

**North Dakota Public Service Commission  
Consolidated Application  
Amendment of Application for Route Permit  
Targa Lateral Pipeline Project  
PU-14-254**

Prepared for:

**ONEOK Bakken Pipeline, L.L.C.**

Prepared by:

**E3 Environmental, L.L.C.**

July 2014



**E3 ENVIRONMENTAL**  
*Enhancing Execution with Experience*





**ONEOK**  
BAKKEN PIPELINE

A SUBSIDIARY OF ONEOK PARTNERS

**North Dakota Public Service Commission**

**Amendment of Application for Route**

**Permit**

**ONEOK Bakken Pipeline, L.L.C.**

**Targa Lateral Pipeline Project**

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## **INTRODUCTION**

ONEOK Bakken Pipeline, L.L.C. (ONEOK) a wholly owned subsidiary of ONEOK Partners, L.P., submitted to the North Dakota Public Service Commission (Commission) a Consolidated Application for Certificate of Corridor Compatibility and Route Permit (Application) for the Targa Lateral Pipeline Project (Project) on May 29, 2014. Since this original submittal, ONEOK has identified the need to alter the proposed pipeline route at two separate locations. Additionally ONEOK is proposing to increase the diameter of the pipeline to accommodate future regional growth. ONEOK has prepared this Amended Application for the Route Permit (Amendment) to address these route modifications.

The two route modifications fall entirely within the original 1-mile corridor described in the initial application for the Project. The Certificate of Corridor Compatibility portion of the Application remains unchanged and, as such, is not part of this Application.

This Amended Application for Route Permit provides the requisite information as stipulated by:

- North Dakota Century Code, Energy Conversion and Transmission Facility Siting Act, Chapter 49-22-08.1 and,
- North Dakota Administrative Code, Chapter 69-06-05, Transmission Facility Permit

## **SECTION 1: DESCRIPTION**

### **1.1 TYPE OF TRANSMISSION FACILITY**

Refer to the Application as filed; no changes have resulted from the route modifications.

### **1.2 LENGTH, SIZE AND DESIGN OF PIPELINE FACILITY**

#### **1.2.1 LENGTH OF FACILITY**

The previously filed Application detailed the Project to be approximately 10.6 miles in length; the proposed route modification will increase the total project length to be approximately 10.8 miles.

#### **1.2.2 PIPE SIZE**

ONEOK is proposing to increase the pipe diameter to accommodate future regional growth. The Application referenced a 6-inch nominal diameter pipe; the proposed change would result in an 8-inch diameter pipe with the following specifications.

- 8-inch Nominal Diameter Steel Pipe
- 8.625 inch Outer Diameter Steel Pipe
- API 5L GR FBE/ARO Coated ERW Pipe
- Nominal Wall Thickness-0.188-inch

#### **1.2.3 OPERATING PRESSURE AND THROUGHPUT**

Refer to the Application as filed; no changes have resulted from the route or pipe diameter modifications.

### **1.3 ABOVEGROUND FACILITIES**

Refer to the Application as filed; no changes have resulted from the route or pipe diameter modifications.

### **1.4 WIDTH OF RIGHT-OF-WAY**

Refer to the Application as filed; no changes have resulted from the route or pipe diameter modifications.

### **1.5 LOCATION**

The proposed Project is approximately 10.8 miles in total length and is located entirely within McKenzie County, North Dakota.

The table below provides the length and approximate location of each proposed route modification. Please refer to Appendix B of this Amendment for Project location maps.

<b>Route Modification</b>	<b>Starting MP</b>	<b>Ending MP</b>	<b>Approximate Length (Miles)</b>
Re-route 1	0.0	0.07	0.07
Re-route 2	8.8	9.3	0.5

## **1.6 PROJECT SCHEDULE**

### **1.6.1 ROUTE PERMIT**

ONEOK seeks a Route Permit on or before mid-September 2014.

### **1.6.2 CERTIFICATE OF CORRIDOR COMPATIBILITY**

Refer to the Application as filed; no changes have resulted from the route modifications.

### **1.6.3 CONSTRUCTION SCHEDULE**

Refer to the Application as filed; no changes have resulted from the route modifications.

## **SECTION 2: ROUTE ANALYSIS AND ENVIRONMENTAL STUDIES**

### **2.1 PIPELINE ROUTE**

Subsequent to the filing of the initial Application, ONEOK identified two locations along the proposed route where alternative alignments are necessary. These minor route alterations closely follow the original alignment as previously filed. ONEOK has commissioned and completed environmental field surveys for each re-route. The results of these field surveys are summarized herein this document; detailed survey results are provided in Appendices D and E (*i.e.*, Natural Resource Report and Cultural Resource Report respectively).

#### **Re-route #1 (MP 0.0 to 0.07):**

Through coordination with Targa Resources LLC, ONEOK has been asked to modify the tie-in location to the Little Missouri Plant. As such, ONEOK has developed this alternative, which routes the pipeline approximately 240 feet east from the original filing. Easements have been secured by ONEOK from the landowner(s) affected by this proposed re-route. ONEOK has commissioned and completed environmental field surveys along the entire length of this segment. Please refer to Appendix B for a map depicting the location of the re-route and Appendices D and E for detailed field survey reports.

#### **Re-route #2 (MP 8.8 to 9.3):**

Subsequent to filing the Application ONEOK was made aware of the development of a future well pad; ONEOK's original route would intersect with this well-pad. As such, ONEOK has developed this alternative, which routes the pipeline around the future well pad. Easements will be secured by ONEOK from the landowner(s) affected by this proposed re-route. ONEOK has commissioned and completed environmental field surveys along the entire length of this segment. Please refer to Appendix B for a map depicting the location of the re-route and Appendices D and E for detailed field survey reports.

### **2.2 ROUTE ALTERNATIVES**

#### **Re-route #1 (MP 0.0 to 0.07):**

No alternatives were considered for this re-route as Targa Resources LLC dictated the tie-in location and the route modification would be minimal.

#### **Re-route #2 (MP 8.8 to 9.3):**

ONEOK considered two alternatives a southern and northern route. This route (southern route) was chosen as it minimizes foreign line crossings and impacts to sensitive environmental features such as wetlands/waterbodies. Additionally this route is shorter in overall length compared to a northern alternative. For these reasons, the southern alternative was chosen.

### **2.3 ENVIRONMENTAL SURVEY.**

Field surveys were conducted of a minimum 250-foot wide survey corridor centered upon the proposed re-route pipeline alignments. Natural resource and cultural resource surveys were conducted on June 25<sup>th</sup> of 2014.

#### **2.3.1 NOXIOUS WEEDS**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **2.3.2 TREE/SAPLING/SHRUB SURVEY**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **2.3.3 WETLAND AND WATERBODIES SURVEY**

The proposed re-routes and additional survey areas were inventoried for wetland and waterbody features. Field crews identified features, characterized the features as wetland or waterbody and recorded feature boundaries relative to the proposed centerline.

##### **2.3.3.1 WETLAND SURVEY**

Refer to the Application as filed; no changes have resulted from the route modifications.

##### **2.3.3.2 WATERBODIES SURVEY**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **2.3.4 WILDLIFE INVENTORY**

Refer to the Application as filed; no changes have resulted from the route modifications.

##### **2.3.4.1 FEDERALLY PROTECTED SPECIES SURVEY**

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **2.3.5 NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE**

ONEOK commissioned SWCA, Inc. (SWCA) to conduct a Class III Cultural Resource Inventory of the re-routes. This was completed on June 25<sup>th</sup>, 2014. SWCA attempted to revisit five previously recorded cultural resources, including a historic homestead and a cultural material scatter site (32MZ481) and four prehistoric chipped stone isolated finds (32MZX261, 32MZX262, 32MZX263, and 32MZX266). None of the previously recorded resources were relocated, and no cultural resources were newly recorded during the Project re-route inventory.

All of the previously recorded isolated finds are considered not eligible for the National Register of Historic Places (NRHP); therefore, no further work is necessary. Site 32MZ481 has been previously recommended not eligible for the NRHP and based on the results of the re-route inventory, SWCA archaeologists concur with this recommendation; therefore, no further work is recommended for this resource. As proposed the Project would not impact any potentially eligible resources; it is therefore

recommended that a determination of No Significant Sites Affected and No Historical Properties Affected be granted for the Project to proceed as planned.

The results of consultations with North Dakota State Historic Preservation Office (SHPO) associated with the Addendum to the Cultural Resource Report. On July 23, 2014 the SHPO responded concurring with the Report findings.

Please refer to Appendix C for related agency consultations and Appendix E for the Cultural Resource Report.

#### **2.3.6 U.S. FISH AND WILDLIFE SERVICE MANAGED LANDS**

Refer to the Application as filed; no changes have resulted from the route modifications.

**SECTION 3: NEED FOR FACILITY**

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

Refer to the Application as filed; no changes have resulted from the route modifications.

## **SECTION 4: SITING CRITERIA ANALYSIS**

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

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

Refer to the Application as filed; no changes have resulted from the route modifications.

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

Refer to the Application as filed; no changes have resulted from the route modifications.

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

Refer to the Application as filed; no changes have resulted from the route modifications.

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

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

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

Refer to the Application as filed; no changes have resulted from the route modifications.

#### **4.1.6 DIRECT AND INDIRECT ECONOMIC IMPACTS OF THE PROPOSED FACILITY:**

Refer to the Application as filed; no changes have resulted from the route modifications.

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

Refer to the Application as filed; no changes have resulted from the route modifications.

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

ONEOK commissioned Class III cultural resource survey of the proposed re-routes. No scenic areas, historic sites or structures or paleontological or archaeological sites were

identified. The Cultural Resource Survey Report is contained in Appendix E of this Amendment.

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

Refer to the Application as filed; no changes have resulted from the route modifications.

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

Refer to the Application as filed; no changes have resulted from the route modifications.

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

Refer to the Application as filed; no changes have resulted from the route modifications.

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

Refer to the Application as filed; no changes have resulted from the route modifications.

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

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.4.1 AGRICULTURAL IMPACTS**

Refer to the Application as filed; no changes have resulted from the route modifications.

**4.4.2 THE IMPACTS UPON OTHER RESOURCES**

Refer to the Application as filed; no changes have resulted from the route modifications.

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

Refer to the Application as filed; no changes have resulted from the route modifications.

## **SECTION 5: MITIGATIVE MEASURES**

### **5.1 LOCATION**

The proposed route modifications have been chosen to avoid the development of a well pad, previously unknown to ONEOK and minor modifications to the tie-in location at the TLMP. ONEOK has commissioned field surveys of the re-routes to assess the environmental resources that may be impacted as well as to confirm the modified alignment conforms to the siting requirements established by the state of North Dakota.

**Trees and shrubs:** A tree shrub inventory was completed of the route modifications. Refer to the Application as filed; no changes have resulted from the route modification.

**Wetlands and Waterbodies:** Refer to the Application as filed; no changes have resulted from the route modifications, no additional wetlands/waterbodies were identified along the proposed re-routes.

**Migratory Bird Treaty Act:** Refer to the Application as filed; no changes have resulted from the route modifications.

**Cultural Resources:** On July 17, 2014, the Addendum to the Cultural Resource Survey Report was submitted to the SHPO requesting for concurrence of *No Significant Sites Affected* for the Project. Refer to Appendix E for the complete Cultural Resource Report and Appendix C for a record of Agency coordination.

### **5.2 CONSTRUCTION**

Refer to the Application as filed; no changes have resulted from the route modifications.

### **5.3 OPERATION**

Refer to the Application as filed; no changes have resulted from the route modifications.

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

Refer to Application as filed; no changes have resulted from the route modifications.

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

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

Refer to Application as filed; no changes have resulted from the route modifications.

**7.2 COMPENSATION POLICY**

Refer to Application as filed; no changes have resulted from the route modifications.

## **SECTION 8: LIST OF PREPARERS**

### **James Akingbola**

Operations Engineer  
ONEOK Partners 100 West 5<sup>th</sup> Street, Tulsa, OK 74103

B.S Chemical Engineering – University of Oklahoma. Mr. Akingbola is an Operations Engineer with 6 years of pipeline integrity and pipeline construction experience. As an Operations Engineer, Mr. Akingbola has managed several pipeline projects for ONEOK Partners Large Projects group. He also serves as project manager for the proposed pipeline project.

### **William McCarthy, C.W.B.**

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

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

### **Katie Schmidt, EIT**

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

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

**Lindsey Danielson**

GIS Analyst

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

Graduate Certificate in Geographic Information Science, St. Mary's University of Minnesota; B.S. Geoscience: Geology, Winona State University. Ms. Danielson also has a M.S. in Geographic Information Science at St. Mary's University of Minnesota with concentrations in Homeland Security/Emergency Management as well as Natural Resource Management. Ms. Danielson has almost 3 years of professional experience creating and editing data from various sources and formats. She specializes in advanced cartography, data management and spatial analysis.

**Dan Woodward, RPA**

Senior Archaeologist

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

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

# **Appendix A**

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## Engineering Documents

Refer to Consolidated Application filed with ND  
PSC on May 29, 2014

# **Appendix B**

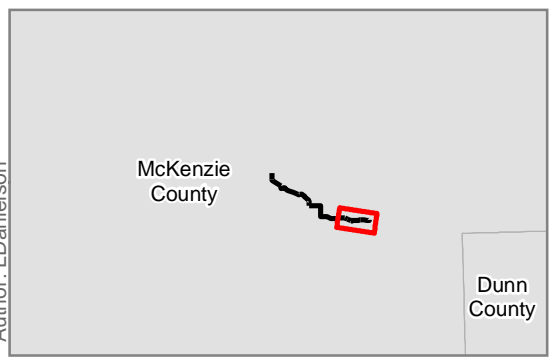
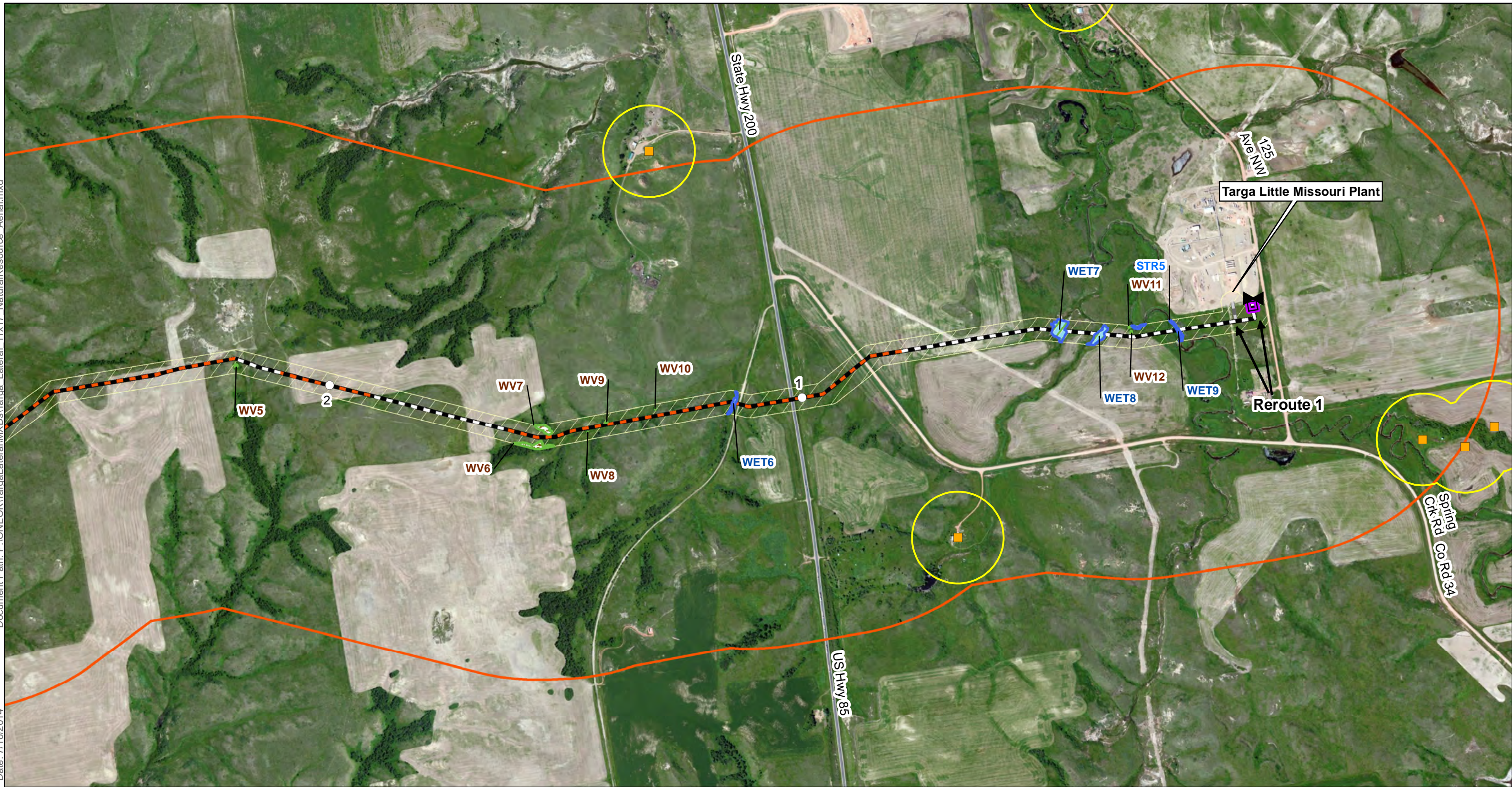
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## Project Maps

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Date: 7/16/2014

Author: LDanielson



<ul style="list-style-type: none"> <li> Valve</li> <li> Milepost</li> <li><b>Centerline</b></li> <li> Not Co-located</li> <li> Co-located</li> <li> Previous Alignment</li> <li> Inventory Corridor</li> <li> Corridor (1 mile)</li> </ul>	<ul style="list-style-type: none"> <li> Launcher Boundary</li> <li> Receiver Boundary</li> <li><b>Survey Data</b></li> <li> Stream</li> <li> Stream</li> <li> Woody Vegetation</li> <li> Wetland</li> <li> Nest</li> </ul>	<ul style="list-style-type: none"> <li> Nest Buffer</li> <li><b>Criteria Data</b></li> <li> Occupied Structure</li> <li> Occupied Structure w/in 500ft of Inventory Corridor</li> <li> Occupied Structure (500ft Buffer)</li> <li> Abandoned Mine</li> <li> NDWC Well</li> </ul>
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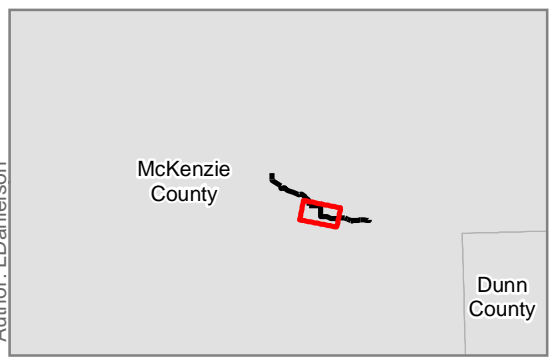
Map not to scale, for environmental review purposes only.

