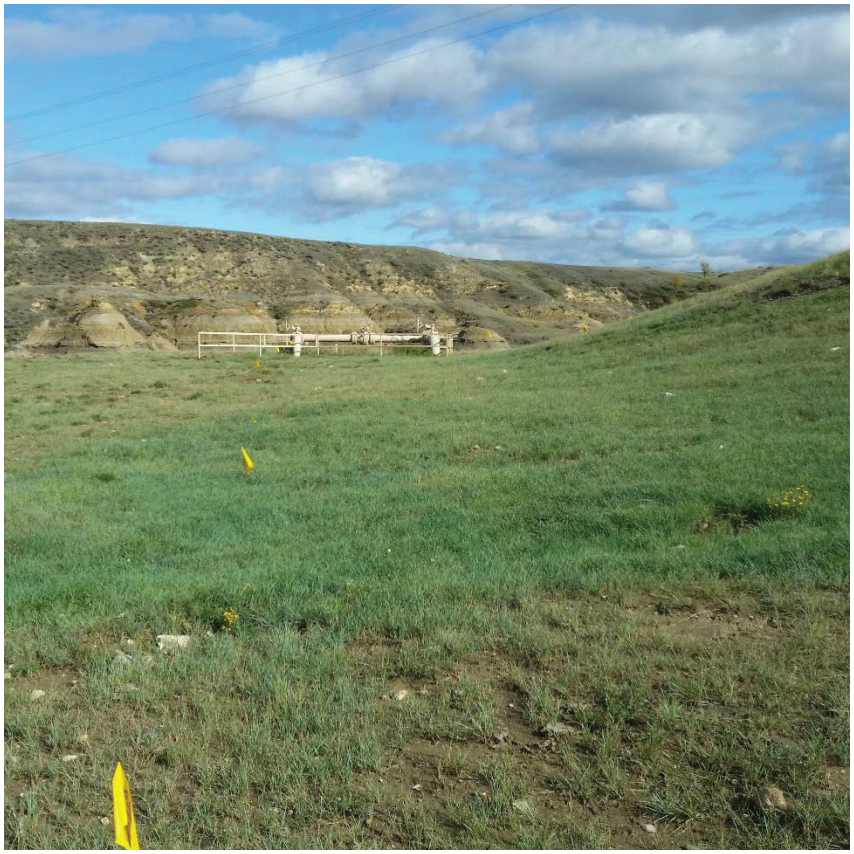
Photo 10.

Aerial photograph of the 570-foot survey corridor (shown in blue) in the Missouri River floodplain. Proximity to the Missouri River is 3,082 feet.

Photo centroid coordinates:

latitude 48.049003

longitude -103.743836

	**Photo 11.** Proposed Control Valve (southeast). Grazed horse pasture. An electric transmission corridor crosses the survey area. Photo coordinates: latitude 48.041412 longitude -103.725849
	**Photo 12.** Proposed Control Valve (southeast). A view of the horse pasture to the south of the existing valve. This area is outside the survey corridor but represents the vegetation and landscape that has not been disturbed by pipeline and facility construction. Photo coordinates: latitude 48.041412 longitude -103.725849

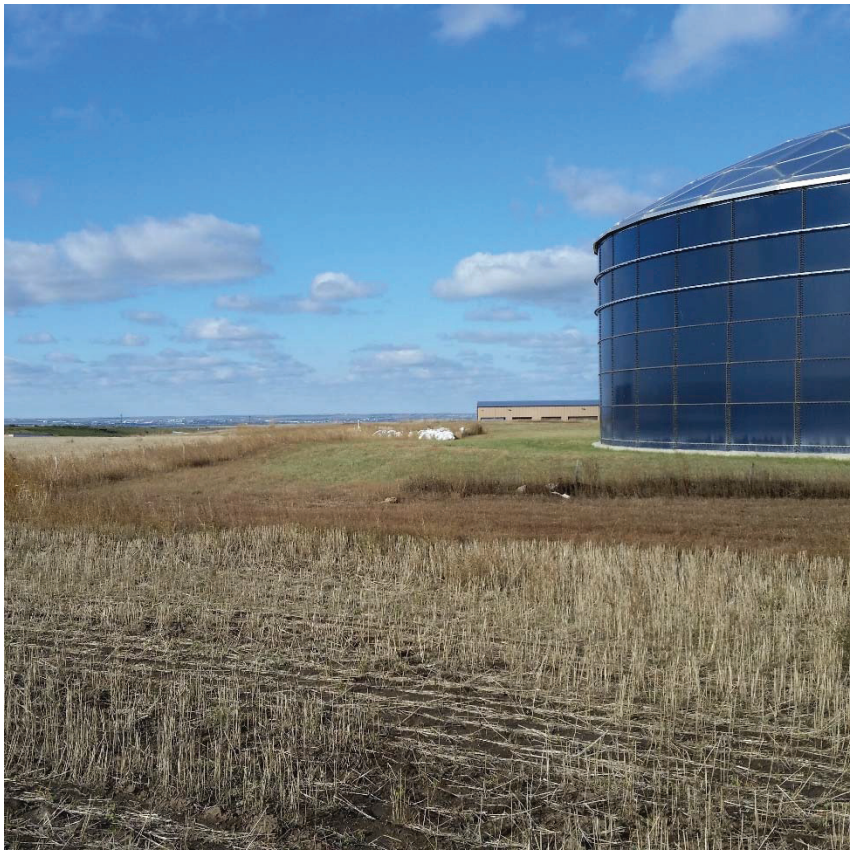


Photo 13.

Pipeline corridor adjacent to water storage tank, just west of U.S. Highway 85.

Photo coordinates:

latitude 48.002344

longitude -103.661348



Photo 14.

View of pipeline corridor looking to the southeast from Lonesome Creek.

Photo coordinates:

latitude 47.830302

longitude -103.603560

	**Photo 15.** View of pipeline corridor looking to the north; U.S. Highway 85 is in the background. Photo coordinates: latitude 47.803601 longitude -103.586660
	**Photo 16.** View of pipeline corridor looking to the southeast from a drill pad access road off 140th Avenue NW. Photo coordinates: latitude 47.798637 longitude -103.579594

	**Photo 17.** View of pipeline corridor looking to the southeast from 26th Street NW. Photo coordinates: latitude 47.790420 longitude -103.565559
	**Photo 18.** View of pipeline corridor looking to the south from 25th Street NW. Photo coordinates: latitude 47.775855 longitude -103.543881

ONEOK Rockies Midstream LLC
STATELINE PLANT TO RAWSON PIPELINE CORRIDOR

BIOLOGICAL ASSESSMENT

T155N-R103W Sections 21, 22, 26, 27, 35
T154N-R103W Sections 2, 11, 12, 13
T154N-R102W Sections 18, 19, 20, 28, 29, 33
T153N-R102W Sections 14, 15, 16, 23, 24, 25
T153N-R101W Sections 28, 29, 30, 31 32, 33
T152N-R102W Sections 1
T152N-R101W Sections 6, 7, 18, 19, 30, 31, 32
T151N-R101W Sections 5, 6, 8, 17, 20, 21, 28, 33
T150N-R101W Sections 4, 9

McKenzie and Williams Counties, North Dakota
April 30, 2012

Prepared for:
Oneok Rockies Midstream LLC

By:
Yellowfield Biological Surveys LLC

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ABSTRACT

Yellowfield Biological Surveys, LLC, investigated the natural resources within the corridor of a proposed 37-mile natural gas pipeline for ONEOK Rockies Midstream LLC. The project is located in T155N-R103W S21, 22, 26, 27, 35; T154N-R103W S2, 11, 12, 13; T154N-R102W S18, 19, 20, 28, 29, 33; T153N-R102W S14, 15, 16, 23, 24, 25; T153N-R101W S28, 29, 30, 31, 32, 33, T152N-R102W S1; T152N-R101W S6, 7, 18, 19, 30, 31, 32; T151N-R101W S5, 6, 8, 17, 20, 21, 28, 33; T150N-R101W S4, 9 in McKenzie and Williams Counties, ND. Existing conditions were documented and recommendations were provided to assist the US Fish and Wildlife Service (FWS) to determine if the proposed activities adhered to the management intent of the FWS. The pipeline would cross through a heavily cultivated landscape; 54% of the survey area has been converted to cropland or hayfield and 22% of the pasture land is reclaimed cropland, planted in non-native species. Only 19% is primarily native plant community, found in river breaks, isolated pastures, and floodplain forests along the Missouri River. The road right-of-ways are planted in smooth brome (*Bromus inermis*). The wooded draws contain Rocky Mountain juniper (*Juniperus scopulorum*), green ash (*Fraxinus pennsulvanica*), and American elm (*Ulmus americana*). The upland grasslands contain blue grama (*Bouteloua gracilis*), needlegrasses (*Stipa spp.*), and little bluestem (*Andropogon scoparius*). Shoreline and wetland species included common cattail (*Typha latifolia*), sandbar willow (*Salix exigua*), and redosier dogwood (*Cornus sericea*). The badlands contained rubber rabbitbrush (*Chrysothamnus nauseosus*), silver sagebrush (*Artemisia cana*), and broom snakeweed (*Gutierrezia sarothrae*). The grasslands are grazed by cattle. Development includes numerous oil wells, oil service structures, pipelines, power lines, and roads. The river is relatively free-flowing in the project area, but is regulated by some dikes, sluice gates, and drainageways. Flooding in 2011 created additional potential habitat for some listed species. The project may affect three Endangered species, one Threatened species, one Candidate Species, one Designated Critical Habitat and three ND Species of Concern. The project may have effects upon individual specimens or habitat patches, but it is not likely to adversely affect and is not expected to contribute to a trend toward federal listing or loss of viability to the population or species. Best management practices should be used during activities to minimize disturbances and reduce effects as much as possible. In particular, restrict construction activities during critical reproductive or migratory activities of listed species and prevent or contain chemical spills and erosion.

INTRODUCTION

Oneok Rockies Midstream LLC is proposing the construction of a 37-mile natural gas pipeline in McKenzie and Williams Counties, west of Williston, North Dakota. Details are in ***Appendix A, Maps.*** The purpose of this biological assessment is to review the proposed pipeline in sufficient detail to determine to what extent the pipeline and its construction may affect federally threatened, endangered or candidate species or their designated critical habitat.

CURRENT MANAGEMENT DIRECTION

This biological assessment is prepared in accordance with legal requirements set forth under the Endangered Species Act, Sections 4(b)(2) (16 USC 1533) and 7 (16 USC 1536 (c)), the National Environmental Policy Act (NEPA), the Migratory Bird Treaty Act (916 United States Code [USC] 703-711) the Bald and Golden Eagle Protection Act (16 USC 668-668c), and follows the standards established in 50 CFR Part 402- Interagency Cooperation-Endangered Species Act of 1973, as amended. These Acts protect federally listed or proposed threatened or endangered species, certain critical habitats, and the bald eagle *(Haliaeetus leucocephalus)*.

THREATENED, ENDANGERED, CANDIDATE SPECIES AND DESIGNATED CRITICAL HABITAT

ENDANGERED		**THREATENED**
Interior least tern (*Sterna antillarum*)		Piping plover (*Charadrius melodus*)
Whooping crane (*Grus americana*)		Western prairie fringed orchid (*Platanthera praeclara*)
Pallid sturgeon (*Scaphirhynchus albus*)		**CANDIDATE**
Gray wolf (*Canis lupus*)		Sprague's pipit (*Anthus spragueii*)
DESIGNATED CRITICAL HABITAT		Dakota Skipper (*Hesperia dacotae*)
Piping plover (*Charadrius melodus*) – Missouri River		

Although the project is not within the jurisdiction of the North Dakota Parks and Recreation Department (NDPR), three ND Species of Concern that have been observed in the project vicinity were considered: Flathead chub (Playtygobio gracilis), Sturgeon chub (Macrhybopsis galida), and Paddlefish (Polyodon spathula).

DESCRIPTION OF PROPOSED ACTION

Company	ONEOK Rockies Midstream LLC	
Company contact	Mr. Troy Fitchner	
Project name	Stateline Plant to Rawson Pipeline Corridor	
Project type	Natural Gas Pipeline corridor	
Legal description	T155N-R103W S 21, 22, 26, 27, 35 T154N-R103W S 2, 11, 12, 13 T154N-R102W S 18, 19, 20, 28, 29, 33 T153N-R102W S 14, 15, 16, 23, 24, 25 T153N-R101W S 28, 29, 30, 31, 32, 33	T152N-R102W S 1 T152N-R101W S 6, 7, 18, 19, 30, 31, 32 T151N-R101W S 5, 6, 8, 17, 20, 21, 28, 33 T150N-R101W S 4, 9
County	McKenzie, Williams	
USGS quadrangles	Williston SW, ND (48103-A6-TF-024)	
National Wetland Inventory Maps	Williston SW, ND (48103-A6-TF-024)	
Date of survey	August 25-27, 2011; April 10, 2012; April 23, 2012	
Project footprint	50 foot wide corridor, 37 miles long	
Start and end times	2012	
Construction access	Existing roadways and field approaches along the length of the construction right-of-way.	
Staging laydown areas	Within the inventoried project corridor and existing pipe yards.	
Construction equipment and techniques	Backhoe and dozers for pipeline open trench construction. Horizontal drilling rigs (closed loop system) for directional drilling road and water crossings.	
Permanent versus temporary impacts	The majority of the project will have a temporary impact, including 225 acres of surface disturbance of the pipeline route. Most is farmland and will continue as such. Some is pasture and will be reclaimed at the end of construction. Construction will take an estimated 60 days with commissioning, with immediate restoration. Minor permanent impacts will be seen.	
If temporary how long	Construction will last approximately 60 days; reclamation will occur at end of construction.	
Whether the project is growth inducing	Increased supply of hydrocarbons will be available to markets by processing hydrocarbons formerly considered waste.	
Whether the project is part of a larger plan or project	2 gas processing plants in Williams County ND will be constructed to process hydrocarbon resources currently wasted at well head; transmission line will be constructed to ship processed hydrocarbons to Sidney MT.	
Whether other projects are interrelated or interdependent	This project will contribute hydrocarbons to the above projects. But the above projects will be developed in the absence of this project.	
Conservation/Minimization Measures	Where possible, cross agricultural land, avoid native grasslands, follow existing pipelines, avoid breeding seasons, reclaim in native vegetation. See ***Discussoin*** for details.	

METHODS

RESEARCH AND CONSULTATION

These publications were reviewed: 1) US Fish and Wildlife Service (FWS) listing of North Dakota species of concern and background information and habitat needs (FWS 1995). 2) A list of threatened and endangered species and designated critical habitat that could occur in North Dakota (FWS 2008). 3) A list of threatened and endangered species and designated critical habitat that could occur within the project area (FWS 2011, ***Appendix B***). 4) Various recovery plans, status surveys, and species descriptions. Requests to the NDPR for element occurrences went unanswered.

Other information was obtained from FWS National Wetlands Inventory Data, US Geological Survey topographic maps and aerial photographs and US Department of Agriculture Farm Service Agency aerial photographs.

AREA SURVEYED

The *survey area* comprised a 125' corridor on each side of the proposed 37-mile pipeline. Total area included in the survey area amounted to about 1122 acres. The *project area* encompassed land within a ½-mile corridor on each side of the proposed pipeline, a total of 24128 acres. The original proposed pipeline route was field surveyed on August 25-27, 2011; ten miles of adjustments were surveyed on April 10, 2012; one mile of adjustments were surveyed on April 23, 2012. The surveyors were David and Amy Schmoller of Yellowfield Biological Surveys.

FIELD INSPECTION

Field surveys were conducted along the corridor to determine the presence or absence of listed species and habitat and to evaluate habitat suitability. Survey stations were located at accessible points along the proposed pipeline and at sites with higher probability of containing listed species or habitat. Survey intensity was intuitive meander. Observations were aided by binocular, spotting scope and 32-power digital camera. Observations were augmented by the research materials listed above.

Other features were assessed within the project area, such as transportation, utility, oilfield, and agricultural developments. These observations were augmented by the research materials listed above.

Global Positioning System equipment (Garmin 60CSx) was used to record site and feature locations using the UTM coordinate system and NAD83 datum. Site and features were projected onto topographic maps and aerial photographs. A photographic record of the site was created.

DETERMINATIONS

An evaluation, called a Biological Assessment, was made as to the direct and cumulative effect of the proposed activities on **1) endangered species**, **2) threatened species, 3) candidate threatened or endangered species,** and **4) designated critical habitat**. This determination was based upon research and field inspection and the evidence they gave of the presence or absence of the species and potential habitat within the project area. For each species, the determinations were one of the following:

1. No effect.
2. Is not likely to adversely affect: May affect individuals or habitat, but is not likely to adversely affect or contribute to a trend toward federal listing or cause a loss of viability to the population or species.
3. Is likely to adversely affect: Will affect individuals or habitat and is likely to adversely affect, with a consequence that the action may contribute to a trend toward federal listing or cause a loss of viability to the population or species.
4. Is not likely to jeopardize a proposed species/adversely modify proposed critical habitat.
5. Is likely to jeopardize a proposed species/adversely modify proposed critical habitat.
6. Beneficial effect.

The concern is whether the project would contribute to a trend toward federal listing or cause a loss of viability to the population or species. A summary of determinations is found in ***Table 1, Effects Summary***.

A revised Biological Assessment would be necessary should the following conditions develop subsequent to the filing of this Biological Assessment:

1. Additional information reveals action that may affect threatened, endangered, or candidate species or designated critical habitat.
2. The proposed project is modified and the modifications may affect threatened, endangered, or candidate species or designated critical habitat.
3. The FWS lists a new species or habitat that may be affected by the proposed project.

ACTION AREA

PIPELINE ROUTE

The proposed natural gas pipeline is approximately 37 miles in length. It begins approximately 1.5 miles east of Alexander, ND and runs in a northwesterly direction, terminating at an oil and gas facility directly 31.3 miles to the northwest. About 14.5 miles of the proposed pipeline would follow the right-of-way of section-line roads, county roads, or pasture roads, 14 miles would fall within cropland or hayfield, 4.1 miles within reclaimed grassland, 3.5 miles within native grassland, 0.6 mile of the pipeline would be bored beneath the bed of the Missouri River and 815' of pipeline would be bored beneath the upper reaches of a stock dam. There is a 1-mile proposed alternate route 2 miles northeast of the town of Alexander. It parallels the primary route and follows an existing pipeline for much of its length. Eleven proposed adjustments were established in 2012, covering about 11 miles. A 2.6-mile adjustment in the breaks on the south side of the Missouri River was a 0.7-mile departure from the 2011 plans; the remaining adjustments were departures of 200 to 900 feet from the 2011 plans. See ***Appendix A*** for details.

GEOLOGY

The project is within the Missouri Slope Uplands. The surface geology in the project area is the Glaciated Missouri Plateau Section of the Great Plains Province. This section is characterized by glacial drift of the Coleharbor Group; a veneer of igneous and metamorphic Precambrian to Paleozoic glacial erratics, deposited during the Pleistocene *Wisconsinan glacial event*. Where the glacial drift is absent, primarily along the Missouri River Breaks, the Paleocene mudstone and siltstone of the *Sentinel Butte* formation is at the surface. ***(Figure 1)*** The underlying *Bullion Creek* formation is exposed in cutbanks and drainages along the Missouri River near Crow Fly High Hill, 4.4 miles to the southwest of the pipeline. Along the waterways in floodplains and terraces is more recent Holocene erosional debris. Waterways within the project area include the Missouri River, Painted Woods Creek on the north side of the Missouri river, and Camp Creek on the south side of the Missouri River. In the breaks, the geomorphology has an undulating, rugged aspect with buttes, steep-sided canyons, and badland outcrops. Landslides, slumps, and mass wasting are common. Upslope from the breaks, the landscape levels off, is less severe in aspect, and has a thicker mantle of glacial veneer. Other geologic features include petrified wood, clinker, or porcelainite, beds, lignite veins and sandstone concretions, relicts of ancient river channels. ***(Figure 2)***

SOILS

The dominant soil types in the survey area were Zahl, Williams, Bowbells, and Cabba soil types. The dominant soil map units were: In the north, Williams-Bowbells loams, Zahl-Williams loams, Cabba-Amor-Zahl loams; in the central, Williams-Zahl loams, Zahl-Williams loams, Zahl-Cabba-Maschetah complex, Cabba-badland outcrop complex; in the south, Vebar-Flasher-Talley Complex, Zahl-Cabba- Maschetah Complex; Dogtooth-Janesburg-Cabba Complex, Williams-Zahl loams, Zahl-Williams loams. The floodplain was dominated by McKeen loam, Lohler silty clay, Havrelon loam, and Trembles fine sandy loam.

VEGETATION

The project area lies within the Missouri River Breaks and the Missouri Plateau Ecoregions and is located within the mixedgrass prairie province. Prior to settlement, the project area was dominated by mixedgrass prairie in the uplands, wooded draws in the breaks along the Missouri River, and floodplain forest and willow thickets on the flats along the Missouri River.

What exists today is a drastically altered landscape. Within the project area, the majority of the uplands, about 54%, have been converted to cropland, mainly wheat field. An additional 22% of the pasture land is reclaimed cropland, planted in non-native grasses and forbs, mainly crested wheatgrass (*Agropyron cristatum*), smooth brome (*Bromus inermis*), and yellow sweetclover (*Melilotus officinalis*). ***(Figure 3)*** The ditches along the road right-of-ways have been planted in non-native grasses, primarily smooth brome. ***(Figure 4)*** Only 19% of the pasture land is native grassland, although non-native species are common there. While much of the floodplain is forested, it comprises only 5% of the land surface and most of the arable land there has been converted to hayfield. ***(See Appendix A, Maps)*** The native plant communities observed are listed below. (Faber-Langendoen, 2001)

1) Mixed grass prairie: This is found in the river breaks on both sides of the Missouri River, and scattered uplands away from the river. (T151N-R101W, S17, 20, 21, 27, 28; T152N-R101W, S29-32; T154N-R103N, S2) The proposed pipeline passes through these areas for 7.8 miles of its length. This habitat contains seven community types:

a. *Stipa comata - Bouteloua gracilis - Carex filifolia* Herbaceous Vegetation ***(Figure 5)***
b. *Schizachyrium scoparium - Bouteloua curtipendula - Hesperostipa spartea* - (*Pascopyrum smithii*) Herbaceous Vegetation ***(Figure 6)***
c. *Hesperostipa comata - Bouteloua gracilis - Carex filifolia* Herbaceous Vegetation ***(Figure 6)***
d. *Artemisia cana* / *Pascopyrum smithii* Shrubland ***(Figure 2)***
e. Great Plains Badlands Sparse Vegetation Complex ***(Figures 1 and 2)***
f. *Fraxinus pennsylvanica - Ulmus americana* / *Prunus virginiana* Woodland ***(Figures 1 and 7)***
g. *Juniperus scopulorum* / *Piptatherum micranthum* Woodland (Faber-Langendoen, 2001). ***(Figures 1 and 7)***
h. Some Prairie Wetlands such as wet swales or intermittent creek bottoms that contained hydrophytic species such as Baltic rush (*Juncus balticus*) ***(Figure 8)***.

2) Floodplain: The floodplain is along the Missouri River. It contains two non-agricultural community types, found on the fringes of the agricultural lands or in the lowest elevations: *Salix exigua* Temporarily Flooded Shrubland and *Populus Deltoides* – (*Salix amygdaloides*) / *Salix exigua* Woodland. ***(Figure 9)*** The flooding of 2011 left most of the floodplain buried in sand dunes, mud, or saturated with alkali. ***(Figure 10)*** As expected, new shorelines, alkali flats and backswamps with potential habitat for interior least tern and piping plover were created. (***Figures 11 and 12***)

Plant species observed included the following: Outside of the agricultural hayfields and wheatfields, the floodplain was dominated by smooth brome. Shoreline and lower elevation species included common cattail (*Typha latifolia*), sandbar willow (*Salix exigua*), speckled alder (*Alnus incana*), common reed (*Phragmites australis*), and redosier dogwood (*Cornus sericea*). The wooded draw contained Rocky Mountain juniper (*Juniperus scopulorum*), green ash (*Fraxinus pennsulvanica*), American elm (*Ulmus americana*), and chokecherry (*Prunus virginiana*). The upland grasslands contained blue grama (*Bouteloua gracilis*), green needlegrass (*Stipa viridula*), needle-and-thread (*Stipa comata*), and little bluestem (*Andropogon scoparius*). The badlands contained rubber rabbitbrush (*Chrysothamnus nauseosus*), curlycup gumweed (*Grindelia squarrosa*), silver sagebrush (*Artemisia cana*), winterfat (*Ceratoides lanata*) and broom snakeweed (*Gutierrezia sarothrae*).

The agricultural lands were planted in wheat or other cereal crops. ***(Figure 13)*** Fallow fields were bare soil with invasives. ***(Figure 14)*** Most of the mixed grass prairie contained invasive species, which were dominant in some locations. Invasives included yellow sweet clover (*Melilotus officinale*), smooth brome (*Bromus inermis*), crested wheatgrass (*Agropyron cristatum*), Russian thistle (*Salsola iberica*), Kochia (*Kochia scoparia*), and Kentucky bluegrass (*Poa pratensis*). ***(Figure 15)*** Some lowlands contained cocklebur (*Xanthium strumarium*) Canada thistle (*Cirsium arvense*) and squirreltail (*Elymus elymoides*).

WILDLIFE

The observed wildlife was rare and mostly limited to the floodplain. The majority of the surface was cropland, so species counts were low. The initial survey was during late-summer; hence much of the migration had occurred. The spring survey presented a better range of species. Species observed were northern harrier, red-tailed hawk, cattle egret, avocet, Canada goose, redhead, northern pintail, blue-winged teal, mallard, northern shoveler, Franklin's gull, ring-billed gull, western kingbird, lark bunting, flicker, western meadowlark, killdeer, and crow. One empty Great horned owl nest was seen near the 2.3 mile adjusted route through Missouri River breaks. ***(Figure 16)***

FEATURES

Recent aerial photos show about 50 oil wells or oil service structures within ½ mile of the proposed pipeline. The majority of the surface within ½ mile of the proposed pipeline is in crops or hayfield. There are few residences within the ½ mile corridor. Numerous pipelines pass through the survey area. ***(Figure 17)*** Power lines are along major roadways. Flood control structures line the Missouri River. These include dikes, sluice gates, and drainageways. Cattle grazing occurs in the survey area. Road density is high, averaging at least four linear miles per square mile. Stock dams are common. At the time of the survey, the Missouri River was at flood stage. ***(Figure 9)***



Figure 1. Sentinel Butte formation badlands in breaks on south side of Missouri River. River is visible in distance. View is to NW.



Figure 2. Petrified wood within Sentinel Butte formation badlands. Silver sagebrush, broom snakeweed, rubber rabbitbrush, and winterfat visible in foreground.



Figure 3. Non-native reclamation grasses in former cropland. Crested wheatgrass dominates this pasture on plateau west of Painted Woods Creek (T154N-R102W-S33). Orange line marks proposed pipeline. View is to NW.



Figure 4. Non-native reclamation grasses in highway right-of-way. Smooth brome thoroughly dominates this photo, with some Canada thistle in lower right corner. View is to E, with Hwy 85 in background. This is 2000' north of intersection with Co Rd 16.

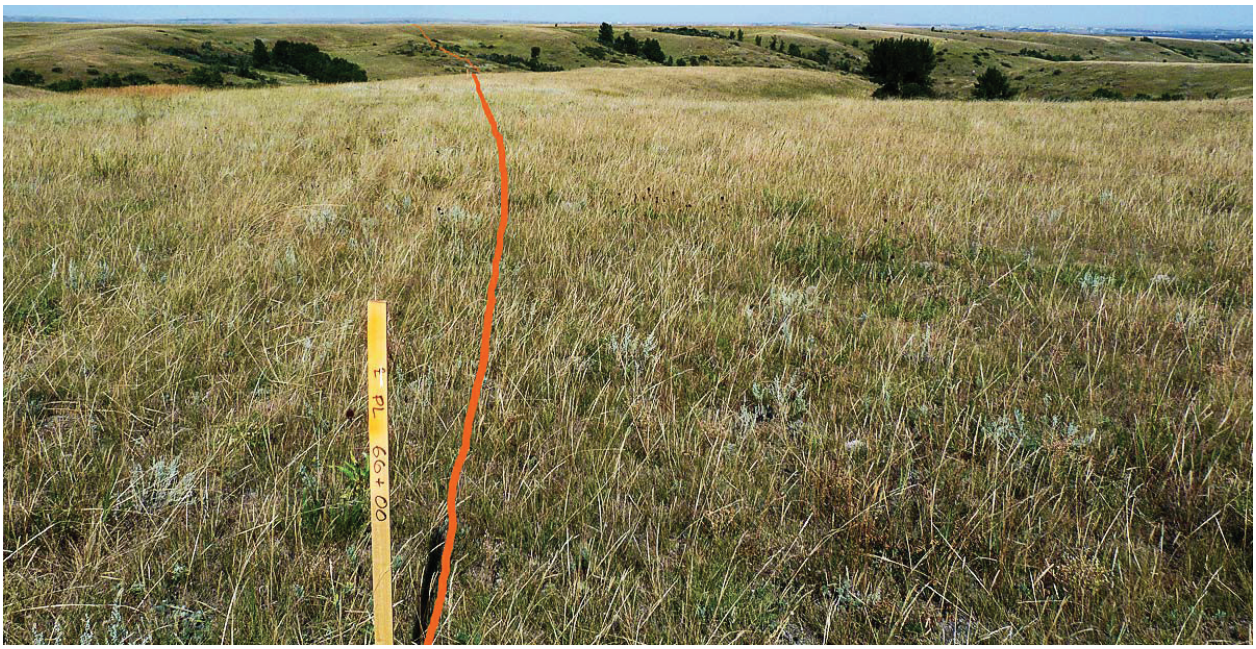

Figure 5. Native prairie in river breaks on south side of Missouri River. Needlegrasses, fringed sagebrush, and blue grama dominate. Orange line marks original proposed pipeline, east of the adjusted pipeline of 2012. View is to NW.



Figure 6. Mixed grass prairie with several community types. Reddish-colored little bluestem is in mid-ground. Foreground has needlegrasses, junegrass, and fringed sagebrush. Pipeline stake is in foreground. This is in T152N-R101W-S29. View is to S.

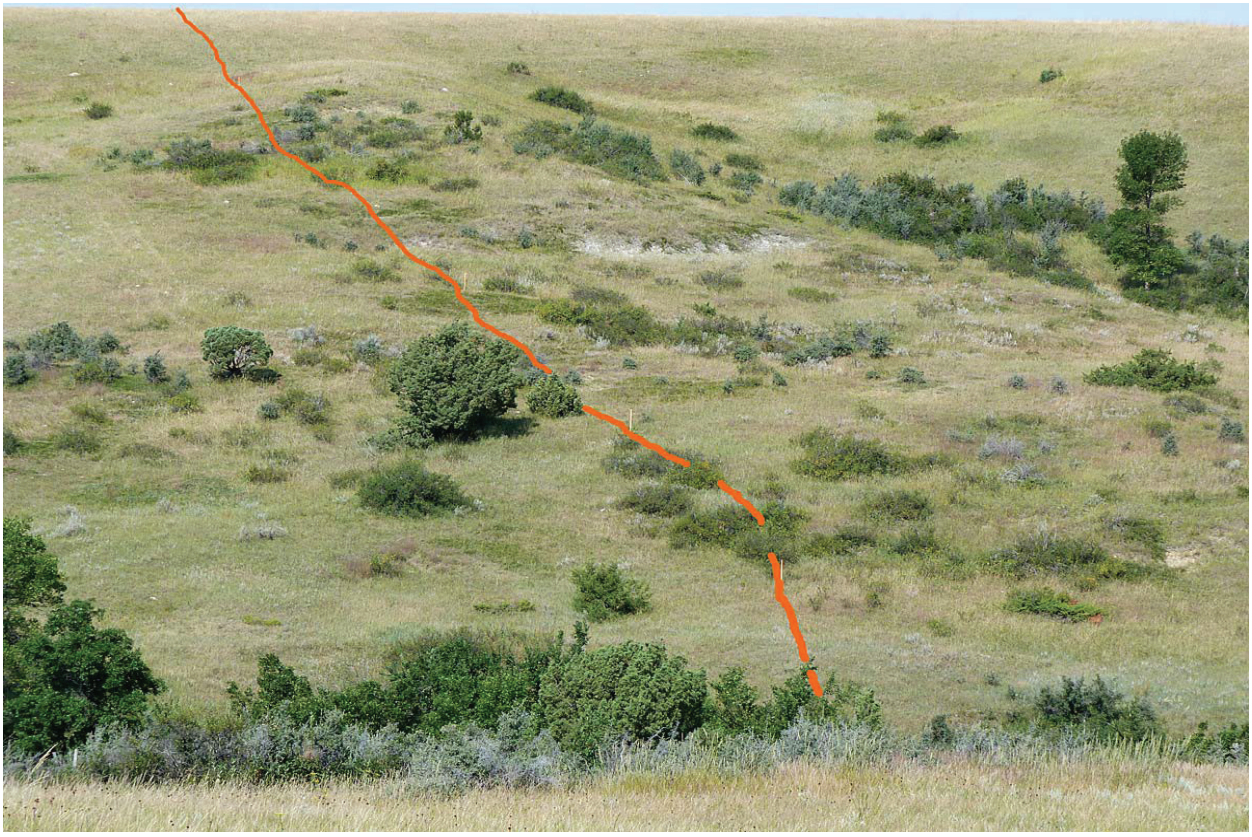

Figure 7. Wooded draws in breaks on south side of Missouri River with American elm, green ash, and Rocky Mountain juniper. Orange line marks the original proposed pipeline, east of the adjusted pipeline of 2012. View is to NW.



Figure 8. Wetland vegetation in stock dam in T151N-R101W-S20. Dark green vegetation is hardstem bulrush. This dam also had common cattail and Baltic rush. Original proposed pipeline would bore beneath the creekbed. (See ***Map 14***) View is to SW.



Figure 9. Flooded Missouri River floodplain in 2011. Floodplain Forest community with cottonwood trees dominate the tree layer in the river bottom. Most of the floodplain is cultivated. View is from south bank, looking to the NE.



Figure 10. Sand dune field on Missouri River floodplain visible in 2012, the result of major flooding in 2011. Orange circles mark pipeline stakes. Yellow flags indicate existing buried pipeline. View is to NW.



Figure 11. Alkali flat on floodplain, buried in about 6" of new silt and sand from the Missouri River floods of 2011. Partially buried yellow pipeline flag is visible in center. View is to NE.



Figure 12. Backswamps formed by Missouri River flooding of 2011. About 6" of new silt and sand is here. Pipeline stake is in lower right. View is to NE.



Figure 13. Wheat field in center of photo, green grasses on either edge are smooth brome with yellow sweetclover. Red circles mark location of pipeline stakes. View is to NW.



Figure 14. Proposed pipeline crossing bare dirt in fallow wheat field. Orange line marks proposed pipeline. View is to N.



Figure 15. Rust-colored yellow sweetclover dominates this reclaimed grassland. Other clover patches can be seen in distance. Orange line marks proposed pipeline route, an alternate route. View is to SE from Waypoint 149, in T151N, R101W, S21.



Figure 16. Empty Great horned owl nest seen along adjusted pipeline route in Missouri River breaks on south side of the river in 2012 survey.

