E3 ENVIRONMENTAL
Enhancing Execution with Experience

North Dakota Public Service Commission
Consolidated Application

Certificate of Corridor Compatibility and Route Permit

Lonesome Creek NGL Pipeline Project

Prepared for:
ONEOK Bakken Pipeline, L.L.C

Prepared by:
E3 Environmental, L.L.C.

April 2015

Volume 1

ONEOK
BAKKEN PIPELINE
A SUBSIDIARY OF ONEOK PARTNERS

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INTRODUCTION

ONEOK Bakken Pipeline, L.L.C. (ONEOK) a wholly owned subsidiary of ONEOK Partners, L.P., owns and operates natural gas liquids (NGLs) assets in North Dakota. ONEOK is proposing the Lonesome Creek Pipeline Project (Project). The Project is a new approximately 4 mile, steel, 8-inch diameter NGL pipeline that would originate at the ONEOK Rockies Midstream, L.L.C. (ORM) Lonesome Creek Gas Plant (LCGP) in McKenzie County, North Dakota and would terminate at an interconnect with ONEOK's Garden Creek NGL Pipeline (GCP) south of Arnegard, North Dakota. The GCP originates at the ORM Garden Creek Gas Plant near Watford City and proceeds generally west and south through McKenzie County. The pipeline crosses the state line into Montana where it can deliver into the ORM Riverview Rail Facility near Sidney, Montana or continue southward on the pipeline.

ONEOK submits to the North Dakota Public Service Commission (PSC) a single consolidated application for a Certificate of Corridor Compatibility and Route Permit for the Project.

The application provides the information required by:

- North Dakota Century Code, Energy Conversion and Transmission Facility Siting Act, Chapter 49-22-08; and
- PSC Administrative Code, Chapter 69-06-05, Certificate of Site or Corridor Compatibility.

SECTION 1: DESCRIPTION

1.1 TYPE AND SIZE OF FACILITY

1.1.1 TYPE

The proposed Project is a Y-grade NGL transmission pipeline. The steel pipeline would meet U.S. Department of Transportation (DOT) regulations, specifically the design criteria outlined in 49 CFR part 195 subpart C, constructed per 49 CFR part 195 subpart D, and operated and maintained per 49 CFR part 195 subpart F.

1.1.2 SIZE

The Project pipeline specifications are detailed below:

- 8-inch outside diameter steel pipe
- 0.188-inch wall thickness (standard)
    - 0.219-inch wall thickness (road crossings)
- Maximum Operating Pressure: 1,440 pounds per square inch gauge (psig)
- Maximum Throughput: approximately 30,000 barrels per day (bpd)
- Maximum Operating Temperature: 120 degrees Fahrenheit
- Normal Operating Conditions: 90 degrees Fahrenheit at 1,100 psig

1.1.3 LENGTH

The proposed Project is approximately 4 miles in length.

1.2 PURPOSE OF FACILITY

The purpose of the Project is to provide take away capacity for Y-grade NGLs (a mixture of ethane, propane, butanes, iso-butane mix, pentanes and natural gasoline) produced at the LCGP. The Project would provide products produced at the LCGP access to ONEOK's GCP for transport to facilities in the Mid-Continent and Gulf Coast for additional processing prior to distribution to various markets.

1.3 LOCATION

The Project would be located in McKenzie County, North Dakota, originating at the LCGP, moving generally east and south, terminating at ONEOK's GCP approximately seven miles south of Arnegard, North Dakota. Refer to Project maps provided in Appendix B.

1.4 ABOVEGROUND FACILITIES

The proposed pipeline would include a receiver site. The receiver would facilitate the introduction of in-line tools which perform various functions varying from cleaning to integrity monitoring. Receiver sites will typically include valves which can be used to isolate pipeline segments for maintenance or safety reasons. Refer to Appendix A for engineering documents.

1.5 PROJECT SCHEDULE

1.5.1 CERTIFICATE OF CORRIDOR COMPATIBILITY

ONEOK seeks a Certificate of Corridor Compatibility by or before August 2015.

1.5.2 ROUTE PERMIT

ONEOK seeks a Route Permit by or before August 2015.

1.5.3 CONSTRUCTION SCHEDULE

ONEOK has scheduled construction activities to commence in the third quarter of 2015. The construction activities would take approximately two months to complete. Initial restoration activities would commence upon completion of construction activities to the extent conditions allow and would continue as weather conditions permit.