**ONEOK Bakken Pipeline, L.L.C.**  
**Targa Lateral Pipeline Project**  
 Siting Criteria  
 Natural Resource - Aerial Map  
 Page 1 of 4  
 McKenzie County, North Dakota


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Date: 7/16/2014


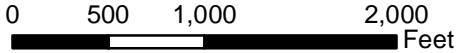
Author: LDanielson



<ul style="list-style-type: none"> <li> Valve</li> <li> Milepost</li> <li><b>Centerline</b></li> <li> Not Co-located</li> <li> Co-located</li> <li> Previous Alignment</li> <li> Inventory Corridor</li> <li> Corridor (1 mile)</li> </ul>	<ul style="list-style-type: none"> <li> Launcher Boundary</li> <li> Receiver Boundary</li> <li><b>Survey Data</b></li> <li> Stream</li> <li> Stream</li> <li> Woody Vegetation</li> <li> Wetland</li> <li> Nest</li> </ul>	<ul style="list-style-type: none"> <li> Nest Buffer</li> <li><b>Criteria Data</b></li> <li> Occupied Structure</li> <li> Occupied Structure w/in 500ft of Inventory Corridor</li> <li> Occupied Structure (500ft Buffer)</li> <li> Abandoned Mine</li> <li> NDWC Well</li> </ul>
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**ONEOK Bakken Pipeline, L.L.C.**  
**Targa Lateral Pipeline Project**  
 Siting Criteria  
 Natural Resource - Aerial Map  
**Page 2 of 4**  
 McKenzie County, North Dakota

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Date: 7/16/2014

Author: LDanielson



Valve	Launcher Boundary	Nest Buffer
Milepost	Receiver Boundary	<b>Criteria Data</b>
<b>Centerline</b>	<b>Survey Data</b>	Occupied Structure
Not Co-located	Stream	Occupied Structure w/in 500ft of Inventory Corridor
Co-located	Stream	Occupied Structure (500ft Buffer)
Previous Alignment	Woody Vegetation	Abandoned Mine
Inventory Corridor	Wetland	NDWC Well
Corridor (1 mile)	Nest	

**E3 ENVIRONMENTAL**  
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0 500 1,000 2,000 Feet

1:12,000

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McKenzie County

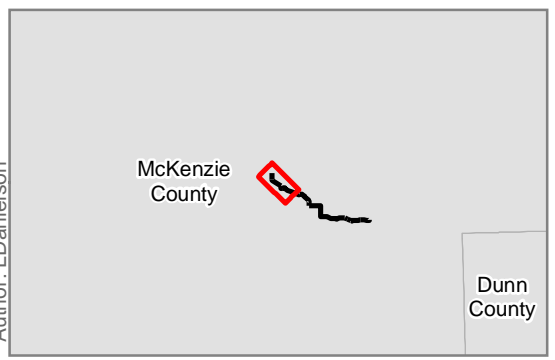
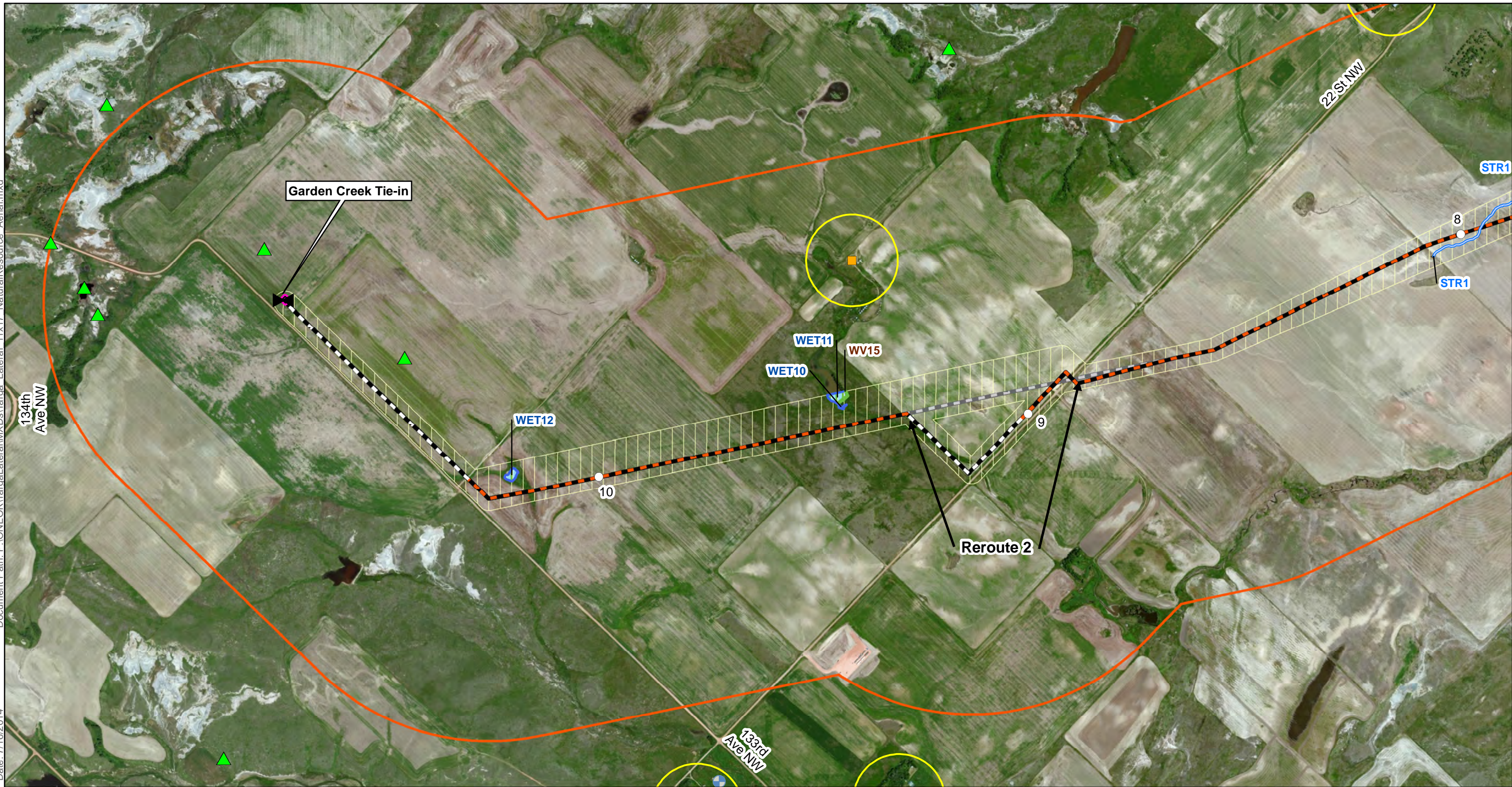
Dunn County

**ONEOK Bakken Pipeline, L.L.C.**  
Targa Lateral Pipeline Project  
Siting Criteria  
Natural Resource - Aerial Map  
**Page 3 of 4**  
McKenzie County, North Dakota

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Author: LDanielson



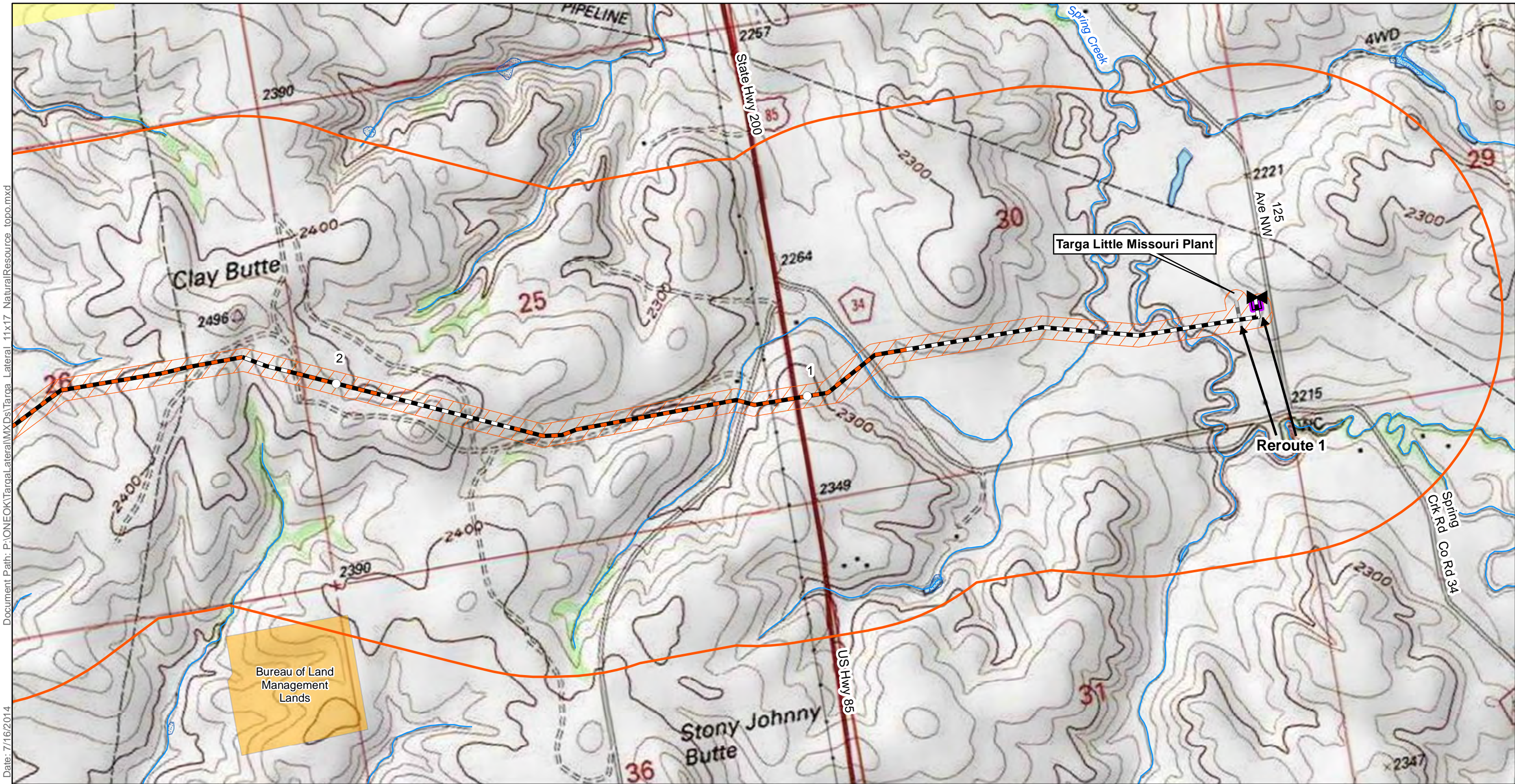
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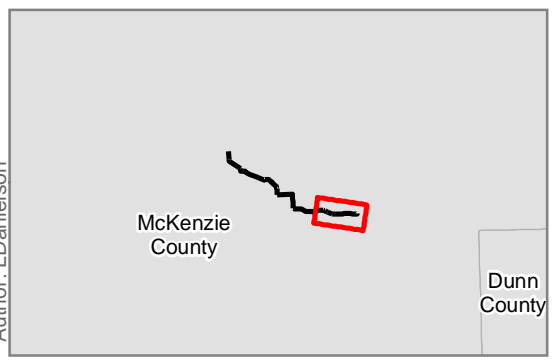
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Map not to scale, for environmental review purposes only.

**ONEOK Bakken Pipeline, L.L.C.**  
**Targa Lateral Pipeline Project**  
 Siting Criteria  
 Natural Resource - Aerial Map  
**Page 4 of 4**  
 McKenzie County, North Dakota



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 Date: 7/16/2014  
 Author: LDanielson



Valve Milepost <b>Centerline</b> Not Co-located Co-located Previous Alignment Inventory Corridor	Corridor (1 mile) Launcher Boundary Receiver Boundary <b>Criteria Data</b> Federal Land Joint Ownership Local Land	Native American Land Private Conservation Land State Land PLOTS Land NHD Waterway NWI Wetland NHD Waterbody
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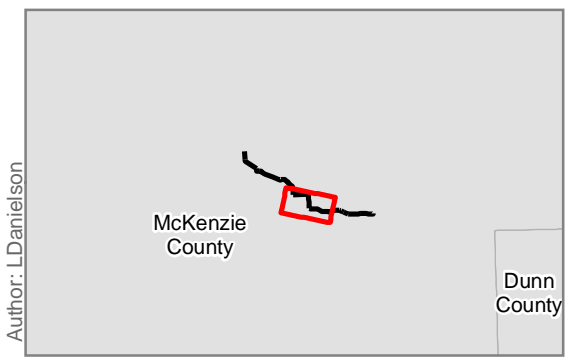
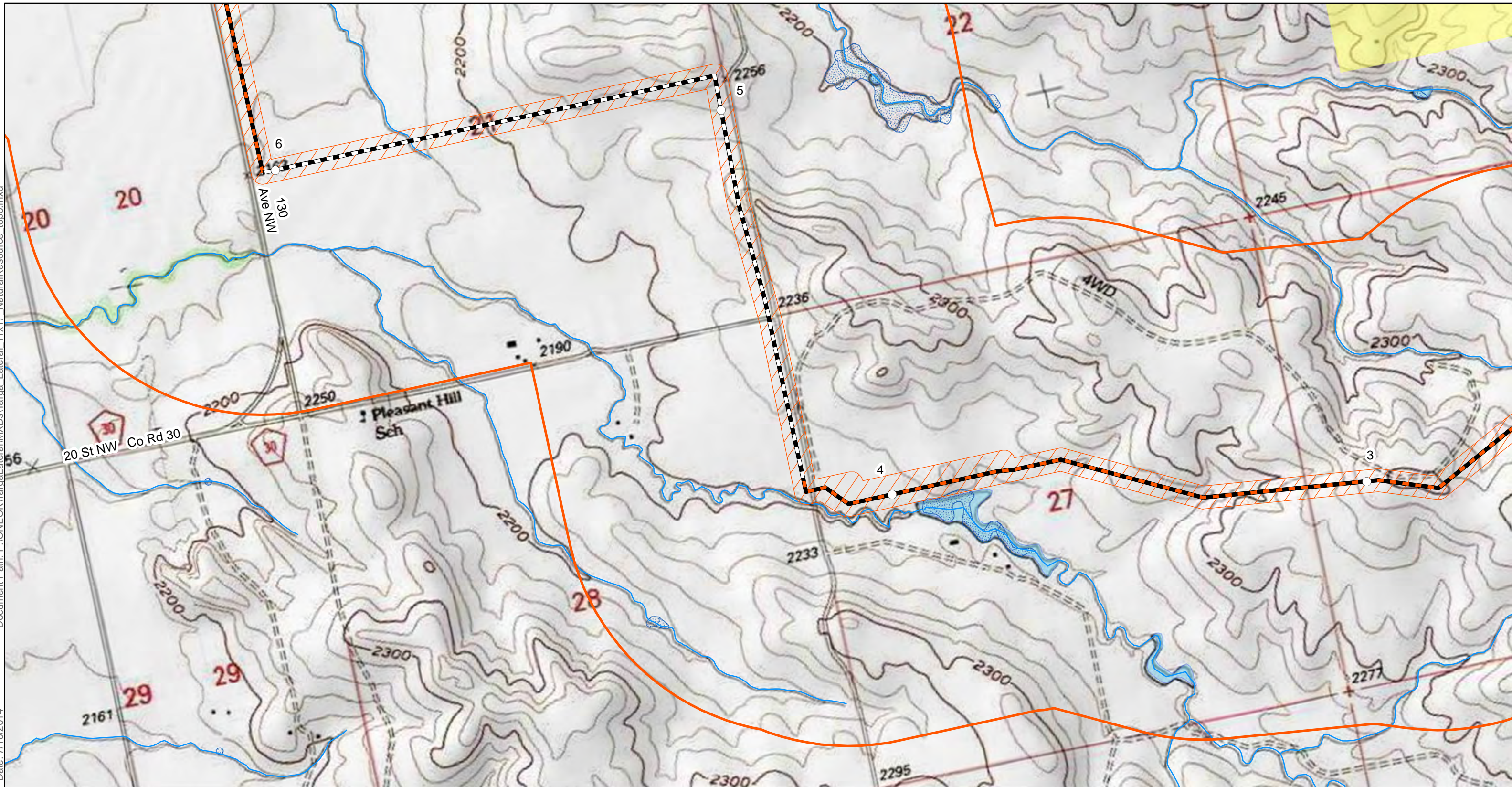
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**ONEOK Bakken Pipeline, L.L.C.**  
**Targa Lateral Pipeline Project**  
 Siting Criteria  
 Natural Resource - Topo Map  
**Page 1 of 4**  
 McKenzie County, North Dakota

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Valve	Corridor (1 mile)	Native American Land
Milepost	Launcher Boundary	Private Conservation Land
<b>Centerline</b>	Receiver Boundary	State Land
Not Co-located	<b>Criteria Data</b>	PLOTS Land
Co-located	Federal Land	NHD Waterway
Previous Alignment	Joint Ownership	NWI Wetland
Inventory Corridor	Local Land	NHD Waterbody