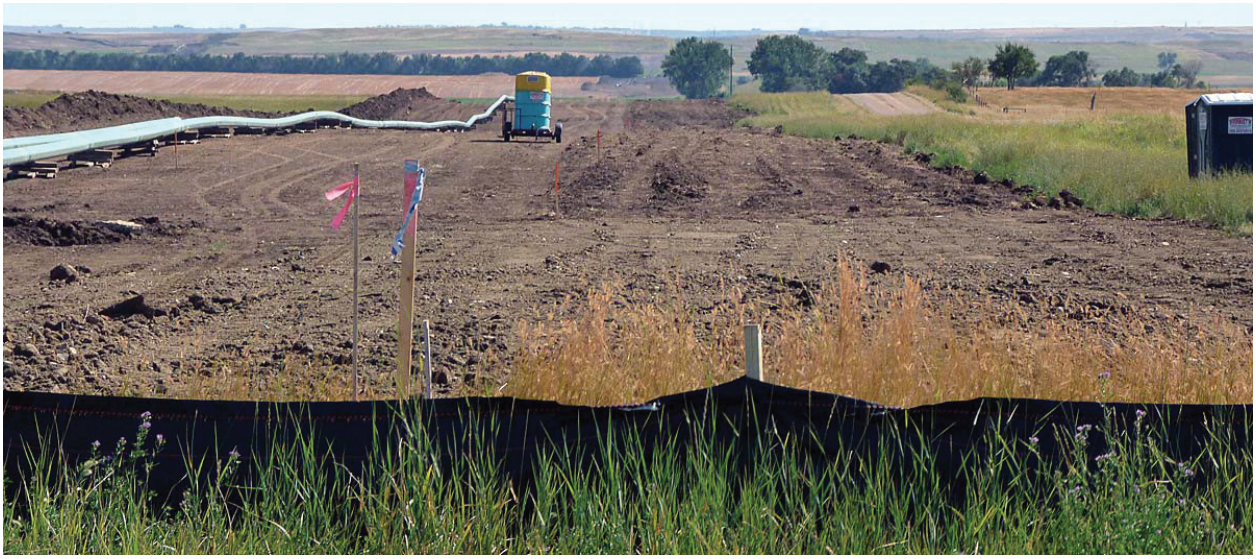

Figure 17. Pipeline construction in corridor of proposed pipeline in August 2011. View is to E. Stake marks proposed pipeline, which continues to the E, into the distance. This is at north terminus of proposed pipeline, at an oil and gas facility. Road to right is 56th Street NW. Pipeline corridors like this were common throughout the survey area during the 2012 surveys.

SPECIES ACCOUNTS

The following evaluation is being made to facilitate the FWS decision making process. The existing conditions documented below may assist FWS personnel to determine if the proposed activities appropriately adhere to the overall management intent of the FWS. A summary of the evaluation is found in ***Table 2, Effects Summary.***

GENERAL

Design criteria are provided to avoid potential future effects unless there is a 'no effect' determination. If there are no adverse effects now or in the future, no avoidance measures are necessary.

ENDANGERED SPECIES

Gray Wolf (Canis lupus)

Historical records show that wolf sightings are very rare within North Dakota. From 1981 to 1992, 10 wolves were killed in the Dakotas, five of them in 1991-92 (Licht 1992). One was shot in Dunn County in 1992, a den was discovered in the Turtle Mountains in 1994, and another was shot in Traill County in 2011. Additional sightings have been reported in the Killdeer Mountains in Dunn County. (Johnson 1999) The Killdeer Mountains are about 40 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.

Black-footed Ferret (Mustela nigripes)

Black-footed ferrets were historically found in North Dakota, mostly in the southwest portion of the state. They have been extirpated from the state. The Black-footed Ferret Recovery Plan lists the need to reintroduce ferrets into suitable habitat. Since they rely almost exclusively on prairie dogs for food and den sites, suitable Black-footed ferret habitat is large prairie dog towns or complexes of towns in close proximity to each other.

The nearest Black-footed ferret population is about 175 miles to the northwest in Grassland National Park, near Val Marie, Saskatchewan. The nearest proposed area of reintroduction is 10 miles to the west, on the Little Missouri National Grassland. No prairie dogs were observed in the project area. The proposed project will have **no effect** on the black-footed ferret.

Interior Least Tern (Sterna antillarum)

According to the FWS recovery plan, "interior least terns breed in the Mississippi and Rio Grande River Basins from Montana to Texas and from eastern New Mexico and Colorado to Indiana and Louisiana. From late April to August they occur primarily on barren to sparsely vegetated riverine sandbars, dike field sandbar islands, sand and gravel pits, and lake and reservoir shorelines." Essential breeding habitat in North Dakota for interior least tern is found along "about 192 km of the Missouri River from Garrison Dam to the mouth of the Cannonball River south of Bismarck, and about 29 km of the Yellowstone River in North Dakota from the Montana border to the river's confluence with the Missouri River. A few interior least terns nest on islands, shorelines and sandbars along the reservoir, Lake Oahe, an impoundment on the Missouri River in North and South Dakota. In Montana, breeding interior least terns recently have been recorded on the Yellowstone River, and on the Missouri River between Fort Peck Reservoir and North Dakota." Suitable riverine breeding habitat is "sparsely vegetated sand and gravel bars within a wide unobstructed river channel, or salt flats along lake shorelines. Nesting locations usually are at the higher elevations and away from the water's edge." (FWS 1990)

Interior least terns nest for 4 to 5 months, arriving in late April to early June and departing by early September. They show strong breeding site fidelity and a small home range. Human presence has been shown to reduce reproductive success.

While Interior least terns subsist on a diet that includes numerous species of small fish, they also feed on crustaceans, insects, mollusks and annelids.

The conversion of the Missouri River from a braided river with numerous channels, sandbars, oxbows, and pools to a single, narrow, relatively uniform navigation channel has eliminated much of the tern's habitat. In addition, reservoirs have submerged hundreds of miles of habitat, captured clay, silt and sand that build sandbars downstream, and produced discharges that fail to mimic those that occurred naturally. Other threats include surface or water contaminants, as by chemical spills, and vehicular and human traffic on beach habitat.

The project area falls 10.8 miles east of the confluence of the Yellowstone and Missouri Rivers. Suitable sandbar habitat for Interior least tern is common within the survey area during periods of normal to low flow of the Missouri River. Downstream, the shorelines of Lake Sakakawea provide suitable habitat during normal to low gage heights. At the time of the 2011 survey, the Missouri River was at flood stage due to record high rainfall and snowpack in the Missouri River watershed in the northern Rocky Mountains, a condition that would continue into late summer. Thus, it was expected that, in the project area, suitable interior least tern sandbar habitat on the Missouri River would be unavailable in 2011. However, the 2012 survey revealed that the flooding left in its wake much additional habitat that could prove suitable to interior least tern (***Figures 10-12***).

The proposed pipeline will intersect the Missouri River. While the proposed pipeline has a narrow footprint and is to be drilled beneath the Missouri River, thereby avoiding the disturbance of sandbars and shorelines, construction activities themselves have the potential to disturb nesting Interior least terns... Breeding season for the least tern is May 1 to August 31st. Construction activities will occur during the breeding season of the least tern. A preconstruction survey will be conducted to confirm the presence or absence active nest sites within 0.5 miles of the project. All active nest sites will be flagged and a 0.5 mile buffer area between construction activities and active nest site will be established and maintained per FWS recommendations. To minimize impacts, horizontal directional drilling (HDD) will be used to install the pipelines under the Missouri river and other waters of the U.S. (e.g., wetlands, intermittent streams) encountered along the ROW of the proposed project. The HDD waterbody crossing technique; this crossing method is a low impact crossing technique that is preferred by the Army Corps of Engineers (COE) and the North Dakota Department of Health. This drilling method minimizes potential impacts to the resources and downstream water quality. As per the COE's Section 10 Waterway Nationwide Permit (NWP) #12-Utility Line Activities, there will be no grading or other earth work on the surface within 825 feet of the river on either bank. Based upon aerial photography it appears that the HDD equipment and materials shall be staged and operating from a point that will maintain the minimum 0.5 buffer from potential nesting habitat.

There is the potential for chemical spill, such as fuel or hydraulic fluid for equipment used in construction, and excess erosion, which may directly impact terns in the vicinity and food sources in the Missouri River. ONEOK Rockies Midstream LLC will implement Spill Prevention, and Containment and Countermeasure Plan (SPCC) for this project. Project personnel shall be trained to the procedures for addressing a potential release event. Typical

equipment used for construction is drill rigs, trucks and excavator equipment. The typical amounts of fuels used for this equipment are diesel, kerosene, military aviation kerosene and gasoline. Each has a capacity between 6,000 to 12,000 gallons. Lubricants used onsite will be less than 500 gallons. Coolants on site typically are less than 100 gallons. Spill response equipment (e.g. spill kits) shall be on site of the appropriate type to manage a potential release. Project personnel shall be oriented to the location and contents of kit and shall be trained to appropriate response measures. There will be no grading or other earth work on the surface within 825 feet of the Missouri River on either bank. The pipeline will parallel the river, the nearest distance of approximately 3,350 feet away from the main river channel, avoiding potential nesting and habitat areas. All operators will use the standard best management practices and will abide by the clean-up measures set forth in the SPCC. Thus, the proposed project the project **may have effects** upon individuals, but it is not likely to adversely affect and is not expected to contribute to a loss of viability to the population or species.

Design Criteria to avoid potential future effects

Best management practices should be used during activities to minimize disturbances and reduce effects as much as possible. While some sources indicate that interior least terns do not nest along the Missouri or Yellowstone Rivers between mid-September and late April, the FWS recommends that construction activities avoid the dates from *February 1 to August 31 to avoid the migratory and breeding activities*. The FWS makes an overarching recommendation that covers all listed migratory birds that occur in the project area would be to limit construction activities to *late summer or fall/early winter*. (FWS 2011 letter, in ***Appendix B***) Project design should include measures to prevent, contain, or collect chemical spills and excess erosion.

Should it not be possible to meet these recommendations, see further commentary by the FWS contained under ***Discussion - Management Practices***.

Pallid Sturgeon (Scaphirhynchus albus)

The pallid sturgeon is known only to occur in the Missouri and Yellowstone Rivers. It requires large rivers with swift and free-flowing, turbid, warmwater habitat with diverse and fluctuating structure. This diverse structure includes braiding, floodplains, oxbows, backwaters, sloughs, chutes, side channels, islands, sandbars, snags, cutbanks, and organic debris. Most recent records show the pallid sturgeon in or near North Dakota in the following locations:

> From the Missouri River between the Marias River and Ft. Peck Reservoir in Montana; between Ft. Peck Dam and Lake Sakakawea (near Williston, North Dakota); within the lower 113 km (70 mi) of the Yellowstone River to downstream of Fallon, Montana. (FWS 1993)

Historically, spawning migrations occurred during the two periods of spring floodflows; April, when snowmelt from the Great Plains entered the river system and late May and June when snowmelt from the Rocky Mountains entered the river system. The sturgeon spawns from June to August. It is surmised that the sturgeon spawns over rough rock or gravel substrate found in the relatively swift waters in the main channel of the Missouri River. Suspended sediment provides essential cover for larvae, fry, and small sturgeon and maintains food sources adapted to turbid waters. Diet includes immature aquatic invertebrates and fish, primarily cyprinids.

Reservoirs along the Missouri River have been the primary threat to pallid sturgeon. This has **1)** altered the river dimensions, **2)** altered patterns of water velocity, discharge, depth, and temperature, **3)** blocked fish movement, **4)** reduced turbidity and organic debris, **5)** reduced bed roughness, and **6)** inundated spawning and nursing areas. Approximately 36% of riverine habitat on the mainstem of the Missouri River has been lost due to the construction of six reservoirs. Forty percent has been lost to channelization. As a result, suitable spawning and forage habitat has been lost. In turn, recruitment of the pallid sturgeon in the Missouri or Yellowstone Rivers has not been documented in 30 or more years. (Krentz 1997)

The proposed pipeline would be constructed in a free-flowing portion of the upper Missouri River, in the midst of braided channels, oxbows, sandbars, and snags. However, the project design calls for the pipeline to be bored beneath the riverbed, thus avoiding direct impacts upon the fish or habitat or the river itself. Indirect effects may be seen in erosional debris generated by the pipeline construction, but turbidity and sedimentation are generally not an impediment to pallid sturgeon. In any event, construction activities in the Missouri River corridor would not start before July 1, 2012, avoiding half of the spawning period.

There is the potential for chemical spill, such as fuel or hydraulic fluid for equipment used in construction which may directly impact sturgeon in the vicinity and food sources in the Missouri River. ONEOK Rockies Midstream LLC will implement Spill Prevention, and Containment and Countermeasure Plan (SPCC) for this project. Project personnel shall be trained to the procedures for addressing a potential release event. Typical equipment used for construction is drill rigs, trucks and excavator equipment. The typical amounts of fuels used for this equipment are diesel, kerosene, military aviation kerosene and gasoline. Each has a capacity between 6,000 to 12,000 gallons. Lubricants used onsite will be less than 500 gallons. Coolants on site typically are less than 100 gallons. Spill response equipment (e.g. spill kits) shall be on site of the appropriate type to manage a potential release. Project personnel shall be oriented to the location and contents of kit and shall be trained to appropriate response measures. As per the COE's Section 10 Waterway Nationwide Permit (NWP) #12-Utility Line Activities, there will be no grading or other earth work on the surface within 825 feet of the river on either bank. Other than the initial crossing of the Missouri River, the pipeline will parallel the river at the nearest distance of approximately 3,350 feet away from the main river channel. This distance to the river would make it highly unlikely that any spill material would reach the river. The HDD waterbody crossing technique limits impacts to the waterbody that will be crossed and generally accepted as the preferred crossing technique by regulating agencies. There are potential impacts to resource that could arise from this crossing method; however, these impacts are typically temporary generally related to equipment failures, spills or a migration of drilling fluid to the surface. Potential impacts to the pallid sturgeon could occur if hydraulic fracturing of the drilling fluid occurs. This refers to fluid pressure building up within the borehole during HDD operations, potentially resulting in hydraulic fracturing and subsequent migration of drilling fluids to the surface (referred to as "frac-out"). The two primary factors affecting hydraulic fracturing in the soil are borehole pressure and depth of cover. When the pressure in the bore hold exceeds the strength of the surrounding strata, a potential frac-out condition occurs. Since the drill path is expected to be a minimum of 50 feet below the bed of the river, the potential for this to occur in the Missouri River is highly unlikely. Additionally, project personnel would monitor the HDD process. Project personnel would promptly respond to any

evidence of “frac-out” occurring or appearing at the surface, and deploy containment resources as necessary to minimize additional impacts. Drilling fluids are comprised primarily of bentonite clay which is inert. In the unlikely event a frac-out were to result in a release of bentonite into the water body, project personnel would implement response measures by reducing drilling fluid pressure, deployment of booms or similar mitigation. Thus, the proposed project the project **may have effects** upon individuals, but it is not likely to adversely affect and is not expected to contribute to a loss of viability to the population or species.

Design Criteria to avoid potential future effects
Best management practices should be used during activities to minimize disturbances and reduce effects as much as possible. It is recommended that construction activities occur between September and May, to avoid the months when pallid sturgeons are spawning. Project design will include measures to prevent, contain, or collect chemical spills.

Should it not be possible to meet these recommendations, see further commentary by the FWS contained under ***Discussion - Management Practices***.

Whooping Crane (Grus americana)

According to the Canadian Wildlife Service (CWS) and the FWS recovery plan, “areas characterized by wetland mosaics appear to provide the most suitable stopover habitat.” Migration patterns show that the “cranes primarily used shallow, seasonally and semipermanently flooded palustrine wetlands for roosting, and various cropland and emergent wetlands for feeding.” The large reservoir margins in the Dakotas were included in this category. Riverine habitats are also used by the cranes during migration, roosting on “submerged sandbars in wide, unobstructed channels that are isolated from human disturbance (CWS FWS 2007)

According to the FWS recovery plan, the Aransas-Wood Buffalo whooping crane population (AWBP) migrates “southeasterly through Alberta, Saskatchewan, and eastern Manitoba, stopping in southern Saskatchewan for several weeks in fall migration before continuing migration into the United States. They migrate through the Great

Plains states of eastern Montana, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas. Their spring migration is more rapid and they simply reverse the route followed in fall." They spend three months of the year in migration. (CWS FWS 2007)

Spring Migration: On average, the AWBP depart from Aransas National Wildlife Refuge (ANWR) in Texas between March 25 and April 15. The northward migration is normally completed in 2-4 weeks. Typically, nesting pairs arrive in Wood Buffalo National Park (WBNP) in late April, lay eggs from late April to mid-May, and hatching occurs in late May to mid-June. The cranes remain in WBNP for the remainder of the summer. **Fall Migration:** Normally, the autumn migration of AWBP from WBNP in Alberta begins in mid-September. Birds linger in northern Saskatchewan for 2-4 weeks then make a rapid migration to their wintering grounds at the ANWR, usually covering the distance in a week. Cranes have lingered in North Dakota into November. Winter storms play a role in migration timing. The population follows an 80-300 km wide migration route as it crosses North Dakota.

Threats to whooping cranes on their migration through North Dakota include: Damage to migration habitat as a result of drought, cattle grazing, contaminated runoff, widespread draining of prairie pothole wetlands and diversions of major river systems. Other threats include low genetic diversity, power line collisions, predation, and illegal shooting. Whooping cranes have shown an aversion to human activity. They will respond negatively to aircraft and humans on foot. This aversion may limit their ability to obtain food resources and weaken individuals and the social structure.

The proposed pipeline will intersect the Missouri River. While the proposed pipeline has a narrow footprint and is to be drilled beneath the Missouri River, thereby avoiding the disturbance of submerged sandbars and other preferred wetland habitat, construction activities have the potential to disturb whooping cranes. The proposed timing of construction activities in the Missouri River corridor would avoid the spring migration and would be well underway during the normal fall migration period. The construction activities would serve as a deterrent for the fall migrants. ONEOK project staff would monitor electronic newsletter documenting migrations activities and would provide training to project personal to facilitate recognition of this species. Project activities would be suspended when whooping cranes are observed within 0.5 miles (line of site) and would resume upon their dispersion. ONEOK would provide notification to the FWS regarding any observations of the species. There is the potential for chemical spill, such as fuel or hydraulic fluid for equipment used in construction, or excess erosion, which may directly impact cranes in the vicinity and food sources in the Missouri River. ONEOK will avoid direct impacts to wetlands by adjusting alignments wherever practicable to avoid crossings, furthermore those locations which cannot be completely avoided via alignment modification shall be crossed utilizing the HDD crossing technique. The HDD crossing technique is the preferred crossing technique of regulating agencies. As such there shall be no loss of wetland habitat and no impact to migratory stopover habitat. Thus, the proposed project **may have effects** upon individuals, but it is not likely to adversely affect and is not expected to contribute to a loss of viability to the population or species.

Design Criteria to avoid potential future effects

Best management practices should be used during activities to minimize disturbances and reduce effects as much as possible. It is recommended that construction activities be limited to months when whooping cranes are not migrating through North Dakota, typically mid-summer and mid-winter, avoiding the months of mid-April to mid-May and mid-October to mid-November. The FWS makes an overarching recommendation that covers all listed migratory birds that occur in the project area would be to limit construction activities to *late summer or fall/early winter.* (FWS 2011 letter) Project design will include measures to prevent, contain, or collect chemical spills and excess erosion. ONEOK Rockies Midstream LLC will implement Spill Prevention, and Containment and Countermeasure Plan (SPCC) for this project. Project personnel shall be trained to the procedures for addressing a potential release event. Typical equipment used for construction is drill rigs, trucks and excavator equipment. The typical amounts of fuels used for this equipment are diesel, kerosene, military aviation kerosene and gasoline. Each has a capacity between 6,000 to 12,000 gallons. Lubricants used onsite will be less than 500 gallons. Coolants on site typically are less than 100 gallons. Spill response equipment (e.g. spill kits) shall be on site of the appropriate type to manage a potential release. Project personnel shall be oriented to the location and contents of kit and shall be trained to appropriate response measures.

Should it not be possible to meet these recommendations, see further commentary by the FWS contained under ***Discussion - Management Practices***.

THREATENED SPECIES

Piping Plover (Charadrius melodus)

Piping plovers spend spring and summer months in North Dakota, breeding and raising young. Breeding, nesting, and foraging habitat occur in North Dakota on open, sparsely vegetated, gravel to sandy beaches and bars along the Missouri and Yellowstone Rivers. About 15% of the plovers in North Dakota are found along the Missouri River from the Garrison Dam south to the mouth of the Cannonball River and along the Yellowstone River in McKenzie County. The remaining 85% of plovers in North Dakota can be found on alkali wetlands on the Missouri Plateau.

Piping plovers spend 3-4 months in North Dakota, arriving from the third week in April to the second week in May. Hatching begins in late May and continues into June. The adult birds begin to abandon nests as early as mid-July and normally, all piping plovers have left by early August. Some have lingered at the breeding grounds into September. Juveniles depart a few weeks later and normally, all have left by late August. Breeding site fidelity is variable from region to region, suggesting the need for variable nest sites. Piping plovers feed on small invertebrates including worms, fly larvae, beetles, crustaceans, and mollusks.

As with interior least terns, the conversion of the Missouri River from a braided river with numerous channels, sandbars, oxbows, and pools to a single, narrow, relatively uniform navigation channel has eliminated much of the plover's habitat. Reservoirs have submerged hundreds of miles of habitat, captured clay, silt and sand that build sandbars downstream, and produced discharges that fail to mimic those that occurred naturally. Other threats to piping plovers include surface or water contaminants, as by chemical spills, vehicular and human traffic on beach habitat, and vegetation encroachment which provides cover for predators. On alkaline wetlands, plover are threatened by cattle trampling, wetland drainage and chemical contaminants.

The project area falls 10.8 miles east of the confluence of the Yellowstone and Missouri Rivers. Suitable sandbar habitat for piping plover is common within the survey area during periods of normal to low flow of the Missouri River. Downstream, the shorelines of Lake Sakakawea overtake the waterway and provide suitable habitat during normal to low gage heights. At the time of the 2011 survey, the Missouri River was at flood stage due to record high rainfall and snowpack in the Missouri River watershed in the northern Rocky Mountains, a condition that would continue into late summer. Thus, it was expected that in the project area suitable piping plover sand and gravel bar habitat on the Missouri River would be unavailable in 2011. However, the 2012 survey revealed that the flooding left in its wake much additional habitat that could prove suitable for piping plover (***Figures 10-12***).

The proposed pipeline will intersect the Missouri River and the alkali flats in the upper arms of a 6.3–acre stock dam (T151N-R101W-S20 NE). While the proposed pipeline has a narrow footprint and is to be drilled beneath the Missouri River and the stock dam, thereby avoiding the disturbance of sandbars and shorelines, construction activities themselves have the potential to disturb nesting piping plover. The FWS has reported that the piping plovers breeding season is from April 1 to August 31. Construction activities will occur during the breeding season of the piping plover. A preconstruction survey will be conducted to confirm the presence or absence active nest sites within 0.5 miles of the project. All active nest sites will be flagged and a 0.5 mile buffer area between construction activities and active nest site will be established and maintained per FWS recommendations. To minimize impacts, horizontal directional drilling (HDD) will be used to install the pipelines under the Missouri river and other waters of the U.S. (e.g., wetlands, intermittent streams) encountered along the ROW of the proposed project. The HDD waterbody crossing technique; this crossing method is a low impact crossing technique that is preferred by the Army Corps of Engineers (COE) and the North Dakota Department of Health. This drilling method minimizes potential impacts to the resources and downstream water quality. As per the COE's Section 10 Waterway Nationwide Permit (NWP) #12-Utility Line Activities, there will be no grading or other earth work on the surface within 825 feet of the river on either bank. Based upon aerial photography it appears that the HDD equipment and materials shall be staged and operating from a point that will maintain the minimum 0.5 buffer from potential nesting habitat.

There is the potential for chemical spill, such as fuel or hydraulic fluid for equipment used in construction, and excess erosion, which may directly impact plovers in the vicinity and food sources in the Missouri River. ONEOK Rockies Midstream LLC will implement Spill Prevention, and Containment and Countermeasure Plan (SPCC) for this project. Project personnel shall be trained to the procedures for addressing a potential release event. Typical equipment used for construction is drill rigs, trucks and excavator equipment. The typical amounts of fuels used for this equipment are diesel, kerosene, military aviation kerosene and gasoline. Each has a capacity between 6,000 to 12,000 gallons. Lubricants used onsite will be less than 500 gallons. Coolants on site typically are less than 100 gallons. Spill response equipment (e.g. spill kits) shall be on site of the appropriate type to manage a potential release. Project personnel shall be oriented to the location and contents of kit and shall be trained to appropriate response measures. Thus, the proposed project the project **may have effects** upon individuals, but it is not likely to adversely affect and is not expected to contribute to a trend toward higher federal listing or loss of viability to the population or species.

Design Criteria to avoid potential future effects

Best management practices should be used during activities to minimize disturbances and reduce effects as much as possible. While some sources indicate that piping plovers do not nest along the Missouri or Yellowstone Rivers between September and late April, the FWS recommends that construction activities avoid the dates from *February 1 to August 31*. The FWS makes an overarching recommendation that covers all listed migratory birds that occur in the project area would be to limit construction activities to *late summer or fall/early winter*. (FWS 2011

letter) Project design should include measures to prevent, contain, or collect chemical spills and excess erosion.

Should it not be possible to meet these recommendations, see further commentary by the FWS contained under ***Discussion - Management Practices***.

Western Prairie Fringed Orchid (Platanthera praeclara)

Botanical field surveys were conducted. However, only one rare plant is listed with the FWS, and that species, *Platanthera praeclara*, exists only in the extreme southeastern corner of North Dakota, on the edge of wet swales in tallgrass prairie, mainly on the Sheyenne National Grassland. This habitat does not exist in the project area. The proposed project will have **no effect** on the western-fringed prairie orchid or its habitat.

CANDIDATE SPECIES

Dakota Skipper (Hesperia dacotae)

The Northern Prairie Wildlife Research Center states that 'the Dakota skipper can survive only in undisturbed tall grass and mid-grass prairie. In the western part of its range the Dakota skipper can be found in ungrazed native pastures with little bluestem, needle-and-thread and purple coneflower" and "upland (dry) prairie on ridges and hillsides dominated by bluestem grasses, needlegrass, pale purple coneflower (*Echinacea pallida*), prairie coneflowers (*Ratibida colmnifera*), and blanketflower (*Gaillardia aristata*)." It is also found in association with harebell (*Campanula rotundifolia*), white prairie clover (*Dalea candida*), fleabanes (*Erigeron*), black-eyed Susans (*Rudbeckia hirta*), and evening primrose (*Oenothera serrulata*). It appears to prefer purple coneflower (*Echinacea*

purpurea) and, to a lesser extent, harebell as nectar sources. They are not found on habitats dominated by exotic plant species. Pupation takes about 10 days and occurs in mid-June to early July. Males emerge as adults about five days before females. They mate during this flight period, which lasts a maximum of about three weeks. (USFWS 2002) It goes on to state:

> Dakota skipper populations have declined historically due to widespread conversion of native prairie for agriculture and other uses. This has left remaining Dakota skipper populations isolated from one another in relatively small areas of remnant native prairie. States and Canadian provinces in the original range of Dakota skipper have each lost 85%-99% of their historical tallgrass prairie and 72%-99.9% of their historical mixed-grass prairie. This has left isolated fragments of native prairie, only some of which are suitable for Dakota skippers. Dakota skippers are sensitive to several types of artificial and natural disturbances and are almost always absent from remnant prairies that are overgrazed or otherwise degraded. Because of this sensitivity, the historical persistence of Dakota skippers may have depended on the vastness of the prairie and the availability of immigrants to repopulate areas in which the species had been eliminated by disturbances, such as fire or intensive bison grazing.

Royer observes that "a reliable indicator of possible presence in the more xeric west is a combination of Needle and Thread (*Stipa comata*) and Narrow-leaved Purple Coneflower (*Echinacea angustifolia*) in rolling upland pastures." (Royer 2003) He recorded three sightings of the butterfly in McKenzie County. 1) Two populations in northern McKenzie County, 30 miles east of the project area. A total of three butterflies were seen in these two populations. 2) One population in southern McKenzie County near Eagle Nest Butte, 42 miles to the east of the project area. This population is small and vulnerable, covering 10 acres of prairie. These sightings constitute the westernmost known populations of the species in the US. (Royer 2005) The majority of the populations occur in McHenry, Ransom, Eddy and Richland counties, at their closest, 120 miles to the east.

About 4480 acres of native mixed-grass prairie are located within ½ mile of the proposed pipeline. They are divided into five contiguous parcels: **1)** 115 acres located in T154N-R103W-S2; **2)** 1450 acres located in the breaks on the north side of the Missouri River, along Painted Woods Creek; **3)** 900 acres located in the breaks on the south side of the Missouri River; **4)** 800 acres located in T152N-R101W-S29 and 32; **5)** 1350 acres located in T151N-R101W-S17, 20, 21, 28, 29. Oil and gas wells are abundant near or within parcel 3. All five parcels contain large and widespread populations of non-native vegetation. Communities of *Stipa comata/Echinacea angustifolia* are uncommon, limited to crests and sideslopes in the four largest parcels. Non-native reclaimed grassland occupies about 5300 acres within ½ mile of the proposed pipeline. The remainder of the survey area is dominated by wheat and hayfields or floodplain. No Dakota skippers were observed in this survey. Due to the sensitivity of the species to disturbance, the project may have effects upon individuals. However, the location of the project outside of the extreme westernmost populations indicates that it will not likely contribute to a trend toward federal listing or loss of viability to the population or species.

Design Criteria to avoid potential future effects
Best management practices should be used during activities to minimize disturbances and reduce effects as much as possible.

Sprague's Pipit (Anthus spragueii)

A 2010 status review found that "listing Sprague's Pipit as threatened or endangered is warranted, but that listing the species at this time is precluded by the need to complete other listing actions of a higher priority." (FWS 2010)

The NPWRC states that Sprague's pipit is "fairly common locally on the Northwestern Drift Plain, Missouri Coteau [Plateau], Coteau Slope, and Little Missouri Slope; uncommon and local on the Northeastern Drift Plain, Southern Drift Plain, and Missouri Slope." Nine sightings of territorial males or pairs were recorded up to 1972 in McKenzie County and 12 were recorded across the Missouri River in Mountrail County. They were heard in three locations in northern McKenzie County in the spring of 2010 (Schmoller 2010) and in four locations in the spring of 2011 (Schmoller 2011). The DPG reports that 'there have been various observations of Sprague's pipit throughout the general area.' (DPG 2010) They are solitary and secretive birds, difficult to observe. Identification is more likely by sound than sight.

Migration occurs between April and October. In Montana, fall migration normally begins at the end of August. Breeding activity is from late April to early September, peaking from early May to August. Some speculate that the species rears two broods each year. Nestlings have been recorded as late as August 2 in North Dakota. The latest recorded singing male in North Dakota was on September 6. The latest recorded migratory Sprague's pipit in Montana was in October.

Their breeding range is from north-central Montana through North Dakota, south to north-central South Dakota. Breeding occurs in April and May. Breeding territory serves for nesting and feeding. Their diet consists primarily of arthropods. In North Dakota it has been observed in short grasses on elevated sites. In Montana, nest sites tended to be in medium-height native grasses that have fewer forbs, clubmosses, or shrubs. Site fidelity is low.

In Saskatchewan, edge-to-area ratios tend to be low; the birds had a 50% probability of occurring on patches greater than 360 acres and were not seen on patches smaller than 70 acres. Regarding general habitat requirements, the Northern Prairie Wildlife Research Center makes these comments:

> Sprague's Pipits use grasslands of intermediate height and sparse to intermediate vegetation density. Although they will use exotic vegetation, they are significantly more abundant in, and prefer, native prairie. Other habitat features required include low visual obstruction, moderate litter cover, and little or no woody. Vegetation in dry lake bottoms and alkali lake borders can also be suitable for Sprague's Pipits. In Alberta native grassland, Sprague's Pipits preferred areas with moderate cover diversity, moderate grass height and height variation, and moderate to high grass to forb ratio. Within grazed mixed-grass areas in North Dakota, abundance of Sprague's Pipits was positively associated with percent clubmoss (*Selaginella densa*) cover and plant communities dominated by native grass (*Stipa, Bouteloua, Koeleria*, and *Schizachyrium*). Abundance was negatively associated with percent grass cover, litter depth, density of low-growing shrubs, vegetation density, and with plant communities dominated by Kentucky bluegrass (*Poa pratensis*) and native grass. In areas not occupied by Sprague's Pipits, percent grass cover, litter depth, and vegetation density were greater than in areas where Sprague's Pipits were present. Strongest vegetational predictors of the presence of Sprague's Pipit were decreasing bare ground and decreasing litter depth. (Deschant 2001)

The FWS makes the following statement regarding habitat requirements:

> Sprague's Pipits have a strong negative response to exotic grasses. Consequently, the introduction of Eurasian plant species has had a negative effect on Sprague's Pipit populations. In Manitoba, Sprague's Pipits were significantly more abundant in native prairie than in introduced vegetation. Singing males were two to three times more abundant in native grass than in crested wheatgrass (*Agropyron cristatum*) and four to 25 times more abundant in native grass than in brome-dominated grassland in south-central. They were more than twice as abundant in native grass than crested wheatgrass or absent from crested wheatgrass in southern Alberta sites. Greater Sprague's Pipit densities were significantly correlated with native grasses at Lostwood NWR in North Dakota. Exotic plant species planted for the Conservation Reserve Program and for nesting cover for waterfowl are generally not used by Sprague's Pipits. (FWS 2010).

Thus, pipits are threatened by degradation or loss of native prairie habitat by cropland conversion, high-intensity grazing, tree planting, shrub encroachment, and fragmentation. Loss of suitable vegetation structure has been shown to reduce pipit density. Non-native reclaimed grasslands with suitable vegetation structure will be used, but their numbers are lower than those found in native grasslands. Energy development has a negative correlation with pipit abundance; it has been shown to decrease within 300 meters of oil wells. Predation is a prime threat to breeding success of pipits.

About 4480 acres of native mixed-grass prairie are located within ½ mile of the proposed pipeline. They are divided into five contiguous parcels: **1)** 115 acres located in T154N-R103W-S2; **2)** 1450 acres located in the breaks on the north side of the Missouri River, along Painted Woods Creek; **3)** 900 acres located in the breaks on the south side of the Missouri River; **4)** 800 acres located in T152N-R101W-S29 and 32; **5)** 1350 acres located in T151N-R101W-S17, 20, 21, 28, 29. All but the 115-acre parcel are clearly large enough to harbor the species. However, tree and shrubs are abundant in parcel 3, presenting less than ideal vegetation structure. Oil and gas wells are abundant

near or within parcel 3. All five parcels contain large and widespread populations of non-native vegetation. Non-native reclaimed grassland occupies about 5300 acres within ½ mile of the proposed pipeline. The remainder of the survey area is dominated by wheat and hayfields or floodplain.

The pipeline has a small footprint: a narrow trench that will be filled and reclaimed by surrounding vegetation. It will occur, in the main, within unsuitable habitat: the fragmented and cultivated fields dotted with oil wells. Nevertheless, in view of the historic observations of Sprague's pipit in the area and the presence of suitable habitat in four parcels, plus the potential for chemical spill in the construction zone, and the aversion the species has to oil wells, the proposed project **may have effects** upon individuals, but it is not likely to adversely affect and is not expected to contribute to a trend toward federal listing or loss of viability to the population or species.

Design Criteria to avoid potential future effects
Best management practices should be used during activities to minimize disturbances and reduce effects as much as possible. The ideal construction window is when Sprague's pipits are not breeding or nesting in the region; the period between mid-September and late April. However, the FWS makes an overarching recommendation that covers all listed migratory birds that occur in the project area that would limit construction activities to *late summer or fall/early winter* (FWS 2011 letter). The normal fall migration occurs in late August. Thus, it is recommended that construction activities occur between late summer and April. Project design should include measures to prevent, contain, or collect chemical spills.

Should it not be possible to meet these recommendations, see further commentary by the FWS contained under ***Discussion - Management Practices***.

DESIGNATED CRITICAL HABITAT

Piping Plover (Charadrius melodus)

According to the FWS recovery plan (FWS 2002), critical habitat for the piping plover in North Dakota includes:

1. On prairie alkali lakes and wetlands, the physical primary constituent elements include—(1) shallow, seasonally to permanently flooded, mixosaline to hypersaline wetlands with sandy to gravelly, sparsely vegetated beaches, salt-encrusted mud flats, and/or gravelly salt flats; (2) springs and fens along edges of alkali lakes and wetlands; and (3) adjacent uplands 200 ft (61 m) above the high water mark of the alkali lake or wetland.
2. On rivers the physical primary constituent elements include—sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and the interface with the river.
3. On reservoirs the physical primary constituent elements include—sparsely vegetated shoreline beaches, peninsulas, islands composed of sand, gravel, or shale, and their interface with the water bodies.