SECTION 2: STUDIES

2.1 CORRIDOR

ONEOK selected the proposed corridor based upon several criteria designed to conform to the PSC's siting requirements and to avoid and minimize socioeconomic and environmental impacts, while maximizing the benefits to local resource developers in the Williston Basin. The location of existing infrastructure was also considered during the selection process. ONEOK's process of selecting a corridor to site a pipeline collocated with two fixed assets was influenced by the opportunity to collocate with other existing utility corridors.

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

A comprehensive desktop analysis of the Corridor included project notification to Federal and state agencies identified below for the purpose of environmental resource assessment as stipulated by the North Dakota Public Service Commission's siting requirements for a Transmission Facility Corridor. The results of this environmental analysis are summarized in Section 2.2. In addition, refer to Appendix C for copies of agency correspondence.

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

Agency comments and field studies are summarized below.

2.2 ENVIRONMENTAL ANALYSIS

The following analysis is based on environmental resources identified through a desktop analysis of the Corridor. Desktop analyses of the Corridor were refined and augmented with field studies along the entire length of the Project by trained natural and cultural resource specialists. These surveys were conducted at a minimum of 250 feet centered upon the proposed alignment (Survey Corridor). The field study results and proposed mitigation are discussed in the Route Permit Application.

2.2.1 WILDLIFE INVENTORY

The wildlife observed in the central region of McKenzie County (Project Area) are species associated with agricultural communities. Various common avian and mammalian fauna were observed. No federally listed threatened, endangered, or candidate species or state species of concern were observed.

2.2.2 WETLAND AND WATERBODIES ANALYSIS

To evaluate the location and extent of mapped wetlands and waterbodies within the Corridor a desktop analysis of aerial photography, National Hydrography Data set (NHD) and National Wetland Inventory (NWI) maps was completed. Desktop analysis identified approximately four individual streams, two waterbodies, and approximately 12 NWI wetland features within the Corridor.

2.2.3 TREE/SAPLING/SHRUB ANALYSIS

Desktop analysis of aerial photography was used to evaluate the location and extent of woody vegetation within the Corridor. The density of the woody cover is generally sparse, and typically appears in association with banks or incised drainage channels, cultivated windrow features or farmsteads. The results of the associated field surveys are included in Appendix D, and proposed mitigation is detailed in the Route Permit Application.

2.3 AGENCY CORRESPONDENCE

2.3.1 U.S. FISH AND WILDLIFE SERVICE

The USFWS administers several programs designed to identify and protect various plant and animal species of special status including habitats deemed critical. Additionally, the USFWS utilizes conservation programs such as Waterfowl Production Areas and wetland and grassland easements to identify and manage high quality wildlife habitat. ONEOK provided the USFWS with project notification which included a description of the Project and an assessment of its impacts relative to the interests of the USFWS as detailed in the following sections.

2.3.1.1 FEDERALLY PROTECTED SPECIES REVIEW

Under the authority of the Endangered Species Act (ESA) of 1973, the USFWS assesses wildlife populations for viability throughout their current and historic ranges. Those species that have been characterized as Threatened or Endangered Species and their critical habitats are managed by the USFWS under the authority of the ESA.

E3 Environmental, LLC (E3), provided ONEOK technical assistance with protected species review and subsequent correspondence with the USFWS. A review of USFWS published data identified the following listed species with the potential to occur within the Corridor:

- Whooping crane (*Grus americana*) – Endangered
- Least tern (*Sternula antillarum*) – Endangered
- Pallid sturgeon (*Scaphirhynchus albus*) – Endangered
- Gray wolf (*Canis lupus*) – Endangered
- Piping plover (*Charadrius melodus*) – Threatened
- Dakota skipper (*Hesperia dacotae*) – Threatened, and proposed critical habitat
- Rufa red knot (*Calidris canutus rufa*) – Threatened

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

Whooping crane: The whooping crane is a large bodied marsh species that breeds primarily in Canada and winters in the Gulf of Mexico. This species has been closely studied and monitored in recent years due to its small population. North Dakota offers migratory habitat for the species, providing roosting and feeding opportunities during migration. This species prefers larger wetland complexes for roosting habitat, typically using adjacent uplands for foraging opportunities. The field studies and associated mitigation measures are discussed in Route Permit Application.