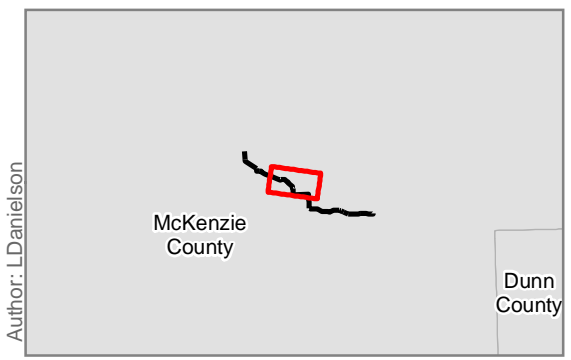
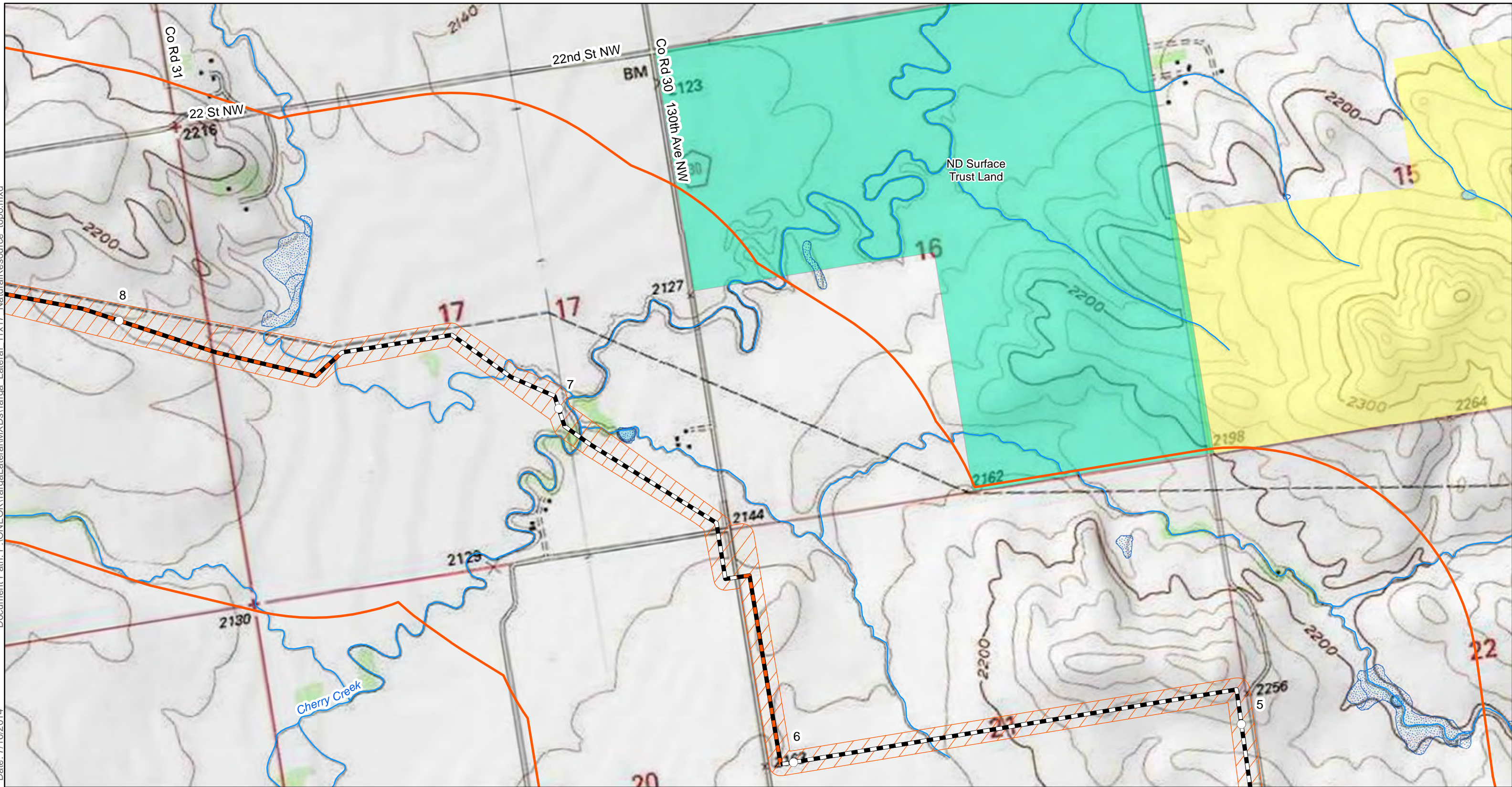
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 Siting Criteria  
 Natural Resource - Topo Map  
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 McKenzie County, North Dakota

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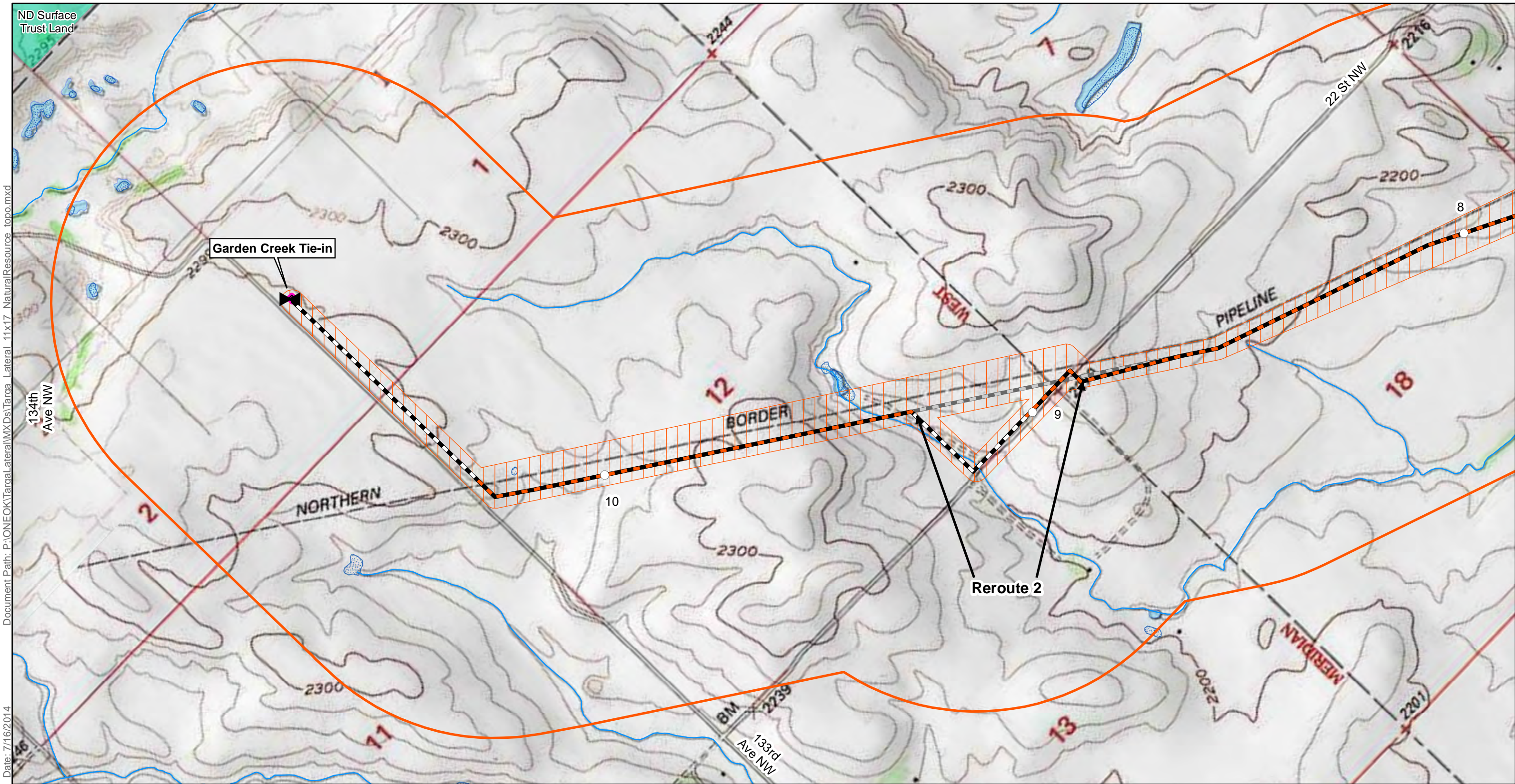
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Milepost	Launcher Boundary	Private Conservation Land
<b>Centerline</b>	Receiver Boundary	State Land
Not Co-located	<b>Criteria Data</b>	PLOTS Land
Co-located	Federal Land	NHD Waterway
Previous Alignment	Joint Ownership	NWI Wetland
Inventory Corridor	Local Land	NHD Waterbody

**E3 ENVIRONMENTAL**  
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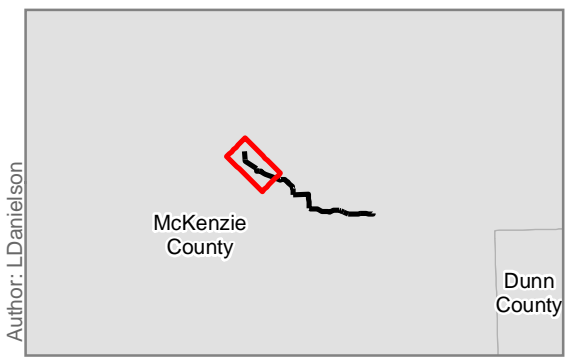
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**ONEOK Bakken Pipeline, L.L.C.**  
 Targa Lateral Pipeline Project  
 Siting Criteria  
 Natural Resource - Topo Map  
**Page 3 of 4**  
 McKenzie County, North Dakota



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 Author: LDanielson  
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Valve	Corridor (1 mile)	Native American Land
Milepost	Launcher Boundary	Private Conservation Land
<b>Centerline</b>	Receiver Boundary	State Land
Not Co-located	<b>Criteria Data</b>	PLOTS Land
Co-located	Federal Land	NHD Waterway
Previous Alignment	Joint Ownership	NWI Wetland
Inventory Corridor	Local Land	NHD Waterbody

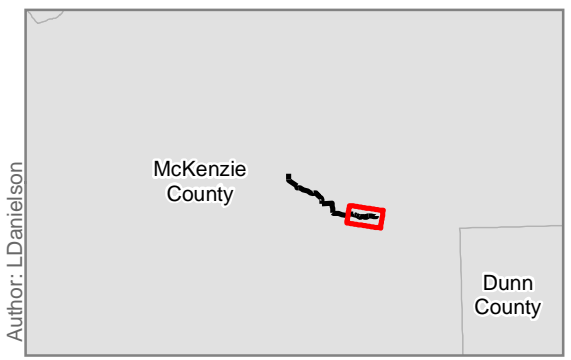
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 EXPERTS

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**ONEOK Bakken Pipeline, L.L.C.**  
 Targa Lateral Pipeline Project  
 Siting Criteria  
 Natural Resource - Topo Map  
**Page 4 of 4**  
 McKenzie County, North Dakota

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Date: 7/16/2014



Valves	Receiver Boundary
Milepost	Launcher Boundary
Centerline	Inventory Corridor
Previous Alignment	Corridor (1 mile)
Cultural Avoidance	

Note: Class III survey efforts confirmed the that the site leads do not occur within the Inventory Corridor.  
Map not to scale, for environmental review purposes only.

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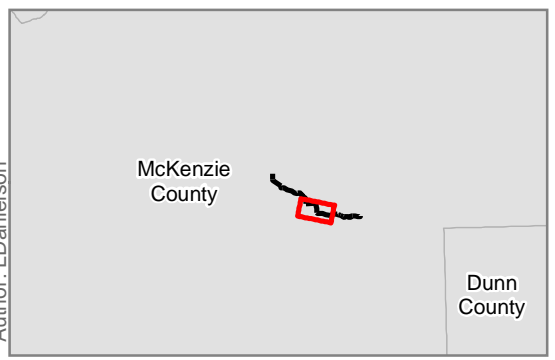
**ONEOK Bakken Pipeline, L.L.C.**  
**Targa Lateral Pipeline Project**  
 Siting Criteria  
 Cultural Resource  
**Page 1 of 4**  
 McKenzie County, North Dakota

Author: LDanielson

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Date: 7/16/2014

Author: LDanielson



	Valves		Receiver Boundary
	Milepost		Launcher Boundary
	Centerline		Inventory Corridor
	Previous Alignment		Corridor (1 mile)
	Cultural Avoidance		

**Note:** Class III survey efforts confirmed the that the site leads do not occur within the Inventory Corridor.  
Map not to scale, for environmental review purposes only.

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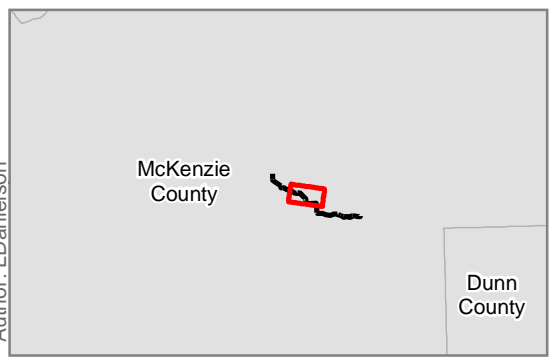
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**ONEOK Bakken Pipeline, L.L.C.**  
**Targa Lateral Pipeline Project**  
 Siting Criteria  
 Cultural Resource  
**Page 2 of 4**  
 McKenzie County, North Dakota

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Date: 7/16/2014

Author: LDanielson



	Valves		Receiver Boundary
	Milepost		Launcher Boundary
	Centerline		Inventory Corridor
	Previous Alignment		Corridor (1 mile)
	Cultural Avoidance		

Note: Class III survey efforts confirmed the that the site leads do not occur within the Inventory Corridor.  
Map not to scale, for environmental review purposes only.

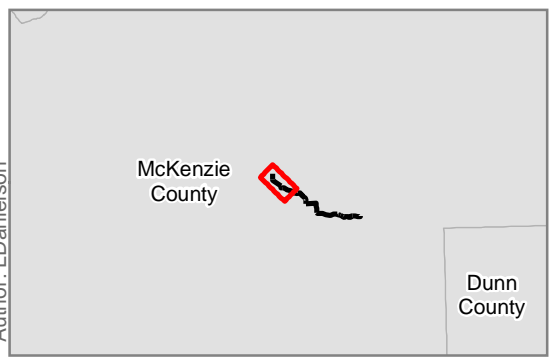
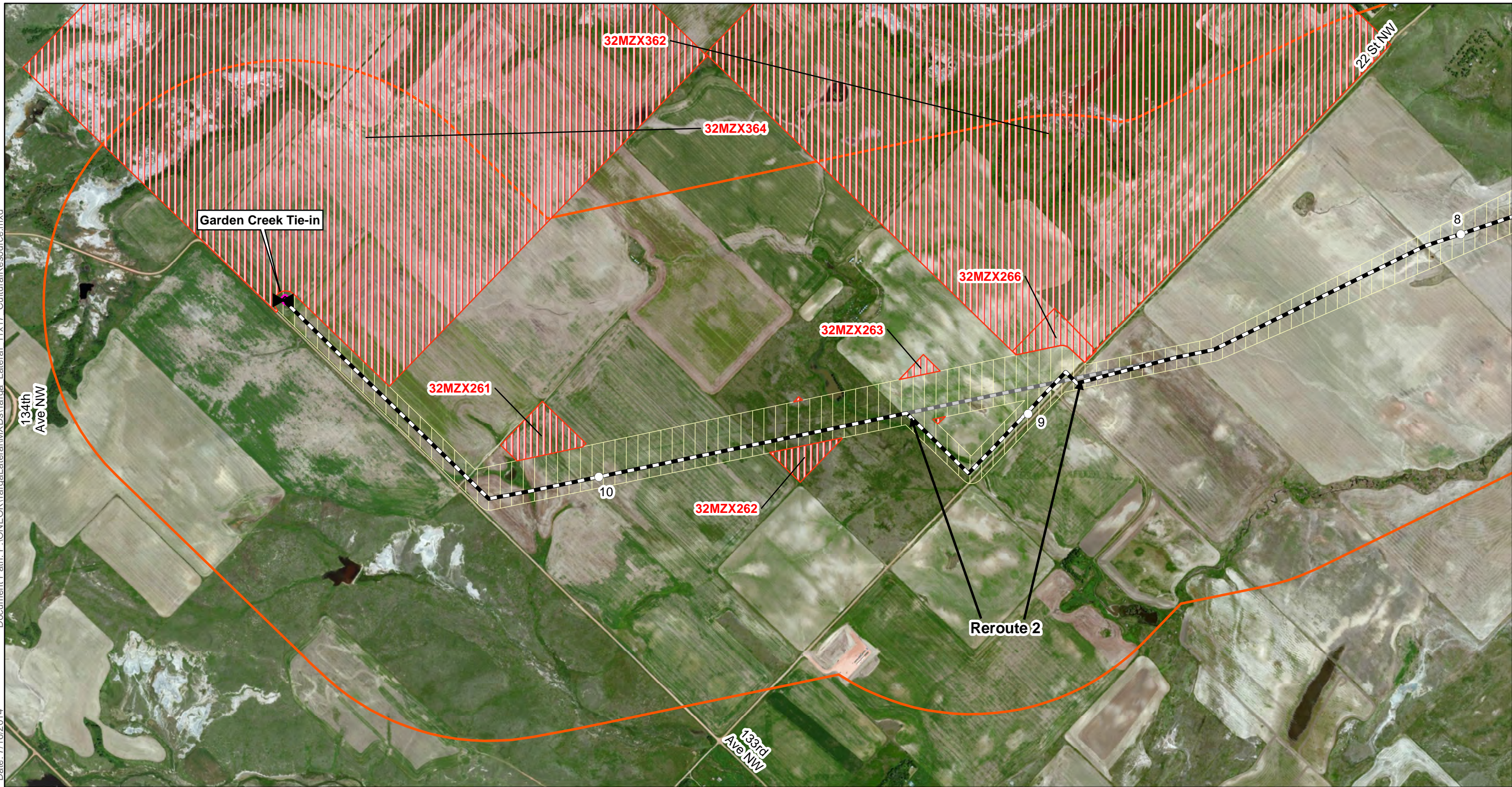
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**ONEOK Bakken Pipeline, L.L.C.**  
**Targa Lateral Pipeline Project**  
 Siting Criteria  
 Cultural Resource  
**Page 3 of 4**  
 McKenzie County, North Dakota

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Date: 7/16/2014

Author: LDanielson



Valves	Receiver Boundary
Milepost	Launcher Boundary
Centerline	Inventory Corridor
Previous Alignment	Corridor (1 mile)
Cultural Avoidance	

Note: Class III survey efforts confirmed the that the site leads do not occur within the Inventory Corridor.  
Map not to scale, for environmental review purposes only.

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**ONEOK Bakken Pipeline, L.L.C.**  
**Targa Lateral Pipeline Project**  
 Siting Criteria  
 Cultural Resource  
**Page 4 of 4**  
 McKenzie County, North Dakota

## **Appendix C**

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### Agency Notifications



**STATE  
HISTORICAL  
SOCIETY  
OF NORTH DAKOTA**

**RECEIVED**

**JUL 28 2014**

**ONEOK  
CORP ENVIRONMENTAL**

Jack Dalrymple  
*Governor of North Dakota*

North Dakota  
State Historical Board

Calvin Grinnell  
*New Town - President*

A. Ruric Todd III  
*Jamestown - Vice President*

Margaret Puetz  
*Bismarck - Secretary*

Albert I. Berger  
*Grand Forks*

Gereld Gemtholz  
*Valley City*

Diane K. Larson  
*Bismarck*

Chester E Nelson, Jr.  
*Bismarck*

Sara Otte Coleman  
*Director  
Tourism Division*

Kelly Schmidt  
*State Treasurer*

Alvin A. Jaeger  
*Secretary of State*

Mark Zimmerman  
*Director  
Parks and Recreation  
Department*

Grant Levi  
*Director  
Department of Transportation*

Merlan E. Paaverud, Jr.  
*Director*

*Accredited by the  
American Alliance  
of Museums since 1986*

July 23, 2014

Ms. Loretta Ernest  
Manager - Environment  
Large Construction Projects  
ONEOK  
100 West Fifth Street  
Tulsa, OK 74103-4298

NDSHPO REF.: 14-1423 PSC Case #PU-14-254 "Addendum to the Class I and Class III Cultural Resource Inventory of the ONEOK Bakken Pipeline, LLC, Targa Lateral Pipeline Project (Reroutes), McKenzie County, North Dakota"

Dear Ms. Ernest,

We reviewed NDSHPO REF.: 14-1423 PSC Case #PU-14-254 "Addendum to the Class I and Class III Cultural Resource Inventory of the ONEOK Bakken Pipeline, LLC, Targa Lateral Pipeline Project (Reroutes), McKenzie County, North Dakota," and find the report acceptable. We concur with a "No Significant Sites" determination for the project, provided the project remains as described and mapped in the above-captioned SWCA report.