Research has provided details regarding favored piping plover habitat. The FWS Designation of Critical Habitat makes these observations about plovers nesting on the Missouri River:

> Plovers use reservoir shorelines and large dry, barren sandbars in wide, open channel beds. Along these rivers, plovers often nest near endangered interior least terns (*Sterna antillarum*). Vegetative cover on nesting islands is usually less than 25 percent…Average vegetation height ranged from 2 to 11 in (6 to 29 cm) and the majority of the plovers (63 percent) nested in areas where vegetation was less than 4 in (10 cm)…[Plovers] select a higher nest site, away from the water's edge, when available. For nesting, piping plovers evidently seek habitats with wide horizontal visibility, protection from terrestrial predators, isolation from human disturbance, low likelihood of inundation, and nearby feeding habitat… Open, wet, sandy areas provide feeding habitat for plovers on river systems and throughout most of the species' nesting range. (Federal Register/Vol. 67, No. 176/Wednesday, September 11, 2002)

The proposed pipeline will intersect the Missouri River. The floodplain of the Missouri River has significant potential habitat for piping plovers. Although such habitat was inaccessible in 2011 due to flooding on the Missouri

River, the 2012 surveys revealed that the river left much new potential piping plover habitat in its wake. (***Figures 10-12***) Although the proposed pipeline has a narrow footprint and is to be drilled beneath the river, thereby avoiding the disturbance of sandbars and shorelines, construction activities have the potential to disturb other aspects of plover habitat. However, construction activities in the Missouri River corridor would maintain a minimum 200-foot buffer between construction activities and piping plover habitat.

There is the potential for chemical spill, such as fuel or hydraulic fluid for equipment used in construction, and excess erosion, which may directly impact food sources in the river. ONEOK Rockies Midstream LLC will implement Spill Prevention, and Containment and Countermeasure Plan (SPCC) for this project. Project personnel shall be trained to the procedures for addressing a potential release event. Typical equipment used for construction is drill rigs, trucks and excavator equipment. The typical amounts of fuels used for this equipment are diesel, kerosene, military aviation kerosene and gasoline. Each has a capacity between 6,000 to 12,000 gallons. Lubricants used onsite will be less than 500 gallons. Coolants on site typically are less than 100 gallons. Spill response equipment (e.g. spill kits) shall be on site of the appropriate type to manage a potential release. Project personnel shall be oriented to the location and contents of kit and shall be trained to appropriate response measures. Thus, the proposed project the project **may have effects** upon critical habitat, but it is not likely to adversely affect and is not expected to contribute to a trend toward federal listing or loss of viability to the population or species.

Design Criteria to avoid potential future effects
Best management practices should be used during activities to minimize disturbances and reduce effects as much as possible. While some sources indicate that piping plovers do not nest along the Missouri or Yellowstone Rivers between September and late April, the FWS recommends that construction activities avoid the dates from *February 1 to August 31*. The FWS makes an overarching recommendation that covers all listed migratory birds that occur in the project area would be to limit construction activities to *late summer or fall/early winter*. (FWS 2011 letter) Project design should include measures to prevent, contain, or collect chemical spills and excess erosion.

Should it not be possible to meet these recommendations, see further commentary by the FWS contained under ***Discussion - Management Practices***.

NORTH DAKOTA SPECIES OF CONCERN

Flathead Chub (Platygobio gracilis)

The flathead chub is usually found in swift flowing, turbid large creeks and rivers and their tributaries with sand to fine gravel bottoms. Although it is usually found in the main channel and in lower reaches of tributaries to plains rivers, rarely it has been found in relatively clear, still pools of water with gravel to bedrock bottoms and in side channels and backwaters. The diet includes small insects, invertebrates, and plant material. It congregates near the bottom of pools amidst tree roots, macrophytes and woody debris. It is believed that it spawns between May and August. It is suspected that it migrates into smaller streams to spawn, but this is not a certainty. It is believed that it spawns in response to floods.

The primary threat to flathead chub is the extensive modification of rivers by reservoirs. On the Missouri River alone, approximately one-third of the flowing water habitat required by flathead chubs has been lost to impoundments. Dams also decrease turbidity, which serves to protect flathead chub from predators. Also, impoundments reduce the length of free flowing rivers needed to suspend the non-adhesive, semi-buoyant flathead chub eggs long enough to hatch and fry long enough to develop the ability to swim. Dams also prevent populations from accessing the remainder of the watershed. Other threats include pollution by animal wastes, groundwater removal for agriculture and industry – which may change a permanent stream to an intermittent stream - and coalbed methane production – which injects water into the waterway, changing an intermittent stream into a permanent stream, often changing the temperature and chemistry in the process.

Suitable habitat does exist within the project area, particularly to the west of its intersection with the Missouri River in the where the Missouri and Yellowstone Rivers are free-flowing and turbid. There is an historic record of flathead chubs from the Missouri River 1.5 miles to the southwest and 0.7 miles to the southwest of the proposed pipeline.

The project does have the potential to affect the flathead chub, but the pipeline will be constructed beneath the Missouri River by horizontal drilling, and the project is not slated to begin before July 1. Hence, the proposed project **may have effects** upon flathead chub and/or its habitat, but it is not likely to adversely affect and is not expected to contribute to a trend toward federal listing or loss of viability to the population or species.

Design Criteria to avoid potential future effects

Best management practices should be used during activities to minimize disturbances and reduce effects as much as possible. It is recommended that construction activities occur between August and May, to avoid flathead chub spawning between the months of May and August. Horizontal drilling beneath the riverbed is recommended.

Project design should include measures to prevent erosion and runoff into the Missouri River and to contain, or collect chemical spills.

Should it not be possible to meet these recommendations, see further commentary by the FWS contained under ***Discussion - Management Practices***

Sturgeon Chub (Macrhybopsis galida)

The sturgeon chub is a lithophile, living in turbid, swift flowing, sandy rivers over substrate of small gravel and coarse sand, especially at heads of islands or exposed sandbars. It is "endemic to the mainstream and large tributaries of the Missouri River and Mississippi River." (FWS 1995) Its historical range included the Missouri, Little Missouri, and Yellowstone Rivers. Its current range in ND is the Yellowstone River, Little Missouri River, and the Missouri River upstream from Lake Sakakawea and the Yellowstone River. The FWS reports that it "has been extirpated from approximately 800 miles of the Missouri River that has been converted to reservoir habitat." (FWS 2001) However, recent collections have shown that the sturgeon chub is more widespread and abundant than believed. In one study, almost a third of the catch at the confluence of the Yellowstone and Missouri Rivers in North Dakota were sturgeon chub. (Stagliano 2010) As a result, it was removed from the FWS Candidate Species list in 2001, where it had been since 1995.

Little is known about the biology of the sturgeon chub. It is believed that they reproduce in June and July. They are highly adapted to life in turbid waters.

Threats include 'habitat and flow alterations from dams, diversions, irrigation operations and riparian development.' Approximately '36 percent of the mainstem Missouri River habitat has been transformed into reservoir, 40 percent of the river downstream of the dams has been channelized, and 24 percent of the river habitat has been altered by flow modifications, hypolimnetic releases, and reduced turbidity levels.' (Stagliano 2010) Population fragmentation, low stream flows, and coalbed natural gas development all pose threats.

Suitable habitat does exist within the project area, particularly to the west of its intersection with the Missouri River in the Yellowstone/Missouri River confluence area. There is an historic record of sturgeon chub from the Missouri River 1 mile to the northeast of the proposed pipeline.

The project does have the potential to affect the sturgeon chub, but the pipeline will be constructed beneath the Missouri River by horizontal drilling, and the project is not slated to begin before July 1. Hence, the proposed project **may have effects** upon sturgeon chub and/or its habitat, but it is not likely to adversely affect and is not expected to contribute to a trend toward federal listing or loss of viability to the population or species.

Design Criteria to avoid potential future effects

Best management practices should be used during activities to minimize disturbances and reduce effects as much as possible. It is recommended that construction activities occur between September and May, to avoid sturgeon chub spawning during the months of June and July. Horizontal drilling beneath the riverbed is recommended. Project design should include measures to prevent erosion and runoff into the Missouri River and to contain, or collect chemical spills.

Should it not be possible to meet these recommendations, see further commentary by the FWS contained under ***Discussion - Management Practices***.

Paddlefish (Polyodon spathula)

Approximately 30-35000 paddlefish exist today, mostly in two populations, the Fort Peck Stock and the Yellowstone/Sakakawea Stock. They prefer turbid, free flowing, naturally fluctuating rivers rich in zooplankton, but will occupy impoundments with access to spawning sites. Paddlefish spawn in rivers over bars of gravel to sand during periods of high-water, typically in May and June. They feed by filtering zooplankton. Commonly, they are found in slow-moving waters of side channels and river-lakes.

Threats include dam and reservoir construction, dredging and channelization of rivers, and drawdowns for irrigation and industry. These factors may reduce turbidity, flow rates, and springtime flooding, essential for spawning.

Suitable habitat exists across the project area, as it is within the range of the Yellowstone/Sakakawea Stock. There is an historic record of paddlefish from the Missouri River 0.7 mile to the southwest of the proposed pipeline.

The project does have the potential to affect the paddlefish, but the pipeline will be constructed beneath the Missouri River by horizontal drilling, and the project is not slated to begin before July 1. Hence, the proposed project **may have effects** upon paddlefish and/or its habitat, but it is not likely to adversely affect and is not expected to contribute to a trend toward federal listing or loss of viability to the population or species.

Design Criteria to avoid potential future effects
Best management practices should be used during activities to minimize disturbances and reduce effects as much as possible. It is recommended that construction activities occur between September and April, to avoid the months when paddlefish are spawning. Horizontal drilling beneath the riverbed is recommended. Project design should include measures to prevent erosion and runoff into the Missouri River and to contain, or collect chemical spills.

Should it not be possible to meet these recommendations, see further commentary by the FWS contained under ***Discussion - Management Practices***.

Table 1. Effects Summary

SPECIES	EFFECT					
	NONE[1]	MAY[2]	WILL[3]	UNLIKELY[4]	LIKELY[5]	BENEFIT[6]
Endangered						
Gray wolf *(Canis lupus)*	X					
Black-footed ferret *(Mustela nigripes)*	X					
Whooping crane *(Grus americana)*		X				
Interior least tern *(Sterna antillarum)*		X				
Pallid sturgeon *(Scaphirhynchus albus)*		X				
Threatened						
Piping plover *(Charadrius melodus)*		X				
Western prairie fringed orchid *(Platanthera praeclara)*	X					
Candidate						
Sprague's pipit *(Anthus spragueii)*		X				
Designated Critical Habitat						
Piping plover habitat		X				
ND Species of Concern						
Flathead chub (*Platygobio gracilis*)		X				
Sturgeon chub (*Machrybopsis galida*)		X				
Paddlefish (*Polyodon spathula*)		X				

[1] no effect.
[2] may affect individuals or habitat, but is not likely to adversely affect or contribute to a trend toward federal listing or cause a loss of viability to the population or species.
[3] will affect individuals or habitat and is likely to adversely affect, with a consequence that the action may contribute to a trend toward federal listing or cause a loss of viability to the population or species.
[4] Is not likely to jeopardize a proposed species/adversely modify proposed critical habitat.
[5] Is likely to jeopardize a proposed species/adversely modify proposed critical habitat.
[6] Beneficial effect.

DISCUSSION

CONDITIONS

The proposed pipeline passes through a heavily cultivated landscape that has been drastically altered by anthropogenic factors. About fifty oil or gas wells or oil service structures are within ½ mile of the project. Pipelines and power lines, numerous roads, highways crisscross the landscape. The proposed pipeline crosses the Missouri River. At that point the river is relatively free flowing, similar to its presettlement condition, able to develop sandbars, cutbanks, floodplains, oxbows, and the likes. This accounts for the potential presence of some of the listed species. But it is free-flowing in a relative sense; dikes, ditches, sluice gates, and farming of the floodplain impose restrictions on the river's ability to develop these natural features to the full. The majority of the uplands, about 54%, have been converted to cropland, mainly wheat field. An additional 22% of the pasture land is reclaimed cropland, planted in non-native grasses and forbs. The ditches along the road right-of-ways have been planted in non-native grasses. Only 19% of the pasture land is in native grasses, and that land sees a heavy representation of non-native species. The floodplain comprises only 5% of the land surface in this analysis, much of which is forested, and most of the arable land there has been converted to hayfield. Thus, of the 24320 acres that occupy the ½ mile corridor on each side of the proposed pipeline, approximately 4620 acres are native mixed-grass prairie, 5350 acres are non-native reclaimed grassland, cropland or hayfield occupy about 13130 acres, and floodplain occupies about 1220 acres. Cattle graze the native pastures.

SPECIES AFFECTED

The project may affect three **Endangered** species, one **Threatened** species, one **Candidate** Species, one **Designated Critical Habitat** and three **ND Species of Concern**. The project may affect individual specimens or habitat patches, but it is not likely to adversely affect and is not expected to contribute to a trend toward federal listing or loss of viability to the population or species.

EFFECTS

Since the settlement of the northern Great Plains, urbanization, agriculture and industry have altered the nature of much of the landscape. The original, integrated ecosystem has been fragmented, redesigned, disturbed, or destroyed. This has resulted in contiguous units that are relatively small, whether in native vegetation or commercial, residential, or industrial development. These units often serve conflicting purposes.

Fencing, roads, powerlines, oil, gas and water pipelines, well pads, storage facilities and other commercial, industrial, and residential developments have produced hundreds of miles of linear disturbances and hundreds of acres of area disturbances within a 1-mile radius of the survey area. About 54% of this surface area has been converted to cropland, 22% of the pasture land is reclaimed cropland, 19% of the pasture land is in native vegetation, and 5% is floodplain.

Affected Habitats: The addition of the proposed pipeline would increase the linear disturbances by about 37 miles; area disturbances would increase by about 225 acres, assuming a 50-foot wide disturbance zone along the pipeline. However, most of this 225-acre disturbance would occur within a currently disturbed environment. About 14.5 miles of the proposed pipeline follows the right-of-way of section-line roads, county roads, or pasture roads. Approximately 14 miles of the route would fall within cropland or hayfield. Only 4.1 miles would fall within reclaimed grassland and 3.5 miles of the route would fall within native grassland. About 0.7 miles of the pipeline would be bored beneath wetlands, mainly the Missouri River. Thus, of the 225 acres of disturbance, approximately 21 acres would occur within native grassland, and additional 25 acres would occur within non-native, reclaimed grassland. In comparison to other transportation, energy, and agricultural developments in place throughout the survey area, this disturbance is minor. The disturbance of native and non-native grasslands is less than one percent of the disturbance created by agricultural disturbances within the 1-mile radius of the proposed pipeline; 46 acres compared to 13130 acres.

The 2011 plan proposed two alternative routes 2 miles northeast of Alexander, ND. Both alternatives would have minimal effects. The routes parallel each other and are about 1 mile in length. The eastern route passes through a

large pasture of dense yellow sweetclover and smooth brome for a quarter of its length. The remaining 0.75 mile crosses semi-native grassland, with a strong presence of sweetclover and smooth brome. It parallels an existing pipeline for much of its length. The western route passes through semi-native grassland with a strong presence of sweetclover and smooth brome for its entire length.

Adjustments in 2012: Eleven adjustments to the route were presented in 2012. Most were less than 1000' from the original. Most fell within cropland or reclaimed grasslands and would have minimal impacts. (***Maps A.4*** and ***A.6-16***) A 2.6-mile adjustment in the Missouri River breaks would be a significant improvement over the original plan; only 17% of the adjusted route fell within native grassland or badland whereas 88% of the 2.0-mile original route fell within native grassland or badland. (***Maps A.7*** and ***A.8***) The remainder of the adjusted and original routes in the breaks would be in reclaimed grassland or wheat field. A 1-mile adjustment in T154N-R102W-S19 would pass through the same amount of agricultural land as the original. Approximately 600 feet of the corridor would be through an intermittent wetland that has been converted to cropland, and is furrowed, barren, and what few plants are present are dominated by alien weeds such as dock (*Rumex crispus*) and various mustards. ***(Figures 18 and 19)*** The remaining adjustments – about 7 miles - minimize contacts with cultural resources, wooded draws, breaks, and wetlands. By avoiding these features, the adjustments are improvements over the original plans. The proportions of agricultural land, restored grassland and native prairie remain essentially unchanged.

Mitigations: In an effort to reduce effects upon listed species that occupy the Missouri River corridor – pallid sturgeon, interior least tern, piping plover, whooping crane, flathead chub, sturgeon chub, and paddlefish - construction activities in the corridor would not start before July 1, 2012, avoiding critical nesting, migration, and spawning periods. Horizontal drilling will occur beneath the Missouri River and, as designed, pipeline that would cross the 6.3-acre stock dam in T151N-R101W-S20 NE. Construction has a relatively narrow footprint and would last 60 days. Immediately after construction, disturbed land would be restored to original contours and reseeded in native vegetation according to federal or landowner specifications.

Intensity of Effects: Thus, the pipeline and its construction would have an insignificant effect upon *croplands* that dominate the upland portion of the survey area. Due to horizontal drilling, minimal impacts are expected in the *wetlands*. The greatest probability for adverse effects may occur in the five parcels of *native grasslands*. This is the only relatively undisturbed and favorable habitat that would experience open trench construction. The only listed species with potential in these habitats is Sprague's pipit, and the potential is significant, judging by the large size of four of the parcels and the lack of oil and gas facilities in three. However, this potential is reduced the presence of vigorous populations of non-native plants on all five parcels, the narrow construction footprint, and the rapid pace of construction and grassland restoration.

Thus, the majority of the project would experience *temporary* effects, construction – earth moving, dust, noise - taking 60 days. Upon completion, original contours would be restored and pasture would be reseeded in native vegetation, according to US Natural Resource and Conservation Service guidelines or according to landowner specifications. The existing land uses would resume; farmland would be cultivated, pasture would be grazed. It can be expected that some revegetation of pasture would occur within the first growing season and that weedy species and annual grasses would be the first to colonize bare ground. This would be followed by bunchgrasses, and eventually a climax prairie. But the development of climax or original conditions may take decades. (Tomanek 1955) Hence, a *long-term* effect would be the persistence of early seral stage or invasive vegetation communities.

In view of the foregoing, the proposed project the project may have effects upon individual species, but it is not likely to adversely affect and is not expected to contribute to a trend toward federal listing or loss of viability to the population or species.

While this project has a relatively small footprint, repeated disturbances and an accumulation of individual impacts could eventually result in an adverse *cumulative* impact on the habitat and/or populations of rare species. Individual impacts may include the introduction of non-native plant species, habitat fragmentation, loss of corridors, decreased vegetative structure, decreased floristic diversity, reduction of populations or habitat below critical threshold levels, extirpation of populations or habitat, sedimentation and degradation of surface water, erosion and siltation. Individually, each of these has the potential result in the loss of viability of a population or species. Cumulatively, these impacts may result in the loss of viability of a population or species. In turn, some of these cumulative effects could accelerate other adverse conditions.

RECOMMENDED DESIGN CRITERIA

Yellowfield Biological Surveys, LLC, recommends the approval of this project with incorporation of the design criteria below:

Best management practices should be conducted in a manner to avoid or minimize cumulative effects to natural plant and animal populations. This can produce major improvements in the ecological outcomes. The best management practice is to limit disturbances as much as possible. This reduces habitat fragmentation, noxious weed opportunities and the loss of suitable habitat, vegetative structure and floristic diversity.

1) It is recommended that construction activities avoid periods of critical reproductive or migratory activities of listed species. ***Table 2, Listed Species and Habitat Sensitivity Periods*** describes potential construction windows. Acceptable construction dates would meet these requirements:

With regard to listed species the FWS makes these specific recommendations in its letter dated Pending USFWS Response to Scoping:

To the extent practicable, schedule construction for avoid the following seasonal critical periods:

- Interior least tern - May 1 through August 31
- Piping plover – April 1 through August 31
- Pallid sturgeon – April 12 through June 30

In the event the construction cannot be scheduled to avoid these dates, it is recommended that surveys be conducted to determine the presence or absence of species within the project area and that a minimum 0.5 mile buffer be established and maintained between construction activities and active nesting sites of listed species.

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Additional management practices are advised: **2)** Clean equipment. While noxious weeds are likely to remain a threat in the grasslands on private and public lands, care can be taken to control further spread of invasive species into the area by cleaning equipment. This is important in this project because the proposed pipeline would travel through so much disturbed habitat, creating a greater potential for distribution of non-native species during construction. **3)** Weed spraying. Isolated weed patches should be treated with herbicide prior to disturbances. **4)** Weed monitoring. Because of the threat of noxious weeds, periodic monitoring of weed populations should be made to determine the need for biological or chemical control measures. **5)** Avoid wooded draws. **6)** Avoid wetlands. Effects on vegetative structure can be reduced by avoiding woody plants and wetland areas. The FWS letter adds these recommendations:

- Make *no stream channel alterations* or changes in drainage patterns.
- Locate construction to *avoid placement of fill in wetlands* along the route.
- *Replace unavoidable loss of wetland habitat* by restoring an equal acreage of functionally restoring equivalent wetland habitat.

7) Reclamation. Floristic diversity can be aided by reclamation practices such as the restoration of topographical diversity, uneven distribution of topsoil, and avoidance of aggressive cultivars. Reclamation of the site should follow specifications set forth by federal and state authorities. The FWS letter adds these recommendations:

- *Reseed disturbed upland areas* with native plant species immediately after construction to reduce erosion.
- *Avoid construction in native prairie*, if possible, and *reseed disturbed native prairie with a comparable native grass and forb seed mixture*.
- The Service recommends *planting a diverse mixture of native cool and warm season grasses* and forbs. Recent research has suggested that a more diverse mix, including numerous forb

species, is not only ecologically beneficial but is also more weed resistant, allowing for less intensive management and chemical use. In essence, the more species included in a mixture, the higher the probability of providing competition to resist invasion by nonnative plants. The *seed source should be as local as possible,* preferably collected from the nearby native prairie. Obtain seed stock from nurseries within 250 miles of the project area to ensure the particular cultivars are well-adapted to the local climate. The [NRCS] compiles a list of vendors in North Dakota that supply conservation seed and plants. Additional information on native grasses and forbs may be found at the NRCS Bismarck Plant Materials Center.

8) Where possible, horizontal drilling rather than open trench construction when crossing the floodplain. **9)** Erosion control. Install and maintain appropriate erosion control measures to reduce sedimentation and water quality degradation of wetlands and streams near the project area. Silt fencing between wetland or aquatic communities or drainageways and the construction zone can provide some protection. **10)** Chemical spill prevention and containment.

As an added protection, a field biologist could be onsite during construction to monitor for listed species. Any future sightings of listed in the project area should be reported to the NDPR and FWS.

Table 2, Listed Species and Habitat Sensitivity Periods

SPECIES	MONTH											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
ENDANGERED												
Gray wolf *(Canis lupus)*												
Black-footed ferret *(Mustela nigripes)*												
Interior least tern *(Sterna antillarum)*												
Pallid sturgeon *(Scaphirhynchus albus)*												
Whooping crane *(Grus Americana)*												
THREATENED												
Piping plover *(Charadrius melodus)*												
CANDIDATE												
Sprague's Pipit *(Anthus spragueii)*												
DESIGNATED CRITICAL HABITAT												
Piping plover – *Missouri River*												

LIMITATIONS

Despite the survey and research efforts, findings and determinations are not absolute nor are they infallible. The fact remains that absence of evidence does not constitute evidence of absence. At times, field surveys do not necessarily coincide with prime survey windows, such as best plant phenology, bird breeding season, or adult flight of butterflies. Mobile species might not be in the survey area or in open view at the time of the survey. Objects or weather conditions may obscure the species or impair visibility. In many cases, a given species may have a wide tolerance for habitats, while in other cases the habitat required by a species has not been closely studied and therefore has been vaguely identified. This makes it difficult to anticipate whether a species will occur on an area or not. Evidence may be limited by the conditions under which it is gathered and determinations are as limited as the evidence upon which they are based.

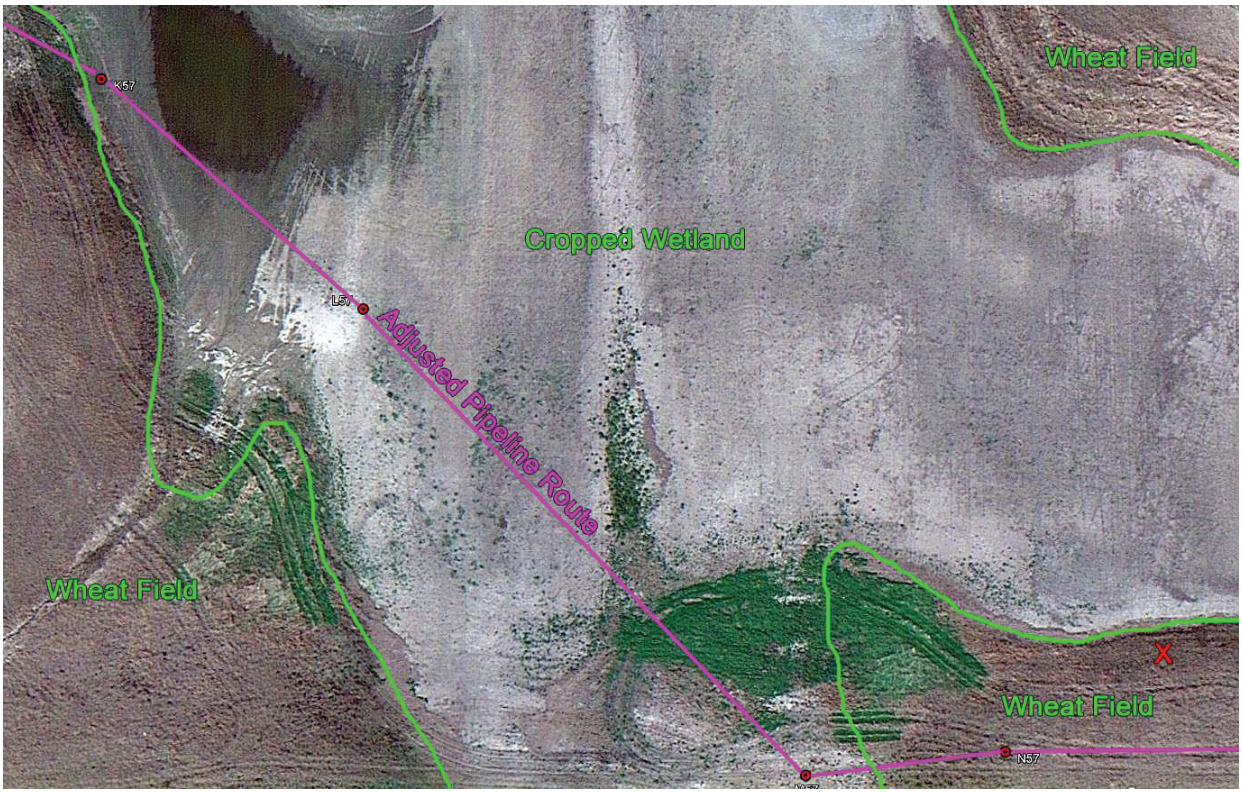

Figure 18. Aerial view of adjusted proposed pipeline route that crosses cropped wetland in T154N-R102W-S19. Proposed route crosses 609 feet of wetland. Wetland is heavily disturbed, with furrows, alien invasive plants, and bare dirt. Red "X" marks location of photo in *Figure 19.*



Figure 19. Ground level view of wetland that is crossed by the adjusted proposed pipeline route. Bare dirt marks the wetland basin; grass is on the wetland boundary. Plow furrows are visible in dirt. Green plants are alien mustards. Green line marks wetland boundary. View is to N, taken from red "X" in *Figure 18*.

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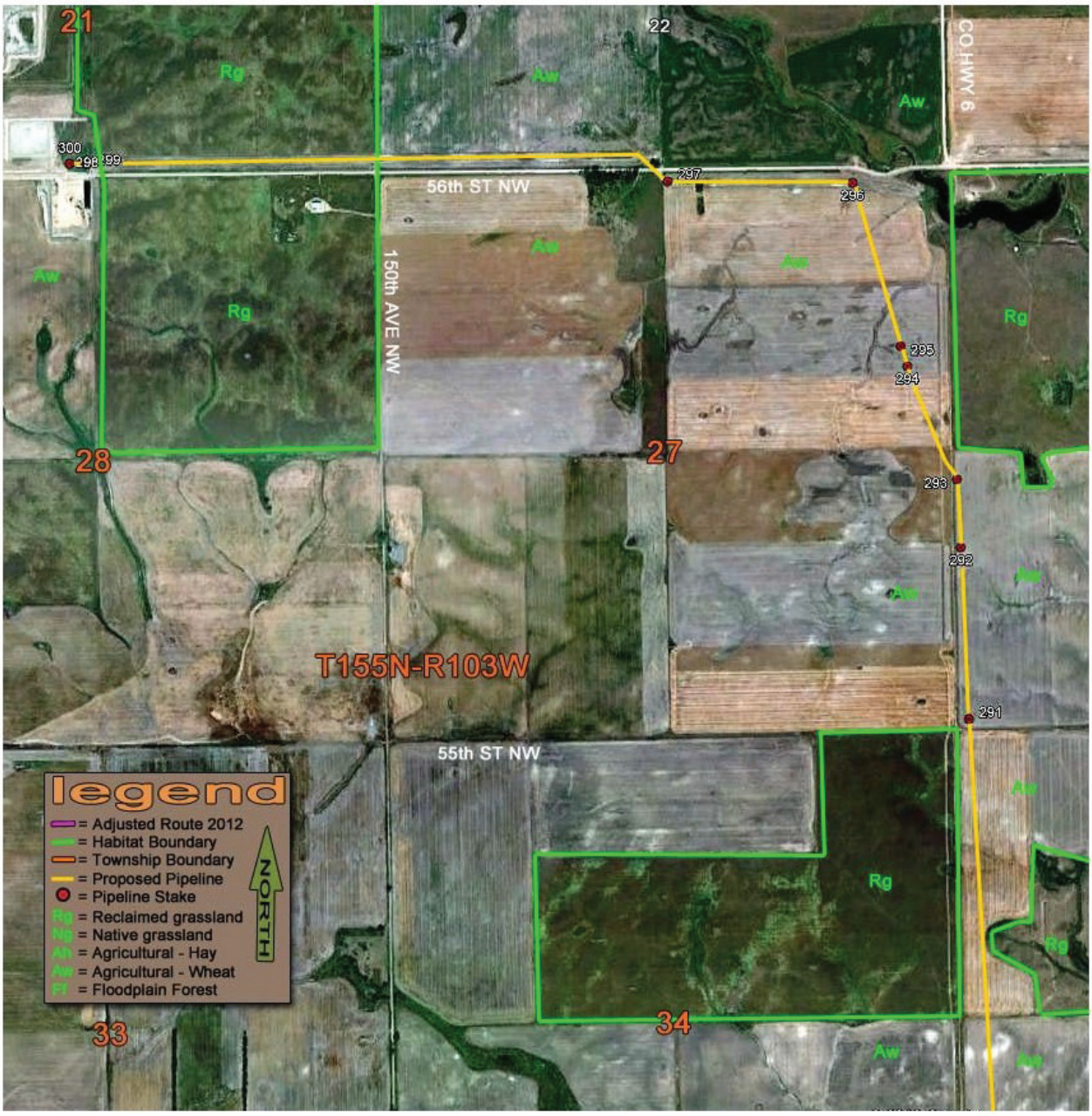
APPENDIX A. MAPS-FROM NORTH TO SOUTH