Least tern: The interior populations of the Least tern have historically been associated with large river systems for breeding and migratory habitats. Breeding birds are known to congregate in colonies, utilizing sandbar habitat common to larger rivers. Regionally, Lake Sakakewea, which is approximately 14.5 straight-line miles from the Project, are known to host remnant breeding populations of terns. No suitable habitat is present within the Corridor; therefore, impacts to the least tern are not anticipated.

Pallid sturgeon: The preferred habitat of the pallid sturgeon includes the benthic environment associated with swift waters of large turbid; free-flowing rivers with braided channels; dynamic flow patterns; periodic flooding of terrestrial habitats; and requires extensive micro habitat diversity. The species inhabits the Missouri and Mississippi Rivers from Montana to Louisiana. In North Dakota, reaches of the Missouri River have been cited as providing suitable habitat for the pallid sturgeon. However, there is no suitable sturgeon habitat in the Corridor as the Missouri River does not intersect the Project corridor; as such, impacts to the pallid sturgeon are not anticipated.

Gray wolf: The gray wolf is a large carnivore that through conservation measures has experienced strong population recovery, particularly in the Great Lakes states of the upper Midwest. As populations rebound, individuals may break from packs to explore opportunities to establish packs in unoccupied territory. Roaming individuals can cover great distances without establishing viable breeding populations in previously unoccupied habitats. This species is not tolerant of human disturbance and would tend to avoid interaction with humans. The activities associated with construction would likely serve as a deterrent to this species. Therefore, impacts to the gray wolf are not anticipated.

Piping plover: The Piping plover is associated with shorelines along small alkaline lakes, large reservoir beaches, and river islands and adjacent sand pits. Breeding birds select wide beaches with highly clumped vegetation covering less than 25 percent of the area. Potential habitat for the Piping plover is present along the shoreline of the Missouri River and Lake Sakakawea approximately 14.5 straight-line miles from the Project. In addition, the closest designated critical habitat is located more than 75 miles from the Project. No suitable habitat is present within the Corridor; therefore, impacts to the Piping plover or its designated critical habitat are not anticipated.

Dakota skipper: Dakota skippers require untilled, high-quality prairie. Habitat preferred by the skipper is wet-mesic prairie with little topographic relief on near-shore glacial lake deposits and in rolling native-prairie terrain over gravelly glacial moraine deposits. Larvae feed on grasses, favoring little bluestem (*Schizachyrium scoparium*). Adults commonly feed on nectar of flowering native forbs such as harebell (*Campanula rotundifolia*), wood lily (*Lilium philadelphicum*), and purple coneflower (*Echinacea angustifolia*). Review of aerial photos and soil survey data indicate that untilled, high-quality prairie dominated by native grasses that contain a high diversity of native forbs are not present within the Corridor. No suitable habitat is present within the Corridor; therefore, impacts to the Dakota skipper are not anticipated.

Rufa red knot: The Rufa red knot migrates between breeding grounds in Canada and wintering grounds in South America. A significant factor threatening the Rufa red knot is the loss or modification of its habitat due to beach erosion and shoreline protection efforts. Migratory behavior and habitat requirements of this species are poorly understood particularly for those populations occupying the midcontinent flyways. Inland stopovers include the Mississippi Valley, Great Lakes, and Great Plains. No suitable habitat is present within the Corridor; therefore impacts to the Rufa red knot are not anticipated.

On November 20, 2014, ONEOK submitted project notification to the USFWS providing a comprehensive project description and environmental analysis. A response from the USFWS is pending. See Appendix C for a copy of the correspondence.

2.3.1.2 MIGRATORY BIRD TREATY ACT

The USFWS is responsible for the protection of migratory birds; management of this responsibility has largely focused on protection of the birds while on their breeding grounds during the breeding season, defined by the USFWS as February 1st through July 15th. Cultivated land provides marginal habitat for breeding birds, and tilled fields typically lack the preferred vegetative cover necessary to provide suitable breeding habitat. Preparation activities for the proposed Project are anticipated to begin during the third quarter of 2015, for a duration of approximately two months. The proposed Project schedule would not overlap with the 2015 breeding season and impacts are not anticipated. Furthermore, construction activities would serve as an effective deterrent for breeding birds.

On November 20, 2014, ONEOK submitted project notification to the Bismarck, ND office of the USFWS describing the proposed measures that ONEOK would employ to avoid and mitigate potential impacts to migratory birds. A response from the USFWS is pending. See Appendix C for a copy of the correspondence.