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

Sincerely,

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



**FedEx 8724 2710 1111**

July 17, 2014

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

**ONEOK BAKKEN PIPELINE, L.L.C.  
TARGA LATERAL PIPELINE PROJECT  
ADDENDUM TO THE CLASS I AND CLASS III CULTURAL RESOURCE  
INVENTORY REPORT**

Dear Mr. Picha:

ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing modifications to the Targa Lateral Pipeline Project (Project) route. These modifications include two (2) re-routes, which would increase the length of the natural gas liquids transmission pipeline from 10.6 miles to 10.8 miles and as such are subject to the North Dakota Public Service Commissions (PSC) Siting Act. The Project will be wholly located in McKenzie County, North Dakota. E3 Environmental, LLC (E3), ONEOK's Environmental Consultant, is preparing the required application materials for the NDPSC; a cultural resource inventory is a required part of this filing.

ONEOK submits the enclosed report titled *Addendum to the Class I and Class III Cultural Resource Inventory of the ONEOK Bakken Pipeline, LLC, Targa Lateral Pipeline Project (Reroutes), McKenzie County, North Dakota* (Report). This Report, prepared by SWCA Environmental Consultants (SWCA) documents the results of the cultural resource inventory conducted for the proposed modifications to the Project.

Five previously recorded cultural resources were revisited for the Project. They are described below:

- 32 MZ481: Historic homestead and cultural material scatter; Not Eligible
- 32 MZX261: Prehistoric isolated incidence of unspecific chipped stone; Not Eligible
- 32 MZX262: Prehistoric isolated incidence of unspecific chipped stone; Not Eligible
- 32 MZX263: Prehistoric projectile point; Not Eligible
- 32 MZX266: Prehistoric isolated incidence of unspecific chipped stone; Not Eligible

Of the resources outlined above 32MZ481 is recommended not eligible for the NRHP, and therefore no further work is necessary. Attempts were made to relocate the four previously recorded isolated finds (32MZX261, 32MZX262, 32MZX263 and 32MZX266) within the

project area. Because the location information for these resources is relatively general, it is possible that these resources are located outside of the current inventory area. Isolated finds by definition are considered to lack the historical integrity to be eligible for nomination to the NRHP; therefore, the four isolated finds are not eligible for the NRHP. Consequently, no further work is recommended for these resources. It is recommended a determination of *No Significant Sites Affected and No Historic Properties Affected* be granted for the project to proceed as planned.

Upon review should you have any questions or require additional information, please contact ONEOK's consultant Katie Schmidt, E3 Environmental, at 651-282-0652 or by email at [kschmidt@go2e3.com](mailto:kschmidt@go2e3.com).

Sincerely,



Loretta M. Earnest  
Manager – Environment  
Large Construction Projects

Enclosures: Addendum to the Class I and Class III Cultural Resource Inventory

xc: Tulsa Large Construction Files – Targa Lateral PL

# **Appendix D**

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## Natural Resources Report

**Addendum to the Natural Resources  
and Wetland Determination Report  
for the Targa Lateral Pipeline,  
McKenzie County, North Dakota**

Prepared for

**E3 Environmental, LLC**

On behalf of

**ONEOK Rockies Midstream, LLC**

Prepared by

**SWCA Environmental Consultants**

July 2014

**Addendum to the Natural Resources and Wetland Determination  
Report for the Targa Lateral Pipeline, McKenzie County, North Dakota**

Prepared for:

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

On behalf of:

**ONEOK Rockies Midstream, LLC**  
1400 16<sup>th</sup> Street, Suite 310  
Denver, Colorado 80202

Prepared by:

**Kate Kenninger, M.S.**  
**Environmental Specialists**

Reviewed by:

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

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

SWCA Project No. 29408

**July 7, 2014**

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B Survey Area Soil Series Map
C Photographs of Project Area

## **1.0 INTRODUCTION**

### **1.1 BACKGROUND**

ONEOK Rockies Midstream, LLC (ONEOK) proposes to construct an approximately 10-mile-long pipeline in McKenzie County, North Dakota. SWCA Environmental Consultants (SWCA) was selected by E3 Environmental, LLC (E3) to conduct natural resources field surveys in order to identify exclusion and avoidance areas as specified in North Dakota Administrative Code 69-06-08-02 for the proposed Targa Lateral pipeline project. The report *Natural Resources and Wetland Determination Report for the Targa Lateral Pipeline, McKenzie County, North Dakota* was submitted by SWCA to E3 on May 21, 2014. Since that time approximately 2 miles of reroutes have been proposed by ONEOK.

As proposed, the Targa Lateral pipeline reroutes are approximately 2 miles long, spanning private lands in North Dakota (Appendix A). The project, in its entirety, spans both private and state lands in North Dakota. The project falls under the jurisdiction of the North Dakota Public Service Commission (NDPSC). E3 is assisting ONEOK with their application to the NDPSC for a certificate of corridor compatibility and route permit for the project.

SWCA conducted field surveys of the reroutes using a 250-foot-wide corridor on June 25, 2014, to determine the potential presence and extent of wetlands and waterbodies, including jurisdictional waters of the U.S., within the proposed survey area. Concurrently with the wetland/waterbody determinations, SWCA conducted a cursory threatened and endangered species survey and habitat assessment; a tree, sapling, and shrub enumeration survey; and a noxious weed survey. Site layout maps of the survey area and natural resource features identified during the field surveys are provided in Appendix A.

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

### **1.2 REGULATORY BACKGROUND**

#### **1.2.1 Clean Water Act, Section 404**

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

#### **1.2.2 USACE Nationwide Permit 12**

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

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

- The activity involves mechanized land clearing in a forested wetland.

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

### **1.2.3 USACE Regional Conditions**

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

## **2.0 METHODS**

### **2.1 SURVEY AREA**

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

The proposed project is located in the Great Plains (level I) ecoregion, West-Central Semi-Arid Prairies (level II) ecoregion, Northwestern Great Plains (level III) ecoregion, and the Missouri Plateau (level IV) ecoregion. These ecoregions are characterized by unglaciated topography, complex stream drainages, and susceptibility to erosion. Primary land uses are grazing, small grain agriculture, and recreation (Bryce et al. 1998). Figure 1 is an overview of the project area.



**Figure 1. Project area overview depicting general topography, facing southeast (photo taken June 25, 2014).**

The inventoried area for the North Dakota portion of the project area discussed herein is situated on the U.S. Geological Survey Stocke Butte (1960) and Tepee Buttes (1960), North Dakota, quadrangles. The proposed project corridor that was surveyed on June 25, 2014, encompasses portions of six sections within three townships and ranges.

- Sections 11, 12, 13, Township (T) 149 North (N), Range (R) 100 West (W)
- Sections 7, 18, T149N, R99W
- Section 30, T149N, R98W

## **2.2 WETLANDS**

National Wetland Inventory (NWI) mapping for the region indicates the presence of wetlands (U.S. Fish and Wildlife Service [USFWS] 2012a). SWCA ecologists conducted wetland determinations within the survey area based on the principles and guidelines provided in the 1987 *Corps of Engineers Wetlands Delineation Manual* (Manual) (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetlands Determination Manual: Great Plains Region Version 2.0* (Supplement) (USACE 2010). According to the Manual, an area is a wetland if three mandatory wetland indicators are present in a given area, with special exceptions. These indicators include the presence of hydrophytic vegetation and wetland hydrology. During wetland determinations SWCA recorded indicators of hydrology

and hydrophytic vegetation. All wetlands and waterbodies geographically referenced within the survey area during field survey are depicted on the site layout maps in Appendix A.

### **2.2.1 Hydrophytic Vegetation**

Ecologists recorded all plants within the vegetative community based on the respective stratum each species occupied. A tree is defined by the Supplement to be a woody-stemmed plant with a trunk diameter at breast height (DBH) of equal to or greater than 3 inches, regardless of height. The sapling and shrub stratum is defined by the Supplement to be composed of woody-stemmed plants with a trunk DBH of less than 3 inches, regardless of height. The herbaceous stratum includes all non-woody-stemmed plants regardless of height. Finally, the woody vine stratum includes all woody-stemmed vines, regardless of diameter.

SWCA recorded the binomial scientific name and percent cover of all plants within a 30-foot radius for the tree stratum, a 15-foot radius for the sapling/shrub stratum, a 5-foot radius for the herbaceous stratum, and a 30-foot radius for the woody vine stratum. SWCA ecologists noted each plant species' respective USFWS indicator status (i.e., upland [UPL], facultative upland [FACU], facultative [FAC], facultative wetland [FACW], and obligate [OBL]). In some instances the size and shape of the vegetative sampling plot was manipulated to better encompass each wetland or upland area, though the overall area assessed remained unchanged. Vegetation communities met the hydrophytic vegetation criterion for wetlands if greater than 50% of dominant species had an indicator status of FAC, FACW, and OBL. SWCA also noted and geospatially referenced all populations of North Dakota state- or county-listed noxious weeds identified within the survey area.

### **2.2.2 Wetland Hydrology**

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

## **2.3 WATERBODIES**

Waterbodies (i.e., ponds, creeks, streams, rivers) were identified by the presence of an ordinary high water mark (OHWM). Common identifiable indicators of an OHWM include open water or evidence of a clear, natural line visible on the bank; shelving; changes in soil characteristics; the destruction of terrestrial vegetation; the presence of litter and debris; and watermarks on structures that are inundated during normal high water conditions. The OHWM typically represents the potential limits of the USACE jurisdiction. Please note that the USACE has full discretion in determining the jurisdictional status of referenced wetlands and waterbodies.

SWCA classified streams as perennial, intermittent, or ephemeral based on field observations. During a typical year, a perennial stream contains flowing water year-round and the water table is located above the stream bed. Groundwater is the primary water source for stream flow while precipitation runoff is supplemental. Ecologists classified streams that showed

significant flow during the field survey as perennial. Additionally, the U.S. Geological Survey topographic maps were used as reference.

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

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

## **2.4 NOXIOUS WEED SURVEYS**

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

## **2.5 TREE, SAPLING, AND SHRUB COUNT**

SWCA ecologists determined the total number of trees, saplings, and shrubs present within the survey area by employing several different techniques depending on the type of woody vegetation habitat (i.e., forested upland, shrubland, or shelterbelt) encountered and the overall extent of each habitat within the right-of-way (ROW). The boundary of all forested upland, shrubland, and shelterbelt habitat was geographically referenced using a Trimble GeoXT series handheld global positioning system (GPS) unit. In forested upland and shrubland habitat, SWCA counted or estimated the number of all woody-stemmed vegetation with a DBH of  $\geq 1$  inch. In shelterbelt areas, all woody-stemmed vegetation, regardless of DBH, was inventoried via direct count. No woody vegetation was inventoried in wetlands. Ecologists taxonomically identified all recorded individuals to the species level within each habitat type.

## **2.6 WILDLIFE INCLUDING THREATENED AND ENDANGERED SPECIES**

Prior to conducting field surveys, SWCA reviewed information obtained from the USFWS list of threatened and endangered species by North Dakota county (USFWS 2014) regarding the presence of threatened or endangered species that may occur within the survey area. This document does not represent a comprehensive survey, but rather acknowledges the past and/or current presence of listed species. The lack of discovery of threatened or endangered species does not signify their non-existence within the area, but only that no primary or secondary indications of these species were recorded. SWCA completed a random survey for all listed species and suitable habitat.

A line-of-sight binocular survey for raptor species was also conducted for a distance of approximately 0.5 mile. SWCA ecologists noted all wildlife observed during the field survey. Wildlife sightings can involve primary observations (i.e., actual sighting of an animal) or secondary observations (i.e., observation of scat, tracks, or fur deposits).

## **2.7 MAPPING**

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

## **3.0 RESULTS**

### **3.1 VEGETATION**

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

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

#### **3.1.1 Herbaceous Upland**

The herbaceous upland community consists of areas dominated by non-woody vegetation such as grasses and forbs. Herbaceous uplands observed were commonly comprised of smooth brome (*Bromus inermis*), crested wheatgrass (*Agropyron cristatum*), Kentucky bluegrass (*Poa pratensis*), yellow sweetclover (*Melilotus officinalis*), white sage (*Artemisia ludoviciana*), prairie sagewort (*Artemisia frigida*), quackgrass (*Elymus repens*), yellow salsify (*Tragopogon dubius*), field pennycress (*Thlaspi arvense*), common dandelion (*Taraxacum officinale*), white milkwort (*Polygala alba*), and prairie rose (*Rosa arkansana*).

#### **3.1.2 Shrubland and Woody Vegetation**

Shrubland communities occurring throughout the survey area consisted of upland areas dominated by woody-stemmed vegetation including western snowberry (*Symphoricarpos occidentalis*).

Forested upland vegetation consisted of eastern cottonwood (*Populus deltoides*) and peachleaf willow (*Salix amygdaloides*).

#### **3.1.3 Cropland**

Cropland was confirmed in the survey area and classified as alfalfa (*Medicago sativa*).

### 3.1.4 Hydrophytic Vegetation

Aquatic vegetation species confirmed during the survey included common reed (*Phragmites australis*), foxtail barley (*Hordeum jubatum*), reed canarygrass (*Phalaris arundinacea*), broad-leaf cattail (*Typha latifolia*), and woolly sedge (*Carex pellita*).

### 3.2 HYDROLOGY

Wetland communities observed during the determination effort displayed at least one primary or two secondary indicators of wetland hydrology, as defined by the Manual and Supplement. Upland communities either failed to display hydrologic indicators or failed to meet the hydrophytic vegetation criterion, as defined by the Manual and Supplement. Common indicators of wetland hydrology observed during field surveys include Surface Water (A1), Saturation (A3), Water Marks (B1), Drift Deposits (B3), Algal Mat or Crust (B4), Inundation Visible on Aerial Imagery (B7), Water-Stained Leaves (B9), Drainage Patterns (B10), Aquatic Invertebrates (B13), Saturation Visible on Aerial Imagery (C9), and Geomorphic Position (D2),

According to National Weather Service preliminary climatological data for Williston, North Dakota (approximately 30 miles northwest from the project area), 4.61 inches of precipitation were recorded from March 1 through June 25, 2014 (Table 1). This amount is 1.10 inches below normal for this time period.

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

Month	Recorded Precipitation (inches)	Normal Precipitation (inches)	Difference (inches)
March 2014	0.32	0.71	-0.39
April 2014	1.71	1.00	0.71
May 2014	1.62	1.92	-0.30
June 1–25, 2014	0.96	2.08	-1.12
<b>Total</b>	<b>4.61</b>	<b>5.71</b>	<b>-1.10</b>

Source: National Oceanic and Atmospheric Administration 2014

### 3.3 WETLANDS

SWCA recorded three PEM wetlands within the 250-foot survey area, totaling approximately 0.67 acre. In total, approximately 0.31 acre of PEM wetland is proposed to be temporarily impacted in the 100-foot-wide construction ROW (Table 2). Two jurisdictional wetlands will be temporarily impacted; however, the USACE has the final authority to determine jurisdictional status.

**Table 2. PEM Wetland Acreage within the Survey Area.**

<b>Feature ID</b>	<b>Location</b>	<b>USACE Jurisdiction*</b>	<b>Temporarily Impacted Area within 100-foot-wide ROW (acres)</b>	<b>Total PEM Size (acres)</b>	<b>Length of Required Crossing (feet)</b>
WET10	Intermittent Drainage	Likely Jurisdictional	0.03	0.03	129.98
WET11	Intermittent Drainage	Likely Jurisdictional	0.06	0.39	44.89
WET12	Ephemeral Drainage	Isolated	0.22	0.25	103.66
<b>Total</b>			<b>0.31</b>	<b>0.67</b>	<b>278.53</b>

\* The USACE has the final authority on the jurisdictional status of a waterbody.

PEM = palustrine emergent

ROW = right-of-way

USACE = U.S. Army Corps of Engineers

### 3.4 WATERBODIES

No waterbodies were identified by SWCA during the field survey.

### 3.5 SOILS

Thirteen soil types are present in the project construction corridor, based on Natural Resources Conservation Service mapping (NRCS 2014). The project area analyzed for soils covers the 100-foot-wide construction corridor. Table 3 lists all soil units within the project area. The following soil component descriptions represent the most prevalent soil series found within the survey area (NRCS 2014).

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

<b>Soil Types</b>	<b>Slopes (%)</b>	<b>Acres within 100-foot-wide ROW</b>	<b>Percent within Map Unit</b>
Daglum-Belfield complex	0 to 6	7.73	36.13
Zahl-Williams-Cabba complex	6 to 9	2.86	13.39
Cabba-Chama-Sen silt loams	9 to 15	2.52	11.78
Chama-Cabba-Sen silt loams	6 to 9	2.18	10.19
Williams-Zahl loams	3 to 6	1.32	6.19
Reeder-Farnuf loams	3 to 6	1.16	5.43
Rhoades-Daglum complex	0 to 6	0.80	3.76
Cabba-Chama-Shambo loams	9 to 50	0.79	3.71
Dogtooth-Janesburg-Cabba complex	6 to 35	0.64	2.98
Reeder-Werner loams	6 to 9	0.60	2.82
Moreau-Barkof silty clays	3 to 6	0.44	2.04

Soil Types	Slopes (%)	Acres within 100-foot-wide ROW	Percent within Map Unit
Zahl-Cabba-Williams complex	9 to 15	0.34	1.59
Korchea loam, occasionally flooded	0 to 2	0.00	0.00
<b>Total</b>		<b>21.38</b>	<b>100.00</b>

Source: NRCS 2014.  
ROW = right-of-way

### **3.5.1 Daglum**

The Daglum series consists of deep and very deep, moderately well- and well-drained, slow to very slowly permeable soils found on swales on upland terraces and foot slopes. Slopes range from approximately 0 to 9 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 16 inches and mean annual air temperature is approximately 42 degrees Fahrenheit (°F). This soil type is used for rangeland foraging and cultivation of small grains. Native vegetation species common to this soil type include western wheatgrass (*Pascopyrum smithii*), blue grama (*Bouteloua gracilis*), and green needlegrass (*Nasella viridula*) (NRCS 2014).

### **3.5.2 Belfield**

The Belfield series consists of deep and very deep, well- to moderately well-drained, very slowly permeable soils found on upland flats, terraces, and swales with slopes ranging from approximately 0 to 9 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 15 inches and mean annual air temperature is approximately 43°F. This soil type is largely used for rangeland foraging. Native vegetation species common to this soil type include western wheatgrass, blue grama, and green needlegrass (NRCS 2014).