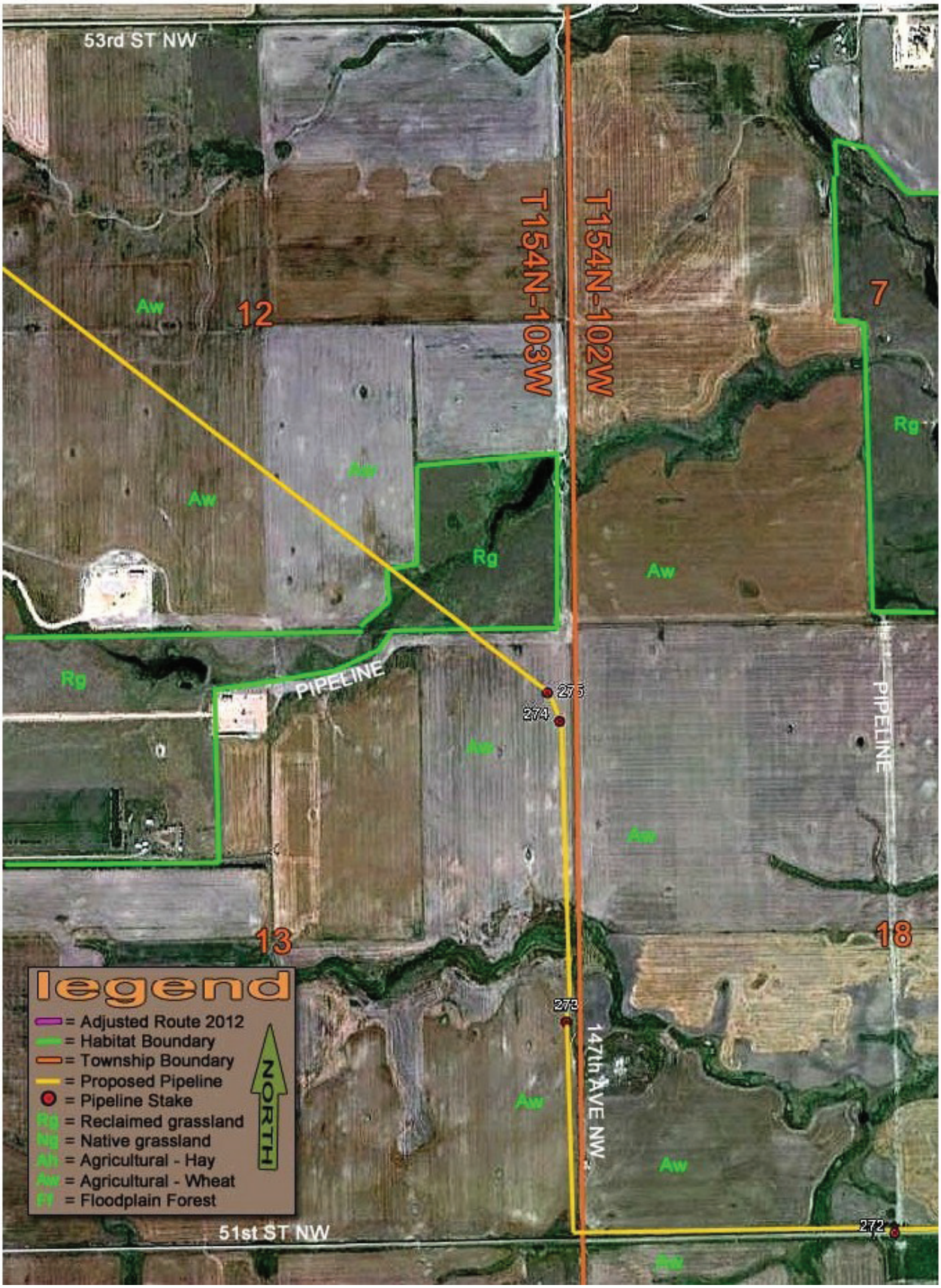
A.1.AERIAL MAP 1 – NORTHERN END



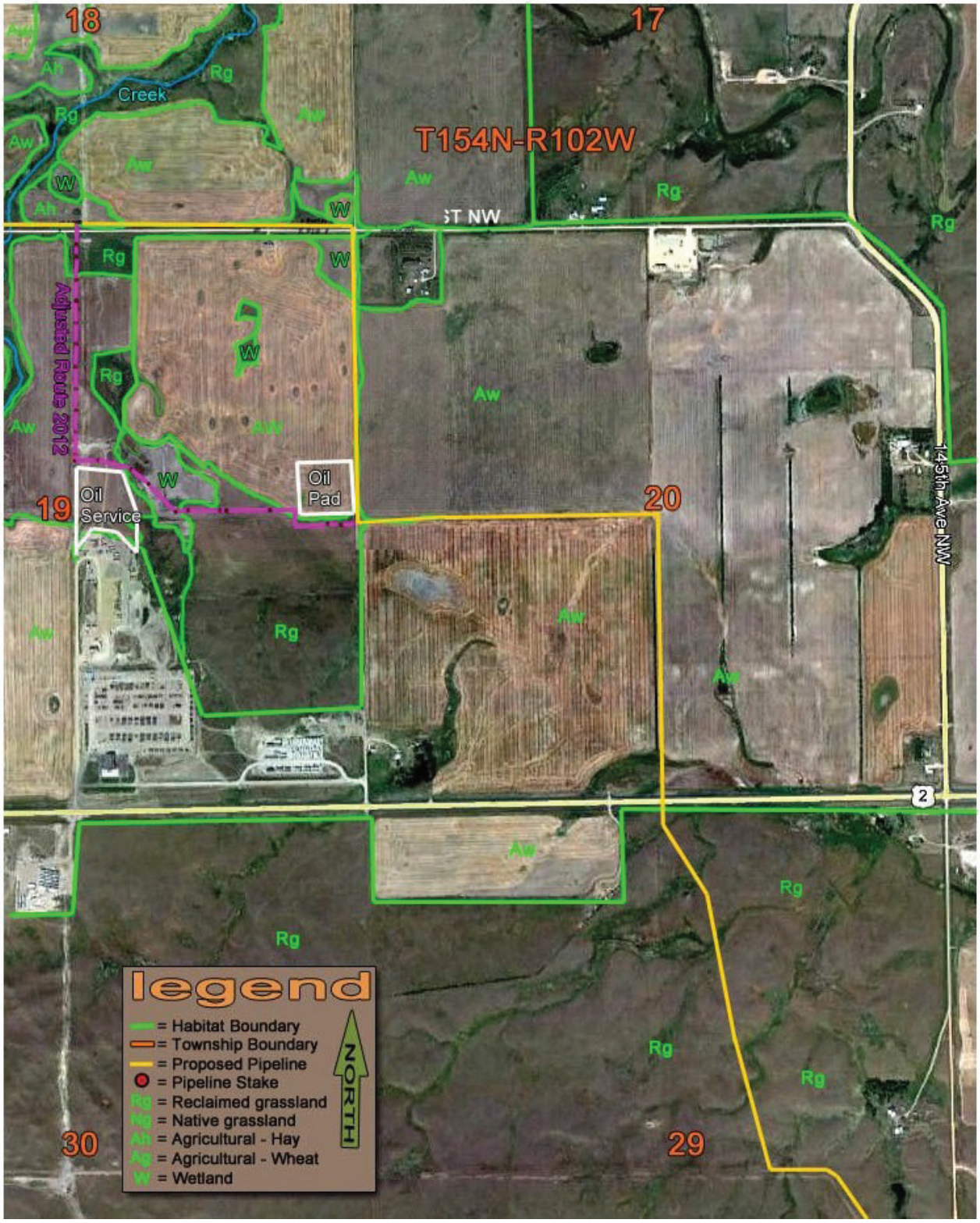
A.2. AERIAL MAP 2-54r" STREET NW

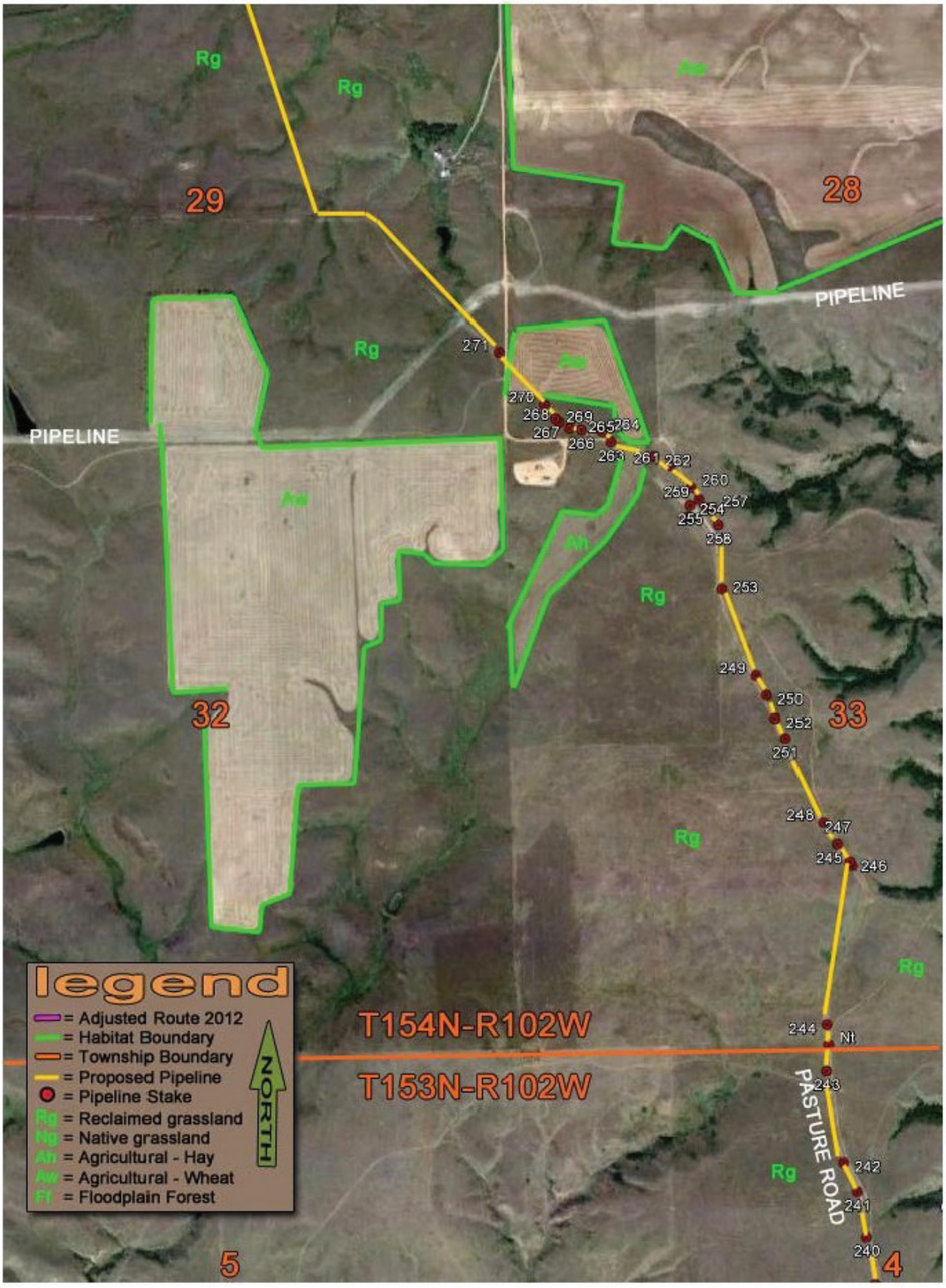


A.3.AERIAL MAP 3-53°0 SIREET NW

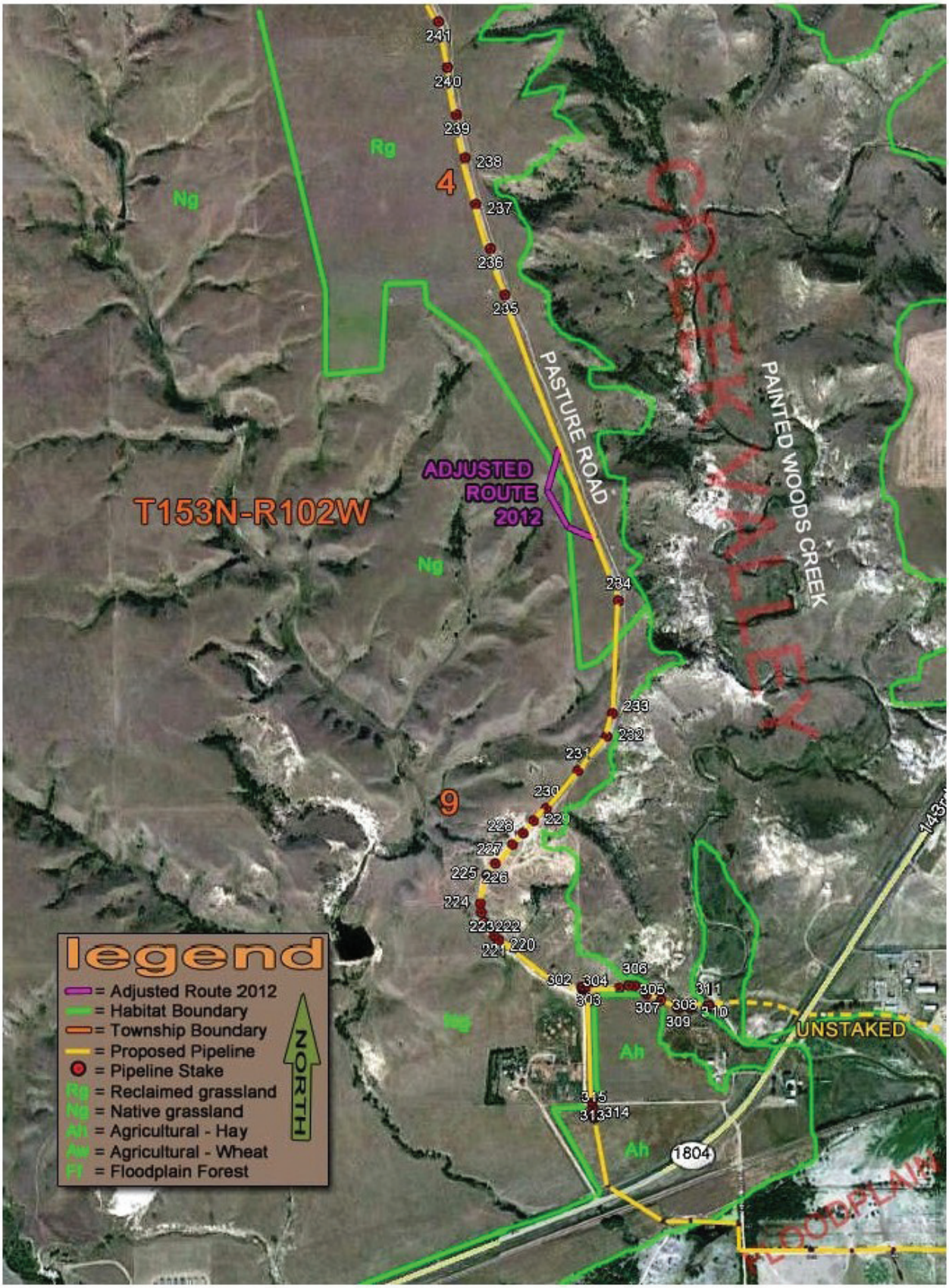


A.4.AERIAL MAP 4-Slsr STREETNW

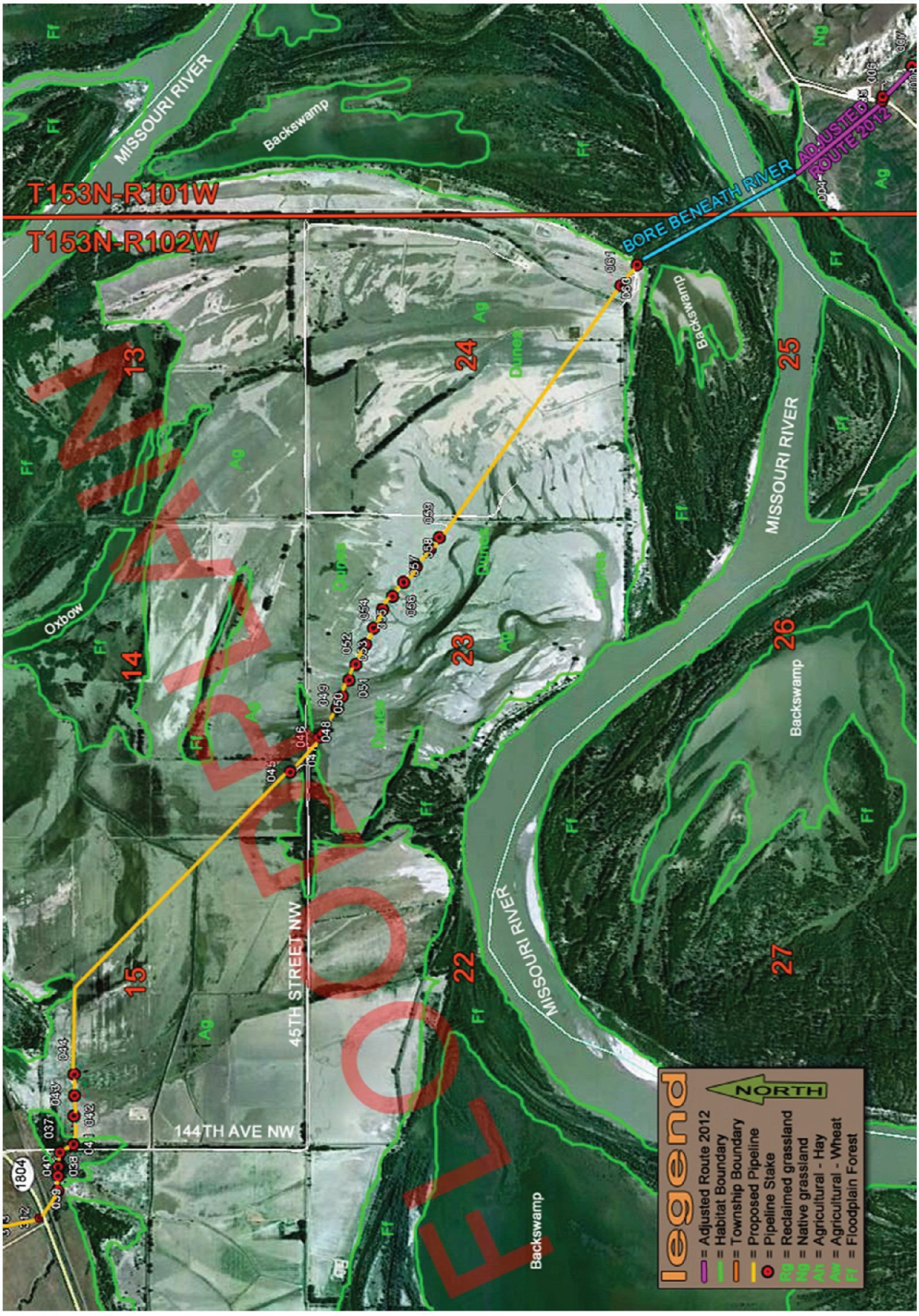



Rg
Rg
Aw
29
28
PIPELINE
Rg
271
Aw
270
268
269
265
264
267
266
263
261
262
260
259
254
257
255
256
PIPELINE
Aw
Ah
Rg
253
249
250
252
33
32
251
248
247
Rg
245
246
Rg
legend
= Adjusted Route 2012
= Habitat Boundary
= Township Boundary
= Proposed Pipeline
= Pipeline Stake
Rg = Reclaimed grassland
Ng = Native grassland
Ah = Agricultural - Hay
Aw = Agricultural - Wheat
Fl = Floodplain Forest
NORTH
T154N-R102W
T153N-R102W
244
Nt
243
PASTURE ROAD
Rg
242
241
240
5
4

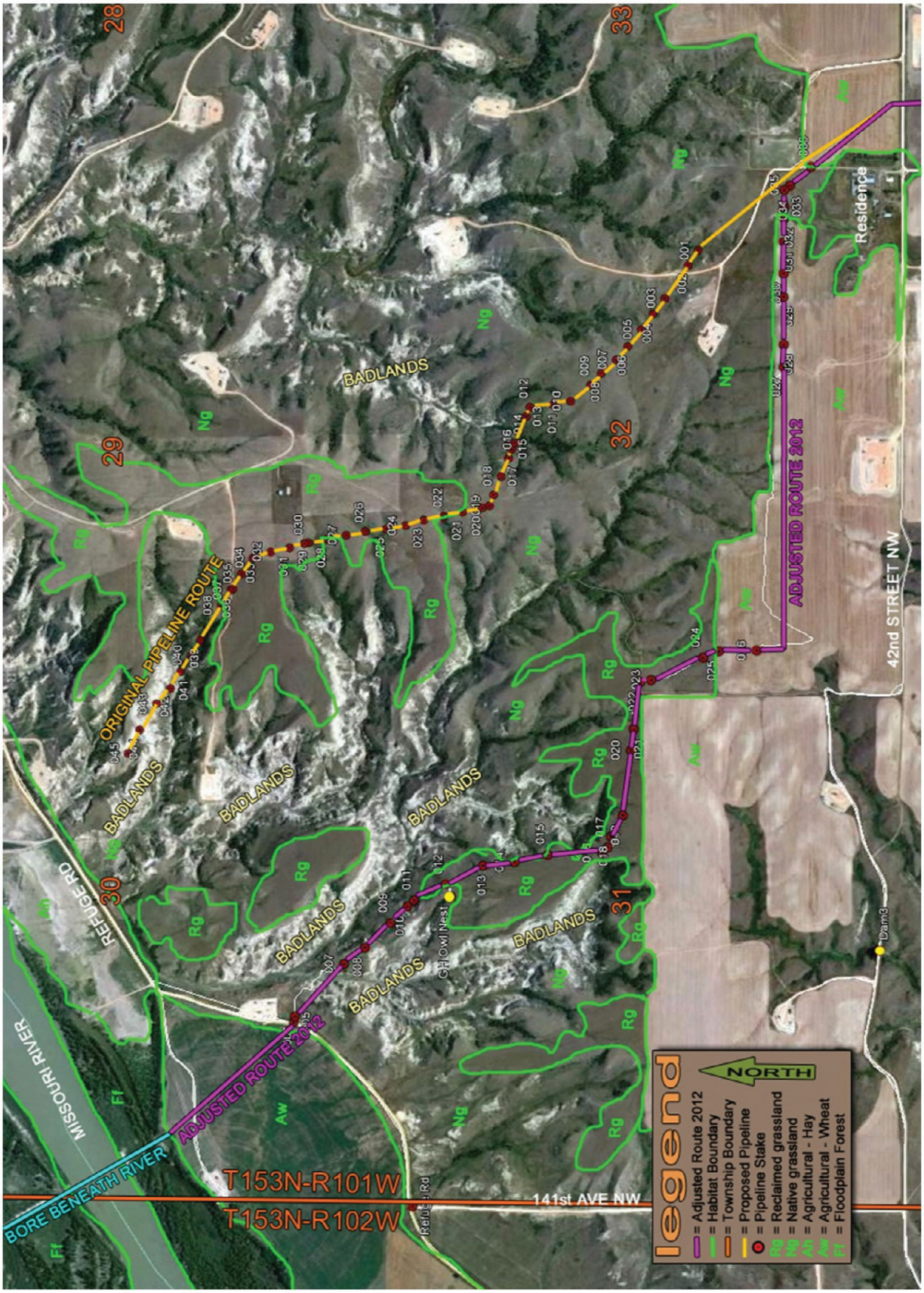
A.6.AERIAL MAP 6–PAINTED Wooos CREEK



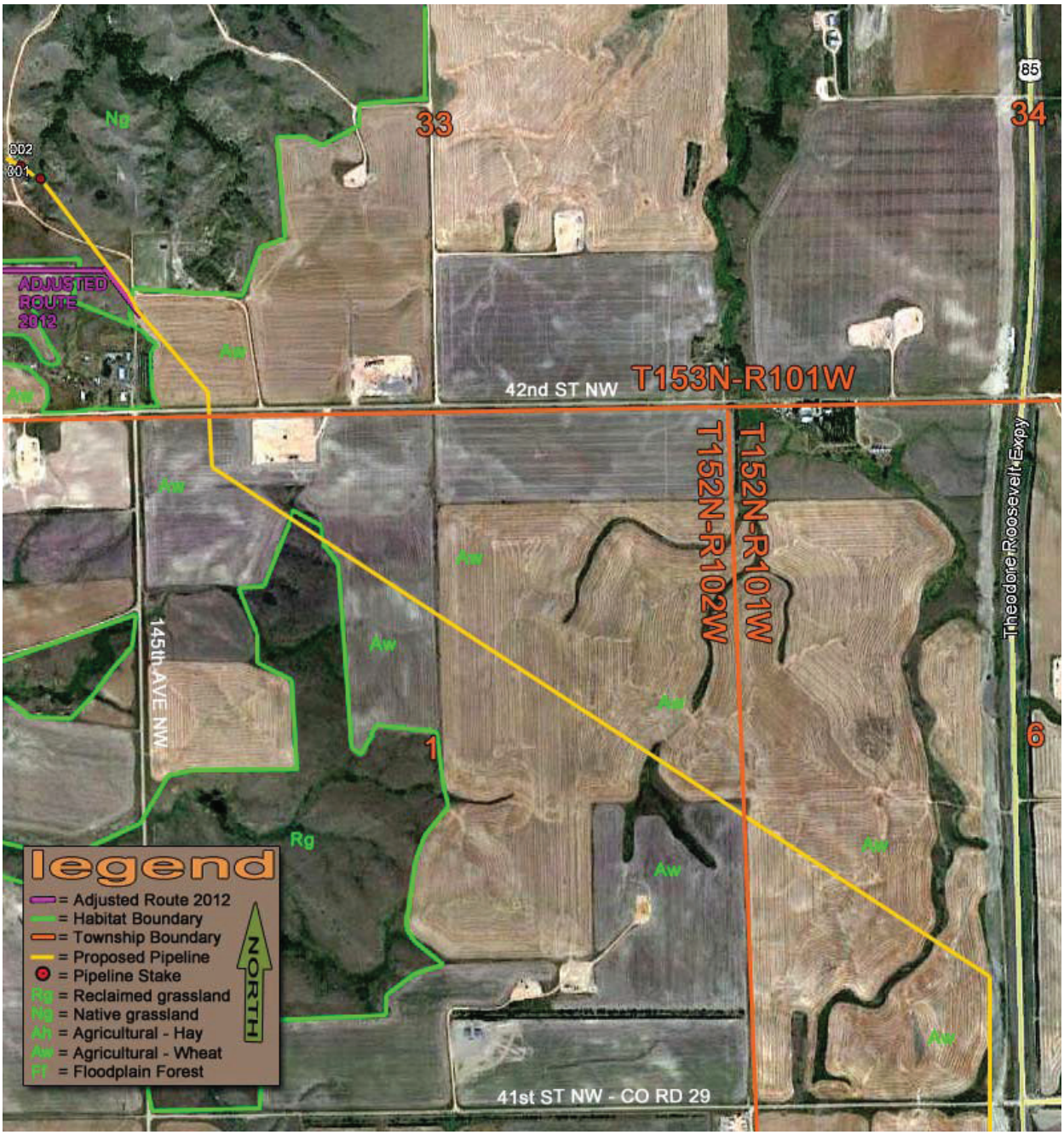
A.7. AERIAL MAP 7 – FLOODPLAIN



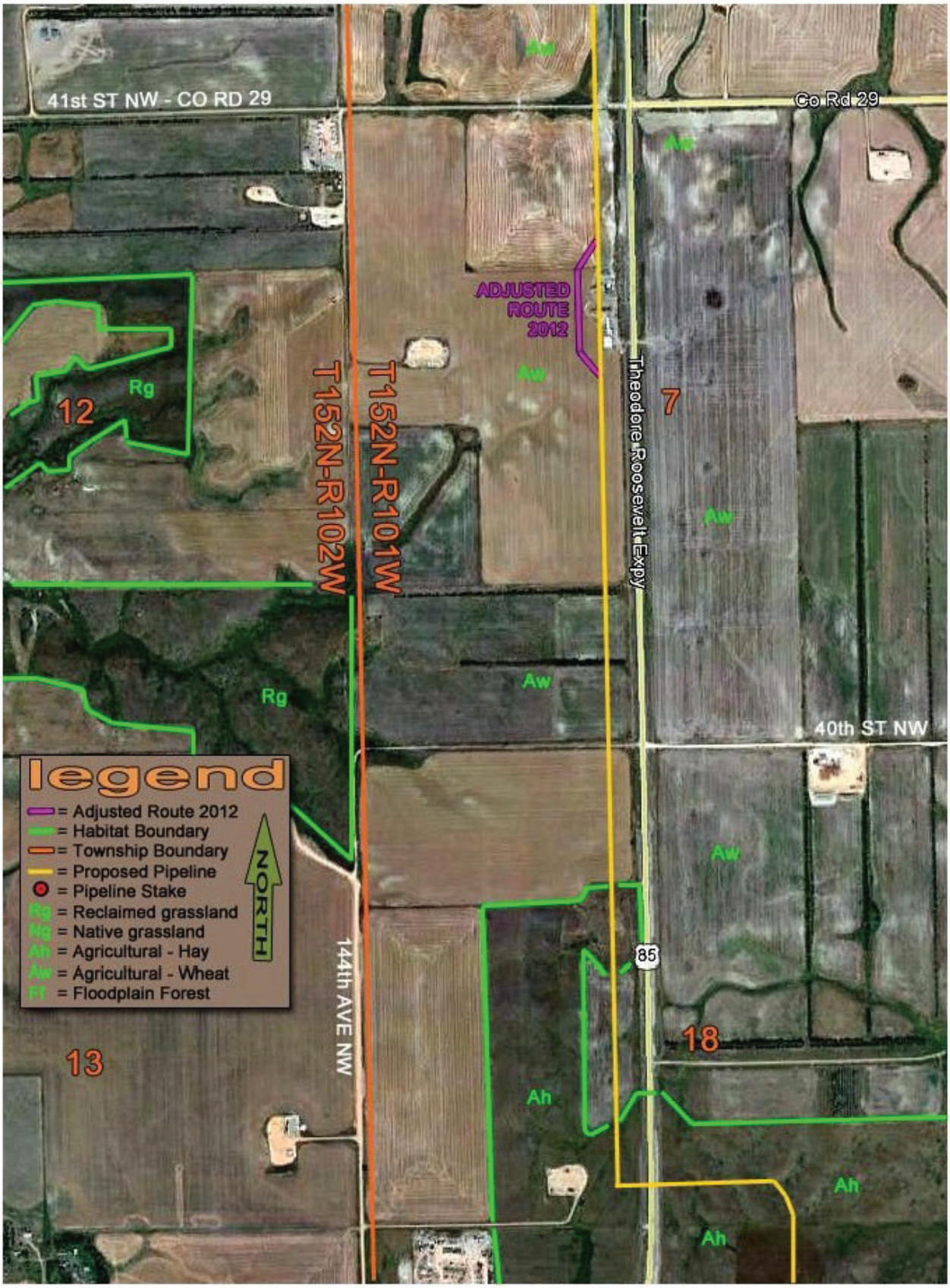
DRAFT


ORIGINAL PIPELINE ROUTE
ADJUSTED ROUTE 2012
ADJUSTED ROUTE 2012
BADLANDS
BADLANDS
BADLANDS
BADLANDS
BADLANDS
BADLANDS
Residence
42nd STREET NW
141st AVE NW
REFUGE RD
MISSOURI RIVER
BORE BENEATH RIVER
T153N-R101W
T153N-R102W
Owl Nest
Dam3
28
29
30
31
32
33
legend
NORTH
= Adjusted Route 2012
= Habitat Boundary
= Township Boundary
= Proposed Pipeline
= Pipeline Stake
= Reclaimed grassland
= Native grassland
= Agricultural - Hay
= Agricultural - Wheat
= Floodplain Forest