2.3.1.3 BALD AND GOLDEN EAGLES PROTECTION ACT

The Bald and Golden Eagle Act (BGEA) prohibits anyone without a permit from taking a bald or golden eagle including their parts, nests or eggs. The BGEA defines “take” as to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.

The BGEA also addresses impacts resulting from human-induced alterations occurring around previously used nesting sites.

On November 20, 2014, ONEOK initiated BGEA correspondence with the USFWS seeking confirmation of presence or absence of known nesting locations for either eagle species within the Corridor. To date, no response has been received from the USFWS regarding the BGEA. Refer to Appendix C for a copy of the correspondence.

2.3.1.4 U.S. FISH AND WILDLIFE SERVICE MANAGED LANDS

The USFWS administers National Wildlife Refuges and Waterfowl Production Areas (WPAs) as well as wetland and grassland easements throughout North Dakota. A desktop review of information available in the public domain, including U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps, USGS PAD-US dataset, and the USFWS Information, Planning, and Conservation System (IPaC) has been completed for the Corridor. Desktop analysis indicates no USFWS managed lands are located within the Corridor.

A notification was provided to the USFWS on November 20, 2014 providing opportunity for the Agency to identify any additional USFWS managed lands, which may be impacted by the Project. A response from the USFWS is pending. Refer to Appendix C for a copy of the correspondence.

2.3.2 NORTH DAKOTA GAME AND FISH DEPARTMENT

The NDGFD has oversight of the State's game species. On November 20, 2014 ONEOK provided project notification to the NDGFD requesting information regarding the presence or absence of State Conservation Priority Species within the Corridor. The NDGFD provided a written response dated December 15, 2014. Refer to Appendix C for a copy of this correspondence.

The NDGFD's response concluded that the Project would not have significant adverse effects on wildlife or wildlife habitat, including species of conservation priority. The NDGFD also noted two drainage ways within the corridor and requested that construction within these areas should be done in a manner that would avoid alterations to the existing drainage patterns.

2.3.3 NORTH DAKOTA PARKS AND RECREATION DEPARTMENT

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

On November 20, 2014, project notification was initiated with the NDPRD seeking confirmation regarding the presence or absence of managed lands, ecological resources, rare species or their critical habitats within the Corridor. The NDPRD provided a written

response dated December 10, 2014. Refer to Appendix C for a copy of this correspondence.

The NDPRD's response stated there are no documented occurrences of any plant or animal species of concern or other significant ecological communities within the Corridor. The Department recommended impacted areas be revegetated with species native to the project area.

2.3.4 NORTH DAKOTA DEPARTMENT OF TRUST LANDS, MINERALS AND SURFACE MANAGEMENT

The NDDTL is responsible for managing surface acres and mineral interests held in trust for various schools and institutions.

On November 20, 2014 ONEOK provided project notification to the NDDTL Surface Management Division requesting comments regarding the presence of School Trust Lands within the Corridor. The NDDTL responded on November 22, 2014 confirming the absence of School Trust Lands within the Corridor. On November 26, 2014, the NDDTL responded again indicating the commons schools trust fund has 50 percent of the minerals in Section 36, T150N, R101W and 50 percent of the minerals in the W2NE4 and E2NW4 Section 7, T149N, R100W. The NDDTL indicated the Project would not interfere with the trusts ability to develop the minerals. Refer to Appendix C for a copy of this correspondence.

On November 20, 2014 ONEOK provided project notification to the NDDTL Minerals Management Division requesting comments regarding the presence or absence of state Mineral Trust Lands within the Corridor. A preliminary review of publicly available Mineral Trust Land information concluded that Section 36, T150N, R101W and Section 7 T149N, R100W intersect with mineral interests within the Corridor. In addition, surface interests were identified within the right-of-way (ROW) in Section 36, T150N, R101W, which is located near the LCGP. The NDDTL Minerals Management Division responded on February 19, 2015 confirming the presence of Mineral Trust land tracts within the Corridor as depicted in the notification map. See Appendix C for a copy of the correspondence.

2.3.5 NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE

The NDSHPO is responsible for managing the historic and archaeological resources of the state; as such, the NDSHPO maintains records of all previously recorded cultural resources within the state. ONEOK commissioned Class I inventory of the Corridor. The Class I effort was completed on December 2, 2014 and identified five previously recorded cultural resources within the Corridor (32MZX1385, 32MZX1130, 32MZ930, 32MZ931, 32MZ932). Of the five previously recorded cultural resources, three are recommended not eligible for inclusion into the National Register of Historic Places (NRHP) (32MZX1385, 32MZX1130, 32MZ930), and two remain unevaluated with regard to their NRHP eligibility (32MZ931, 32MZ932).