### **3.5.3 Zahl**

The Zahl series consists of very deep, slowly permeable, well-drained soils found on glacial till plains, moraines, and valley side slopes at approximately 1 to 60 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 14 inches and mean annual air temperature is approximately 40°F. This soil type is largely used for rangeland foraging. Native vegetation species common to this soil type include western wheatgrass, little bluestem (*Schizachyrium scoparium*), and needle and thread (*Hesperostipa comata*) (NRCS 2014).

### **3.5.4 Williams**

The Williams series consists of very deep, slowly permeable, well-drained soils found on glacial till plains and moraines with slopes at approximately 0 to 35 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 14 inches and mean annual air temperature is approximately 42°F. This soil type is largely used for cultivation. Native vegetation species common to this soil type include western wheatgrass, needle and thread, blue grama, and green needlegrass (NRCS 2014).

### 3.5.5 Cabba

The Cabba series consists of shallow, well-drained, moderately permeable soils found on hills, escarpments, and sedimentary plains. The soil slopes broadly range between 2 and 70 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 16 inches and mean annual air temperature is approximately 43°F. The most common vegetation species found on this soil type are little bluestem, green needlegrass, and other various herbs, forbs, and shrub species (NRCS 2014).

### 3.6 TREE, SAPLING, AND SHRUB COUNT

During SWCA’s field survey, one upland tree and shrubland areas was geographically referenced within the survey area. Table 4 summarizes the number of trees estimated to be impacted by the project as currently proposed. The NDPSR requires a 2:1 post- to pre-construction mitigation for all trees, saplings, and shrubs impacted during the construction of the proposed pipeline. Therefore, SWCA estimates approximately 24 2-year-old sapling individuals would need to be replanted in order to fulfill the 2:1 mitigation requirement.

**Table 4. Tree, Sapling, and Shrub Count.**

Woody Vegetation (WV) ID	Species	Type	Number of Trees*		Estimated Mitigation Commitment
			250-foot-wide Survey Corridor	100-foot-wide Construction ROW	
WV1	Eastern cottonwood ( <i>Populus deltoids</i> )	Tree	10	6	12
	Peachleaf willow ( <i>Salix amygdaloides</i> )		10	6	12
<b>Total</b>			<b>20</b>	<b>12</b>	<b>24</b>

\* Estimated value based off of the observed density of trees.  
ROW = right-of-way

### 3.7 NOXIOUS WEEDS

North Dakota Century Code Chapter 63-01.1 and the North Dakota Department of Agriculture recognize 11 species as noxious weeds. The species include absinth wormwood (*Artemisia absinthium*), Canada thistle (*Cirsium arvense*), diffuse knapweed (*Centaurea diffusa*), leafy spurge (*Euphorbia esula*), musk thistle (*Carduus nutans*), purple loosestrife (*Lythrum salicaria*), Russian knapweed (*Acroptilon repens*), spotted knapweed (*Centaurea stoebe*), yellow toadflax (*Linaria vulgaris*), dalmatian toadflax (*Linaria dalmatica*), and salt cedar (*Tamarix ramosissima*). Each county has the authority to add additional species to their list of noxious weeds. McKenzie County has listed the black henbane (*Hyoscyamus niger*), common burdock (*Arctium minus*), houndstounge (*Cynoglossum officinale*), halogeton (*Halogeton glomeratus*), and baby’s breath (*Gypsophila elegans*) in addition to the 11 state-listed noxious weeds. No noxious weeds were identified during the surveys.

### **3.8 WILDLIFE**

Several wildlife species that may exist in McKenzie County are listed as threatened or endangered under the Endangered Species Act (ESA) (16 United States Code 1531 et seq.). According to the USFWS, listed species in McKenzie County, North Dakota, include the black-footed ferret (*Mustela nigripes*), gray wolf (*Canis lupus*), whooping crane (*Grus americana*), piping plover (*Charadrius melodus*), interior least tern (*Sterna antillarum*), and pallid sturgeon (*Scaphirhynchus albus*). Candidate species include Sprague's pipit (*Anthus spragueii*). Proposed species include Dakota skipper (*Hesperia dacotae*), northern long-eared bat (*Myotis septentrionalis*), and rufa red knot (*Calidris canutus rufa*) (USFWS 2014). SWCA conducted a cursory threatened and endangered species survey concurrently with the wetland determination. Ecologists did not observe any primary (i.e., actual sighting) or secondary (i.e., tracks, scat, fur) indication of the presence of threatened or endangered species.

The proposed project would have no effect on black-footed ferret and gray wolf. Interior least tern, whooping crane, and piping plover have the potential to occur within the project area as migrants. As a result, these species may be, but are not likely to be adversely, affected by the proposed project. Additionally, the proposed project occurs within the same watershed as Lake Sakakawea and therefore may affect, but is not likely to adversely affect the pallid sturgeon or designated critical habitat for piping plover. The proposed project is not likely to jeopardize the Sprague's pipit, Dakota skipper, northern long-eared bat, and rufa red knot.

#### **3.8.1 Black-footed Ferret**

**Federal Status:** Endangered

**Affects Determination:** No effect

Black-footed ferrets are nocturnal, solitary carnivores of the weasel family that have been largely extirpated from the wild primarily due to range-wide decimation of the prairie dog (*Cynomys* sp.) ecosystem (Kotliar et al. 1999). They have been listed by the USFWS as endangered since 1967, and have been the object of extensive re-introduction programs (USFWS 2013a). Ferrets inhabit extensive prairie dog complexes of the Great Plains, typically composed of several smaller colonies in proximity to one another that provide a sustainable prey base. The *Black-footed Ferret Survey Guidelines for Compliance with the Endangered Species Act* (USFWS 1989) states that ferrets require black-tailed prairie dog (*Cynomys ludovicianus*) towns or complexes greater than 80 acres in size, and towns of this dimension may be important for ferret recovery efforts (USFWS 1988a). Prairie dog towns of this size were not observed during the field survey. In addition, this species has not been observed in the wild for more than 20 years. Therefore, the proposed project would have **no effect** on this species.

#### **3.8.2 Gray Wolf**

**Federal Status:** Endangered

**Affects Determination:** No effect

The gray wolf, listed as endangered in the United States in 1978, was believed extirpated from North Dakota in the 1920s and 1930s, with only sporadic reports from the 1930s to present (Licht and Huffman 1996; USFWS 1978). The presence of wolves in most of North Dakota

consists of occasional dispersing animals from Minnesota and Manitoba (Licht and Fritts 1994; Licht and Huffman 1996). Most documented gray wolf sightings within western North Dakota are believed to be young males seeking to establish territory (Hagen et al. 2005). The Turtle Mountain region of north-central North Dakota provides marginal habitat that may be able to support a very small population of wolves. The closest known pack of wolves is the Minnesota population located approximately 17 miles (28 kilometers [km]) from the northeast corner of North Dakota.

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

### **3.8.3 Whooping Crane**

**Federal Status:** Endangered

**Affect Determination:** May affect, is not likely to adversely affect

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

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

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

Suitable whooping crane foraging habitat (i.e., cultivated cropland and wetlands >0.04 hectare) was observed within the survey area. In addition, the project area is located within the migratory corridor for the whooping crane, with the nearest sighting approximately 5 miles to the southwest of the western-most reroute of the pipeline (USFWS, M. Tarcha, unpublished data). Therefore, the proposed project **may affect, but is not likely to adversely affect** the endangered whooping crane.

#### **3.8.4 Piping Plover**

**Federal Status:** Threatened

**Affect Determination:** May affect, is not likely to adversely affect

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

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

Suitable shoreline habitat for breeding and nesting plovers does not occur within the project area and the Missouri River is a minimum of 16.5 miles north from the survey area. It is unlikely but possible that migrating plovers may traverse the project area during their migration. Therefore, the proposed project **may affect, but is not likely to adversely affect** piping plovers.

#### **3.8.5 Designated Critical Habitat of Piping Plover**

**Affect Determination:** May affect, is not likely to adversely affect

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

Since the proposed project would not modify, alter, disturb, or affect the shoreline of Lake Sakakawea or the Missouri River, but is within the same watershed as Lake Sakakawea or the Missouri River, the proposed project **may affect, is not likely to adversely affect** designated critical habitat of the piping plover.

### **3.8.6 Interior Least Tern**

**Federal Status:** Endangered

**Affect Determination:** May affect, is not likely to adversely affect

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

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

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

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

Suitable shoreline habitat for breeding and nesting terns does not occur in the project area, and the Missouri River is a minimum of 16.5 miles north from the survey area. It is unlikely that terns would visit the upland or wetland habitats present in the survey area. Therefore, the proposed project **may affect, but is not likely to adversely affect** endangered least terns.

### **3.8.7 Pallid Sturgeon**

**Federal Status:** Endangered

**Affect Determination:** May affect, is not likely to adversely affect

The pallid sturgeon was listed as endangered in 1990 in the United States by the USFWS (1990b). The primary factor leading to the decline of this species is the alteration of habitat

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

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

Suitable habitat for pallid sturgeon is not present in the survey area and the Missouri River is a minimum of 16.5 miles north from the project area. However, tributaries to the Missouri River are found within the project area. Potential pollution occurring as a result of construction activities, hydrostatic testing, and pipeline operations are concerns for downstream populations of endangered pallid sturgeon. Activities associated with the proposed project are not anticipated to adversely affect water quality and subsequently the pallid sturgeon. Therefore, the proposed project **may effect, but is not likely to adversely affect** pallid sturgeon.

### **3.8.8 Sprague's Pipit**

**Federal Status:** Candidate

**Affect Determination:** Not likely to jeopardize

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

In North Dakota, Sprague's pipit has been found in areas of moderate grazing. Sprague's pipits are sensitive to patch size and avoid edges between grasslands and other habitat features (USFWS 2011). They may avoid non-grassland features including roads, trails, oil wells, croplands, woody vegetation, and wetlands. The Sprague's pipit is reported to stay up to 350

meters away from anthropogenic features such as roads, oil wells, and wind turbines (USFWS 2011). The USFWS has estimated that each new oil well and associated road in North Dakota results in potential impacts to approximately 51 acres of pipit habitat due to avoidance and habitat fragmentation (USFWS 2011). Because of increasing habitat fragmentation, especially by energy development, throughout the Sprague's pipit range, and the loss of native prairie habitat, the Sprague's pipit was listed as a Candidate Species under the ESA in 2010 (USFWS 2011).

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

Native prairie habitat with grasses of intermediate height does occur within the project area. However, the habitat within and surrounding the project area has been previously disturbed by agriculture, roads, and oil and gas development. The proposed project is unlikely to directly affect habitat due to lack of adequate patch sizes required by the Sprague's pipit for breeding grounds in the immediate project area, but may indirectly contribute to reduced use of any nearby suitable grassland habitat patches within 350 meters of the proposed project. Therefore, the proposed project **is not likely to jeopardize the** Sprague's pipit.

### **3.8.9 Dakota Skipper**

**Federal Status:** Proposed

**Affect Determination:** Not likely to jeopardize

The Dakota skipper is a small butterfly with a 1-inch wingspan and is found primarily in undisturbed native tall grass and upland dry Northern mixed grass prairie areas with a high diversity of wildflowers and grasses (Committee on the Status of Endangered Wildlife in Canada 2003). The Dakota skipper appears to require a range of precipitation-evaporation ratios between 60 and 105 and a soil pH between 7.20 and 7.90 (McCabe 1981). Larvae feed on grasses, favoring little bluestem. Adults commonly feed on nectar of flowering native forbs such as harebell (*Campanula rotundifolia*), wood lily (*Lilium philadelphicum*), and purple coneflower (*Echinacea angustifolia*). The species is threatened by conversion of native prairie to cultivated agriculture or shrublands, over-grazing, invasive species, gravel mining, and inbreeding (USFWS 2005). Suitable habitat does not exist within the proposed project area. It is not anticipated that construction activities would negatively impact the species as long as reclamation is conducted as soon as the construction phase is complete. In addition, the use of existing access roads to reach the proposed pipeline location reduces the potential fragmentation of suitable habitat. Lastly, the implementation of a noxious weed management program significantly reduces any potential impacts on the Dakota skipper and its habitat. Therefore, the proposed project **is not likely to jeopardize** this species. The use of best management practices and conservation guidelines (USFWS 2007b) during construction and operation and immediate reclamation of short-term disturbance should decrease direct, indirect, and cumulative impacts to this species.

### **3.8.10 Northern Long-eared Bat**

**Federal Status:** Proposed

**Affect Determination:** Not likely to jeopardize

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

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

Northern long-eared bats are not known to occur in the project area. Suitable winter habitat for northern long-eared bats does not occur within the project area. Nearby trees and rocky outcrops can act as suitable summer day roosts. Due to the low likelihood of northern long-eared bat occurrence in the project area, the proposed project **is not likely to jeopardize** the species.

### **3.8.11 Rufa Red Knot**

**Federal Status:** Proposed

**Affect Determination:** Not likely to jeopardize

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

Potential habitat along the lake is approximately 16.5 straight-line miles north from the proposed project. Potential spills and sedimentation occurring within the project area are concerns for downstream water quality and could indirectly affect suitable stopover habitat for the rufa red knot. Activities associated with the construction, production, or reclamation of the proposed project are not anticipated to adversely affect suitable stopover habitat for the rufa red knot. Therefore, the proposed project **is not likely to jeopardize** the rufa red knot.

### **3.8.12 Migratory Birds**

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

**Effects of Project:** No adverse effects anticipated

Suitable habitat for migratory birds exists in the entire project area. Specifically, grassland nesting birds have the potential to occur and nest in the project area, especially during the migratory bird breeding season between February 1 and July 15. Suitable woodland nesting habitat also occurs in the project area. SWCA recommends construction outside of the migratory bird nesting season. The proposed project is unlikely to cause any adverse effects to migratory birds.

**3.8.13 Bald Eagle**

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

**Effects of Project:** No adverse effects anticipated

The bald eagle (*Haliaeetus leucocephalus*) feeds on fish and carrion and typically roosts in large trees near a water source. Bald eagle nesting habitat is typically any mature stands of conifer (*Pinophyta* sp.) or cottonwood (*Populus* sp.) trees in association with rivers, streams, reservoirs, lakes, or any significant body of water. Bald eagles are usually observed along the Missouri River (Gomes n.d.) and Yellowstone River. Bald eagles frequently migrate through the grassland habitats; however, no bald eagles or nests were observed during the field surveys. Therefore, **no adverse effects** to bald eagles are anticipated.

**3.8.14 Golden Eagle**

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

**Effects of Project:** No adverse effects anticipated

The golden eagle (*Aquila chrysaetos*) prefers habitat characterized by open prairie, plains, and forested areas. Usually, golden eagles can be found in proximity to badland cliffs which provide suitable nesting habitat. Golden eagles may occur within or near the survey area; however, no golden eagles or nests were observed during the field surveys. Therefore, **no adverse effects** to golden eagles are anticipated.

**3.8.15 Wildlife Observed**

During the field survey, SWCA ecologists observed various wildlife species which utilize wetlands and other habitat within the survey area (Table 5). Common wildlife species may be affected both directly via incidents with construction equipment or indirectly through the temporary fragmentation of habitat as a result of construction activities.

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

Common Name	Scientific Name	Observation Type
Western meadowlark	<i>Sturnella neglecta</i>	Primary
Horned lark	<i>Eremophila alpestris</i>	Primary
Bobolink	<i>Dolichonyx oryzivorus</i>	Primary
Mallard	<i>Anas platyrhynchos</i>	Primary
Eastern kingbird	<i>Tyrannus tyrannus</i>	Primary

<b>Common Name</b>	<b>Scientific Name</b>	<b>Observation Type</b>
Northern pintail	<i>Anas acuta</i>	Primary
Brown-headed cowbird	<i>Molothrus ater</i>	Primary
White-tailed deer	<i>Odocoileus virginianus</i>	Primary
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	Primary

## **4.0 CONCLUSIONS AND RECOMMENDATIONS**

1. SWCA ecologists recorded approximately 0.67 acre of wetlands within the survey area.
2. In total, approximately 0.31 acre of PEM wetland *may* be temporarily impacted by construction activities.
3. No waterbodies were observed within the survey area.
4. SWCA estimates 12 trees, saplings, and shrubs may be impacted. Therefore, approximately 24 2-year-old saplings may need to be replanted to fulfill the 2:1 mitigation requirement.
5. According to the recommendations of the North Dakota Forest Service, tree species selection for replacement should be accomplished through collaboration with a reputable area nursery. This will allow for species to be selected based on various factors including species hardiness and area soil type.
6. No threatened or endangered species were observed during the field survey. Suitable roosting and foraging habitat exists within the project area for the whooping crane, and there have been several previous sightings within 10 miles of the project area. SWCA recommends to stop construction and notify the USFWS if construction is to occur within whooping crane spring and fall migration periods, and a whooping crane is observed within 0.5 mile of the project.

The other listed threatened and endangered species which occur in McKenzie County are not likely to be detrimentally impacted by construction activities.

7. A 0.5-mile line-of-sight survey was conducted throughout the survey area. Migratory birds and habitat were observed throughout the entire project area.

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

8. No noxious weeds were discovered within the surveyed areas. If noxious weeds are confirmed during construction activities, actions should be taken to reduce the potential to spread any state listed noxious weed species, especially to native areas.