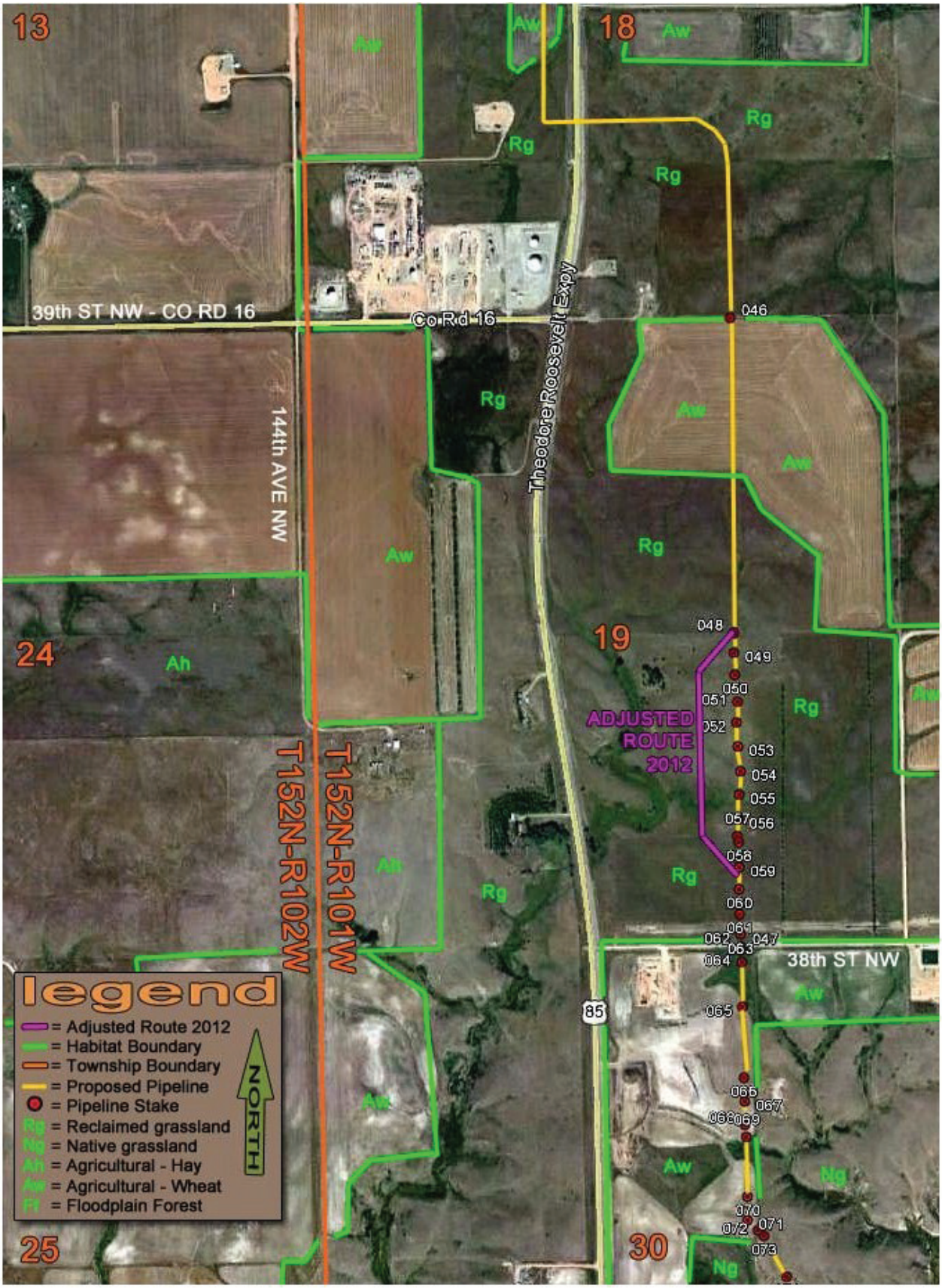
A.9. AERIAL MAP 9 – 42ND STREET NW



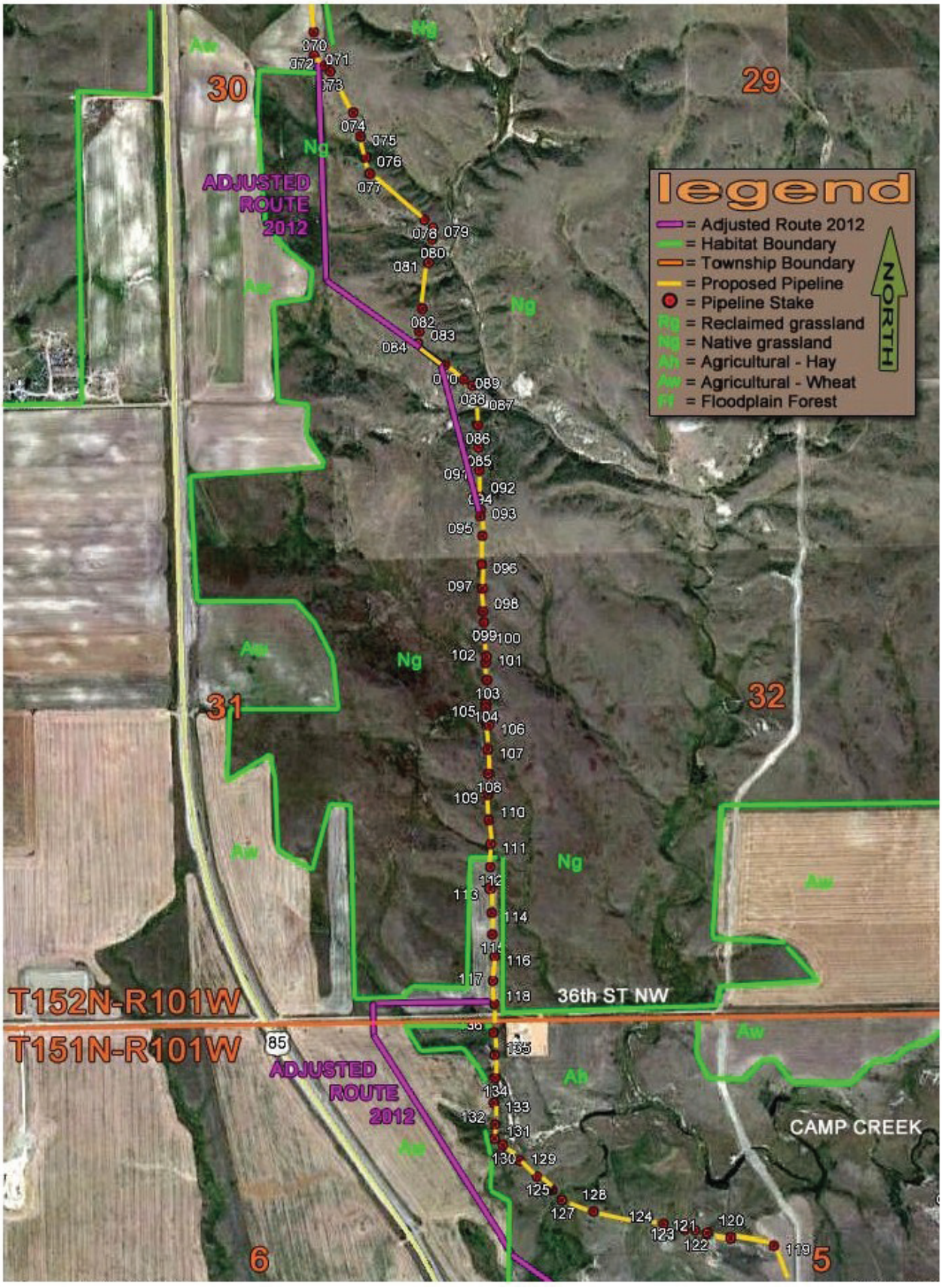
A.10.AERIAL MAP 10-40nt STREET NW



A.11.AERIAL MAP 11-38nt STREET NW



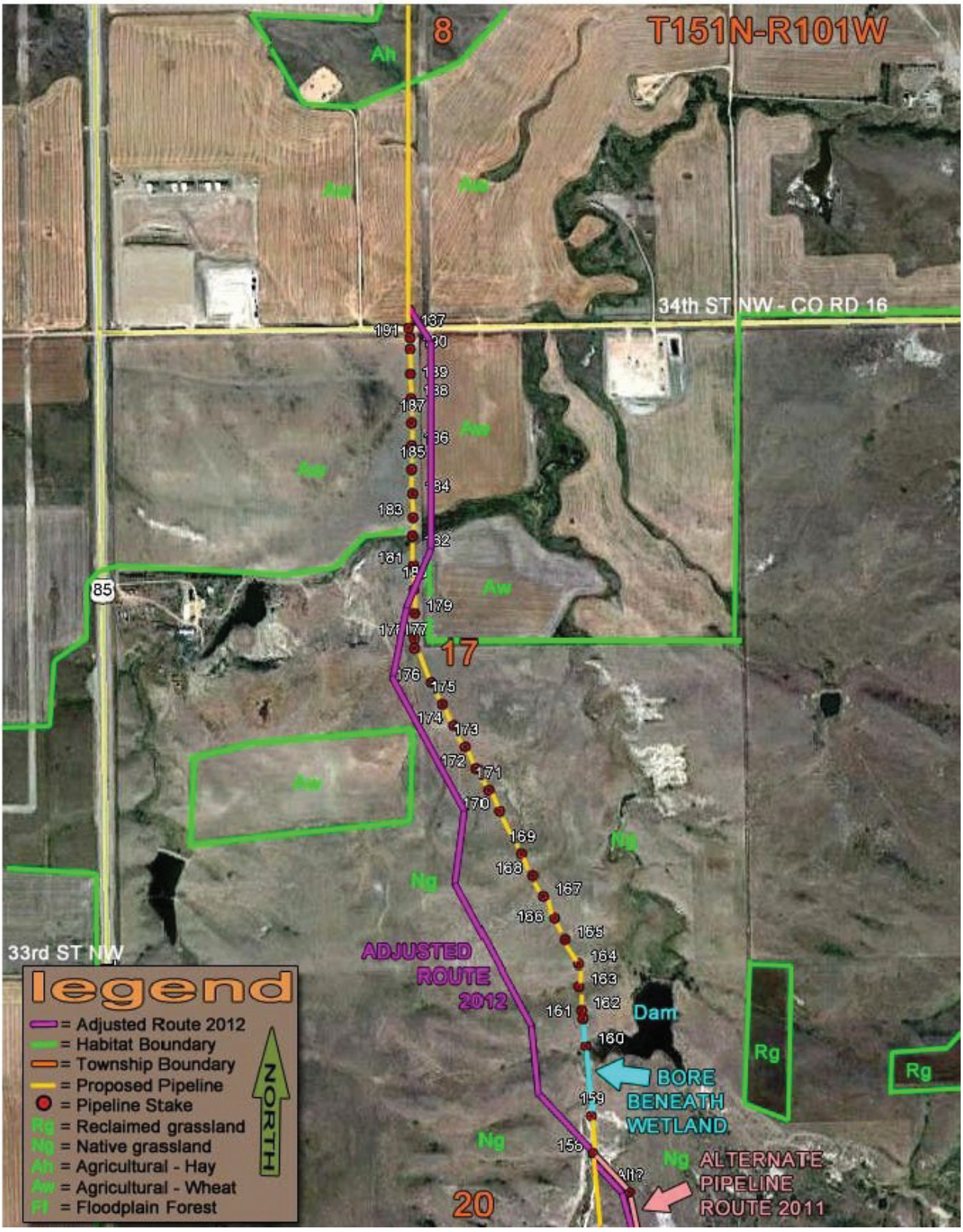
A.12. AERIAL MAP 12-36'" SlllEET NW



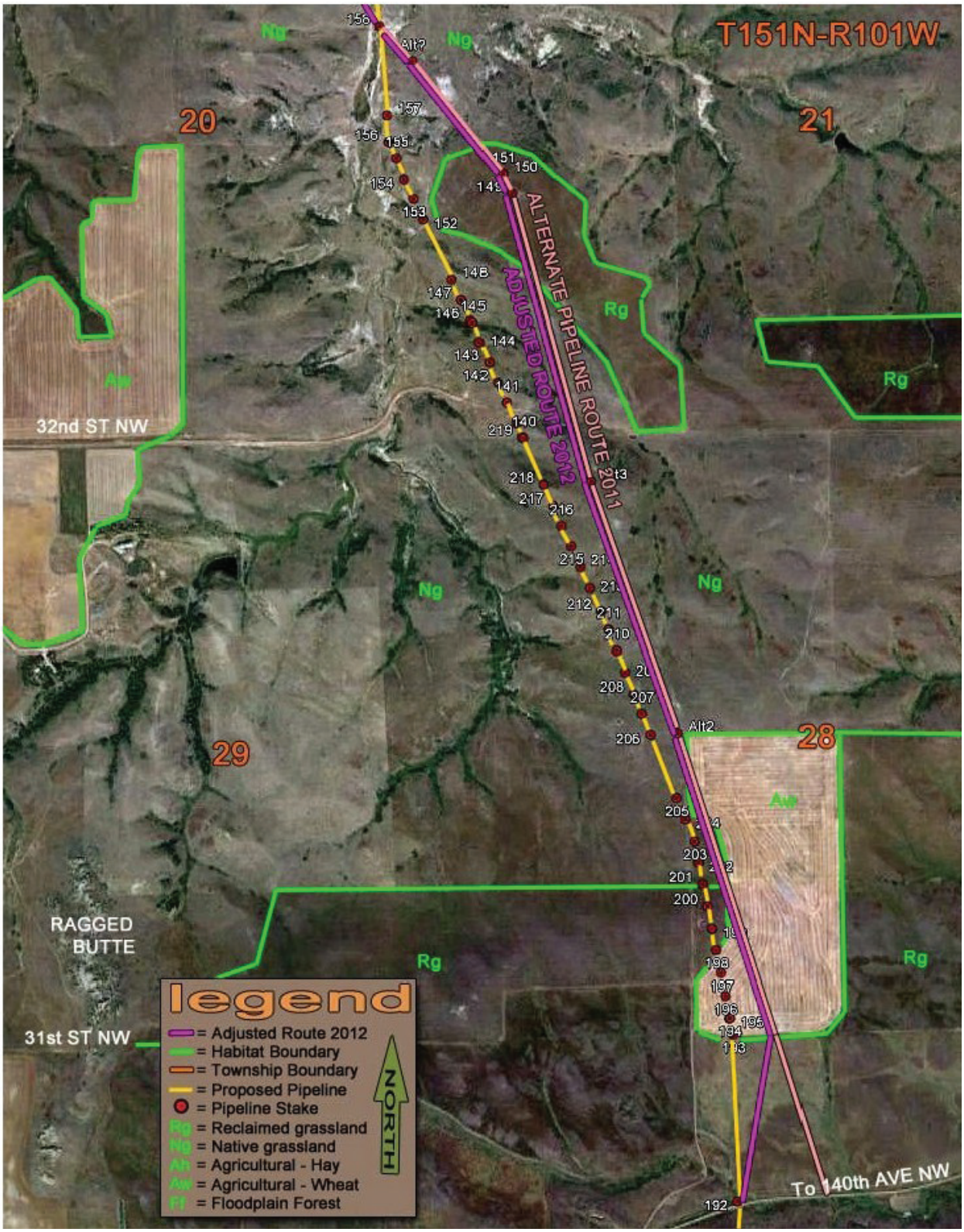
A.13.AERIAL MAP 13-35nt STREET NW



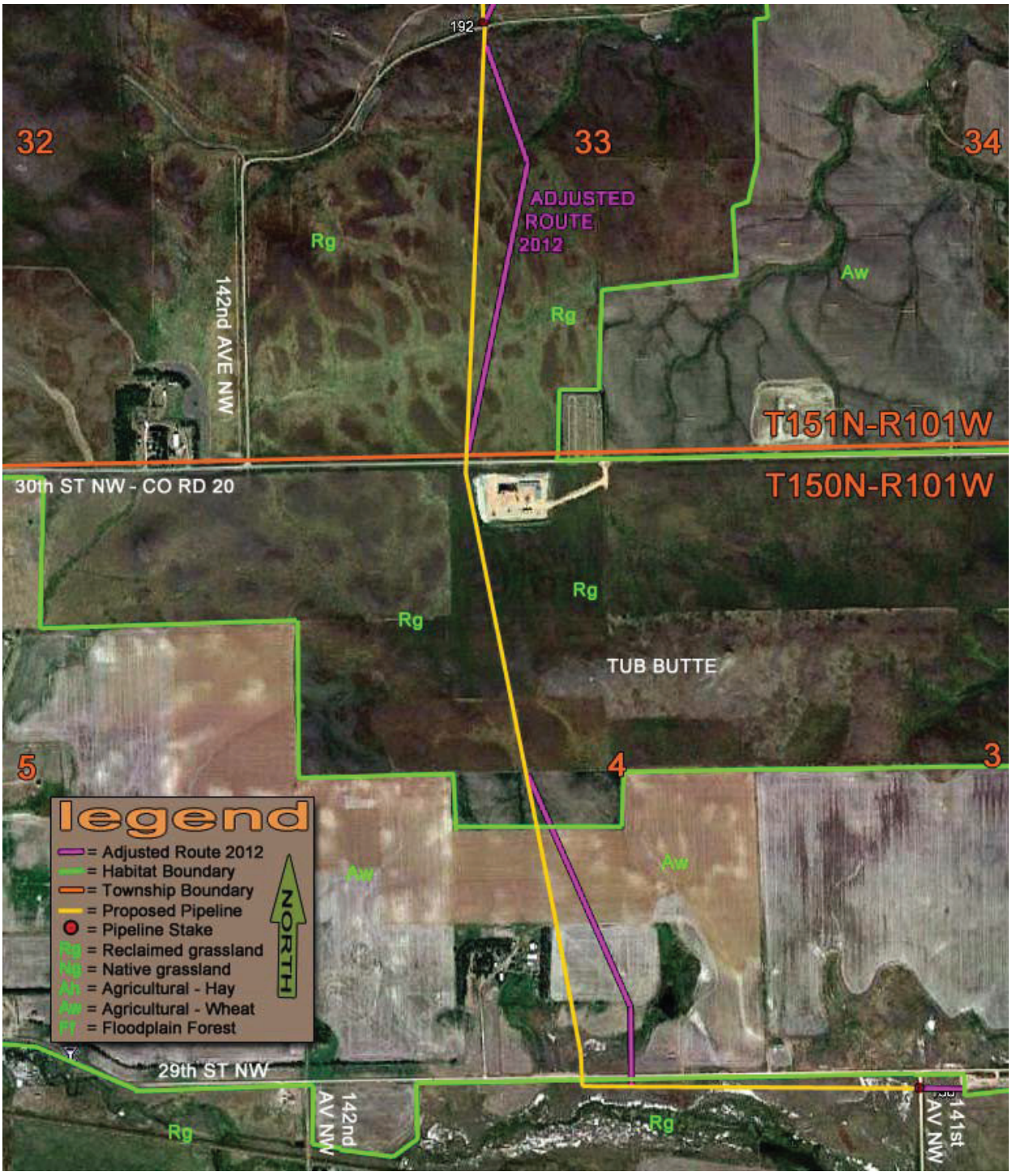
A.14.AERIAL MAP 14-33°° STREET NW



A.IS.AERIAL MAP 15–RAGGED BUTTE



A.16. AERIAL MAP 16 – SOUTHERN END



APPENDIX B. USFWS LETTER

COMMENTS ON WILLISTON WASTEWATER TREATMENT PLANT IMPROVEMENTS, MARCH 22, 2011

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501

MAR 2 2 2011

Mr. Scott Schaefer, PE
Advanced Engineering and Environmental Services, Inc.
6901 East Fish Lake Road, Suite 184
Maple Grove, Minnesota 55369

Re: Williston Wastewater Treatment
Improvements, Williston, North Dakota

Dear Mr. Schaefer:

We are in receipt of your letter dated February 14, 2011, requesting comments from the U.S. Fish and Wildlife Service (Service) on the proposed improvements to the wastewater treatment facilities located in the city of Williston.

The project entails multiple components as follows:

Treatment Improvements: T. 154 N., R. 101 W., Sections 24 and 25
Effluent Forcemain: T. 154 N., R. 101 W., Sections 25 and 36
Westside Lift Station and Forcemain: T. 154 N., R. 101 W., Sections 19, 20, 21, 22, 23, 24, 25, and 28

We offer the following comments under the authority of and in accordance with the Endangered Species Act (16 U.S.C. 1531 et seq.) (ESA), the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.) (MBTA), the Bald and Golden Eagle Protection Act (16 U.S.C. 2342352352) (BGEPA), the National Environmental Policy Act (42 U.S.C. 4321 et seq.) (NEPA), and in accordance with Executive Order 11990 "Protection ofWetlands" (E.O. 11990) and Executive Order 13186 "Responsibilities ofFederal Agencies to Protect Migratory Birds" (E.O. 13186).

Following are recommendations to assist in complying with each of these authorities. Your plans should integrate these recommendations to the extent practicable to maximize compliance. Recommendations addressing the trust resources umlt:r Service authorities are tailored to address protective measures for a variety of species. As such, recommended timing restrictions are not identical and the Federal action agency or project proponent should evaluate the trust resources that may be affected by the proposed project and use the protective timing restriction accordingly. The Service recommends that Advanced Engineering and Environmental Services, Inc. (AE2S) coordinate with the Corps of Engineers (Corps) on this project. Until such time as the Corps designates AE2S as its agent for purposes of informal Section 7 consultation, these comments should be considered as preliminary to assist in project planning.

Threatened and Endangered Species

If a Federal agency authorizes, funds, or carries out a proposed action, the responsible Federal agency, or its designated agent, is required to evaluate whether the action "may affect" listed species and critical habitat. If the Federal agency detem1ines the action "may affect, is likely to adversely affect" listed species and/or critical habitat, then the responsible Federal agency shall request formal section 7 consultation with this office, or work with this office to remove the likely adverse effects before proceeding. If the evaluation shows a "no effect" detem1ination on listed species or critical habitat, fmiher consultation is not necessary. If a non-Federal entity receives Federal funding for an activity, or if a Federal pennit or license is required, the Federal funding, licensing, or permitting agency may designate, in writing, the fund recipient, pennittee, or other party as its non-Federal agent for purposes of informal section 7 consultation. The Federal action agency is responsible to ensure that its actions comply with the ESA, including obtaining concurrence from the Service for any action that may affect a threatened or endangered species or designated critical habitat prior to carrying out the activity, funding, permitting or licensing the activity.

A list of federally listed endangered and threatened species that may be present within the proposed project's area of influence is enclosed. This list fulfills requirements of the Service under Section 7 of the Endangered Species Act. This list remains valid for 90 days.

Migratory Bird Treaty Act

The MBTA prohibits the taking, killing, possession, and transportation (among other actions) of migratory birds and parts thereof, their eggs, and nests, except when specifically permitted by regulations. While the MBTA has no provision for allowing unauthorized 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 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 and companies that take migratory birds without identifying and implementing all reasonable, prudent, and effective measures to avoid that take. Companies are encouraged to work closely with Service biologists to identify available protective measures when developing project plans or avian protection plans, and to implement those measures prior to and during construction, operations and maintenance, 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 generally, for least tems and piping plovers the breeding season extends through August 31). If the construction window above cannot be honored, migratory bird habitat can be degraded outside of the breeding

season by mowing and/or clearing and grubbing to discourage nesting, and the habitat maintained in this degraded state until constmction is completed. Ifwork is proposed to take place during the breeding season or at any other time which may result in the take of migratory birds, their eggs, or active nests, the Service recommends that the project proponent implement all practicable measures to avoid take, such as suspending construction where necessary and 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) perfonning the survey(s), and any avoidance measures implemented at the project site. Should surveys or other available infom1ation 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.

Bald and Golden Eagle Protection Act

The BGEPA prohibits take of eagles, including their parts, nests, or eggs, without a pennit issued by the Secretary of the Interior. The Act provides criminal and civil penalties for persons who take or possess, at any time or any manner, any bald eagle or golden eagle, alive or dead, or any part, nest, or egg thereof. The Act defines take as "to 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." This definition includes impacts resulting from human activities around a previously used nest site when eagles are not present if such activities subsequently 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.

High Value Habitat Avoidance

Construction activities should be conducted in a manner that will avoid/minimize impacts to the existing habitat in the project area. The following recommendations are intended to reduce construction related impacts:

- Make no stream channel alterations or changes in drainage pattems.
- Locate construction to avoid placement of fill in wetlands along the route.
- Replace unavoidable loss of wetland habitat by restoring an equal acreage of functionally equivalent wetland habitat.
- Install and maintain appropriate erosion control measures to reduce sedimentation and water quality degradation of wetlands and streams near the project area.
- Reseed disturbed upland areas with native plant species immediately after construction to reduce erosion. Avoid construction in native prairie, if possible, and reseed disturbed native prairie with a comparable native grass and forb seed mixture. The Service

recommends planting a diverse mixture of native cool and warm season grasses and forbs. Recent research has suggested that a more diverse mix, including numerous forb species, is not only ecologically beneficial but is also more weed resistant, allowing for less intensive management and chemical use. In essence, the more species included in a mixture, the higher the probability of providing competition to resist invasion by non-native plants. The seed source should be as local as possible, preferably collected from the nearby native prairie. Obtain seed stock from nurseries within 250 miles of the project area to ensure the particular cultivars are well-adapted to the local climate. The Natural Resources Conservation Service (NRCS) compiles a list of vendors in North Dakota that supply conservation seed and plants (http://www.plant-materials.nrcs.usda.gov/pubs/ndpmcmt8152.pdf.). Additional information on native grasses and forbs may be found at the NRCS Bismarck Plant Materials Center (http://www.plant-materials.nrcs.usda.gov/ndpmc/).

Executive Order 11990

Our review of the National Wetland Inventory (NWI) maps and photographs indicate the proposed planning area includes numerous wetland basins and stream channels. You may access the NWI data directly through their website (wetlands.fws.gov). Pipeline burial should not significantly affect wetland basins or stream channels provided precautions are taken to restore natural basin contours. Precautions should also be taken during installation of underground facilities by sufficiently compacting trenches through the wetlands to prevent drainage along the trench or through bottom seepage. The Service recommends that construction through or adjacent to these areas be avoided where possible or measures be taken (e.g. directional boring) to minimize disturbance to these areas.

According to materials provided with your letter, the construction footprint will intersect wetlands. Wetlands are important for water quality as well as for a variety of wildlife species. The Service suggests that the project proponent include a detailed plan to avoid or minimize impacts to the wetland if possible. If avoidance or minimization is not feasible, then the plan should include a mitigation plan to mitigate for wetland losses. Section 404 of the Clean Water Act regulates placement of fill materials in certain wetlands and other waters of the United States. A Corps of Engineers' 404 pem1it may be required if fill material will be placed in aquatic sites including wetlands. Contact Mr. Dan Cimarosti, Regulatory Office, Corps of Engineers, 1513 South 12th Street, Bismarck, North Dakota 58504 (701-255-0015), to determine their permit requirements. If a 404 permit is required, the Service will provide recommendations on this project to the Corps.

Thank you for the opportunity to provide comments on the project proposal. If you have any questions or require additional information, please contact Micah Reuber of my staff, or contact me directly, at telephone number (701) 250-4481, or at the letterhead address.

Sincerely,

Jeffrey K. Towner

Jeffrey K. Towner
Field Supervisor
North Dakota Field Office

Enclosure

cc: Corps of Engineers, Regulatory Office, Bismarck
(Attn: Dan Cimarosti)
North Dakota Department of Health, Bismarck
(Attn: Gary Bracht)
Director, ND Game & Fish Depmtment, Bismarck
(Attn: Paul Schadewald)
City of Williston, Williston
(Attn: Monte Meiers)

FEDERAL THREATENED, ENDANGERED, AND CANDIDATE SPECIES AND DESIGNATED CRITICAL HABITAT FOUND IN WILLIAMS COUNTY, NORTH DAKOTA
March 2011

ENDANGERED SPECIES

Interior least tern *(Sterna antillarum):* Nests along midstream sandbars of the Missouri and Yellowstone Rivers.

Whooping crane *(Grus Americana):* Aransas-Wood Buffalo Population (264 birds) occurs in North Dakota counties during spring and fall migration between breeding and wintering areas. Whooping cranes prefer to roost overnight in shallow open water wetland habitat with good visibility during migration stopovers.

Pallid sturgeon *(Scaphirhynchus albus):* Known only from the Missouri and Yellowstone Rivers. No reproduction has been documented in 15 years.

Mammals

Gray wolf *(Canis lupus):* Occasional visitor in North Dakota. Most frequently observed in the Turtle Mountains area.

THREATENED SPECIES

Piping plover *(Charadrius melodus):* Nests on midstream sandbars of the Missouri and Yellowstone Rivers and along shorelines of saline wetlands. More nest in North Dakota than any other state.

CANDIDATE SPECIES

Sprague's Pipit *(Anthus spragueii):* Endemic to the Northern Great Plains native short-to-mixed grass prairie. Sensitive to fragmentation and conversion of grassland habitat. Sprague's pipits prefer relatively large prairie patches of at least approximately 72 acres, with larger patches of at least 360 acres preferred.

DESIGNATED CRITICAL HABITAT

Piping Plover- Missouri River- Critical habitat includes sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and the interface with the river.

ENVIRONMENTAL & STATISTICAL CONSULTANTS

4007 State Street, Suite 109, Bismarck, ND 58503
Phone: 701-250-1756 ◆ www.west-inc.com ◆ Fax: 701-250-1761

June 6, 2012

Jacque Hamilton
Sr. Consultant
E3 Environmental, LLC
817 Vandalia Street
St. Paul, MN 55114

RE: ONEOK Pipeline Tern and Plover Habitat Survey

Dear Ms. Hamilton

On behalf of Western EcoSystems Technology, Inc. (WEST), I am please to provide the following information regarding the least tern and piping plover surveys completed by WEST in regards to the Stateline Plant to Rawson Pipeline Project (Project) planned for construction by ONEOK Rockies Midstream, LLC (ONEOK). The Project is an approximately 37 mile long pipeline west of Williston, North Dakota (Figure 1). E3 Environmental, LLC (E3) is assisting ONEOK in permitting for this project and has contracted various field survey efforts to WEST.

WEST investigated the Missouri River crossing area to determine if there was potential suitable habitat for least terns and piping plover present, defined in the Biological Assessment as "open, sparsely vegetated, gravel to sandy beaches and bars along the Missouri and Yellowstone Rivers"[1], within 0.25-mile either side of the crossing (Figure 2). If potential habitat existed, WEST was to also conduct surveys for nesting least terns and/or piping plovers. The following describes the survey methods and results.

Methods

In North Dakota least terns and piping plovers may be found breeding in portions of the Missouri and Yellowstone River systems. Additionally, piping plovers may be found in alkaline wetlands and lakes in the state. For this effort, WEST only was asked to look for potential habitat and species occurrence along the Missouri River crossing. Surveys were done to augment those previously done for the BA where they noted potential habitat may exist. Field surveys were

[1] Yellowfield Biological Surveys LLC. 2012. ONEOK Rockies Midstream LLC, Stateline Plant to Rawson Pipeline Corridor, Biological Assessment. Technical report prepared for ONEOK Rockies Midstream.

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done on May 23 and 24, 2012 to side of the river. Klarissa Lawrence and Jeanette Flaig conducted the wetland delineations in this area and also recorded the habitat characteristics during the surveys for potential least tern and piping plover habitat. Both individuals have extensive vegetation and wildlife experience. Photographs were taken of the crossing corridor.

Results

No potential nesting habitat has present within the survey area. The bare sand or sparsely vegetated areas were generally wet, precluding any nesting opportunities for either species (see attached photographs). The “dune field” described in the BA has evidently been cultivated back into an agricultural field as it was not present either. The river bank itself has salix species and grasses growing extensively and then it goes drops steeply and directly into flowing, open water, making the river bank itself unsuitable for nesting for either species (see attached photographs). There were no mid-channel islands observed in the survey area, again making the area unsuitable for nesting (see attached photographs). Overall there were only very small parcels of dry, open sand areas; likely precluding any nesting opportunities. In addition to looking for nesting birds the surveyors looked for foraging birds or birds simply flying by and none were observed.

Include photographs

Sincerely,

Clayton Derby
Senior Manager

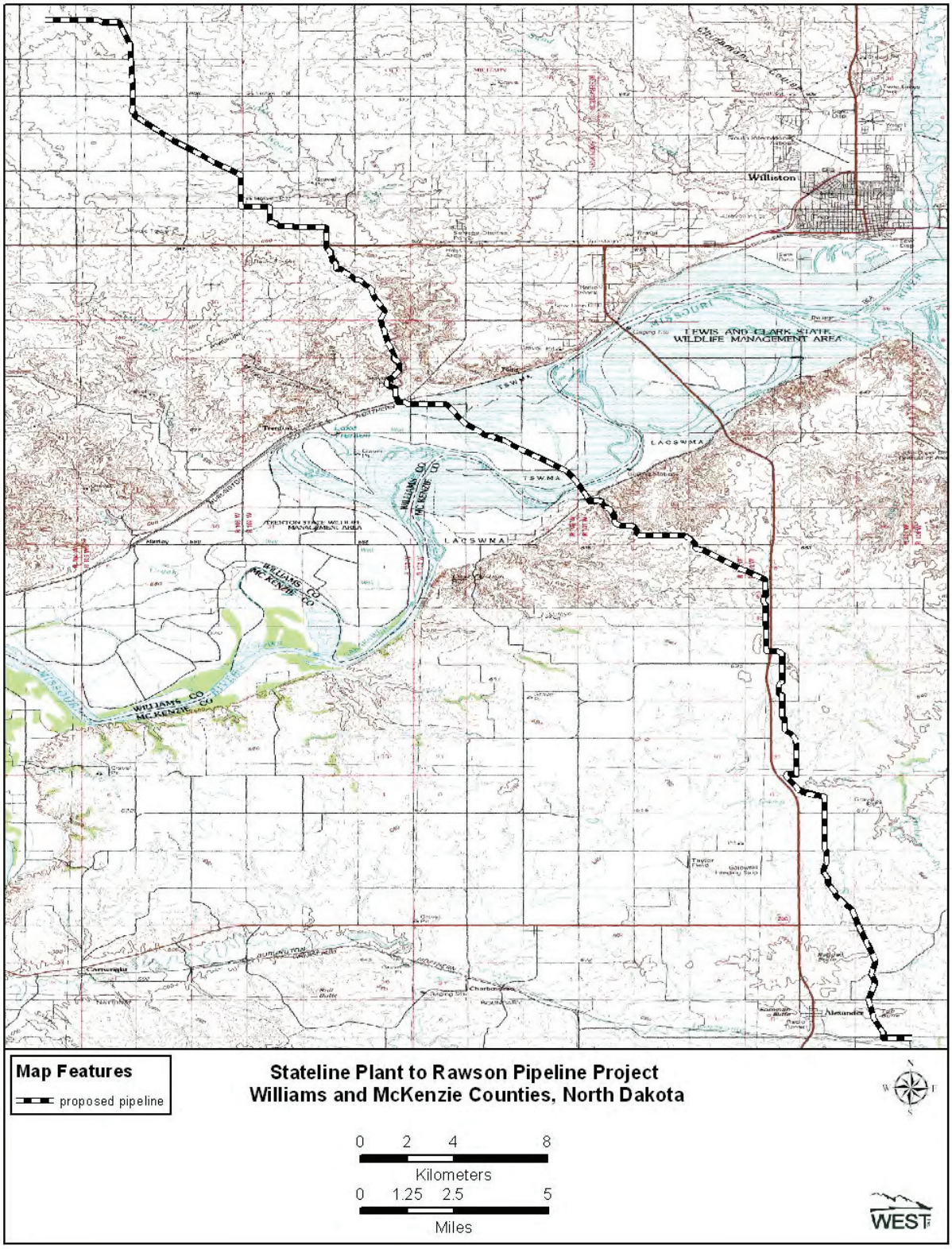


Figure 1. General Project area for the Stateline Plant to Rawson Pipeline Project.

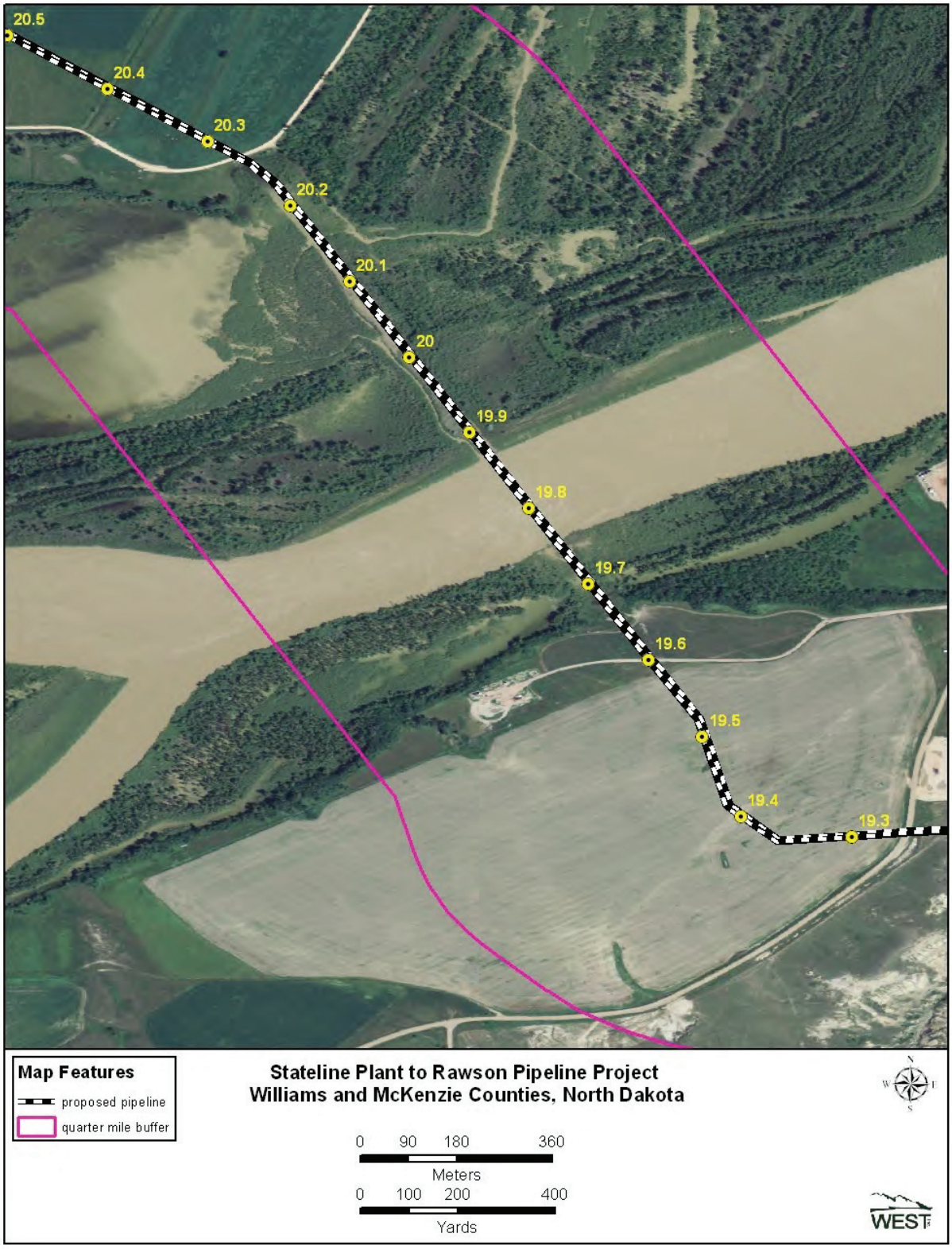


Figure 2. Missouri River crossing area surveyed for least terns and piping plovers.









ONEOK

October 5, 2017

Mr. Kevin Shelley, Acting Supervisor
U.S. Fish and Wildlife Service
North Dakota Ecological Services Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

RE: ONEOK Bakken NGL, L.L.C. – Lonesome Creek to Stateline 12" Pipeline Conversion Project
Review of Project for potential to impact federally listed threatened and endangered species

Dear Mr. Shelley,

The ONEOK Bakken Pipeline, L.L.C. (ONEOK) Lonesome Creek to Stateline 12" Pipeline Conversion Project (Project), is proposing to convert a pre-existing, idle 12-inch natural gas gathering pipeline into a natural gas liquids transmission pipeline. The Project extends approximately 45 miles in length, from ONEOK's Lonesome Creek Facility in McKenzie County, North Dakota to its Stateline Facility in Williams County, North Dakota (see enclosed Project location maps).

The ground excavation work involved in the Project is limited to installing two remotely actuated control valves at existing aboveground valve settings approximately 4 miles northwest of the pipeline's crossing of the Missouri River and 0.5 mile southeast of the pipeline's crossing of the Missouri River. Conversion of the pipeline's operation from gathering to transmission places the Project under the jurisdiction of the North Dakota Public Service Commission (NDPSC). ONEOK plans to submit an application to the NDPSC for a Certificate of Corridor Compatibility and Route Permit in the fall of 2017. Construction activities are proposed to begin in early 2018 and be completed in 1-2 months.

A copy of your response to this letter will be included in the application to the NDPSC. The enclosed Project maps depict the pipeline route and a one-mile-wide evaluation corridor. The Counties, Townships, Ranges, and Sections crossed by the Project in North Dakota are presented in Table 1.

Table 1
Lonesome Creek to Stateline 12" Pipeline Conversion Project Location Information

County	Township	Range	Sections
McKenzie	150 North	101 West	4, 9, 10, 15, 22, 23, 25, 26, 36
McKenzie	151 North	101 West	5, 6, 8, 17, 20, 21, 28, 33
McKenzie	152 North	101 West	6, 7, 18, 19, 30, 31
McKenzie	152 North	102 West	1
McKenzie	153 North	101 West	30, 31, 32, 33
Williams	153 North	102 West	4, 9, 14, 15, 16, 23, 24, 25

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

Table 1 Lonesome Creek to Stateline 12" Pipeline Conversion Project Location Information			
County	Township	Range	Sections
Williams	154 North	102 West	18, 19, 20, 28, 29, 33
Williams	154 North	103 West	2, 11, 12, 13
Williams	155 North	103 West	21, 22, 26, 27, 35

Merjent, Inc. (Merjent), on behalf of ONEOK, reviewed the U.S. Fish and Wildlife Service's Information for Planning and Conservation (IPaC) website for a list of species and critical habitat that may be present in the Project area (Table 2).

Table 2 Federally Listed Species Potentially Present in the Lonesome Creek to Stateline 12" Pipeline Conversion Project Area		
Common Name	**Scientific Name**	**Status**
Least tern	*Sterna antillarum*	Endangered
Piping plover	*Charadrius melodus*	Threatened
Rufa red knot	*Calidris canutus rufa*	Threatened
Whooping crane	*Grus americana*	Endangered
Pallid sturgeon	*Scaphihynchus albus*	Endangered
Dakota skipper	*Planthera praeclara*	Threatened
Gray wolf	*Canis lupus*	Endangered
Northern long-eared bat	*Myotis septentrionalis*	Threatened

Least tern

The interior least tern is the smallest of the terns found in North America. The species is characterized by a black "crown" on their head, a snowy white underside and forehead, grayish back and wings, orange legs, and a yellow bill with a black tip. The least tern can be found in sandy, sparsely vegetated areas along large, slow-moving rivers. The species is a colony nester, and pairs nest and raise young on barren river sandbars. In North Dakota, nesting activity is primarily along the Missouri River.

Construction activities are expected to take place outside of the species' breeding and nesting period (i.e., late April – August 31), and there will be no new ground disturbance at the Missouri River crossing. Therefore, impacts to this species are not expected.

Piping plover

The piping plover is a small, stocky migratory shorebird which nests in three locations in North America: the shorelines of the Great Lakes, the shores of rivers and lakes in the Northern Great Plains, and along the Atlantic Coast. Plovers are found on wide, flat, open, sandy beaches with very little grass or other vegetation. In the Great Plains, piping plovers inhabit barren sand and gravel shores of rivers and lakes, and avoid dense vegetation. Nearly all natural lakes used by plovers in North Dakota are alkaline in nature and have salt-encrusted, white beaches. Such alkali lakes probably are selected due to their sparse vegetation. Piping plovers will also utilize wide beaches and barren river sandbars. In North Dakota, this habitat type is most often found on the Missouri and Yellowstone Rivers.

Construction activities are expected to take place outside of the species' breeding and nesting period (i.e., late April – August 31), and there will be no new ground disturbance at the Missouri River crossing. Therefore, impacts to this species are not expected.

Rufa red knot

The red knot is a large sandpiper known for its long-distance migration between breeding grounds in the Canadian Arctic and several wintering areas in the Southern Hemisphere. Large numbers of rufa red knots migrate along the Atlantic coast of North America and winter in South America. Red knots may also winter in the Southeastern U.S. in Florida, South Carolina, Georgia, and Texas; some red knots wintering in the northwestern Gulf of Mexico migrate through the interior of North America during both spring and fall migration and utilize stopover sites in the Northern Great Plains.

The occurrence of rufa red knots in North Dakota is unpredictable, and the number of migrating shorebirds documented in the interior can vary dramatically due to high inter-annual availability in water levels and habitat quality at mid-continental wetlands. Suitable stopover habitat (i.e., open landscape wetlands and croplands) is present in the vicinity of the Project area. However, while the red knot may stop opportunistically to forage and roost, it is not possible to predict their presence in an area.

Construction activities are expected to take place outside of the species' migration period (i.e., May 15 - June 15 and July 15 - Sept 15). Therefore, impacts to this species are not expected.

Whooping crane

The whooping crane is the tallest bird in North America; adults stand nearly 5 feet tall with a wing span that averages 7.5 feet. Adult plumage is primarily white with black primary feathers on the wings, with a red crown and red facial skin often apparent.

Whooping cranes embark on a bi-annual migration from summer nesting and breeding grounds in Wood Buffalo National Park in northern Alberta to the barrier islands and coastal marshes of the Aransas National Wildlife Refuge on the Gulf Coast of Texas. The migratory corridor is approximately 2,400 miles in length, 220 miles wide, and includes eastern Montana and portions of North Dakota, South Dakota, Nebraska, Kansas, Oklahoma and eastern Texas. During migration, birds stop to feed daily and primarily forage for waste grains in agricultural fields but will also eat frogs, fish, crayfish, insects, and plant tubers. They also utilize upland freshwater sites and forage for acorns, crayfish, insects, and snails. Migrating cranes also use riverine habitats and more open roosting sites in wetlands, sandbars and shallow river channels.