## 5.0 LITERATURE CITED

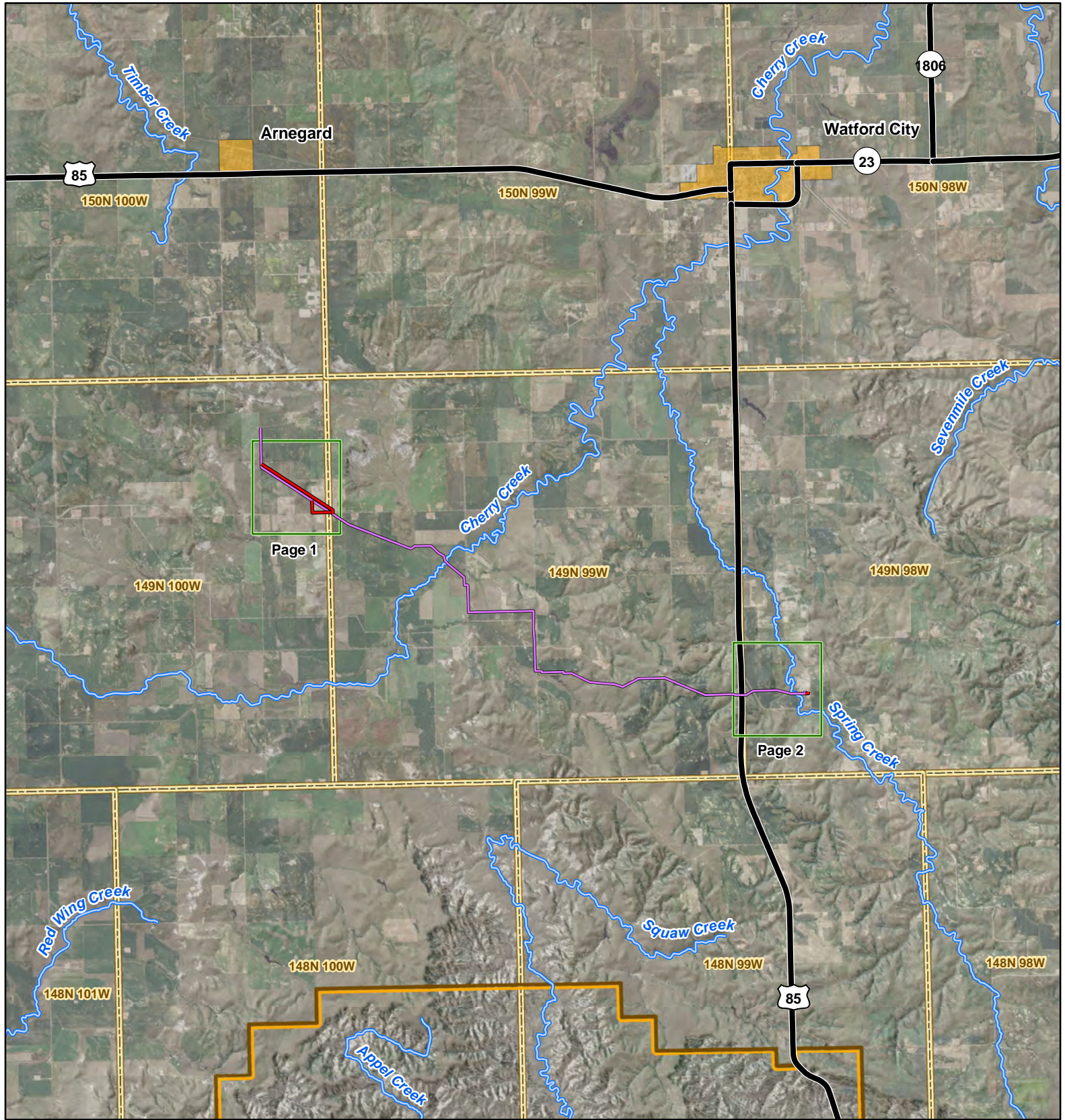
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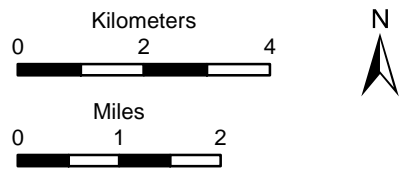
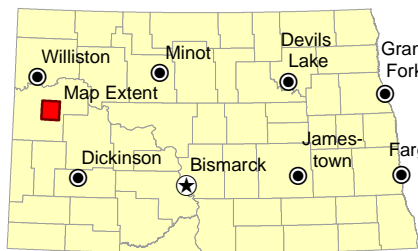
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**APPENDIX A**  
**Vicinity and Site Layout Maps**

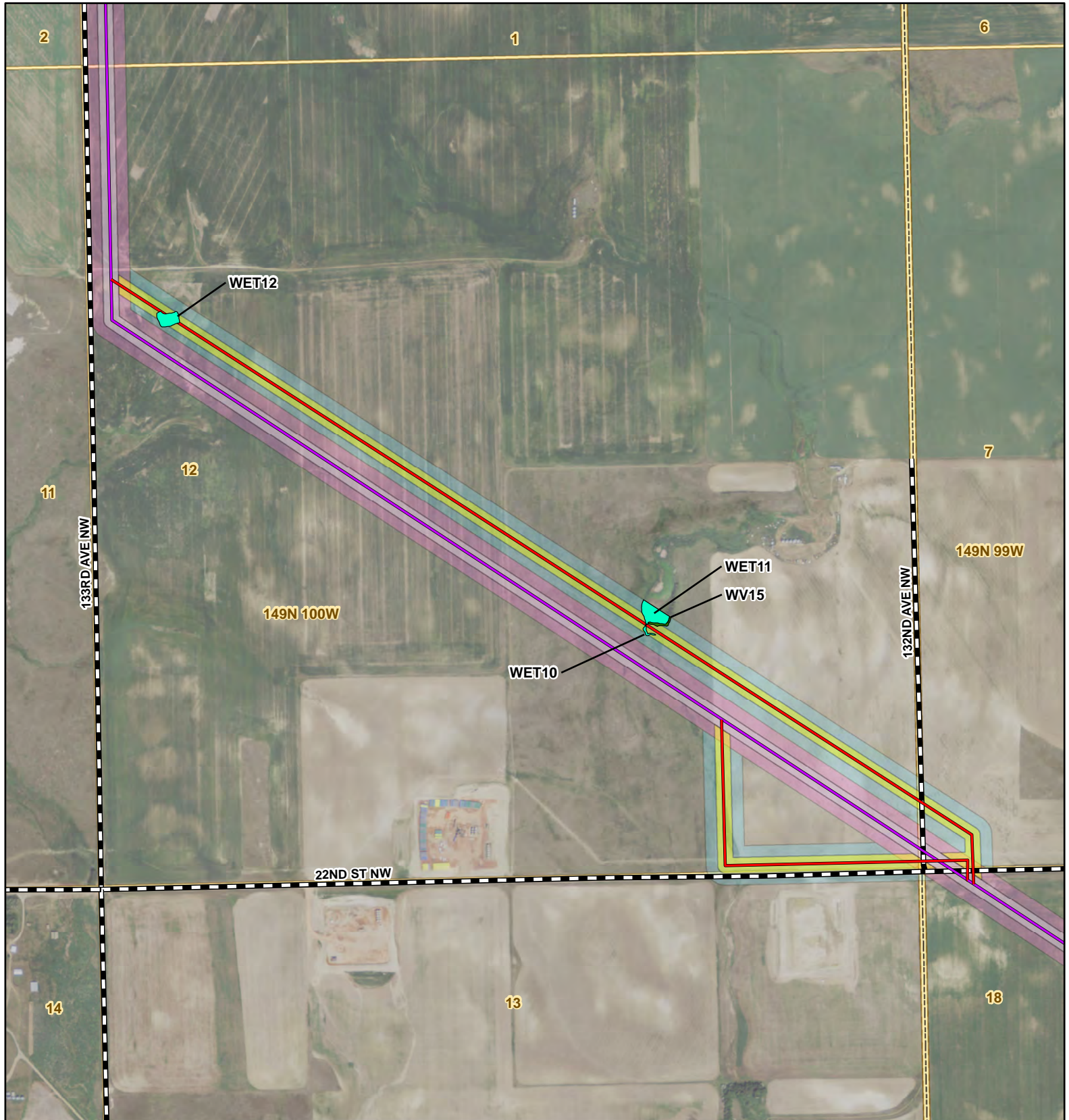


### Targa Lateral

-  Proposed Reroute Pipeline System
-  Previously Proposed Pipeline System
-  Major Highway
-  Stream
-  Reroute Project Location Extent
-  City Limit
-  Theodore Roosevelt National Park North Unit Boundary
-  Township Boundary

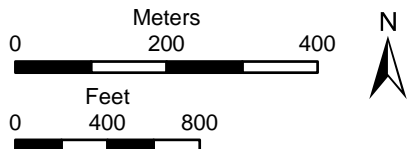
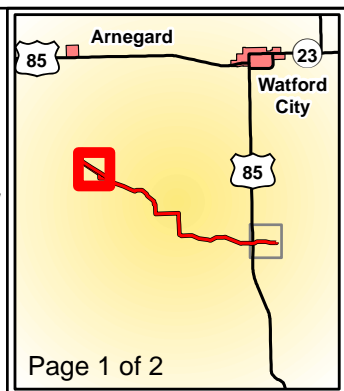


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 Projection: NAD 1983 UTM Zone 13N



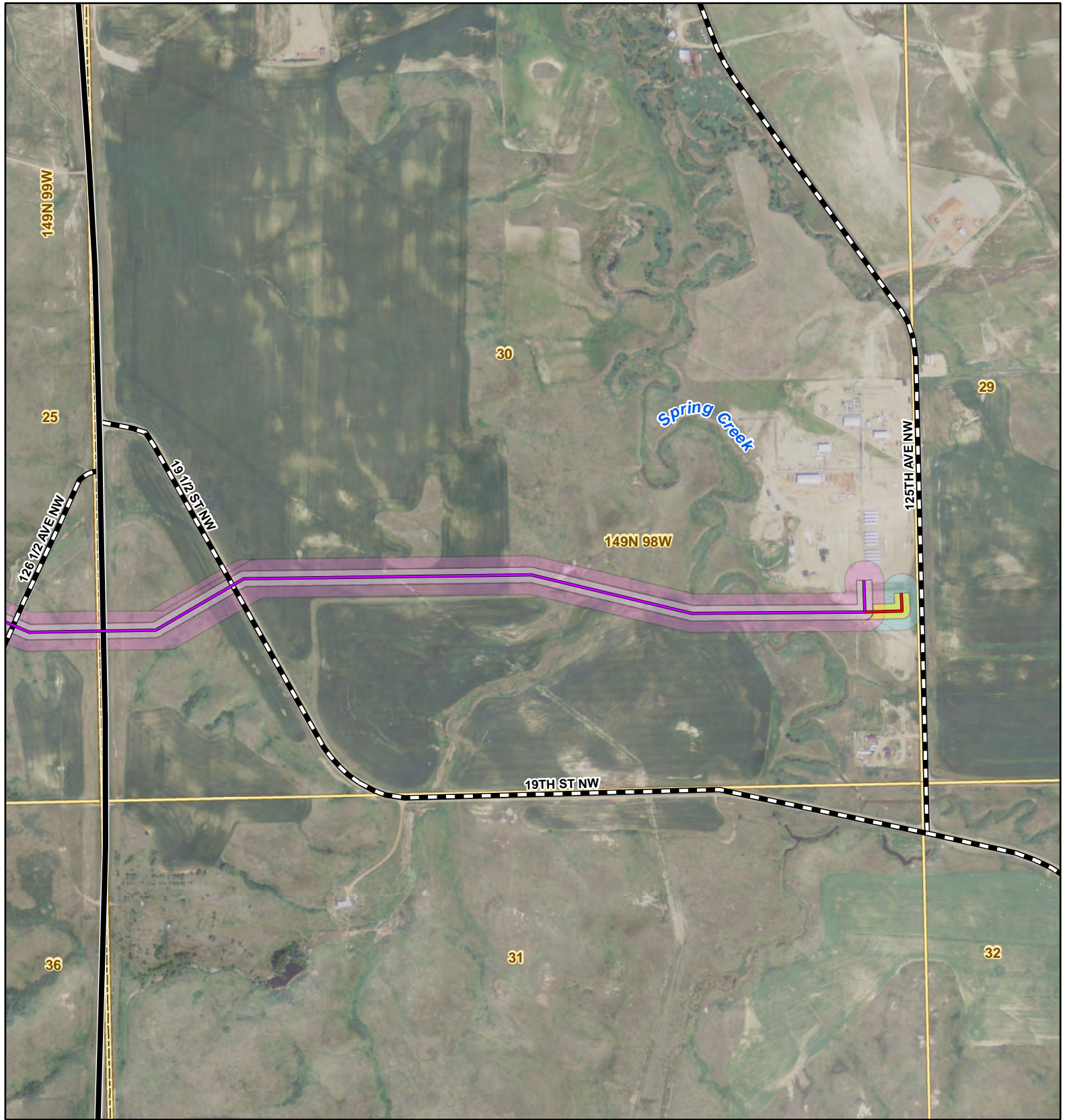
### Targa Lateral Reroute

- Proposed Reroute Pipeline System
- Previously Proposed Pipeline System
- U.S. Highway
- County Road
- Wetland
- Woody Vegetation
- Proposed Reroute ROW
- Previously Proposed ROW
- Current Survey Area
- Previous Survey Area
- Township Boundary
- Section Boundary



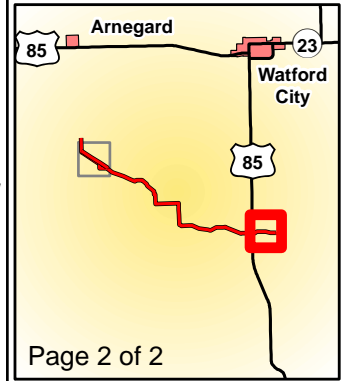
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 Source: North Dakota GIS Hub  
 Quadrangle: Arnegard (1979)  
 and Stock Butte (1960)  
 Township, Range: 149N, 100W

McKenzie County, North Dakota  
 Projection: NAD 1983 UTM Zone 13N



**Targa Lateral Reroute**

- Proposed Reroute Pipeline System
- Previously Proposed Pipeline System
- U.S. Highway
- County Road
- Wetland
- Woody Vegetation
- Proposed Reroute ROW
- Previously Proposed ROW
- Current Survey Area
- Previous Survey Area
- Township Boundary
- Section Boundary

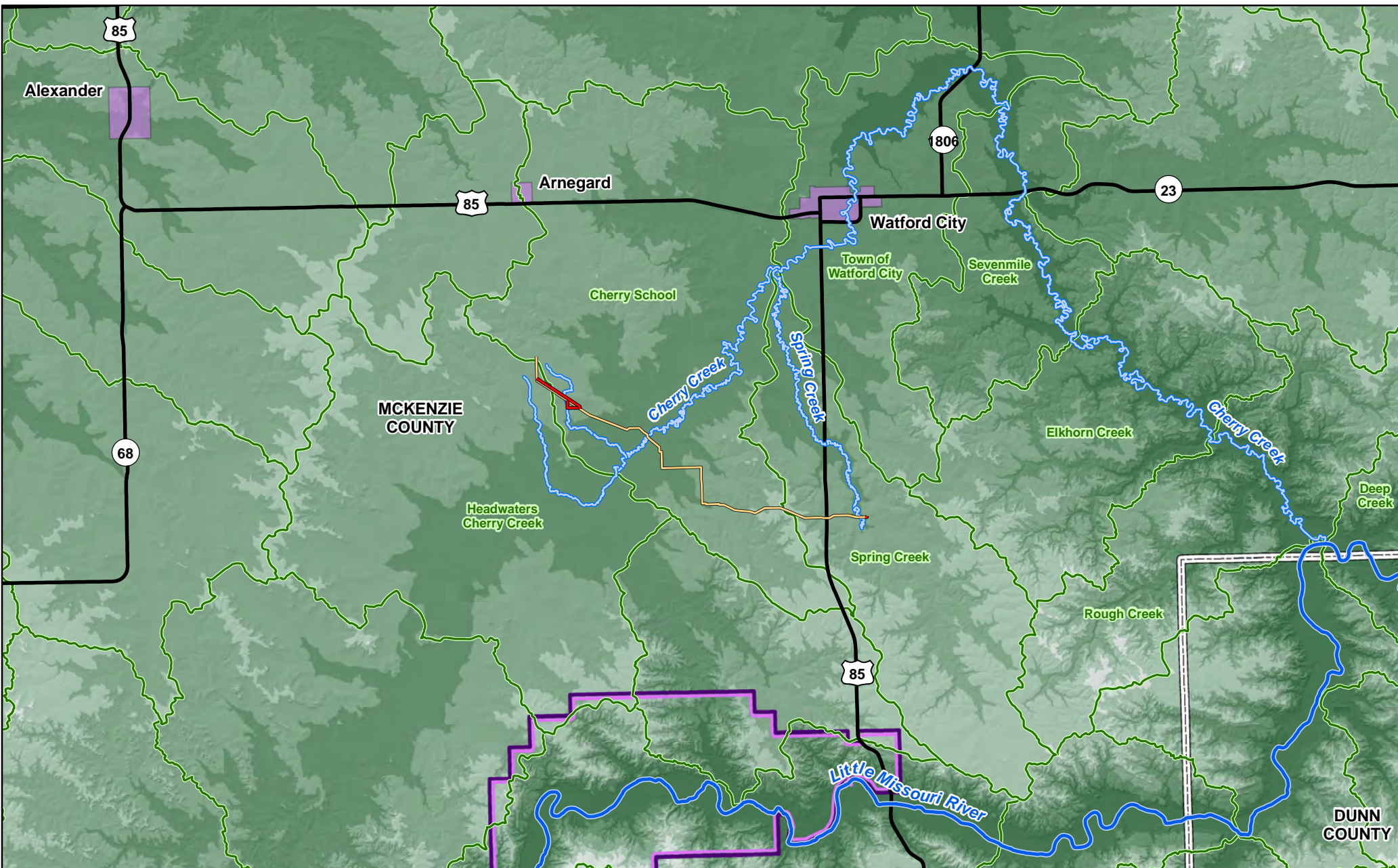


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
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
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Township, Range: 149N, 99W  
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McKenzie County, North Dakota  
Projection: NAD 1983 UTM Zone 13N








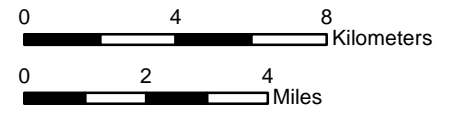
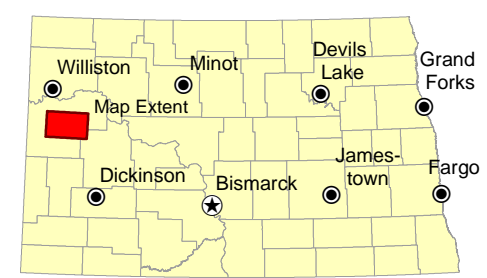
**Targa Lateral**

-  Proposed Reroute Pipeline System
-  Previously Proposed Pipeline System
-  Flow Path
-  Little Missouri River
-  Major Highway

-  Hydrologic Unit Boundary
-  City Limit
-  Theodore Roosevelt National Park North Unit Boundary
-  County Boundary

**Elevation (feet)**

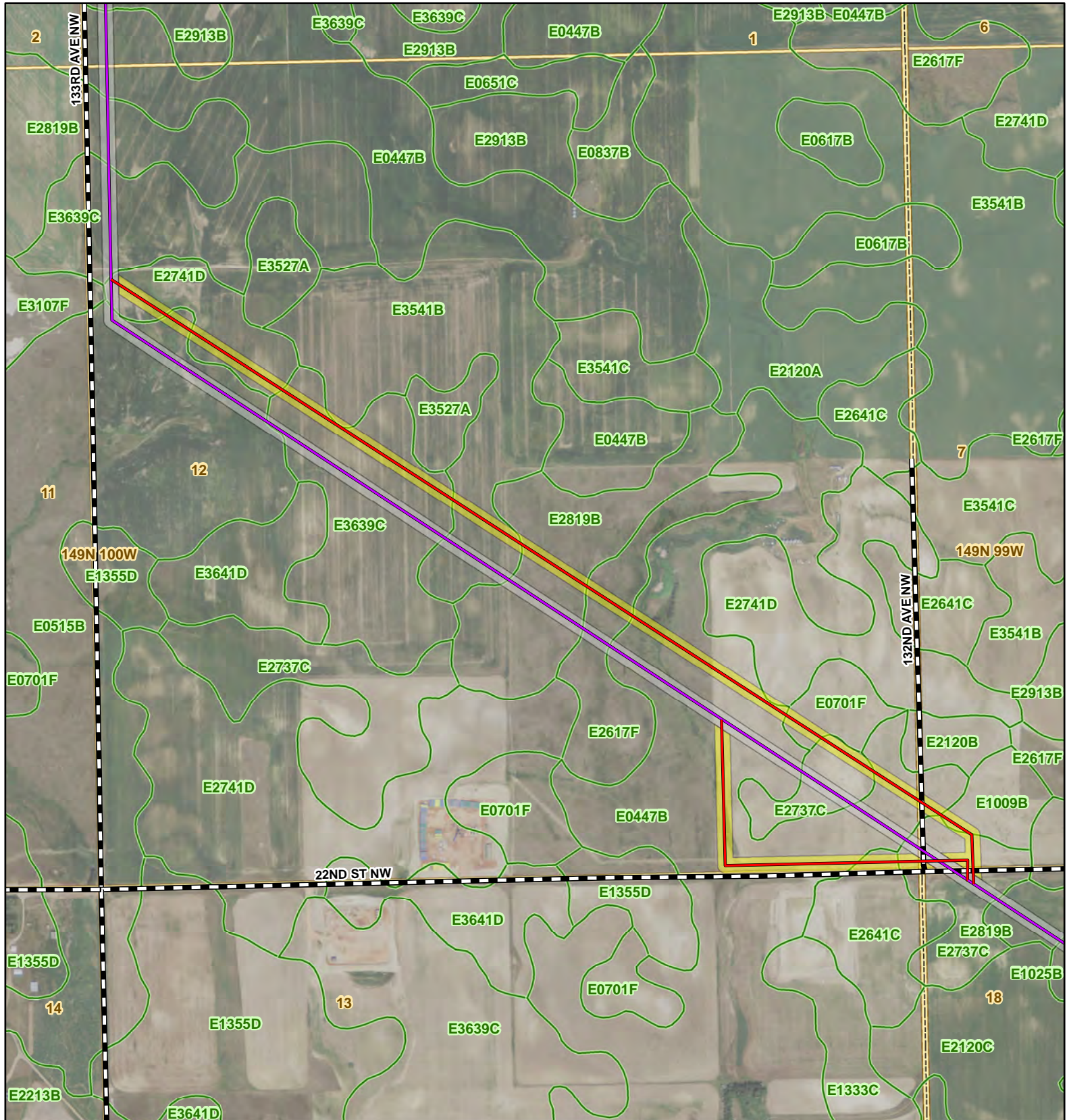
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-  > 2,042.9 - < 2,209.8
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Base Map: 2012 Aerial Imagery  
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 McKenzie County, North Dakota  
 Projection: NAD 1983 UTM Zone 13N

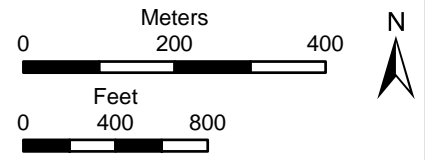
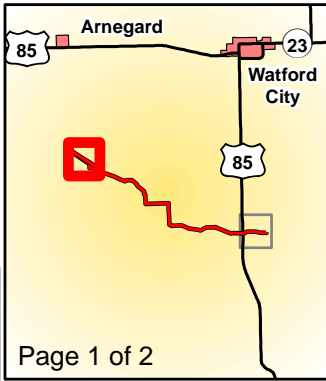


**APPENDIX B**  
**Survey Area Soil Series Map**



**Targa Lateral Reroute**

- Proposed Reroute Pipeline System
- Previously Proposed Pipeline System
- U.S. Highway
- County Road
- Proposed Reroute ROW
- Previously Proposed ROW
- Soil Unit Boundary
- Township Boundary
- Section Boundary

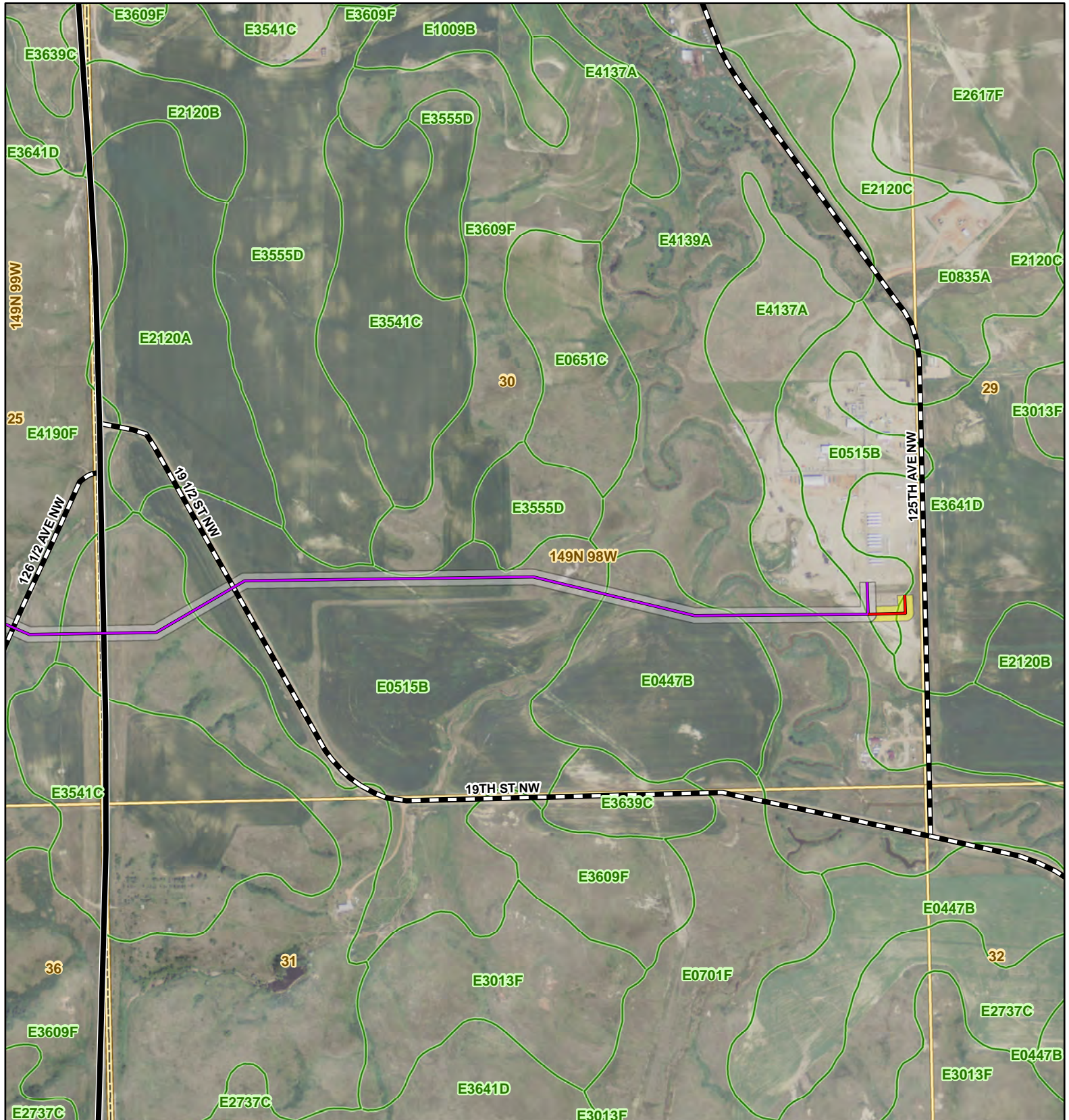


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 and Stock Butte (1960)  
 Township, Range: 149N, 100W



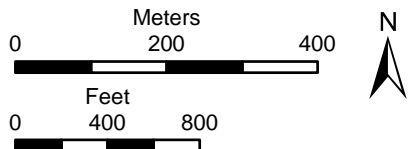
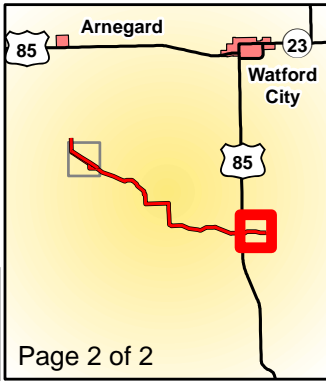
116 North 4th Street  
 Suite 200  
 Bismarck, ND 58501  
 Phone: 701.258.6622  
 Fax: 701.258.5957  
 www.swca.com

McKenzie County, North Dakota  
 Projection: NAD 1983 UTM Zone 13N



**Targa Lateral Reroute**

- Proposed Reroute Pipeline System
- Previously Proposed Pipeline System
- U.S. Highway
- County Road
- Proposed Reroute ROW
- Previously Proposed ROW
- Soil Unit Boundary
- Township Boundary
- Section Boundary



Base Map: 2012 Aerial Imagery  
 Source: North Dakota GIS Hub  
 Quadrangle: Tepee Buttes (1960)

Township, Range: 149N, 99W  
 and 149N, 98W  
 McKenzie County, North Dakota  
 Projection: NAD 1983 UTM Zone 13N



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**APPENDIX C**  
**Photographs of Project Area**



**Figure C.1. Seasonal wetland (WET10), facing northwest (photo taken June 25, 2014).**



**Figure C.2. Permanent wetland (WET11), facing north (photo taken June 25, 2014).**



**Figure C.3. Woody vegetation (WV15) consisting of eastern cottonwood and peachleaf willow, facing east (photo taken June 25, 2014).**



**Figure C.4. Semipermanent wetland (WET12), facing south (photo taken June 25, 2014).**

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# **Appendix E**

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## Cultural Resources Report

**Addendum to the Class I and Class  
III Cultural Resource Inventory of the  
ONEOK Bakken Pipeline, LLC, Targa  
Lateral Pipeline Project (Reroutes),  
McKenzie County, North Dakota**

Prepared for

**E3 Environmental, LLC**

Prepared by

**SWCA Environmental Consultants**

July 2014



## MANUSCRIPT DATA RECORD FORM

1. Manuscript Number:
2. SHPO Reference #:
3. Author(s): Carolyn Riordan
4. Title: Addendum to the Class I and Class III Cultural Resource Inventory of the ONEOK Bakken Pipeline, LLC, Targa Lateral Pipeline Project (Reroutes), McKenzie County, North Dakota
5. Report Date: July 7, 2014
6. Number of Pages: 23
7. Type – I, T, E, O: I
8. Acres: 48.98
9. Legal Location(s) (no quarter sections) with Historic Context Study Unit(s):  
Consult the township tables in *The North Dakota Comprehensive Plan for Historic Preservation: Archeological Component*, (SHSND 2008; available at <http://history.nd.gov/hp/hpforms.html>) for Study Unit assignments.  
Study Units: LM, CB, KN, HE, SM, GA, JA, GR, NR, SR, SO, SH, YE

<u>COUNTY</u>	<u>TWP</u>	<u>RNG</u>	<u>SEC</u>	<u>SU</u>
McKenzie	149N	98W	30	LM
McKenzie	149N	99W	7	LM
McKenzie	149N	100W	12	LM



**Addendum to the Class I and Class III Cultural Resource Inventory of the  
ONEOK Bakken Pipeline, LLC, Targa Lateral Pipeline Project (Reroutes),  
McKenzie County, North Dakota**

Submitted to:

**State Historical Society of North Dakota**

Prepared for:

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SWCA Cultural Resource Report Number 14-330  
Addendum to Report Number 14-225

**July 7, 2014**



## **ABSTRACT**

This report is an addendum to the Class I and Class III cultural resource inventory report of the ONEOK Bakken Pipeline, LLC, Targa Lateral pipeline project (Picka 2014), and presents the results of a Class III cultural resource inventory conducted by SWCA Environmental Consultants (SWCA) on June 25, 2014, on behalf of E3 Environmental, LLC (E3), in support of reroutes of the pipeline project. The proposed reroutes would be located on privately owned lands in McKenzie County, North Dakota. The regulatory agencies involved with the project are 1) the North Dakota Public Service Commission under the North Dakota Energy Conversion and Transmission Facility Siting Act (excluding any applicable county or local requirements), and 2) the U.S. Army Corps of Engineers through Section 404 of the Clean Water Act, which regulates discharge into waters of the U.S. regulated by the U.S. Army Corps of Engineers. Therefore, SWCA's Class III inventory in support of the project reroutes is to assist E3 in meeting the cultural resource requirements within the North Dakota Public Service Commission's Certificate of Corridor Compatibility and Route Permit application. Additionally, SWCA's inventory assists E3 in achieving compliance with Section 404 of the Clean Water Act, including the Nationwide Permit General Conditions pertaining to Section 106 of the National Historic Preservation Act and the Endangered Species Act.

The proposed Targa Lateral reroutes are in Section 30, Township (T) 149 North (N), Range (R) 98 West (W), Section 7, T149N, R99W, and Section 12, T149N, R100W, and consist of three separate segments measuring 2,625 feet long, 6,900 feet long, and 356 feet long. The proposed reroutes were designed to assist E3 with pipeline siting options. The inventory consists of a 250-foot-wide survey corridor centered on the proposed reroutes. In total 48.98 acres were inventoried for the project.

During the inventory SWCA attempted to revisit five previously recorded cultural resources, including one historic homestead and cultural material scatter site (32MZ481) and four prehistoric chipped stone isolated finds (32MZX261, 32MZX262, 32MZX263, and 32MZX266). None of the previously recorded resources were relocated, and no cultural resources were newly recorded during the Targa Lateral pipeline project reroute inventory. All of the previously recorded isolated finds are considered not eligible for the National Register of Historic Places and, therefore, no further work is necessary. Site 32MZ481 has been previously recommended not eligible for the National Register of Historic Places and, based on the results of the current revisit, SWCA archaeologists concur with this recommendation; therefore, no further work is recommended for this resource. As proposed the project would not impact any potentially eligible resources; it is therefore recommended that a determination of *No Significant Sites Affected* and *No Historic Properties Affected* be granted for the project to proceed as planned.

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## **INTRODUCTION**

This addendum report presents the results of a Class III cultural resource inventory conducted by SWCA Environmental Consultants (SWCA) on June 25, 2014, on behalf of E3 Environmental, LLC (E3), in support of reroutes for the ONEOK Bakken Pipeline, LLC, Targa Lateral pipeline project. The inventory was conducted to provide E3 with alignment options to accommodate engineering concerns. The initial alignment is outlined in the original Class I and Class III report (Picka 2014), while three separate reroute segments, measuring 2,625 feet long, 6,900 feet long, and 356 feet long, are outlined herein. The proposed reroutes would be located on privately owned lands in McKenzie County, North Dakota.

Although the proposed project would be located on privately owned lands, the regulatory agencies involved with the project are 1) the North Dakota Public Service Commission under the North Dakota Energy Conversion and Transmission Facility Siting Act (excluding any applicable county or local requirements), and 2) the U.S. Army Corps of Engineers through Section 404 of the Clean Water Act, which regulates discharge into waters of the U.S. regulated by the U.S. Army Corps of Engineers. Therefore, SWCA's Class III inventory in support of the project reroutes is to assist E3 in meeting the cultural resource requirements within the North Dakota Public Service Commission's Certificate of Corridor Compatibility and Route Permit application. Additionally, SWCA's inventory assists E3 in achieving compliance with Section 404 of the Clean Water Act, including the Nationwide Permit General Conditions pertaining to Section 106 of the National Historic Preservation Act and the Endangered Species Act.

In total 9,881 feet of reroute alignments were inventoried for the Targa Lateral pipeline project. The survey area consists of 48.98 acres and includes a 250-foot-wide corridor centered on the reroute centerlines. The inventoried area is located in the Section 30, Township (T) 149 North (N), Range (R) 98 West (W), Section 7, T149N, R99W, and Section 12, T149N, R100W, situated on Arnegard (1979), Stock Butte (1960), and Tepee Buttes (1960), North Dakota, U.S. Geological Survey topographic quadrangles (Figures 1a and 1b).

For the cultural resource investigation, William Harding served as Principal Investigator. Fieldwork was conducted by Matthew Cox, SWCA archaeologist. All field notes and photographs are on file at SWCA's Bismarck, North Dakota, office under project number 29408.

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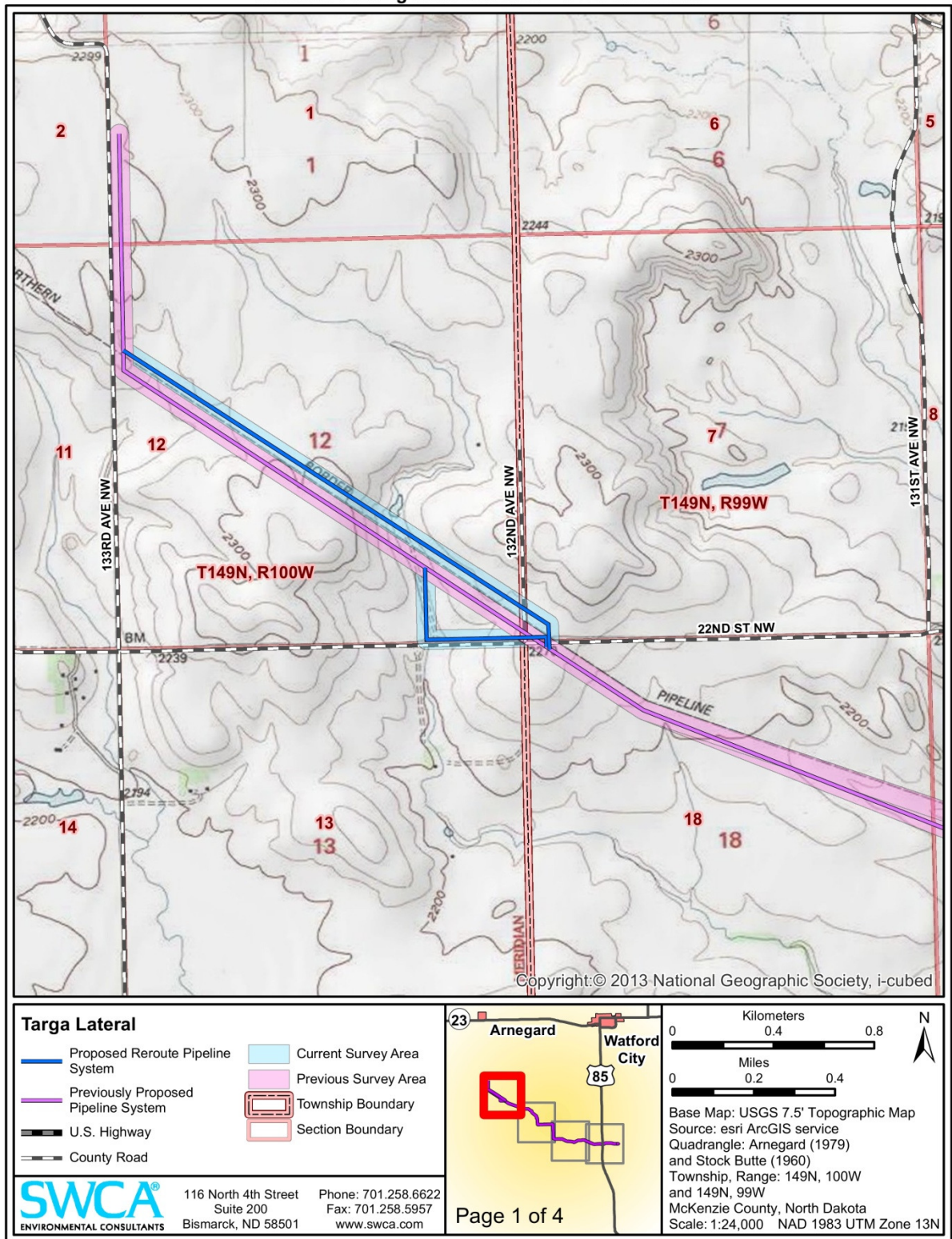


Figure 1a. Project location map 1 of 2.