The Project area falls within the 95% migration corridor (i.e., the 220-mile band where 95% of all whooping crane sightings have occurred), and suitable stopover habitat (i.e., open landscape wetlands and croplands) is present in the vicinity of the Project area. Construction activities are expected to take place outside of the species' migration period (i.e., late April - June 15 and September 15 – November 15). Therefore, impacts to this species are not expected.

Pallid sturgeon

The pallid sturgeon is a large, slow-growing fish found in the Missouri and Mississippi Rivers from Montana to Louisiana. The pallid sturgeon's 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. The species is usually found in main-channel habitat with a sand or gravel bottom. Wild pallid sturgeon have been noted in the Missouri River downstream from the Fort Peck Dam in Montana to the headwaters of Lake Sakakawea, North Dakota, and downstream from Garrison Dam, North Dakota to the headwaters of Lake Oahe, South Dakota.

No in-water work will be performed for the Project. Therefore, impacts to this species are not expected.

Dakota skipper

The Dakota skipper is a small-to-medium sized butterfly characterized by a short, sturdy body and a quick, skipping flight. The species is an obligate of untilled, high-quality native prairie containing a variety of wildflowers and grasses. Dakota skippers can be found in both wetlands and uplands, but do not thrive in heavily grazed or cultivated areas. The preferred wetland habitat is associated with plant species consisting of bluestem grasses, wood lily, and harebell. The preferred upland habitat contains bluestem grasses, needlegrass, purple coneflower, and blanketflower.

New ground disturbing activities will be minimal and limited to grazed and crop fields immediately adjacent to existing valve locations where new actuated control valves will be installed. Field surveys conducted on September 25 and 26, 2017 in these areas determined that suitable habitat for the Dakota skipper is not present in these areas. Therefore, impacts to this species are not expected.

Gray wolf

The gray wolf is the largest of the wild dog species and is found in a variety of habitats throughout North America. They are typically distinguishable from coyotes by their larger size, shorter, more rounded ears, and broader muzzle. Gray wolves prey primarily on large ungulates, including white-tailed deer (*Odocoileus virginianus*), elk (*Cervus elaphus*), moose (*Alces alces*), bison (*Bison bison*), and caribou (*Rangifer tarandus*), depending on location. They will occasionally take smaller prey, including beaver (*Castor canadensis*), insects, various small mammals, and domestic animals. Additionally, wolves will usurp carcasses and scavenge carrion opportunistically from kills made by other carnivores.

A habitat generalist, the gray wolf originally occupied most habitat types in North America. They show no preference for one cover type over another and successfully use alpine, forest, grassland, shrubland, and woodland habitats across their range. Once thought to require wilderness areas with little to no human disturbance, recent range expansions have demonstrated the species' ability to tolerate higher rates of anthropogenic development than previously thought. Given abundant prey and low rates of human-caused mortality, wolves can survive in proximity to human-dominated environments.

As dispersers, individual wolves will be transient and highly mobile. Naturally curious, they may stray close to the project area, but would likely retreat upon seeing or hearing construction activities. Therefore, impacts to this species are not expected.

Northern long-eared bat

The range of the northern long-eared bat stretches across much of the eastern and Midwestern United States. During summer, the bats roost singly or in colonies under bark, in cavities, or in crevices of both live and dead trees. Males and non-reproductive females may also roost in cooler places such as caves and mines. This species is thought to be opportunistic in selecting roosts, utilizing tree species based on

the tree's ability to retain bark or provide cavities or crevices. It has also been found, rarely, roosting in structures such as barns and sheds. In winter, northern long-eared bats utilize caves and mines as hibernacula.

On April 1, 2015, the U.S. Fish & Wildlife Service (USFWS) listed the northern long-eared bat as threatened under the Endangered Species Act (ESA) and simultaneously published an interim 4(d) rule; the final listing and interim 4(d) rule took effect as of May 4, 2015. On January 14, 2016, the USFWS published the final 4(d) rule identifying prohibitions that focus on protecting the bat's sensitive life stages in areas affected by White Nose Syndrome (WNS). The USFWS has developed a White Nose Syndrome (WNS) zone map identifying counties containing hibernacula where bats have been found to exhibit WNS and/or have tested positive for the fungus that causes WNS. This map is updated periodically and was reviewed for this project on September 12, 2017 (map dated June 30, 2017). McKenzie and Williams Counties, North Dakota, currently fall outside of the FWS-designated WNS buffer zone; as such, incidental take of northern long-eared bats is not prohibited.

Tree-clearing activities will not be required for this Project. Therefore, impacts to this species are not expected.

In addition to your review of the Project for concerns related to federally listed species and designated critical habitat, ONEOK also requests your review and comments regarding migratory birds and eagles as they relate to the limited construction activities proposed along the existing right-of-way.

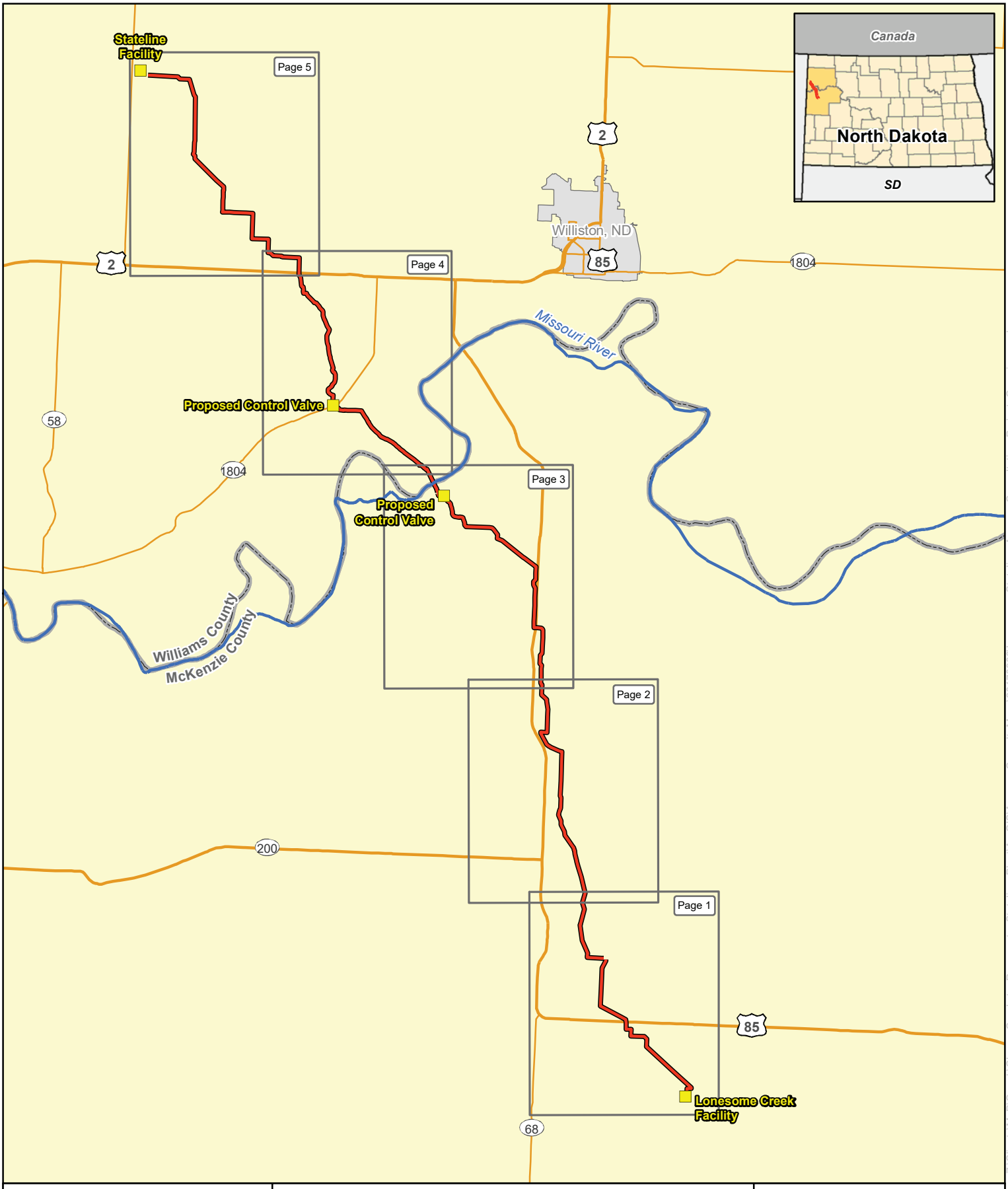
We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. as its environmental consultant for this project. Should you have any questions or require additional information, please contact Andrea Sampson of Merjent, Inc. at 612-226-1331 or asampson@merjent.com or me at 918-246-4728 or Kevin.Windstrup@oneok.com.

Sincerely,

Kevin Windstrup
Senior Environmental Engineer
ONEOK, Inc.

Enclosures: Project Overview Maps

cc: Maddy Krumwiede, Merjent, Inc.
Andrea Sampson, Merjent, Inc.



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ONEOK Bakken Pipeline

Lonesome Creek to Stateline
12" Pipeline Conversion
Project Location Map
McKenzie and Williams Counties, ND

Project Facilities

Proposed Pipeline

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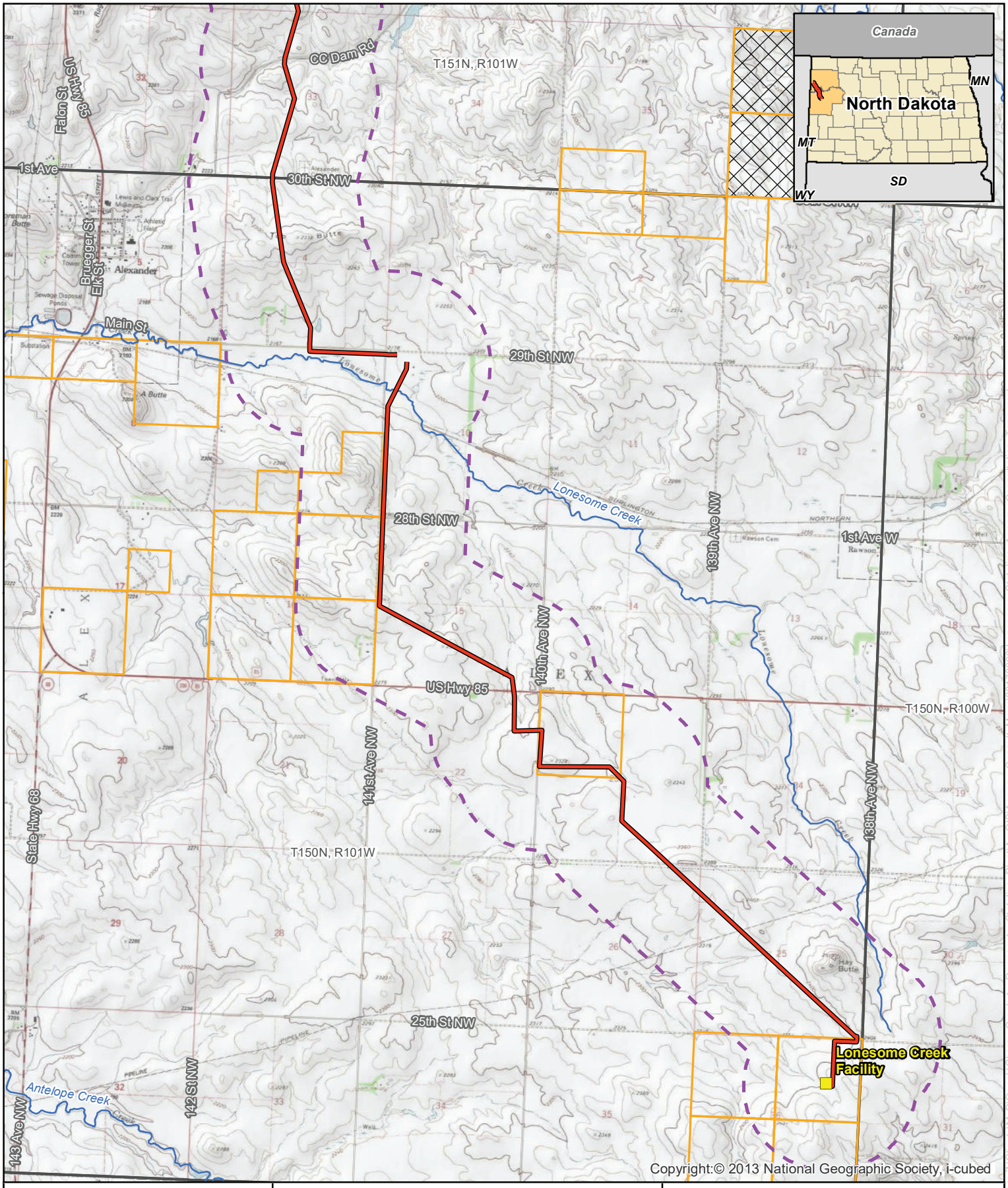

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Page 1 of 5

ONEOK Bakken Pipeline

Lonesome Creek to Stateline

12" Pipeline Conversion

Federal and State Lands

McKenzie and Williams Counties, ND

- Project Facilities
- Proposed Pipeline
- NHD Waterbody
- 1-Mile Buffer
- Township Boundary
- County Boundary
- ND Trust Land - Mineral
- ND School Trust Land

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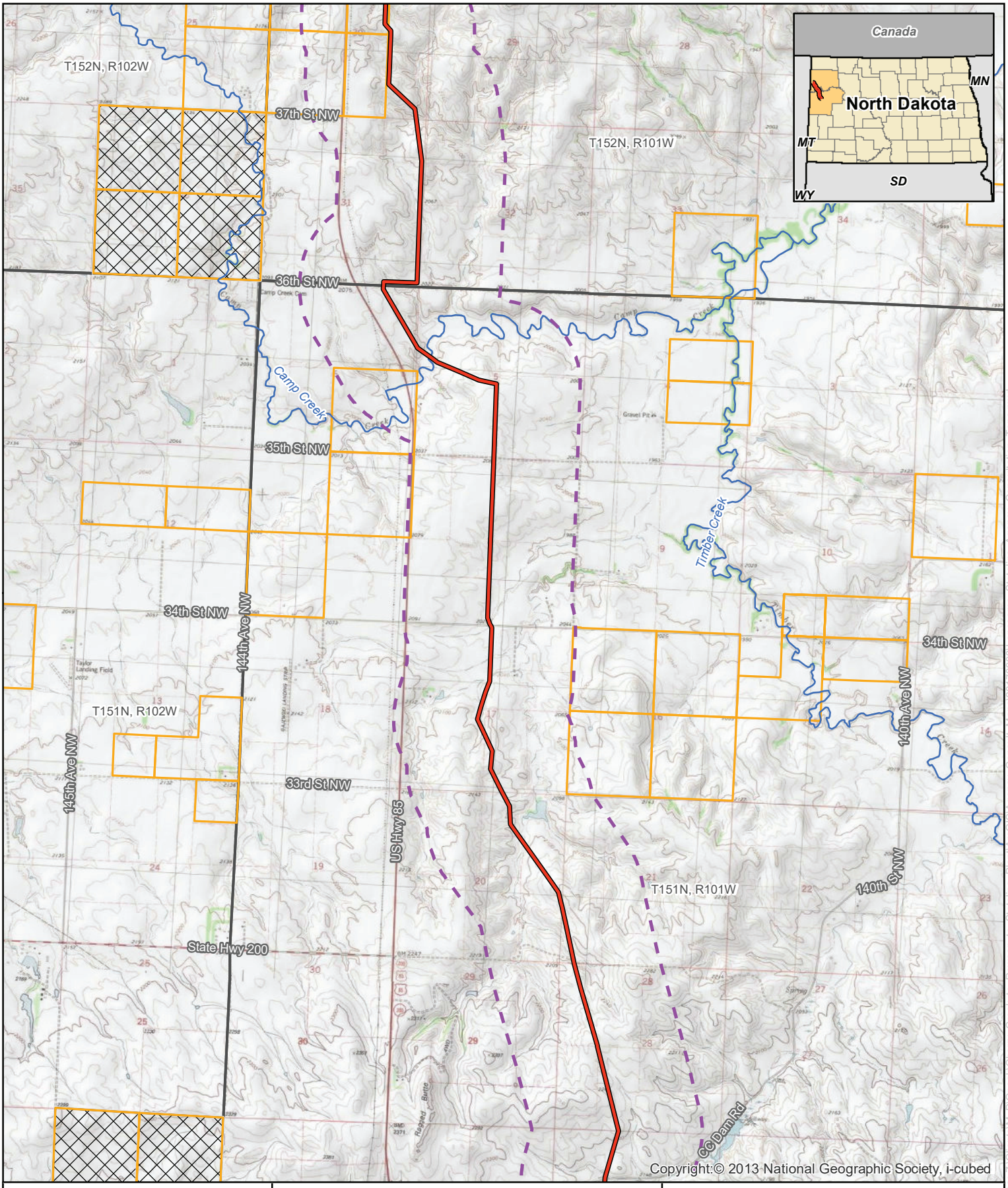

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Page 2 of 5

ONEOK Bakken Pipeline

Lonesome Creek to Stateline

12" Pipeline Conversion

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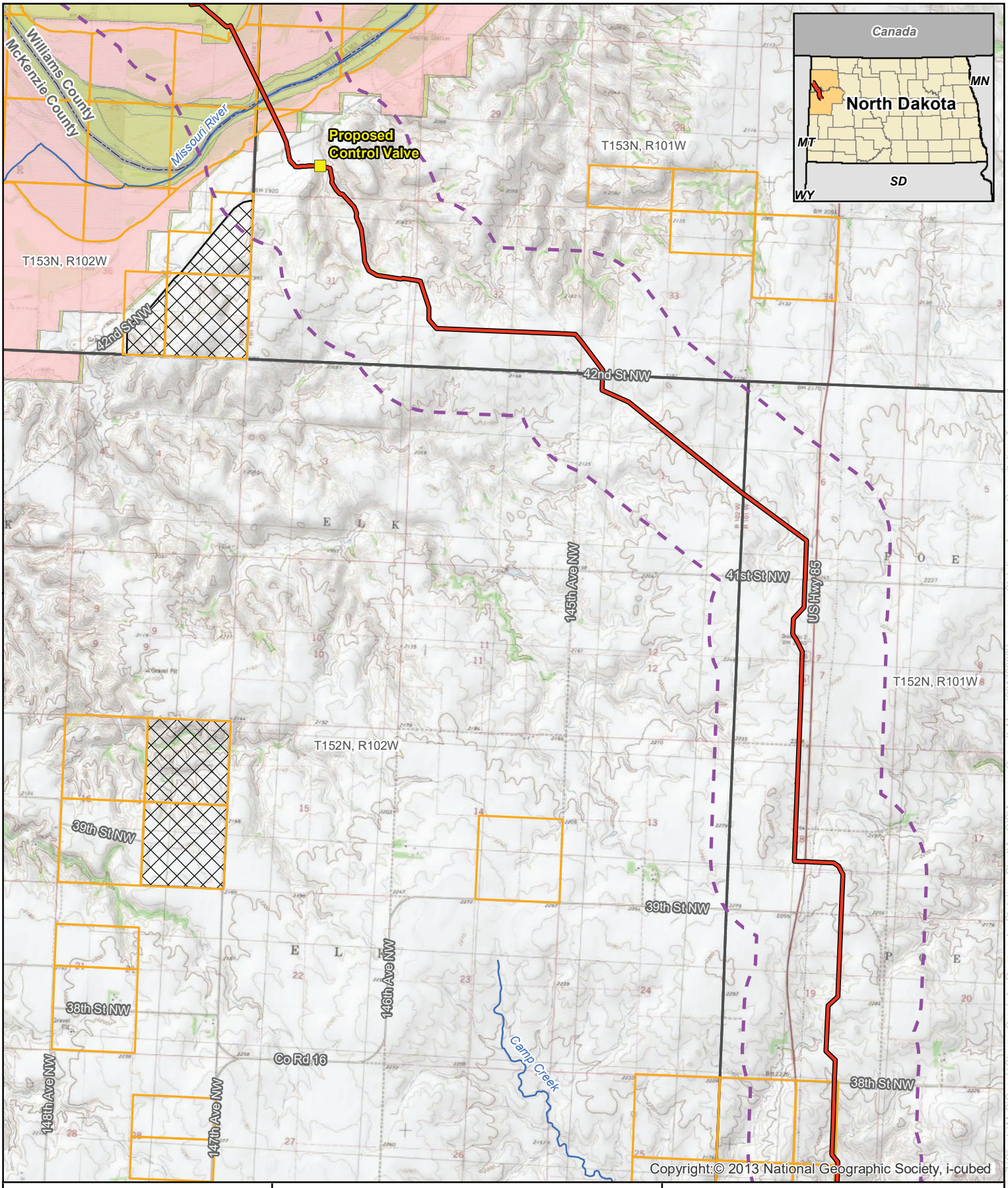

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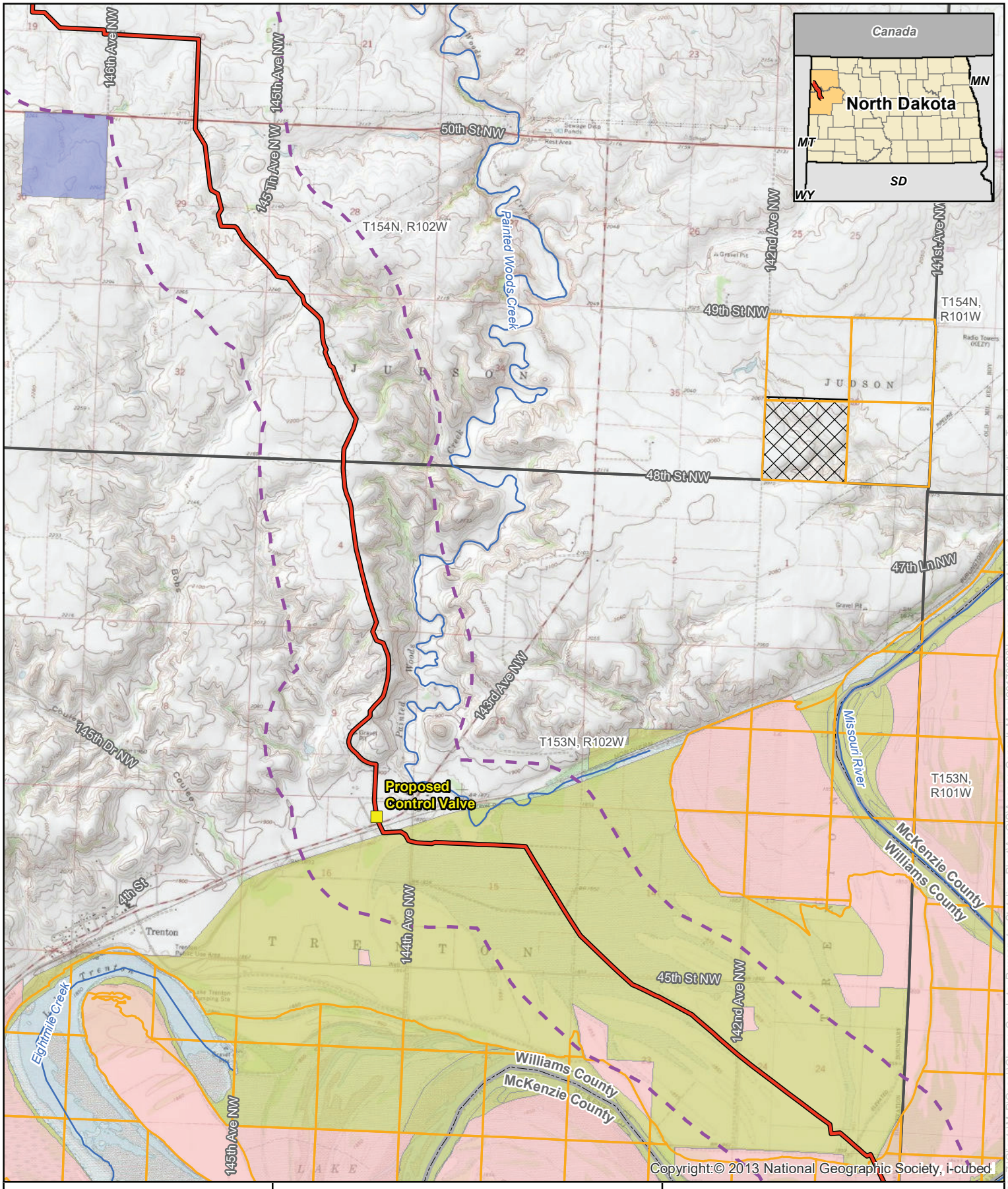

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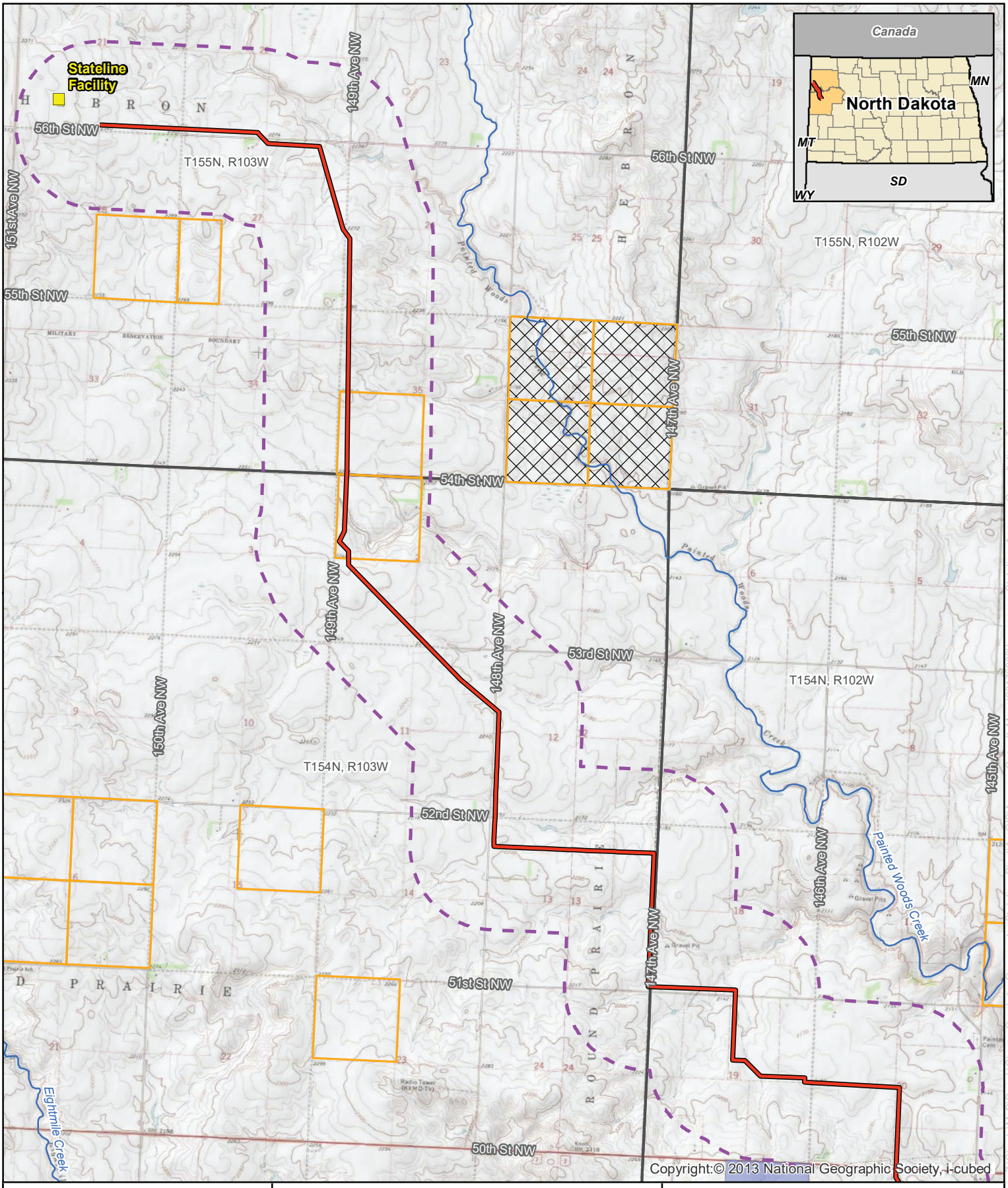

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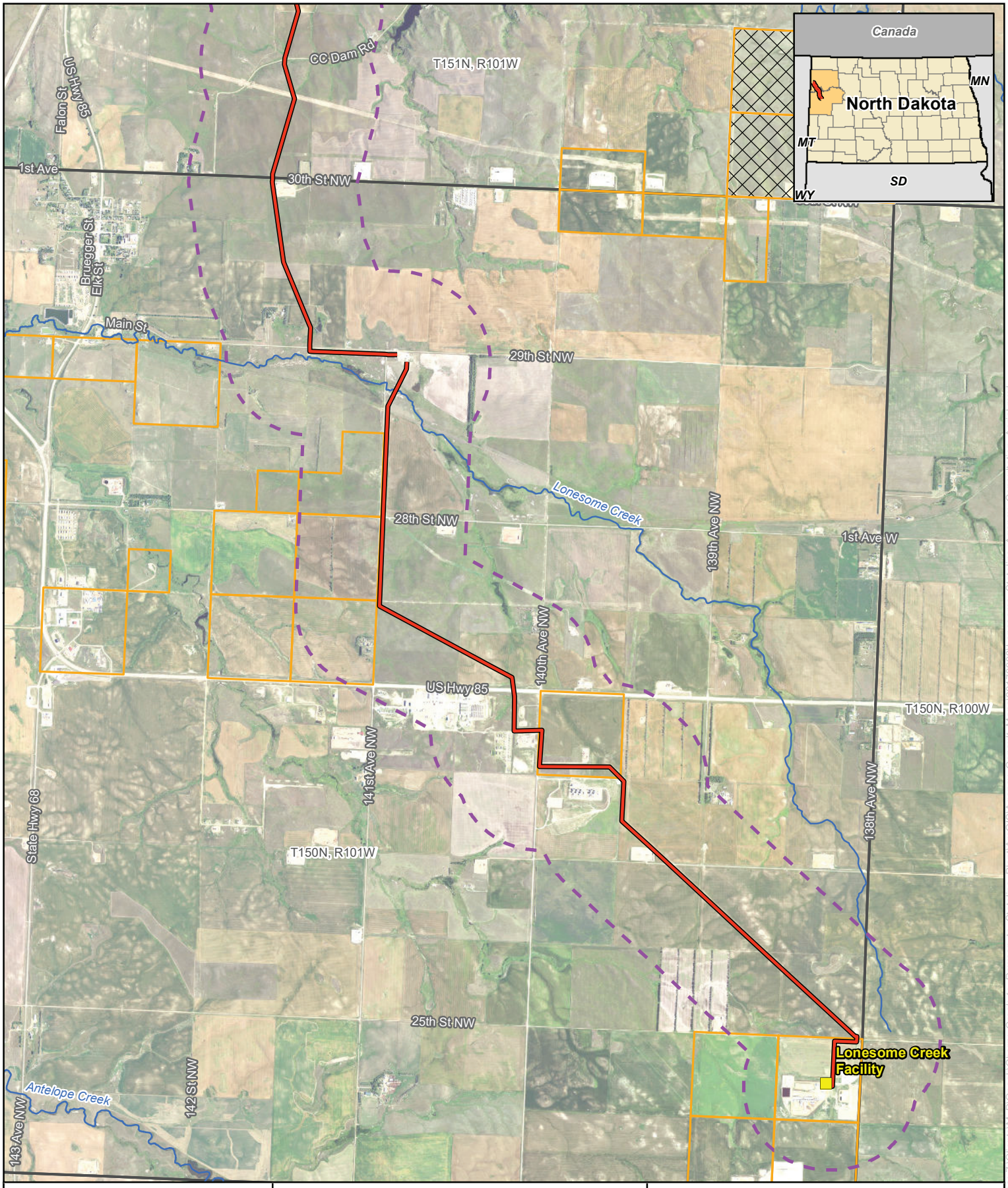

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Project Facilities(query)
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Federal and State Lands
McKenzie and Williams Counties, ND

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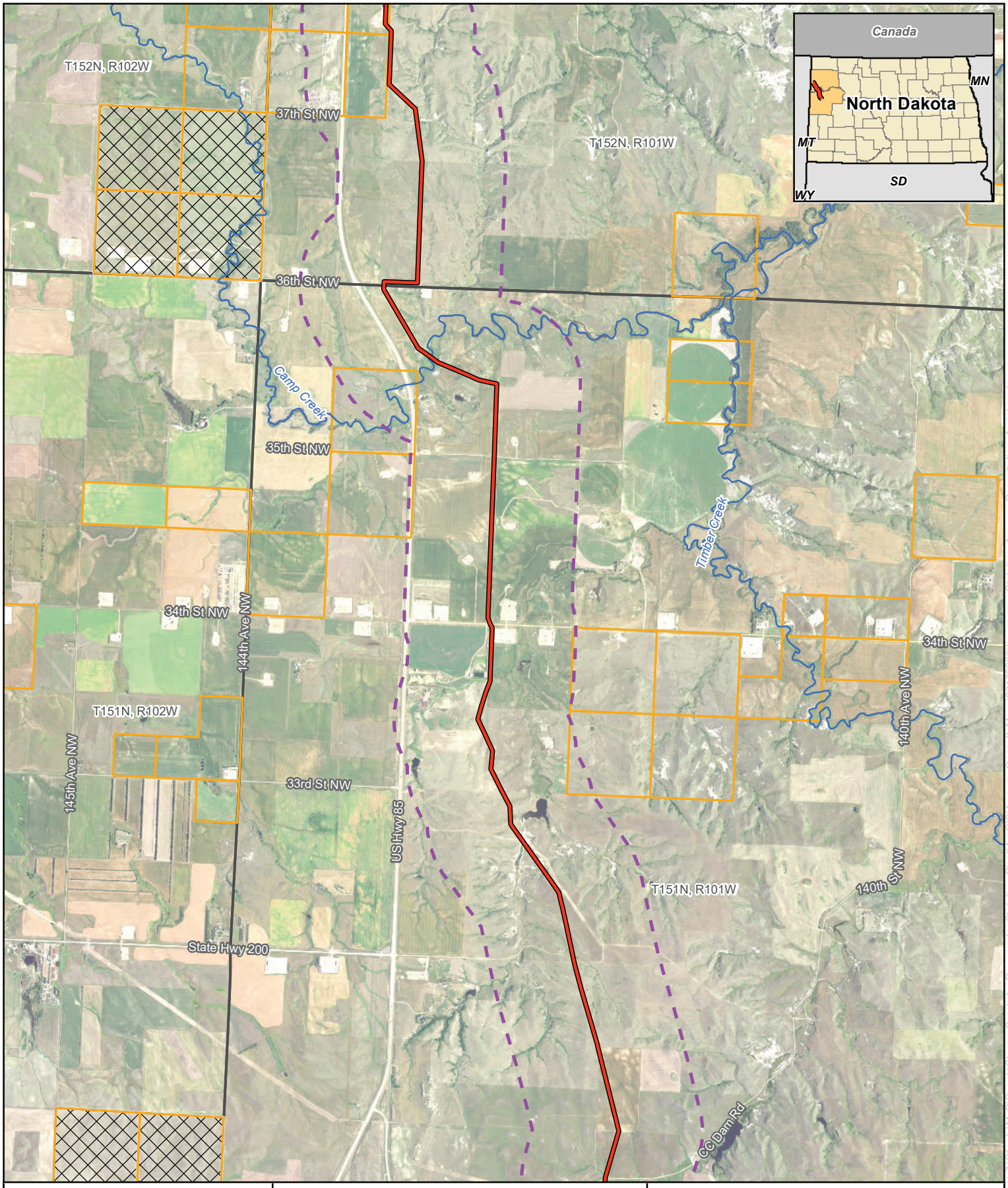