Contains Privileged Information -- Do Not Release

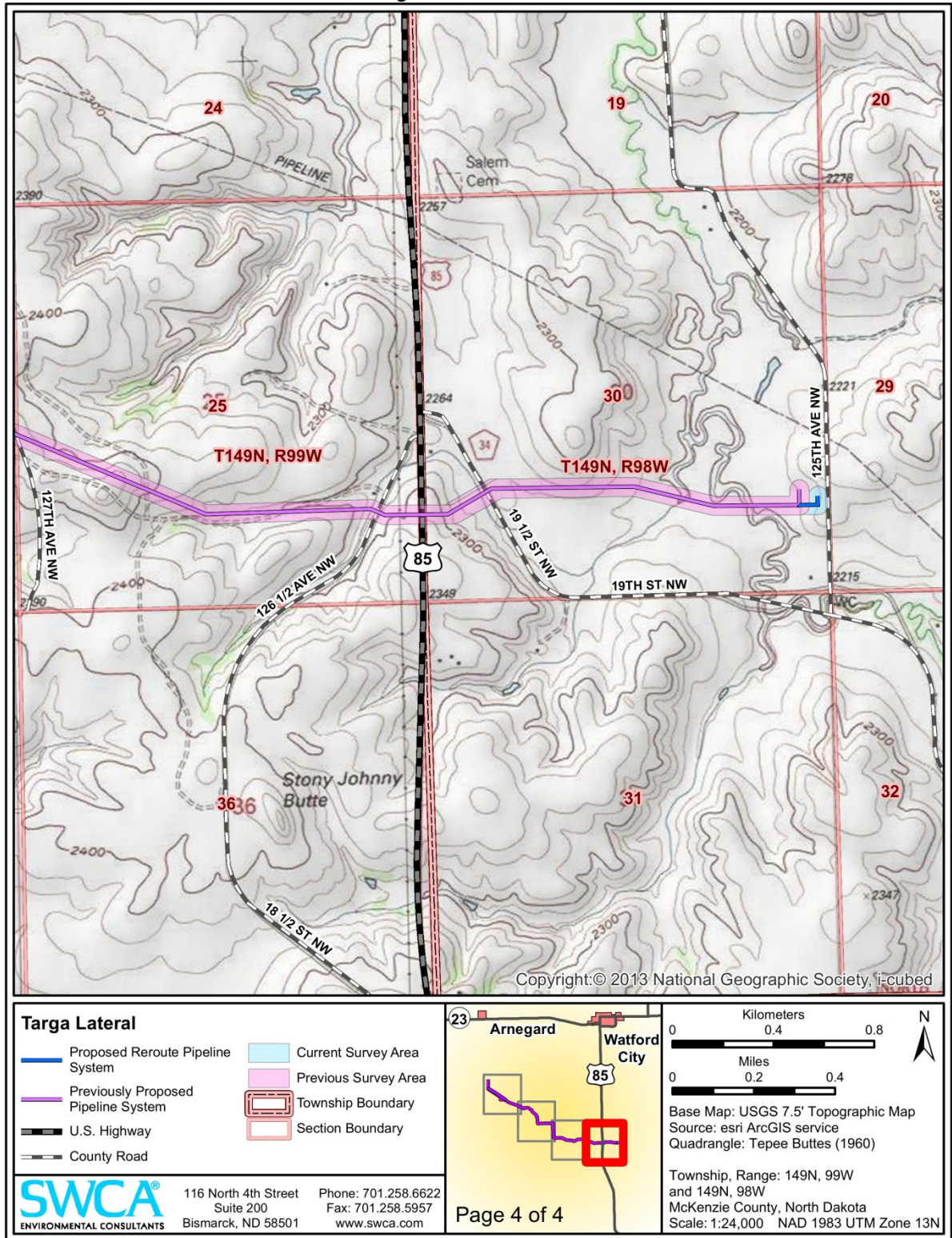


Figure 1b. Project location map 2 of 2.

## **PROJECT SETTING AND BACKGROUND**

The project setting, including discussions of the topography, climate, hydrology, geology, soils, and flora and fauna; environmental constraints; and cultural and historic overview are described in the original Class I and Class III report (Picka 2014).

## **BACKGROUND RESEARCH**

As part of the initial phase of this investigation, SWCA conducted a background search of archaeological and historical literature and records for the project area and surrounding 1-mile area. Researchers searched relevant records holdings at the State Historical Society of North Dakota and other available sources for information regarding previously recorded historic and prehistoric sites located within the project area. Background research was conducted on April 21, 2014. The results of this search are detailed in Picka (2014). No previously recorded sites are located within the project area.

## **FIELDWORK METHODS**

The inventory area included a 250-foot-wide corridor centered on 9,881 feet of alignment, totaling 48.98 acres. Inventory was conducted by means of pedestrian transects spaced no more than 30 meters apart. No subsurface testing was conducted. For a detailed discussion of the project survey methods and site evaluation, refer to Picka (2014).

## **INVENTORY RESULTS AND RECOMMENDATIONS**

The Class III inventory was conducted on June 25, 2014, for the proposed Targa Lateral reroutes. The proposed reroutes traverse both rolling fodder lands and cultivated agricultural fields (Figures 2 and 3). Impacts to the area include oil and gas development, agricultural activity, and alluvial erosion (see Figure 2). Vegetation observed in the project area includes wheat, wheat stubble, alfalfa, sweet clover, and brome. Bare ground visibility at the time of survey ranged from 10 to 80 percent, with greater visibility in disturbed areas and cultivated lands. Soils throughout the project area consist of yellow-brown silty clay loam formed through residual and alluvial processes.

SWCA attempted to revisit five previously recorded cultural resources, including one historic homestead and cultural material scatter site (32MZ481) and four prehistoric chipped stone isolated finds (32MZX261, 32MZX262, 32MZX263, and 32MZX266). None of the previously recorded resources were relocated, and no cultural resources were newly recorded during the Targa Lateral pipeline project reroute inventory. Brief descriptions of the previously recorded resources are below. Resource location maps illustrating the locations of the previously located cultural resources are presented in Appendix A.



**Figure 2. Overview of proposed reroute, facing west. Existing well in background and 22<sup>nd</sup> Street NW in left frame.**



**Figure 3. Overview of proposed reroute, facing southeast.**

## **NOT RELOCATED ISOLATED FINDS**

SWCA attempted to relocate four previously recorded isolated finds (32MZX261, 32MZX262, 32MZX263, and 32MZX266). 32MZX261, 32MZX262, and 32MZX266 are prehistoric isolated incidences of unspecified chipped stone. 32MZX263 is a prehistoric projectile point. Although attempts were made to relocate these resources, none were identified in the current inventory area. Because the location information for these resources is relatively general, as the previous site forms give the quarter-section and not exact location, it is possible that these resources are located outside of the current inventory area. Isolated finds by definition are considered to lack the historical integrity to be eligible for nomination to the National Register of Historic Places (NRHP); therefore, all four isolated finds are not eligible for the NRHP. Consequently, no further work is recommended for these resources.

## **NOT RELOCATED SITE**

### **32MZ481**

32MZ481 is a previously recorded historic homestead and cultural material scatter. SWCA attempted to revisit the site during the original Targa Lateral pipeline project Class III inventory (Picka 2014). The site was not identified, and it was noted that the site features had likely been plowed over since the initial recording; therefore, SWCA recommended the site not eligible for the NRHP (Picka 2014). For a full discussion of the site description, previous recording, historic background, and NRHP eligibility recommendation please see Picka (2014). During the current inventory, SWCA attempted to revisit the site again; however, no change was observed and no cultural material or features were identified (Figure 4). Therefore, SWCA concurs with Picka (2014) and recommends the site not eligible for the NRHP. No further work for this resource is recommended.



**Figure 4. Overview of approximate location of 32MZ481, facing southeast.**

## CONCLUSIONS

SWCA conducted a Class III inventory for the proposed Targa Lateral pipeline project reroutes. The Class III inventory consists of three reroute segments totaling a 48.98-acre, linear survey area.

During the inventory SWCA attempted to revisit five previously recorded cultural resources, including one historic homestead and cultural material scatter site (32MZ481) and four prehistoric chipped stone isolated finds (32MZX261, 32MZX262, 32MZX263, and 32MZX266). None of the previously recorded resources were relocated, and no cultural resources were newly recorded during the Targa Lateral pipeline project reroute inventory. All of the previously recorded isolated finds are considered not eligible for the NRHP; therefore, no further work is necessary. Site 32MZ481 has been previously recommended not eligible for the NRHP and based on the results of the current inventory, SWCA archaeologists concur with this recommendation; therefore, no further work is recommended for this resource. As proposed the project would not impact any potentially eligible resources; it is therefore recommended that a determination of *No Significant Sites Affected* and *No Historic Properties Affected* be granted for the project to proceed as planned.

## **REFERENCES CITED**

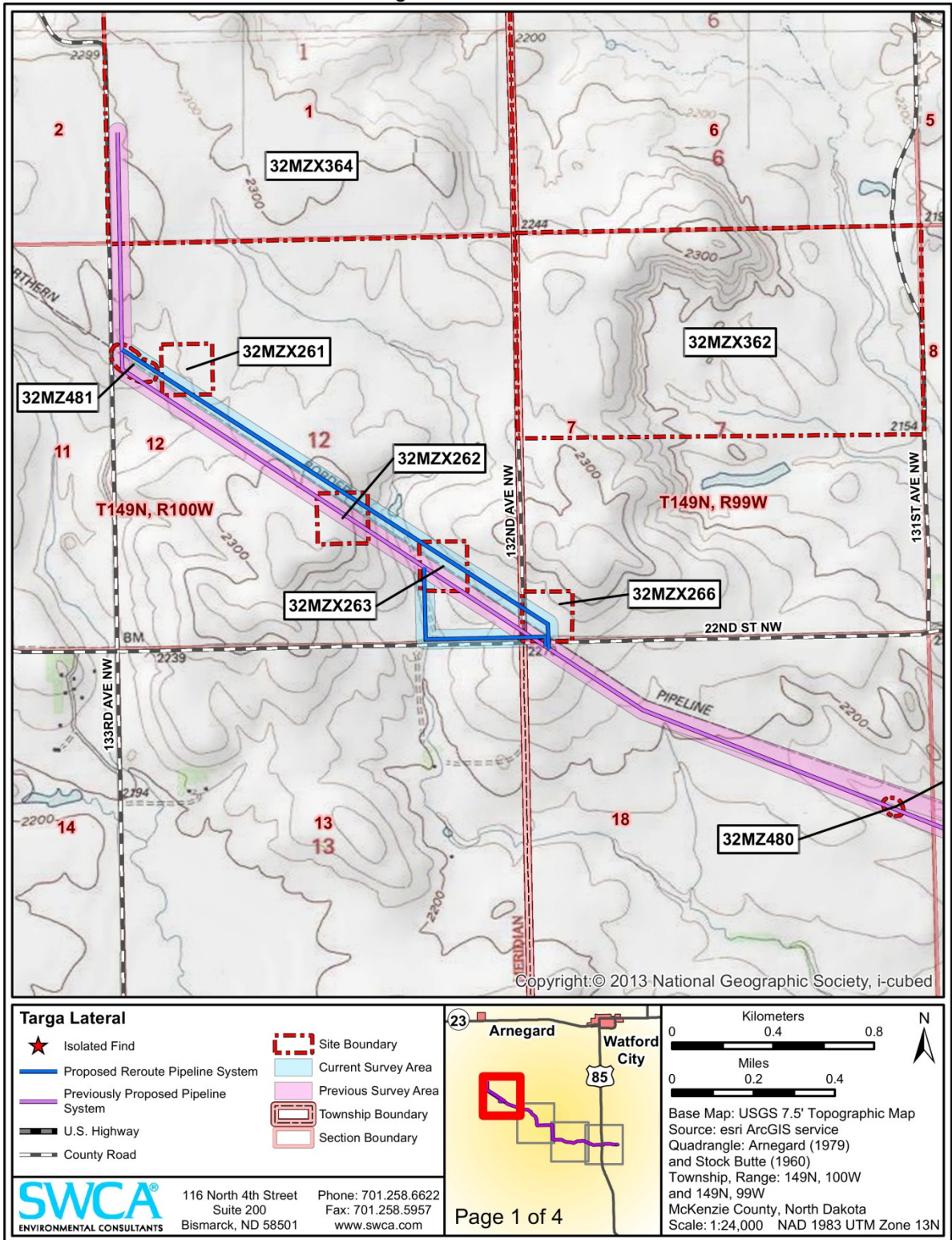
Picka, Craig

- 2014 *A Class I and Class III Cultural Resource Inventory of the ONEOK Bakken Pipeline, LLC, Targa Lateral Pipeline Project, McKenzie County, North Dakota.* Prepared by SWCA Environmental Consultants for E3 Environmental, LLC. Unpublished document submitted to the State Historical Society of North Dakota, Bismarck, North Dakota.

**APPENDIX A**  
**Resource Location Maps**

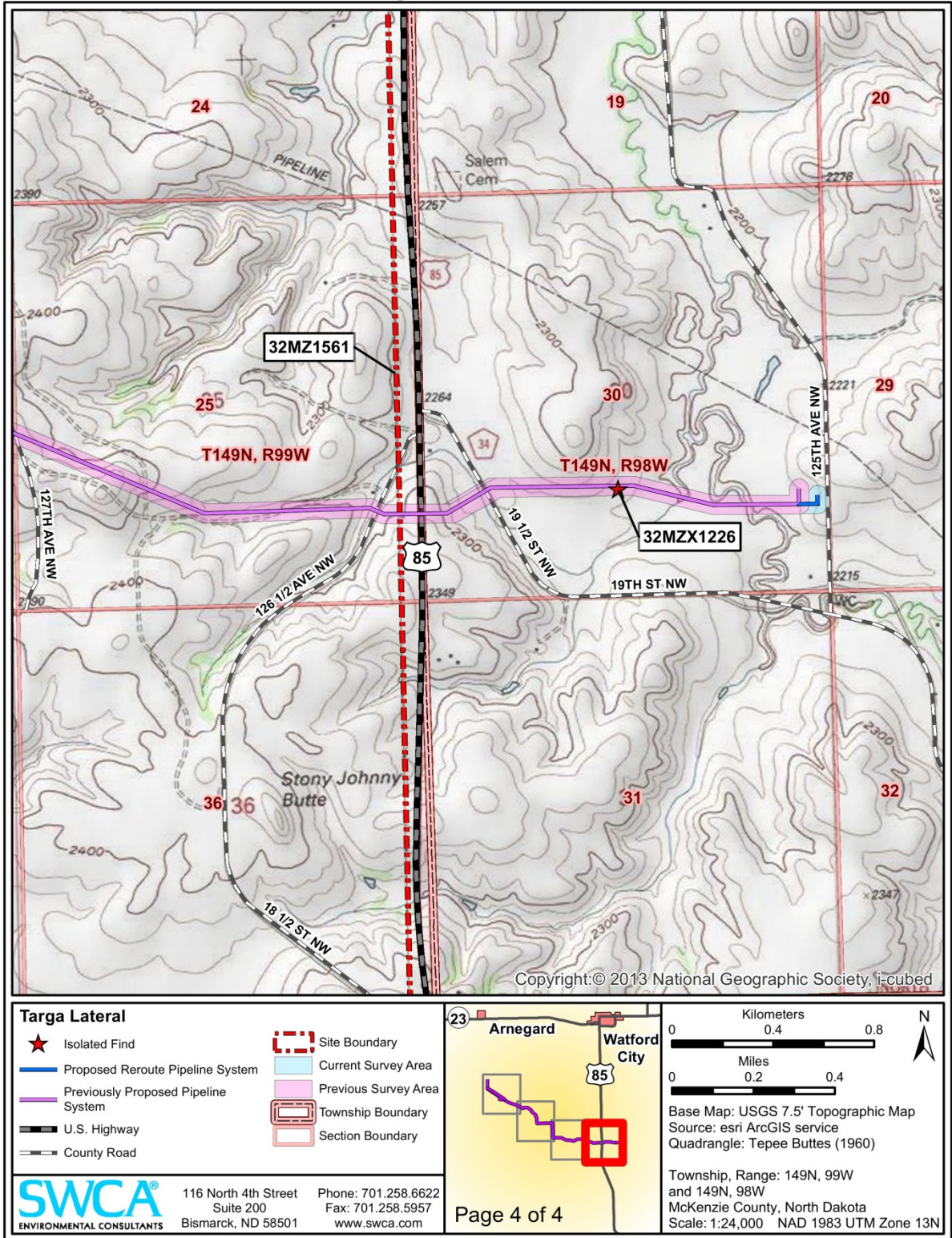


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Resource location map 1 of 2.

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Resource location map 2 of 2.

# **Appendix F**

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## 10-Year Plan

Refer to Consolidated Application filed with ND  
PSC on May 29, 2014

# **Appendix G**

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## Landowner Waivers



June 19, 2014

MTM Enterprises and Services L.L.C.  
Mark Fogarty  
26346 Meridian Ave  
Belle Plaine MN 56011

RE: ONEOK Bakken Pipeline, L.L.C. - Targa Lateral Pipeline

Mr. Fogarty -

Please review the attached site map noting the proposed location of a pipeline (hereinafter referred to as "Facilities") associated with the Targa Lateral Natural Gas Liquids Pipeline Project Application ONEOK Bakken Pipeline, L.L.C. intends to file with the North Dakota Public Service Commission. The map indicates that the Facilities will be located within 500 feet of your residence or business.

By signing below you are confirming that you have no objection to the installation of ONEOK's proposed Facilities at this location, or the future operation and maintenance of the Facilities. ONE OK will obtain a legal easement from MTM Enterprises and Services, LLC. And it's successors for any work on the proposed facility and or any future maintenance to the facilities should they need access to MTM's property that is within the pipeline corridor.

Your cordial cooperation in this matter is greatly appreciated.

Please contact me at 701-609-8824 if you have any questions or concerns.

Thank you.

Kelsey Davis  
Land Agent  
ONEOK Bakken Pipeline, LLC  
701-609-8824

MTM Enterprises and Services, L.L.C.

BY

A handwritten signature in black ink, appearing to read "Matt Fogarty", with a long horizontal line extending to the right.

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Matt Fogarty