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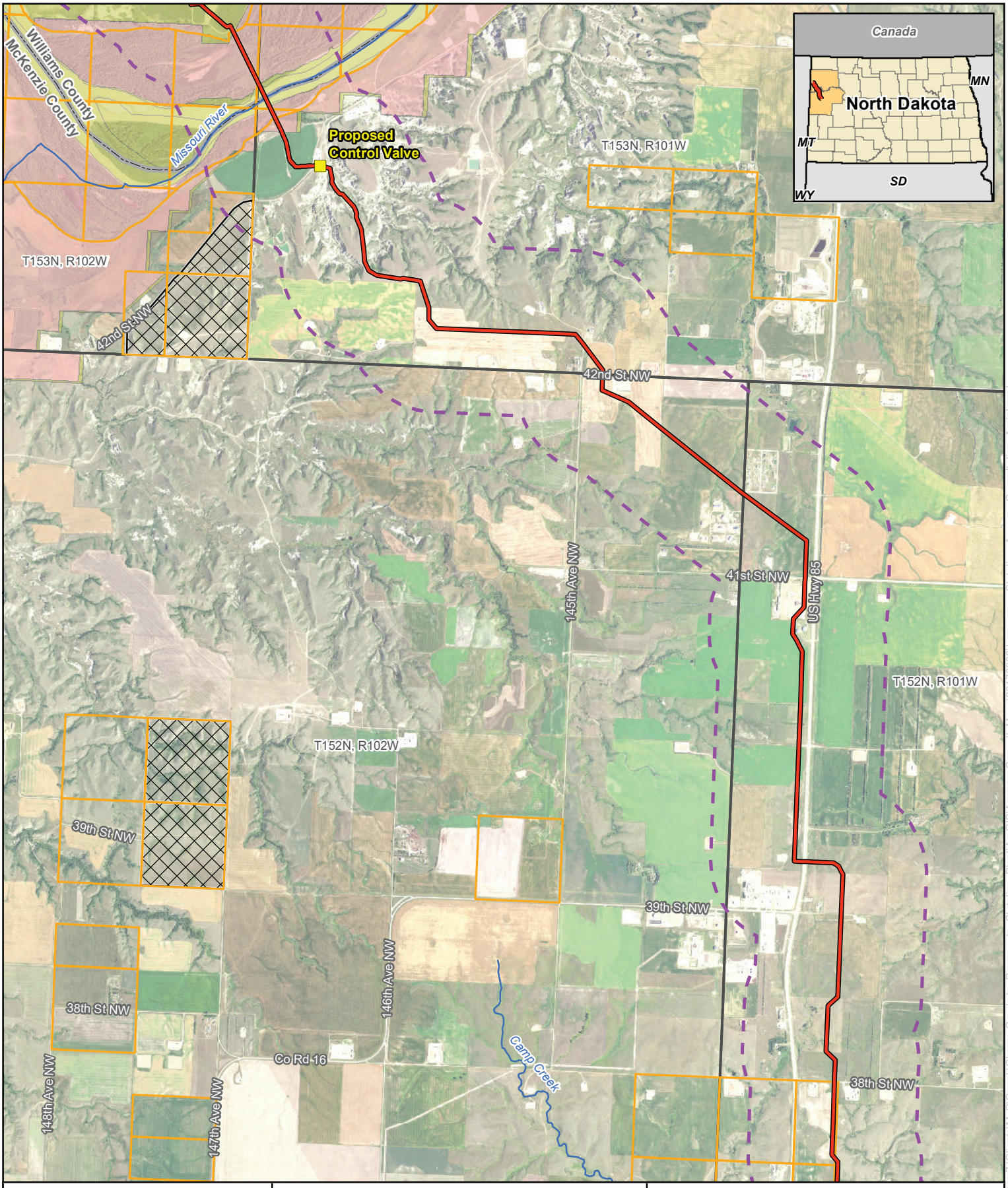

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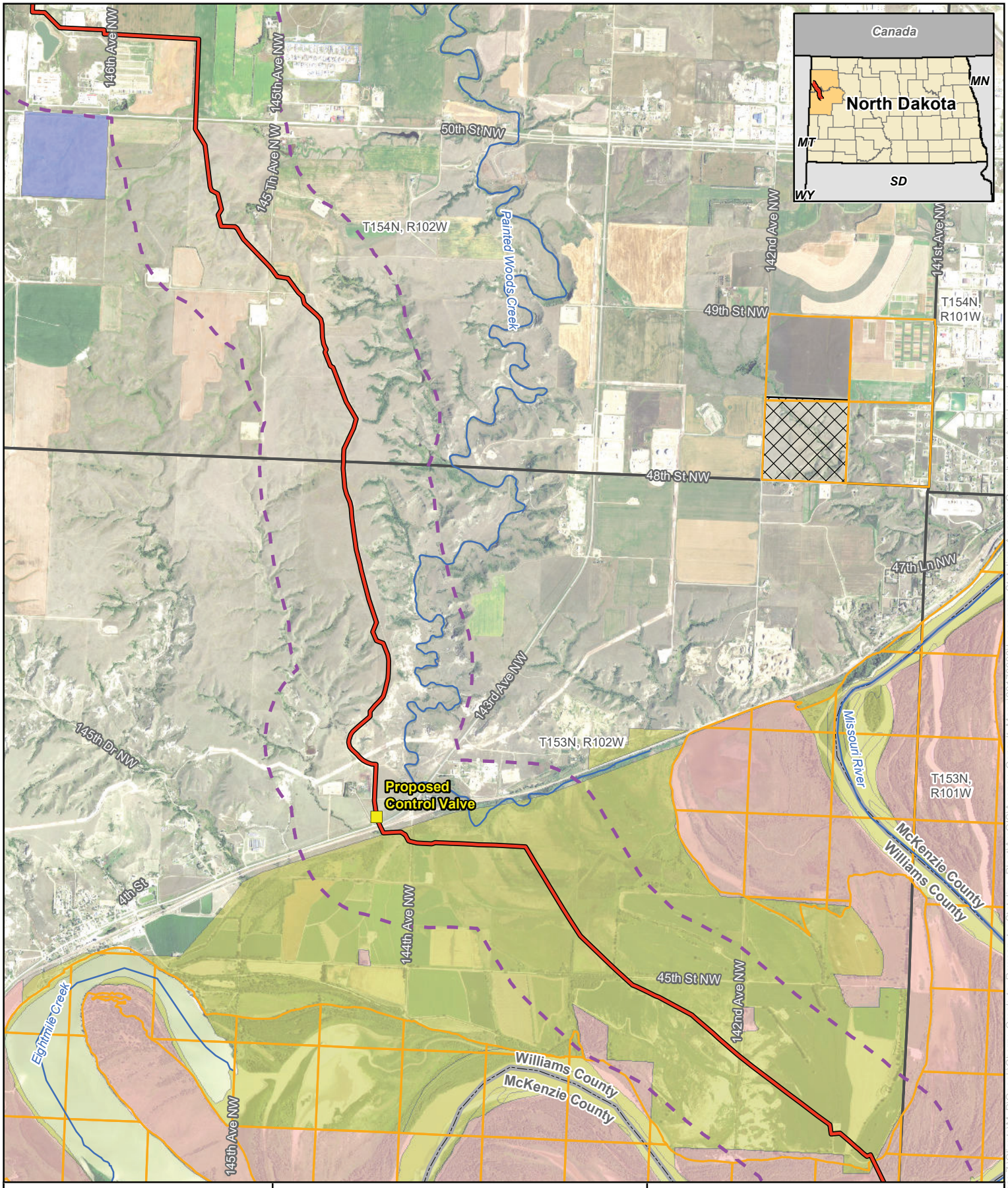
Date: (9/27/2017)



0 2,000 4,000 Feet

1 inch = 4,000 feet

N W E S

merjent

For Environmental Review Purposes Only

Page 4 of 5

ONEOK Bakken Pipeline

Lonesome Creek to Stateline

12" Pipeline Conversion

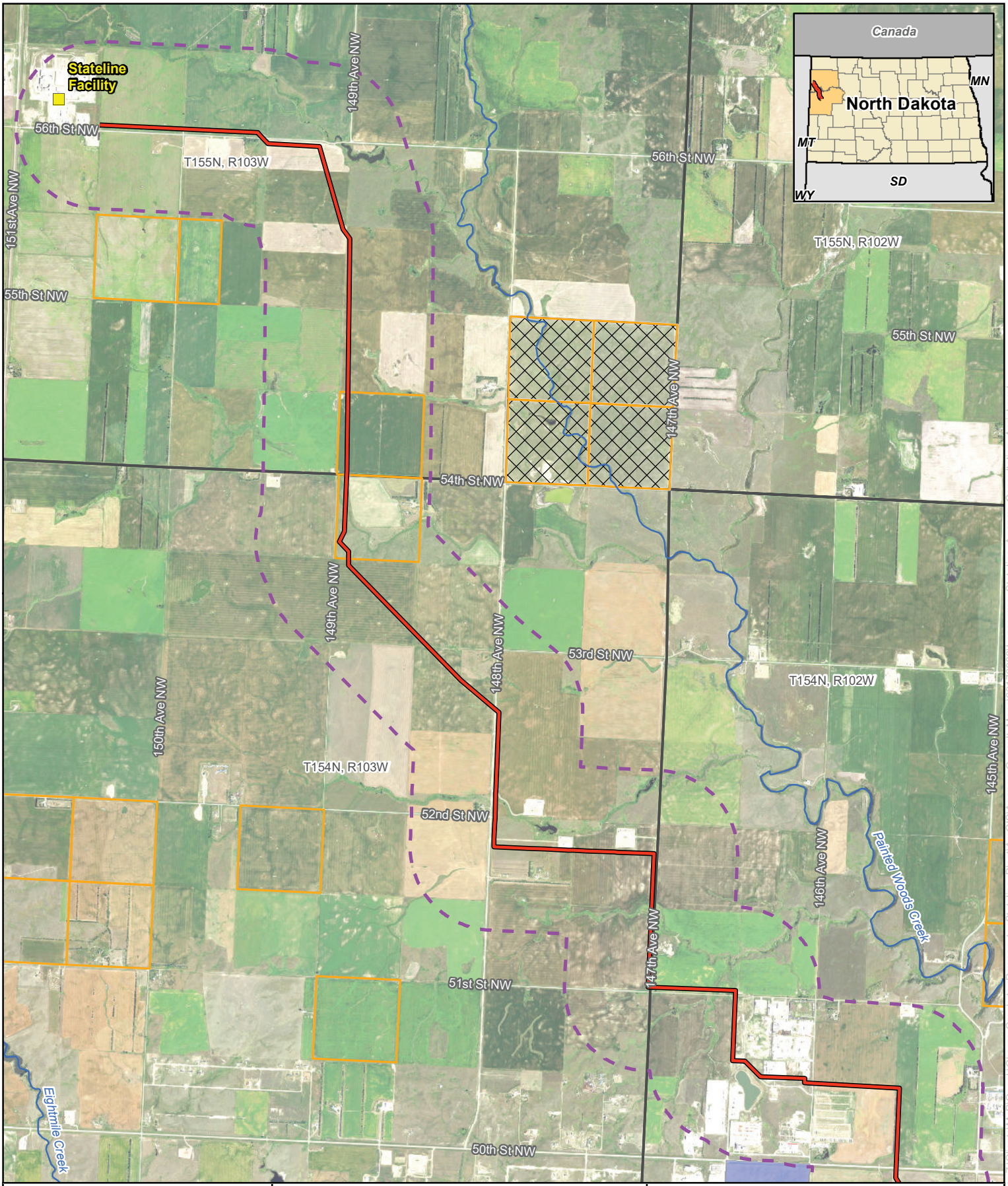
Federal and State Lands

McKenzie and Williams Counties, ND

- Project Facilities(query)
- Proposed Pipeline
- NHD Waterbody
- 1-Mile Buffer
- Township Boundary
- County Boundary
- ND Trust Land - Mineral
- ND School Trust Land
- USACE Lands
- American Indian Lands
- ND Game and Fish Land

Source: Z:\Clients\M_P\ONEOK\Cherry_Creek_to_Rawson_to_Stateline_Plant\ArcGIS\Agency_Consult_Maps\20170908Lonesome_Stateline_Agency_Consultation_Aerial.mxd

Date: (9/27/2017)



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N W E S

merjent

For Environmental Review Purposes Only

Page 5 of 5

ONEOK Bakken Pipeline

Lonesome Creek to Stateline

12" Pipeline Conversion

Federal and State Lands

McKenzie and Williams Counties, ND

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Source: Z:\Clients\W_P\ONEOK\Cherry_Creek_to_Rawson_to_Stateline_Plant\Arcd\SAgency_Consult_Maps\20170908Lonesome_Stateline_Agency_Consultation_Aerial.mxd

Date: (9/27/2017)

ONEOK

September 28, 2017

Delivered via email to:
Cy Munos, U.S. Department of Defense - Air Force Cable Affairs (cy.munos@us.af.mil)

RE: ONEOK Bakken NGL, L.L.C. – Lonesome Creek to Stateline 12" Pipeline Conversion Project
Project Notification and Request for Review

Dear Mr. Munos,

The ONEOK Bakken Pipeline, L.L.C (ONEOK) Lonesome Creek to Stateline 12" Pipeline Conversion Project (Project) is proposing to convert a pre-existing, idle 12-inch natural gas gathering pipeline into a natural gas liquids transmission pipeline. The Project extends approximately 45 miles in length from ONEOK's Lonesome Creek Facility in McKenzie County, North Dakota to its Stateline Facility in Williams County, North Dakota (see enclosed Project location maps).

The ground excavation work involved in the Project is limited to installing two remotely actuated control valves at existing aboveground valve settings located approximately 4 miles northwest of the pipeline's crossing of the Missouri River and 0.5 mile southeast of the pipeline's crossing of the Missouri River. Conversion of the pipeline's operation from gathering to transmission places the Project under the jurisdiction of the North Dakota Public Service Commission (NDPSC). ONEOK plans to submit an application to the NDPSC for a Certificate of Corridor Compatibility and Route Permit in the fall of 2017. Construction activities are proposed to begin in early 2018 and be completed in 1-2 months.

ONEOK respectfully submits a request for Project review from the U.S. Department of Defense, Air Force Cable Affairs regarding the location of intercontinental ballistic missiles and launch facilities near the Project. A copy of your response to this letter will be included in the application to the NDPSC. The enclosed Project maps depict the pipeline route and a one-mile-wide evaluation corridor. The Counties, Townships, Ranges, and Sections crossed by the Project in North Dakota are presented in the following table:

County	Township	Range	Sections
McKenzie	150 North	101 West	4, 9, 10, 15, 22, 23, 25, 26, 36
McKenzie	151 North	101 West	5, 6, 8, 17, 20, 21, 28, 33
McKenzie	152 North	101 West	6, 7, 18, 19, 30, 31
McKenzie	152 North	102 West	1
McKenzie	153 North	101 West	30, 31, 32, 33
Williams	153 North	102 West	4, 9, 14, 15, 16, 23, 24, 25
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County	Township	Range	Sections
Williams	154 North	103 West	2, 11, 12, 13
Williams	155 North	103 West	21, 22, 26, 27, 35

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Maddy Krumwiede of Merjent at 612-924-3973 or mkrumwiede@merjent.com or me at 918-246-4728 or Kevin.Windstrup@oneok.com.

Sincerely,

Kevin Windstrup
Senior Environmental Engineer
ONEOK, Inc.

Enclosures: Project Overview Maps
cc: Maddy Krumwiede, Merjent

Maddy Krumwiede

From: MUNOS, CY I GS-11 USAF AFGSC 91 MMXS/MMXSFK <cy.munos@us.af.mil>
Sent: Monday, October 2, 2017 7:49 AM
To: Maddy Krumwiede
Subject: RE: ONEOK Bakken Pipeline, L.L.C. Lonesome Creek to Stateline 12" Pipeline Conversion Project

Maddy,

The AF have no assets in your project area. Thanks.

Cy Munos
Chief, Cable Affairs
Minot AFB, ND
W. 701-723-6053
C. 701-720-8274

-----Original Message-----
From: Maddy Krumwiede [mailto:mkrumwiede@merjent.com]
Sent: Friday, September 29, 2017 9:32 PM
To: MUNOS, CY I GS-11 USAF AFGSC 91 MMXS/MMXSFK <cy.munos@us.af.mil>
Cc: Loretta M. Earnest - ONEOK (Loretta.Earnest@oneok.com) <Loretta.Earnest@oneok.com>; Windstrup, Kevin <Kevin.Windstrup@oneok.com>; Chad Anderson <canderson@merjent.com>
Subject: [Non-DoD Source] ONEOK Bakken Pipeline, L.L.C. Lonesome Creek to Stateline 12" Pipeline Conversion Project

Mr. Munos,

Merjent, on behalf of ONEOK Bakken Pipeline, L.L.C. (ONEOK), respectfully submits the attached letter regarding ONEOK's Lonesome Creek to Stateline 12" Pipeline Conversion Project. This project is under the jurisdiction of the North Dakota Public Service Commission, and copies of correspondence received in response to this letter will be included in ONEOK's Certificate of Corridor Compatibility and Route Permit application. We appreciate your review and response to this letter.

Kind regards,

Maddy Krumwiede

ONEOK

September 28, 2017

Delivered via email to:
Todd Hagel, USDA-NRCS Assistant State Conservationist (Programs) (todd.hagel@nd.usda.gov)
Kevin Seitz, Williams County SCD District Conservationist (kevin.seitz@nd.usda.gov)
Kyle Hartel, McKenzie County SCD District Conservationist (kyle.hartel@nd.usda.gov)

RE: ONEOK Bakken NGL, L.L.C. – Lonesome Creek to Stateline 12" Pipeline Conversion Project
Project Notification and Request for Review

Dear Mr. Hagel, Mr. Hartel and Mr. Seitz,

The ONEOK Bakken Pipeline, L.L.C (ONEOK) Lonesome Creek to Stateline 12" Pipeline Conversion Project (Project) is proposing to convert a pre-existing, idle 12-inch natural gas gathering pipeline into a natural gas liquids transmission pipeline. The Project extends approximately 45 miles in length from ONEOK's Lonesome Creek Facility in McKenzie County, North Dakota to its Stateline Facility in Williams County, North Dakota (see enclosed Project location maps).

The ground excavation work involved in the Project is limited to installing two remotely actuated control valves at existing aboveground valve settings located approximately 4 miles northwest of the pipeline's crossing of the Missouri River and 0.5 mile southeast of the pipeline's crossing of the Missouri River. Conversion of the pipeline's operation from gathering to transmission places the Project under the jurisdiction of the North Dakota Public Service Commission (NDPSC). ONEOK plans to submit an application to the NDPSC for a Certificate of Corridor Compatibility and Route Permit in the fall of 2017. Construction activities are proposed to begin in early 2018 and be completed in 1-2 months.

ONEOK respectfully submits a request for Project review from the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) regarding NRCS-administered lands and programs. A copy of your response to this letter will be included in the application to the NDPSC. The enclosed Project maps depict the pipeline route and a one-mile-wide evaluation corridor. The Counties, Townships, Ranges, and Sections crossed by the Project in North Dakota are presented in the following table:

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September 28, 2017
Mr. Hagel, Mr. Hartel and Mr. Seitz

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Williams	155 North	103 West	21, 22, 26, 27, 35

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Maddy Krumwiede of Merjent at 612-924-3973 or mkrumwiede@merjent.com or me at 918-246-4728 or Kevin.Windstrup@oneok.com.

Sincerely,

Kevin Windstrup
Senior Environmental Engineer
ONEOK, Inc.

Enclosures: Project Overview Maps
cc: Maddy Krumwiede, Merjent

Maddy Krumwiede

From: Hagel, Todd - NRCS, Bismarck, ND <Todd.Hagel@nd.usda.gov>
Sent: Monday, October 2, 2017 7:44 AM
To: Maddy Krumwiede; Seitz, Kevin - NRCS, Williston, ND; Hartel, Kyle - NRCS, Watford City, ND
Cc: Loretta M. Earnest - ONEOK (Loretta.Earnest@oneok.com); Windstrup, Kevin; Chad Anderson
Subject: RE: ONEOK Bakken Pipeline, L.L.C. Lonesome Creek to Stateline 12" Pipeline Conversion Project

I reviewed the proposed ONEOK pipeline right-of-way including its one mile buffer area. There are no NRCS stewardship land easement areas impacted by this proposed project. Let me know if you need anything else.

From: Maddy Krumwiede [mailto:mkrumwiede@merjent.com]
Sent: Friday, September 29, 2017 10:50 PM
To: Hagel, Todd - NRCS, Bismarck, ND <Todd.Hagel@nd.usda.gov>; Seitz, Kevin - NRCS, Williston, ND <Kevin.Seitz@nd.usda.gov>; Hartel, Kyle - NRCS, Watford City, ND <Kyle.Hartel@nd.usda.gov>
Cc: Loretta M. Earnest - ONEOK (Loretta.Earnest@oneok.com) <Loretta.Earnest@oneok.com>; Windstrup, Kevin <Kevin.Windstrup@oneok.com>; Chad Anderson <canderson@merjent.com>
Subject: ONEOK Bakken Pipeline, L.L.C. Lonesome Creek to Stateline 12" Pipeline Conversion Project

Mr. Hagel, Mr. Hartel and Mr. Seitz –

Merjent, on behalf of ONEOK Bakken Pipeline, L.L.C. (ONEOK), respectfully submits the attached letter regarding ONEOK's Lonesome Creek to Stateline 12" Pipeline Conversion Project. This project is under the jurisdiction of the North Dakota Public Service Commission, and copies of correspondence received in response to this letter will be included in ONEOK's Certificate of Corridor Compatibility and Route Permit application. We appreciate your review and response to this letter.

Kind regards,
Maddy Krumwiede

merjent

Madeline Krumwiede,
CPPM

TractorWorks Building
800 Washington Avenue N.
Suite 315
Minneapolis, MN 55401

612.746.3660 main
612.924.3973 direct
612.746.3679 fax

www.merjent.com
mkrumwiede@merjent.com

Merjent is proud to be one of America's Safest Companies

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ONEOK

September 29, 2017

Delivered via email to:
Brian Haugen, USDA-FSA State Executive Director (brian.haugen@nd.usda.gov)
Corey Paryzek, USDA-FSA Williams County Executive Director (corey.paryzek@nd.usda.gov)
Marcy Feilmeier, USDA-FSA McKenzie County Executive Director (Marcy.Feilmeier@nd.usda.gov)

RE: ONEOK Bakken NGL, L.L.C. – Lonesome Creek to Stateline 12" Pipeline Conversion Project
Project Notification and Request for Review

Dear Mr. Haugen, Mr. Paryzek, and Ms. Feilmeier,

The ONEOK Bakken Pipeline, L.L.C (ONEOK) Lonesome Creek to Stateline 12" Pipeline Conversion Project (Project) is proposing to convert a pre-existing, idle 12-inch natural gas gathering pipeline into a natural gas liquids transmission pipeline. The Project extends approximately 45 miles in length from ONEOK's Lonesome Creek Facility in McKenzie County, North Dakota to its Stateline Facility in Williams County, North Dakota (see enclosed Project location maps).

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ONEOK respectfully submits a request for Project review from the U.S. Department of Agriculture, Farm Service Agency (FSA) regarding FSA-administered lands and programs. A copy of your response to this letter will be included in the application to the NDPSC. The enclosed Project maps depict the pipeline route and a one-mile-wide evaluation corridor. The Counties, Townships, Ranges, and Sections crossed by the Project in North Dakota are presented in the following table:

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Sincerely,

Kevin Windstrup
Senior Environmental Engineer
ONEOK, Inc.

Enclosures: Project Overview Maps
cc: Maddy Krumwiede, Merjent

USDA

United States Department of Agriculture

October 2, 2017

United States Department of Agriculture

Farm and Foreign Agricultural Services

Farm Service Agency

North Dakota
Farm Service Agency
1025 28th St. South
Fargo, ND 58103

PH: (701) 239-5224
FAX: (855) 813-6644

Merjent, Inc.
C/O Madeline Krumwiede, CPPM
Tractor Works Building
800 Washington Ave, N. Suite 315
Minneapolis, MN 55401

Dear Ms. Krumwiede,

This letter is in response to your September 29, 2017 letter concerning the proposed Lonesome Creek natural gas conversion project in McKenzie and William Counties of North Dakota.

Based on the information in your September 29th letter, it is possible the project could begin in 2018, furthermore, it is unknown if, at any time, the project will be affecting land enrolled in the Conservation Reserve Program (CRP). Although the land enrolled in CRP is privately owned, FSA has administrative responsibilities to ensure the provisions of CRP are maintained throughout the contract period.

FSA is under no statutory based obligation to review the map data provided by Merjent, Inc., and evaluate the one-mile corridor centered along the route pipeline, nor make a determination if land contained within the one-mile project corridor may be enrolled in programs administered by FSA. Since FSA does not retain records categorized by pipeline routes or project corridors, FSDA is not required by statute to create records in order to respond to your request.

The land enrolled in CRP shall not have the cover disturbed during the Primary Nesting and Brood Rearing Season (PNS), which in North Dakota, is from April 15 through August 1. No activity is to take place on CRP during the PNS. However, there are exceptions to this provision. If disturbance of the existing cover is minimal, a waiver of this provision could be granted.

If the Lonesome Creek Project will need access to CRP during the PNS, a separate formal request to waive this provision must be submitted prior to any disturbance of CRP cover. Only the North Dakota State FSA Committee has the authority to grant a waiver of activity during the PNS. Therefore, if necessary, the request to disturb cover during the PNS shall be sent to the North Dakota State FSA Committee at the address provided in the letterhead of this letter. Such a request should include the proposed timeframe construction will occur, impact to the land enrolled in CRP and plans to restore CRP cover, if necessary.

If there are any questions, please contact this office.

Sincerely,

Brian Haugen
Acting State Executive Director

cc: McKenzie County FSA
Williams County FSA
Honeyman, DD
Leith, DD

USDA is an equal opportunity provider, employer and lender.

ONEOK

September 28, 2017

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

RE: ONEOK Bakken NGL, L.L.C. – Lonesome Creek to Stateline 12" Pipeline Conversion Project
Project Notification and Request for Review

Dear Mr. Link,

The ONEOK Bakken Pipeline, L.L.C (ONEOK) Lonesome Creek to Stateline 12" Pipeline Conversion Project (Project) is proposing to convert a pre-existing, idle 12-inch natural gas gathering pipeline into a natural gas liquids transmission pipeline. The Project extends approximately 45 miles in length from ONEOK's Lonesome Creek Facility in McKenzie County, North Dakota to its Stateline Facility in Williams County, North Dakota (see enclosed Project location maps).

The ground excavation work involved in the Project is limited to installing two remotely actuated control valves at existing aboveground valve settings located approximately 4 miles northwest of the pipeline's crossing of the Missouri River and 0.5 mile southeast of the pipeline's crossing of the Missouri River. Conversion of the pipeline's operation from gathering to transmission places the Project under the jurisdiction of the North Dakota Public Service Commission (NDPSC). ONEOK plans to submit an application to the NDPSC for a Certificate of Corridor Compatibility and Route Permit in the fall of 2017. Construction activities are proposed to begin in early 2018 and be completed in 1-2 months.

ONEOK respectfully submits a request for Project review from the North Dakota Department of Game and Fish for presence or absence of sensitive species, game refuge or game management lands, and Private Land Open to Sportsmen lands. A copy of your response to this letter will be included in the application to the NDPSC. The enclosed Project maps depict the pipeline route and a one-mile-wide evaluation corridor. The Counties, Townships, Ranges, and Sections crossed by the Project in North Dakota are presented in the following table:

County	Township	Range	Sections
McKenzie	150 North	101 West	4, 9, 10, 15, 22, 23, 25, 26, 36
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County	Township	Range	Sections
Williams	153 North	102 West	4, 9, 14, 15, 16, 23, 24, 25
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We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Maddy Krumwiede of Merjent at 612-924-3973 or mkrumwiede@merjent.com or me at 918-246-4728 or Kevin.Windstrup@oneok.com.

Sincerely,

Kevin Windstrup
Senior Environmental Engineer
ONEOK, Inc.

Enclosures: Project Overview Maps
cc: Maddy Krumwiede, Merjent
Andrea Sampson, Merjent

GOVERNOR, Doug Burgum
DIRECTOR, Terry Steinwand
DEPUTY, Scott A. Peterson

"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

RECEIVED
NOV 6 2017
ONEOK
CORP ENVIRONMENTAL

October 30, 2017

Kevin Windstrup
Senior Environmental Engineer
ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103

Dear Mr. Windstrup:

RE: Lonesome Creek to Stateline 12" Pipeline Conversion Project

ONEOK Bakken Pipeline, LLC is proposing to convert a pre-existing, idle 12-inch natural gas gathering pipeline into a natural gas liquids transmission pipeline. The project extends approximately 45 miles in length from ONEOK's Lonesome Creek Facility in McKenzie County to its Stateline Facility in Williams County, North Dakota. The North Dakota Game and Fish Department has reviewed this project for wildlife concerns.

The Department manages the Lewis & Clark Wildlife Management Area crossed in Section 30, T153N, R101W and the Trenton Wildlife Management Area crossed in Section 25, T153N, R102W. A special use permit may be required if any additional construction activity is proposed on these lands. Mr. Kent Luttschwager, Wildlife Resource Management Section Leader, can be contacted at 701-774-2780 for additional information on permit requirements.

A primary concern with pipeline projects is the possible disturbance of native prairie and wooded draws associated with construction of the pipeline and access roads. Avoidance of native prairie areas reduces impacts to a number of grassland species including many of the species of conservation priority. We ask that work within these areas be avoided to the extent possible, every effort be made to prevent destruction of woody vegetation, and disturbed areas be reclaimed to pre-project conditions.

The pipeline route crosses the Missouri River / Lake Sakakawea, a high-valued fishery resource. The Department recommends that additional precautions be implemented into the design of pipes crossing under the State's waterways. One means of minimizing a potentially large pipeline failure is to incorporate pressure sensing valves on both sides of the waterway. These valves should be placed as close to the waterway as possible while staying out of the floodplain to

reduce potential damage from ice and other floating debris. A maintenance schedule should be developed to insure the integrity of the pipe for the life of the project.

Aquatic nuisance species (ANS) are a major concern in North Dakota. State law requires that the contractor, including any and all subcontractors involved in this project, take appropriate precautions to prevent the introduction or movement of ANS within the state. The contractor should provide the department a reasonable opportunity to inspect any equipment prior to these items being launched or placed into waters of the state. The Department's Aquatic Nuisance Species Coordinator, Ms. Jessica Howell, can be contacted at 701-368-8368 for equipment inspections or additional information regarding ANS prevention protocols.

The National Wetland Inventory indicates a variety of 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. Unavoidable destruction or degradation of wetland acres should be mitigated in kind.

Aerial surveys should be conducted for raptor nests before construction begins. We recommend that a ½-mile construction buffer be implemented around active eagle nest sites (known occupied within the past 5 years). Ms. Sandra Johnson, Conservation Biologist, may be contacted at 701-328-6327 for additional information on golden eagle nest sites in the state.

We do not believe this project will have significant adverse effects on wildlife or wildlife habitat provided these recommendations were implemented in the construction of the project.

Sincerely,

(for) Greg Link
Chief
Conservation & Communication Division

js

September 28, 2017

Kathy Duttenhefner
North Dakota Department of Parks and Recreation
1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649

RE: ONEOK Bakken NGL, L.L.C. – Lonesome Creek to Stateline 12" Pipeline Conversion Project
Project Notification and Request for Review

Dear Ms. Duttenhefner,

The ONEOK Bakken Pipeline, L.L.C (ONEOK) Lonesome Creek to Stateline 12" Pipeline Conversion Project (Project) is proposing to convert a pre-existing, idle 12-inch natural gas gathering pipeline into a natural gas liquids transmission pipeline. The Project extends approximately 45 miles in length from ONEOK's Lonesome Creek Facility in McKenzie County, North Dakota to its Stateline Facility in Williams County, North Dakota (see enclosed Project location maps).

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ONEOK respectfully submits a request for Project review from the North Dakota Parks and Recreation Department of the North Dakota Natural Heritage Inventory system, and for presence or absence of state parks, recreation areas, natural areas, and land and water conservation fund projects. A copy of your response to this letter will be included in the application to the NDPSC. The enclosed Project maps depict the pipeline route and a one-mile-wide evaluation corridor. The Counties, Townships, Ranges, and Sections crossed by the Project in North Dakota are presented in the following table:

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Sincerely,

Kevin Windstrup
Senior Environmental Engineer
ONEOK, Inc.

Enclosures: Project Overview Maps
cc: Maddy Krumwiede, Merjent
Andrea Sampson, Merjent

Doug Bergum, Governor
Melissa Baker, 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

October 10, 2017

Kevin Windstrup
ONEOK
100 West 5th Street
Tulsa, OK 74103

Re: Bakken NGL LLC Lonesome Creek Stateline 12" Pipeline Conversion Project

Dear Mr. Windstrup,

The North Dakota Parks and Recreation Department has reviewed the above referenced proposal for the Bakken NGL LLC Lonesome Creek Stateline 12" Pipeline Conversion Project in McKenzie and Williams Counties.

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 affect Land and Water Conservation Fund (LWCF) project sites that we manage

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any current or historical 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, a couple aquatic species of concern have been identified within or adjacent to the project areas. Please refer to attached map and spreadsheet. 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. We defer an additional information regarding these species to the US Fish and Wildlife Service and/or ND Game and Fish Department.

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.

It is our policy to charge requests for data services including data retrieval, data analysis, manual and computer searches, packaging and collection of data. An invoice for services provided has been enclosed.

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 kgduttenhefner@nd.gov) of our staff. Thank you for the opportunity to comment on this proposed project.

Sincerely,

Kathy Duttenhefner, Coordinator
Natural Resources Division

R.USNDNHI*2017_058KD10/10/2017DL10.10.2017

ND Parks and Recreation Department

ND Natural Heritage Inventory
1600 East Century Ave., Suite 3
Bismarck, ND 58503-0649
(701) 328-5370 FAX: (701) 328-5363

INVOICE

INVOICE NO: 716
DATE: 10/10/2017

Kevin Windstrup
ONEOK
100 West 5th Street
Tulsa, OK 74103

CONTACT	REFERENCE NO.	DATE SHIPPED	SHIPPED VIA	F.O.B. POINT	TERMS
K.Duttenhefner	NHI_2017_058	9/29/2017	USPS		

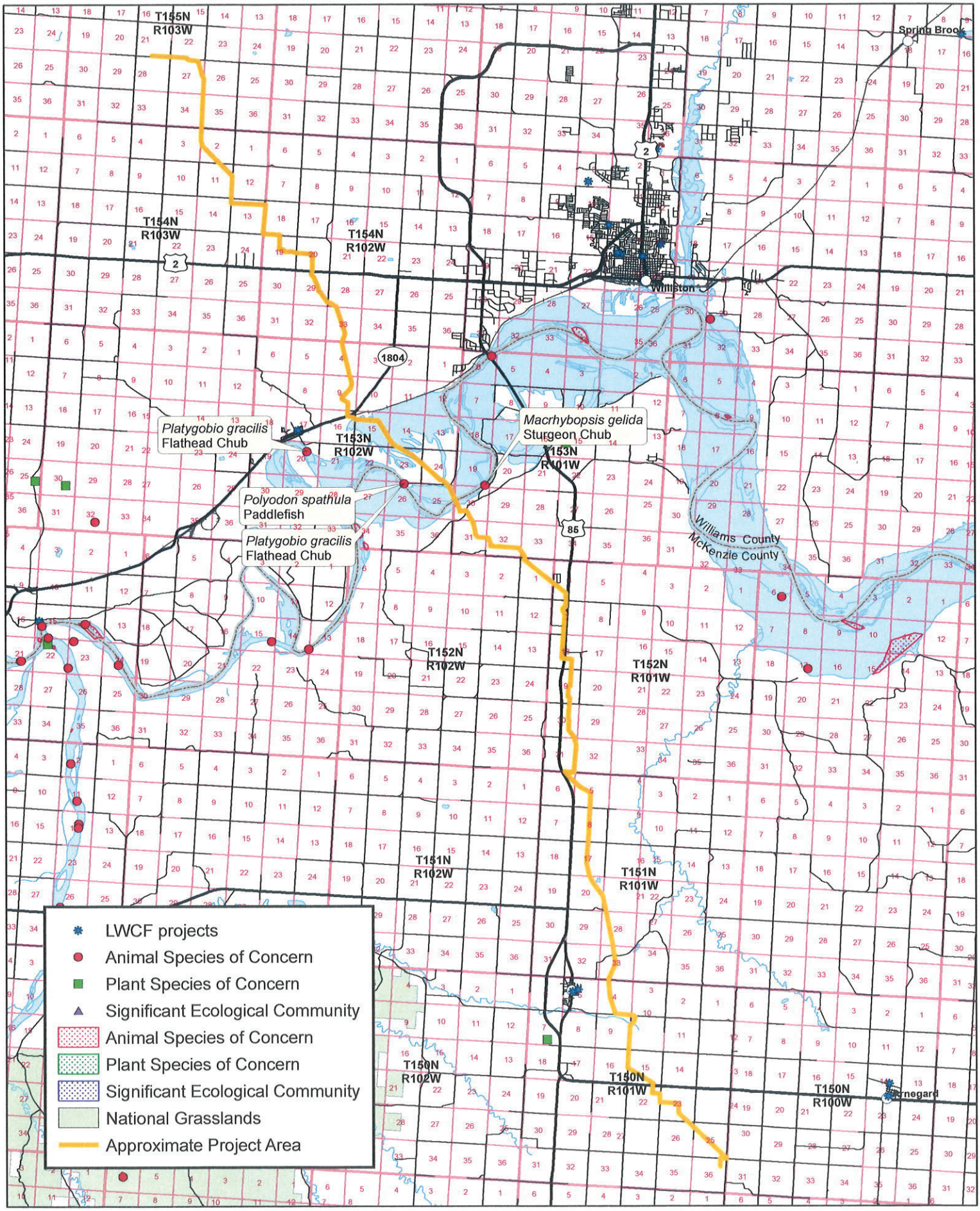
QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
1	Data retrieval, data analysis, manual and computer searches, packaging and collection of data. Digital data sumitted. Bakken NGL LLC Lonesome Creek Stateline 12" Pipeline Conversion Project	$ 60.00	$ 60.00
		SUBTOTAL	$ 60.00
		SALES TAX	
		SHIPPING & HANDLING	
		TOTAL DUE	$ 60.00

Make all checks payable to: ND Parks and Recreation Department
If you have any questions concerning this invoice, call: Kathy Duttenhefner, (701) 328-5370

THANK YOU FOR YOUR INTEREST IN RARE SPECIES CONSERVATION.

Entry Event	Fund	Dept.	Project	Activity
463021	398	1508	OR15082	15082

North Dakota Parks and Recreation Department
North Dakota Natural Heritage Inventory



October 2017

North Dakota Natural Heritage Inventory

Rare Animal and Plant Species and Significant Ecological Communities

State Scientific Name	State Common Name	State Rank	Global Rank	Federal Status	Township Range Section	County	Last Observation	Estimated Representation Accuracy	Precision
Macrhybopsis gelida	Sturgeon Chub	S2	G3		153N101W - 19; 153N101W - 30	McKenzie, Williams	1994-09-21		S
Platygobio gracilis	Flathead Chub	SNR	G5		153N102W - 20	Williams	1994-09-20		S
Platygobio gracilis	Flathead Chub	SNR	G5		153N102W - 26; 153N102W - 23	McKenzie, Williams	1993-08-06		S
Polyodon spathula	Paddlefish	SNR	G4		153N102W - 26; 153N102W - 23	McKenzie, Williams	1993-10-04		S

North Dakota Natural Heritage Inventory Biological and Conservation Data Disclaimer

The quantity and quality of data collected by the North Dakota Natural Heritage Inventory are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in North Dakota have never been thoroughly surveyed, and new species are still being discovered. For these reasons, the Natural Heritage Inventory cannot provide a definite statement on the presence, absence, or condition of biological elements in any part of North Dakota. Natural Heritage data summarize the existing information known at the time of the request. Our data are continually upgraded and information is continually being added to the database. This data should never be regarded as final statements on the elements or areas that are being considered, nor should they be substituted for on-site surveys.

Estimated Representation Accuracy

Value that indicates the approximate percentage of the Element Occurrence Representation (EO Rep) that was observed to be occupied by the species or community (versus buffer area added for locational uncertainty). Use of estimated representation accuracy provides a common index for the consistent comparison of EO reps, thus helping to ensure that aggregated data are correctly analyzed and interpreted.

Very high (>95%)
High (>80%, <= 95%)
Medium (>20%, <= 80%)
Low (>0%, <= 20%)
Unknown
(null) - Not assessed

Precision

A single-letter code for the precision used to map the Element Occurrence (EO) on a U.S. Geological Survey (USGS) 7.5' (or 15') topographic quadrangle map, based on the previous Heritage methodology in which EOs were located on paper maps using dots.

S - Seconds: accuracy of locality mappable within a three-second radius; 100 meters from the centerpoint
M - Minute: accuracy of locality mappable within a one-minute radius; 2 km from the centerpoint
G - General: accuracy of locality mappalbe to map or place name precision only; 8 km from centerpoint
U - Unmappable

ONEOK

September 29, 2017

Delivered via email to:
Allisen Bement, NDTL – Mineral Trust Lands, Land Professional (abement@nd.gov)

RE: ONEOK Bakken NGL, L.L.C. – Lonesome Creek to Stateline 12" Pipeline Conversion Project
Project Notification and Request for Review

Dear Ms. Bement,

The ONEOK Bakken Pipeline, L.L.C (ONEOK) Lonesome Creek to Stateline 12" Pipeline Conversion Project (Project) is proposing to convert a pre-existing, idle 12-inch natural gas gathering pipeline into a natural gas liquids transmission pipeline. The Project extends approximately 45 miles in length from ONEOK's Lonesome Creek Facility in McKenzie County, North Dakota to its Stateline Facility in Williams County, North Dakota (see enclosed Project location maps).

The ground excavation work involved in the Project is limited to installing two remotely actuated control valves at existing aboveground valve settings located approximately 4 miles northwest of the pipeline's crossing of the Missouri River and 0.5 mile southeast of the pipeline's crossing of the Missouri River. Conversion of the pipeline's operation from gathering to transmission places the Project under the jurisdiction of the North Dakota Public Service Commission (NDPSC). ONEOK plans to submit an application to the NDPSC for a Certificate of Corridor Compatibility and Route Permit in the fall of 2017. Construction activities are proposed to begin in early 2018 and be completed in 1-2 months.

ONEOK respectfully submits a request for Project review from the North Dakota Department of Trust Lands regarding the location of Mineral Trust Lands. A copy of your response to this letter will be included in the application to the NDPSC. The enclosed Project maps depict the pipeline route and a one-mile-wide evaluation corridor. The Counties, Townships, Ranges, and Sections crossed by the Project in North Dakota are presented in the following table:

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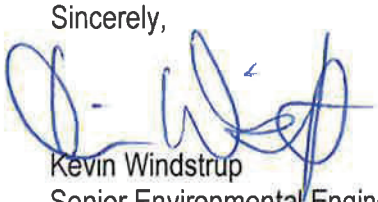
Williams	154 North	103 West	2, 11, 12, 13
Williams	155 North	103 West	21, 22, 26, 27, 35

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Maddy Krumwiede of Merjent at 612-924-3973 or mkrumwiede@merjent.com or me at 918-246-4728 or Kevin.Windstrup@oneok.com.

Sincerely,



Kevin Windstrup
Senior Environmental Engineer
ONEOK, Inc.

Enclosures: Project Overview Maps
cc: Maddy Krumwiede, Merjent

Maddy Krumwiede

From: Bement, Allisen C. <abement@nd.gov>
Sent: Wednesday, October 4, 2017 1:12 PM
To: Maddy Krumwiede
Cc: 'Loretta M. Earnest - ONEOK (Loretta.Earnest@oneok.com)'; 'Windstrup, Kevin'; Chad Anderson
Subject: RE: ONEOK Bakken Pipeline, L.L.C. Lonesome Creek to Stateline 12" Pipeline Conversion Project

Maddy,

We agree that the data provided represents the approximate location of the Lonesome Creek to Stateline Conversion Project and the proximity of mineral interests managed by this office, for use in a filing with the PSC in the state of North Dakota.

Allisen Bement, RPL
Land Professional
ND Department of Trust Lands
701.328.1952
abement@nd.gov

From: Maddy Krumwiede [mailto:mkrumwiede@merjent.com]
Sent: Friday, September 29, 2017 10:42 PM
To: Bement, Allisen C. <abement@nd.gov>
Cc: Loretta M. Earnest - ONEOK (Loretta.Earnest@oneok.com) <Loretta.Earnest@oneok.com>; Windstrup, Kevin <Kevin.Windstrup@oneok.com>; Chad Anderson <canderson@merjent.com>
Subject: ONEOK Bakken Pipeline, L.L.C. Lonesome Creek to Stateline 12" Pipeline Conversion Project

CAUTION: This email originated from an outside source. Do not click links or open attachments unless you know they are safe.

Ms. Bement,

Merjent, on behalf of ONEOK Bakken Pipeline, L.L.C. (ONEOK), respectfully submits the attached letter regarding ONEOK's Lonesome Creek to Stateline 12" Pipeline Conversion Project. This project is under the jurisdiction of the North Dakota Public Service Commission, and copies of correspondence received in response to this letter will be included in ONEOK's Certificate of Corridor Compatibility and Route Permit application. We appreciate your review and response to this letter.

Kind regards,
Maddy Krumwiede

merjent

Madeline Krumwiede,
CPPM

TractorWorks Building
800 Washington Avenue N.
Suite 315
Minneapolis, MN 55401

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612.924.3973 direct
612.746.3679 fax

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mkrumwiede@merjent.com

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ONEOK

September 28, 2017

Delivered via email to:
Joseph Stegmiller, NDTL – School Trust Lands, Natural Resource Professional (jstegmiller@nd.gov)

RE: ONEOK Bakken NGL, L.L.C. – Lonesome Creek to Stateline 12" Pipeline Conversion Project
Project Notification and Request for Review

Dear Mr. Stegmiller,

The ONEOK Bakken Pipeline, L.L.C (ONEOK) Lonesome Creek to Stateline 12" Pipeline Conversion Project (Project) is proposing to convert a pre-existing, idle 12-inch natural gas gathering pipeline into a natural gas liquids transmission pipeline. The Project extends approximately 45 miles in length from ONEOK's Lonesome Creek Facility in McKenzie County, North Dakota to its Stateline Facility in Williams County, North Dakota (see enclosed Project location maps).

The ground excavation work involved in the Project is limited to installing two remotely actuated control valves at existing aboveground valve settings located approximately 4 miles northwest of the pipeline's crossing of the Missouri River and 0.5 mile southeast of the pipeline's crossing of the Missouri River. Conversion of the pipeline's operation from gathering to transmission places the Project under the jurisdiction of the North Dakota Public Service Commission (NDPSC). ONEOK plans to submit an application to the NDPSC for a Certificate of Corridor Compatibility and Route Permit in the fall of 2017. Construction activities are proposed to begin in early 2018 and be completed in 1-2 months.

ONEOK respectfully submits a request for Project review from the North Dakota Department of Trust Lands regarding the location of School Trust Lands. A copy of your response to this letter will be included in the application to the NDPSC. The enclosed Project maps depict the pipeline route and a one-mile-wide evaluation corridor. The Counties, Townships, Ranges, and Sections crossed by the Project in North Dakota are presented in the following table:

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McKenzie	150 North	101 West	4, 9, 10, 15, 22, 23, 25, 26, 36
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Williams	154 North	102 West	18, 19, 20, 28, 29, 33
Williams	154 North	103 West	2, 11, 12, 13
Williams	155 North	103 West	21, 22, 26, 27, 35

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

September 28, 2017

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Maddy Krumwiede of Merjent at 612-924-3973 or mkrumwiede@merjent.com or me at 918-246-4728 or Kevin.Windstrup@oneok.com.

Sincerely,

Kevin Windstrup
Senior Environmental Engineer
ONEOK, Inc.

Enclosures: Project Overview Maps
cc: Maddy Krumwiede, Merjent

Maddy Krumwiede

From: Stegmiller, Joseph H. <jstegmiller@nd.gov>
Sent: Monday, October 2, 2017 10:56 AM
To: Maddy Krumwiede
Cc: Loretta M. Earnest - ONEOK (Loretta.Earnest@oneok.com); Windstrup, Kevin; Chad Anderson; Humann, Michael T.
Subject: RE: ONEOK Bakken Pipeline, L.L.C. Lonesome Creek to Stateline 12" Pipeline Conversion Project

Ms. Krumwiede,

The Department of Trust Lands has reviewed the proposed Lonesome Creek to Stateline 12" Pipeline Conversion Project. Neither the existing pipeline nor the proposed controlled valves involve surface acres managed by the Department of Trust Lands. Therefore, the surface management division has no further actions or comments on the proposed project.

Joseph H. Stegmiller
Natural Resources Professional
North Dakota Department of Trust Lands
1707 N 9th Street
Bismarck ND 58506-5523
PH: (701)328-1912

From: Maddy Krumwiede [mailto:mkrumwiede@merjent.com]
Sent: Friday, September 29, 2017 11:04 PM
To: Stegmiller, Joseph H. <jstegmiller@nd.gov>
Cc: Loretta M. Earnest - ONEOK (Loretta.Earnest@oneok.com) <Loretta.Earnest@oneok.com>; Windstrup, Kevin <Kevin.Windstrup@oneok.com>; Chad Anderson <canderson@merjent.com>
Subject: ONEOK Bakken Pipeline, L.L.C. Lonesome Creek to Stateline 12" Pipeline Conversion Project

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Mr. Stegmiller –

Merjent, on behalf of ONEOK Bakken Pipeline, L.L.C. (ONEOK), respectfully submits the attached letter regarding ONEOK's Lonesome Creek to Stateline 12" Pipeline Conversion Project. This project is under the jurisdiction of the North Dakota Public Service Commission, and copies of correspondence received in response to this letter will be included in ONEOK's Certificate of Corridor Compatibility and Route Permit application. We appreciate your review and response to this letter.

Kind regards,
Maddy Krumwiede

merjent

Madeline Krumwiede,
CPPM

TractorWorks Building 612.746.3660 main

800 Washington Avenue N.
Suite 315
Minneapolis, MN 55401

612.924.3973 direct
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ONEOK

September 28, 2017

Delivered via email to:
Jeff Shaffer, McKenzie County Water Resource District Director (jshaffer@co.mckenzie.nd.us)

RE: ONEOK Bakken NGL, L.L.C. – Lonesome Creek to Stateline 12" Pipeline Conversion Project
Project Notification and Request for Review

Dear Mr. Shaffer,

The ONEOK Bakken Pipeline, L.L.C (ONEOK) Lonesome Creek to Stateline 12" Pipeline Conversion Project (Project) is proposing to convert a pre-existing, idle 12-inch natural gas gathering pipeline into a natural gas liquids transmission pipeline. The Project extends approximately 45 miles in length from ONEOK's Lonesome Creek Facility in McKenzie County, North Dakota to its Stateline Facility in Williams County, North Dakota (see enclosed Project location maps).

The ground excavation work involved in the Project is limited to installing two remotely actuated control valves at existing aboveground valve settings located approximately 4 miles northwest of the pipeline's crossing of the Missouri River and 0.5 mile southeast of the pipeline's crossing of the Missouri River. Conversion of the pipeline's operation from gathering to transmission places the Project under the jurisdiction of the North Dakota Public Service Commission (NDPSC). ONEOK plans to submit an application to the NDPSC for a Certificate of Corridor Compatibility and Route Permit in the fall of 2017. Construction activities are proposed to begin in early 2018 and be completed in 1-2 months.

ONEOK respectfully submits a request for Project review from the McKenzie County Water Resource District regarding ditches/drains, drainage, permits or other matters that may relate to the Project. A copy of your response to this letter will be included in the application to the NDPSC. The enclosed Project maps depict the pipeline route and a one-mile-wide evaluation corridor. The Counties, Townships, Ranges, and Sections crossed by the Project in North Dakota are presented in the following table:

County	Township	Range	Sections
McKenzie	150 North	101 West	4, 9, 10, 15, 22, 23, 25, 26, 36
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Williams	153 North	102 West	4, 9, 14, 15, 16, 23, 24, 25
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Williams	154 North	103 West	2, 11, 12, 13

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

September 28, 2017

County	Township	Range	Sections
Williams	155 North	103 West	21, 22, 26, 27, 35

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Maddy Krumwiede of Merjent at 612-924-3973 or mkrumwiede@merjent.com or me at 918-246-4728 or Kevin.Windstrup@oneok.com.

Sincerely,

Kevin Windstrup
Senior Environmental Engineer
ONEOK, Inc.

Enclosures: Project Overview Maps
cc: Maddy Krumwiede, Merjent

ONEOK

September 28, 2017

Delivered via email to:
Amber Higgins, McKenzie County Weed Control Officer (mcweed@restel.net)

RE: ONEOK Bakken NGL, L.L.C. – Lonesome Creek to Stateline 12" Pipeline Conversion Project
Project Notification and Request for Review

Dear Ms. Higgins,

The ONEOK Bakken Pipeline, L.L.C (ONEOK) Lonesome Creek to Stateline 12" Pipeline Conversion Project (Project) is proposing to convert a pre-existing, idle 12-inch natural gas gathering pipeline into a natural gas liquids transmission pipeline. The Project extends approximately 45 miles in length from ONEOK's Lonesome Creek Facility in McKenzie County, North Dakota to its Stateline Facility in Williams County, North Dakota (see enclosed Project location maps).

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ONEOK respectfully submits a request for Project review from the McKenzie County Weed Board regarding the location of weeds and weed control recommendations as it may relate to the Project. A copy of your response to this letter will be included in the application to the NDPSC. The enclosed Project maps depict the pipeline route and a one-mile-wide evaluation corridor. The Counties, Townships, Ranges, and Sections crossed by the Project in North Dakota are presented in the following table:

County	Township	Range	Sections
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We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Maddy Krumwiede of Merjent at 612-924-3973 or mkrumwiede@merjent.com or me at 918-246-4728 or Kevin.Windstrup@oneok.com.

Sincerely,

Kevin Windstrup
Senior Environmental Engineer
ONEOK, Inc.

Enclosures: Project Overview Maps
cc: Maddy Krumwiede, Merjent

Chad Anderson

From: Amber Higgins <mcweed@restel.net>
Sent: Monday, October 2, 2017 7:38 AM
To: Maddy Krumwiede
Subject: RE: ONEOK Bakken Pipeline, L.L.C. Lonesome Creek to Stateline 12" Pipeline Conversion Project
Attachments: Weed Management Plan - Copy.doc

Maddy-

Good morning, can you fill out the attachment and get it back to me? This is Weed Controls Weed Management Plan. F you have any questions feel free to contact me!

Amber Higgins#
P fNhq}lh#Frxqw|#Z hhg#R iilfhu#
Skrqh0#:340;7507464#
Id{#0:340;757:64#

From: Maddy Krumwiede [mailto:mkrumwiede@merjent.com]
Sent: Friday, September 29, 2017 10:06 PM
To: mcweed@restel.net
Cc: Loretta M. Earnest - ONEOK (Loretta.Earnest@oneok.com); Windstrup, Kevin; Chad Anderson
Subject: ONEOK Bakken Pipeline, L.L.C. Lonesome Creek to Stateline 12" Pipeline Conversion Project

Ms. Higgins,

Merjent, on behalf of ONEOK Bakken Pipeline, L.L.C. (ONEOK), respectfully submits the attached letter regarding ONEOK's Lonesome Creek to Stateline 12" Pipeline Conversion Project. This project is under the jurisdiction of the North Dakota Public Service Commission, and copies of correspondence received in response to this letter will be included in ONEOK's Certificate of Corridor Compatibility and Route Permit application. We appreciate your review and response to this letter.

Kind regards,
Maddy Krumwiede

merjent

Madeline Krumwiede,
CPPM

TractorWorks Building
800 Washington Avenue N.
Suite 315
Minneapolis, MN 55401

612.746.3660 main
612.924.3973 direct
612.746.3679 fax

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ONEOK

September 28, 2017

Delivered via email to:
Beth, Williams County Water Resource Board (Bethi@co.williams.nd.us)

RE: ONEOK Bakken NGL, L.L.C. – Lonesome Creek to Stateline 12" Pipeline Conversion Project
Project Notification and Request for Review

To whom it may concern,

The ONEOK Bakken Pipeline, L.L.C (ONEOK) Lonesome Creek to Stateline 12" Pipeline Conversion Project (Project) is proposing to convert a pre-existing, idle 12-inch natural gas gathering pipeline into a natural gas liquids transmission pipeline. The Project extends approximately 45 miles in length from ONEOK's Lonesome Creek Facility in McKenzie County, North Dakota to its Stateline Facility in Williams County, North Dakota (see enclosed Project location maps).

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ONEOK respectfully submits a request for Project review from the Williams County Water Resource Board regarding ditches/drains, drainage, permits or other matters that may relate to the Project. A copy of your response to this letter will be included in the application to the NDPSC. The enclosed Project maps depict the pipeline route and a one-mile-wide evaluation corridor. The Counties, Townships, Ranges, and Sections crossed by the Project in North Dakota are presented in the following table:

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Williams	155 North	103 West	21, 22, 26, 27, 35

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Tulsa, OK 74103
www.oneok.com

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Maddy Krumwiede of Merjent at 612-924-3973 or mkrumwiede@merjent.com or me at 918-246-4728 or Kevin.Windstrup@oneok.com.

Sincerely,

Kevin Windstrup
Senior Environmental Engineer
ONEOK, Inc.

Enclosures: Project Overview Maps
cc: Maddy Krumwiede, Merjent

ONEOK

September 28, 2017

Delivered via email to:
Jerry Summerville, Williams County Weed Control Officer (jerrys@co.williams.nd.us)

RE: ONEOK Bakken NGL, L.L.C. – Lonesome Creek to Stateline 12" Pipeline Conversion Project
Project Notification and Request for Review

Dear Mr. Summerville,

The ONEOK Bakken Pipeline, L.L.C (ONEOK) Lonesome Creek to Stateline 12" Pipeline Conversion Project (Project) is proposing to convert a pre-existing, idle 12-inch natural gas gathering pipeline into a natural gas liquids transmission pipeline. The Project extends approximately 45 miles in length from ONEOK's Lonesome Creek Facility in McKenzie County, North Dakota to its Stateline Facility in Williams County, North Dakota (see enclosed Project location maps).

The ground excavation work involved in the Project is limited to installing two remotely actuated control valves at existing aboveground valve settings located approximately 4 miles northwest of the pipeline's crossing of the Missouri River and 0.5 mile southeast of the pipeline's crossing of the Missouri River. Conversion of the pipeline's operation from gathering to transmission places the Project under the jurisdiction of the North Dakota Public Service Commission (NDPSC). ONEOK plans to submit an application to the NDPSC for a Certificate of Corridor Compatibility and Route Permit in the fall of 2017. Construction activities are proposed to begin in early 2018 and be completed in 1-2 months.

ONEOK respectfully submits a request for Project review from the Williams County Weed Control Department regarding the location of weeds and weed control recommendations as it may relate to the Project. A copy of your response to this letter will be included in the application to the NDPSC. The enclosed Project maps depict the pipeline route and a one-mile-wide evaluation corridor. The Counties, Townships, Ranges, and Sections crossed by the Project in North Dakota are presented in the following table:

County	Township	Range	Sections
McKenzie	150 North	101 West	4, 9, 10, 15, 22, 23, 25, 26, 36
McKenzie	151 North	101 West	5, 6, 8, 17, 20, 21, 28, 33
McKenzie	152 North	101 West	6, 7, 18, 19, 30, 31
McKenzie	152 North	102 West	1
McKenzie	153 North	101 West	30, 31, 32, 33
Williams	153 North	102 West	4, 9, 14, 15, 16, 23, 24, 25
Williams	154 North	102 West	18, 19, 20, 28, 29, 33
Williams	154 North	103 West	2, 11, 12, 13
Williams	155 North	103 West	21, 22, 26, 27, 35

ONEOK, Inc.
100 West Fifth Street
Tulsa, OK 74103
www.oneok.com

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. ONEOK has retained Merjent, Inc. (Merjent) as its environmental consultant for this project. Should you have any questions or require additional information, please contact Maddy Krumwiede of Merjent at 612-924-3973 or mkrumwiede@merjent.com or me at 918-246-4728 or Kevin.Windstrup@oneok.com.

Sincerely,

Kevin Windstrup
Senior Environmental Engineer
ONEOK, Inc.

Enclosures: Project Overview Maps
cc: Maddy Krumwiede, Merjent

November 9, 2017

RE: ONEOK Rockies Midstream, L.L.C. – Lonesome Creek to Stateline NGL conversion
Project notification and request for review

Dear Mr. Anderson,

Please review the attached site map, noting the existing location of an underground pipeline and associated facilities included in the Lonesome Creek to Stateline 12" NGL Conversion project's application, which ONEOK Rockies Midstream, L.L.C. intends to file with the North Dakota Public Service Commission. The project involves the conversion of approximately 45 miles of existing 12-inch-diameter steel pipeline in Williams and McKenzie Counties, ND from its current use as a natural gas gathering pipeline to an NGL transmission pipeline.

The attached site map indicates that the project is located within 500 feet of your residence or business. By signing below, you are confirming that you have no objection to the project, or the future, continued operation and maintenance of the pipeline. Since the pipeline and facilities are existing, no construction activities will occur near your residence or business as a result of the conversion. Your cordial cooperation in this matter is greatly appreciated.

Respectfully,

Tom Giltner
Contract Land Agent
ONEOK Rockies Midstream, L.L.C.

Arnold L Anderson

By: Arnold Anderson

11-15-17

Date

ONEOK
ROCKIES MIDSTREAM
A SUBSIDIARY OF ONEOK PARTNERS

November 6, 2017

Ms. Cassandra Figaro, as Trustee of the Cassandra Figaro Trust
88005 Overseas Hwy, Ste 10-135
Islamorada, FL 33036-6000

RE: ONEOK Rockies Midstream, L.L.C. – Lonesome Creek to Stateline NGL conversion
Project notification and request for review

Dear Ms. Figaro,

Please review the attached site map, noting the existing location of an underground pipeline and associated facilities included in the Lonesome Creek to Stateline 12" NGL Conversion project's application, which ONEOK Rockies Midstream, L.L.C. intends to file with the North Dakota Public Service Commission. The project involves the conversion of approximately 45 miles of existing 12-inch-diameter steel pipeline in Williams and McKenzie Counties, ND from its current use as a natural gas gathering pipeline to an NGL transmission pipeline.

The attached site map indicates that the project is located within 500 feet of your residence or business. By signing below, you are confirming that you have no objection to the project, or the future, continued operation and maintenance of the pipeline. Since the pipeline and facilities are existing, no construction activities will occur near your residence or business as a result of the conversion. Your cordial cooperation in this matter is greatly appreciated.

Respectfully,

Alyssa Ruffie
Contract Land Agent
ONEOK Rockies Midstream, L.L.C.

Cassandra Figaro

By: Cassandra Figaro, as Trustee
of the Cassandra Figaro Trust dated
11/29/1989

11-13-2017
Date

Land Department
ONEOK ROCKIES MIDSTREAM
896 25th Street SE, Sidney, MT 59270-9554
406-433-8410
www.oneok.com/landowners

November 9, 2017

RE: ONEOK Rockies Midstream, L.L.C. – Lonesome Creek to Stateline NGL conversion
Project notification and request for review

Dear Mr. Tracy,

Please review the attached site map, noting the existing location of an underground pipeline and associated facilities included in the Lonesome Creek to Stateline 12" NGL Conversion project's application, which ONEOK Rockies Midstream, L.L.C. intends to file with the North Dakota Public Service Commission. The project involves the conversion of approximately 45 miles of existing 12-inch-diameter steel pipeline in Williams and McKenzie Counties, ND from its current use as a natural gas gathering pipeline to an NGL transmission pipeline.

The attached site map indicates that the project is located within 500 feet of your residence or business. By signing below, you are confirming that you have no objection to the project, or the future, continued operation and maintenance of the pipeline. Since the pipeline and facilities are existing, no construction activities will occur near your residence or business as a result of the conversion. Your cordial cooperation in this matter is greatly appreciated.

Respectfully,

Tom Giltner
Contract Land Agent
ONEOK Rockies Midstream, L.L.C.

Dave Tracy

By: David Tracy

11-14-17

Date

ONEOK
ROCKIES MIDSTREAM
A SUBSIDIARY OF ONEOK PARTNERS

November 16, 2017

ONEOK Rockies Midstream, L.L.C.
Attn.: Craig Forsander, VP of Operations
896 25th St. SE
Sidney, MT 59270

RE: ONEOK Rockies Midstream, L.L.C. – Lonesome Creek to Stateline NGL conversion
Project notification and request for review

Dear Mr. Forsander,

Please review the attached site map noting the existing location of an underground pipeline and associated facilities that are included in the Lonesome Creek to Stateline 12" NGL Conversion application that ONEOK Rockies Midstream, L.L.C. (ONEOK) intends to file with the North Dakota Public Service Commission. The Project involves the conversion of approximately 45 miles of existing 12-inch-diameter steel pipeline in Williams and McKenzie Counties, ND from its current use as a natural gas gathering pipeline to an NGL transmission pipeline.

The attached site map indicates that the Project is located within 500 feet of your residence or business. By signing below, you are confirming that you have no objection to the Project, or the future, continued operation and maintenance of the pipeline. Your cordial cooperation in this manner is greatly appreciated.

Respectfully,

Alyssa Ruffie
Contract Project Coordinator
ONEOK Rockies Midstream, L.L.C.

Craig Forsander

By: Craig Forsander, VP of Operations
ONEOK Rockies Midstream, L.L.C.

November 22, 2017
Date

Land Department
ONEOK ROCKIES MIDSTREAM
896 25th Street SE, Sidney, MT 59270-9554
406-433-6410
www.oneok.com/landowners

November 9, 2017

RE: ONEOK Rockies Midstream, L.L.C. – Lonesome Creek to Stateline NGL conversion
Project notification and request for review

Dear Landowner,

Please review the attached site map, noting the existing location of an underground pipeline and associated facilities included in the Lonesome Creek to Stateline 12" NGL Conversion project's application, which ONEOK Rockies Midstream, L.L.C. intends to file with the North Dakota Public Service Commission. The project involves the conversion of approximately 45 miles of existing 12-inch-diameter steel pipeline in Williams and McKenzie Counties, ND from its current use as a natural gas gathering pipeline to an NGL transmission pipeline.

The attached site map indicates that the project is located within 500 feet of your residence or business. By signing below, you are confirming that you have no objection to the project, or the future, continued operation and maintenance of the pipeline. Since the pipeline and facilities are existing, no construction activities will occur near your residence or business as a result of the conversion. Your cordial cooperation in this matter is greatly appreciated.

Respectfully,

_____

Tom Giltner
Contract Land Agent
ONEOK Rockies Midstream, L.L.C.

_____

By: Richie Beuning

11/15/17

Date

_____

By:

_____

Date

November 8, 2017

RE: ONEOK Rockies Midstream, L.L.C. – Lonesome Creek to Stateline NGL conversion
Project notification and request for review

Dear Mrs. Stewart,

Please review the attached site map, noting the existing location of an underground pipeline and associated facilities included in the Lonesome Creek to Stateline 12" NGL Conversion project's application, which ONEOK Rockies Midstream, L.L.C. intends to file with the North Dakota Public Service Commission. The project involves the conversion of approximately 45 miles of existing 12-inch-diameter steel pipeline in Williams and McKenzie Counties, ND from its current use as a natural gas gathering pipeline to an NGL transmission pipeline.

The attached site map indicates that the project is located within 500 feet of your residence or business. By signing below, you are confirming that you have no objection to the project, or the future, continued operation and maintenance of the pipeline. Since the pipeline and facilities are existing, no construction activities will occur near your residence or business as a result of the conversion. Your cordial cooperation in this matter is greatly appreciated.

Respectfully,

Tom Giltner
Contract Land Agent
ONEOK Rockies Midstream, L.L.C.

Ann R. Stewart

By: Ann Stewart
Title:
Three Sister Properties, LLC

11/09/17
Date

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF NORTH DAKOTA

In the Matter of the Application of ONEOK Rockies Midstream, L.L.C., for a Certificate of Corridor Compatibility and Route Permit for a 45 mile long, 12-inch NGL transmission pipeline in McKenzie and Williams Counties, North Dakota	Case No. _____

APPLICATON OF ONEOK ROCKIES MIDSTREAM, L.L.C.,
FOR A WAIVER OR REDUCTION OF PROCEDURES AND TIME SCHEDULES
AND FOR A CERTIFICATE OF CORRIDOR COMPATIBILITY AND ROUTE PERMIT

Applicant ONEOK Rockies Midstream, L.L.C. ("ONEOK"), whose address for purposes of this application is 100 West Fifth Street, Tulsa, OK 74103, hereby submits this Application for a Waiver or Reduction of Procedures and Time Schedules and for a Certificate of Corridor Compatibility and Route Permit ("Application") pursuant to North Dakota Century Code Chapter 49-22.1, Energy Conversion and Transmission Facilities [Siting Act for gas or liquid energy conversion and transmission facilities] ("Act").

ONEOK requests that the North Dakota Public Service Commission ("Commission") waive and/or reduce procedures and time schedules required by the Act or in the Commission's regulations set forth in Article 69-06 of the North Dakota Administrative Code, to accomplish the purposes as requested herein. These include, but are not limited to:

1. Waive pursuant to North Dakota Century Code Sections 49-22.1-05, 49-22.1-10(2), and the North Dakota Administrative Code Chapter 69-06-06 and Section 69-06-01-02, of those provisions of the North Dakota Century Code Sections 49-22.1-06(5), 49-22.1-07(5), 49-22.1-10, and the North Dakota Administrative Code Section 69-06-01-02 which require separate filings of such applications, separate notices of such applications, separate hearings on such applications, separate orders

on such applications; and certain procedures and time schedules as set forth in said statutes and rules;

2. Allow consolidation of the certificate of corridor compatibility application and route permit application into a single consolidated application;

3. Approve a corridor 150 feet in width;

4. Hold one combined public hearing on this Application;

5. Find that the proposed facilities are of such design, length, location and purpose that they will produce minimal adverse effects; and

6. Designate and approve the requested facilities as identified in this Application and issue the appropriate corridor certificate and route permit.

The Commission's application guidelines for waiver of procedures and time schedules require the description of the facility, the need for the facility, the cost of the facility, and separate justification for each provision of the Act for which the Applicant is requesting a waiver, together with evidence that the project will produce minimal adverse effects of that a demonstrable emergency exists. As demonstrated in this Application, and summarized below, Applicant's requests for waivers and/or reductions of procedures and time schedules and the issuance of a corridor certificate and route permit are justified as the proposed facilities are of such design, length, location, and purpose that they will produce minimal adverse effects, and that the pipeline for which approval is sought is essential to create needed pipeline capacity for the transport of natural gas liquid ("NGL") products from oil and gas fields in the state to markets and processing facilities in the Mid-Continent and Gulf Coast regions.

DESCRIPTION

The proposed Cherry Creek Lateral Pipeline Conversion Project consists of approximately 45 miles of existing 12-inch steel pipeline originating at ONEOK's Lonesome Creek Plant in McKenzie County, North Dakota and terminating at ONEOK's Stateline Plant in Williams

County, North Dakota. ONEOK intends to convert the previously constructed natural gas and NGL gathering system to a NGL transmission pipeline.

NEED

The purpose of the Project is to provide an additional take-away option for NGLs at ONEOK's Lonesome Creek Plant. By redirecting NGLs at Lonesome Creek Plant, additional NGLs from processing plants in Dunn and McKenzie Counties will have access to pipeline capacity to be transported for further processing. Conversion of the line to transmission will help offset the flaring of gas as additional wells come on line in the Williston Basin.

COST

The estimated cost of constructing the Project is approximately $1,800,000.00.

JUSTIFICATION

The environmental and cultural resource studies and reports which have been commissioned by the Applicant for the Project demonstrate that there will be minimal adverse effects by construction. As a result, Applicant hereby submits that there is substantial justification set forth in the Need section above for the requested waivers and/or reduction of time schedules and procedures, as the Project will produce minimal adverse effects.

Therefore, Applicant respectfully requests that the Commission (1) grant the requested waivers and/or reduction of procedures and time schedules; and (2) render an expeditious decision approving a corridor certificate and a route permit for the Project.

Dated this 14th day of December, 2017.

Respectfully submitted,

ONEOK ROCKIES MIDSTREAM, L.L.C.

CROWLEY FLECK PLLP
Attorneys for Applicant
100 West Broadway, Suite 250
P.O. Box 2798
Bismarck, North Dakota 58502

By: _____
WADE C. MANN (Bar ID No.: 05871)

STATE OF NORTH DAKOTA)
)
COUNTY OF BURLEIGH)

Wade C. Mann, being first duly sworn on oath, deposes and says that he is the attorney for the applicant herein named, that he has read the above and foregoing application, knows the contents thereof, and that the same is true to the best of this affiant's knowledge, information, and belief.

_____
WADE C. MANN

Subscribed and sworn to before me this 14th day of December, 2017.

(S E A L)

LISA HERBERHOLZ
Notary Public, State of North Dakota
My Commission Expires
March 17, 2023

_____
Notary Public
Burleigh County, North Dakota
My Commission Expires: _____