The results of this Class I effort are summarized in the documents provided in Appendix E. To augment this Class I effort, ONEOK commissioned a Class III field investigation. The results have been summarized and can be found in Appendix E and in the Route Permit Application. The full cultural resources report and associated maps located in Volume 2 are privileged and not for internet publication.

2.3.6 NORTH DAKOTA DEPARTMENT OF HEALTH

The North Dakota Department of Health (NDDoH) administers regulatory programs that monitor and enforce compliance with state and Federal laws related to air and water quality. ONEOK is currently engaged at various stages in the permitting process with the NDDoH with respect to air emissions and water discharges.

2.3.6.1 NDDOH POLLUTION DISCHARGE ELIMINATION SYSTEM

The North Dakota Pollution Discharge Elimination System (NDPDES) is the regulatory program that regulates water discharges such as construction stormwater, site dewatering, and hydrostatic discharge permits. ONEOK would procure the following NDPDES permits from the NDDoH as described below.

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

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

SECTION 3: NEED FOR FACILITY

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

Technological advances in drilling and completion associated with horizontal wells currently employed in the Bakken Shale and Three Forks formations of the Williston Basin has dramatically increased hydrocarbon production in the area. Producers remain active in the region, creating demand for natural gas gathering infrastructure. According to data released in December of 2014, natural gas production in North Dakota was reported to reach approximately 1430 MMcfd. Approximately 42 percent of that statewide total is produced in McKenzie County.

The increased production of oil and natural gas products continues to be constrained by the available infrastructure take away capacity. While near term demands associated with increased crude oil production can be readily addressed with the installation of tankage for temporary storage coupled with additional trucking or rail capacity to bring it to market, the associated natural gas production is typically lost to flaring until the required infrastructure is placed into service.

In June 2014, the state Industrial Commission, which regulates North Dakota's oil and gas industry mandated gas capture plans to be implemented on all new oil and gas drilling permits to reduce flaring. Companies that fail to meet their specified gas-capture targets will face penalties, including mandatory production curtailments. Prior to the enactment, North Dakota drilling flared more than 30 percent of gas compared to the national average of less than one percent. The plan set targets to reduce flaring to 23 percent by January 2015, ten percent by 2020, and potentially five percent beyond that. According to data released in December 2014, approximately 22 percent of gas produced is being flared, one percent below the January 2015 goal.

In order to continue to meet the gas capture plan goals, infrastructure needs to be added to accommodate the approximately 94 active drilling rigs in North Dakota. The requisite infrastructure includes gathering systems and gas processing facilities to separate commercial grade methane (*i.e.*, natural gas) from NGLs such as butane, propane and ethane; and in turn prepare these products for delivery.

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

Construction of the proposed Project would provide firm, reliable service for up to 30,000 barrels of NGLs per day and would provide a critical link between the LCGP and GCP.

The products would be delivered to the ORM Riverview Rail Facility near Sidney, Montana or continue southward on the pipeline.

SECTION 4: CORRIDOR LOCATION AND CRITERIA EVALUATION

ONEOK has conducted a thorough inventory of the Corridor and evaluated the resources within it to assess the compatibility of the Project with the PSC's siting criteria. The following sections identify and discuss the presence or absence of siting criteria within the Corridor. Where siting criteria are identified, the location of each is shown on the maps in Appendix B, as appropriate.

4.1 CORRIDOR LOCATION

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

ONEOK owns and operates several assets throughout the region. The operation of these assets are conducted in a manner that maximizes the overall value of the NGLs, which benefits regional stakeholders (producers, royalty owners, and the State) through tax revenues.

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

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

4.2.1 FEASIBLE ALTERNATIVES TO THE PROPOSED CORRIDOR OR ROUTE

Construction of the proposed Project would provide firm, reliable service for up to 30,000 barrels of NGLs per day and would provide a critical link between the LCGP and GCP. The products would be delivered to the ORM Riverview Rail Facility near Sidney, Montana or continue southward on the pipeline. ONEOK identified and evaluated several project alternatives; however, none of these alternatives effectively satisfied the Project objective. These alternatives included:

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

4.2.1.1 NO ACTION ALTERNATIVE:

A No Action Alternative would leave the region constrained by limited transport capacity for safe and reliable transmission of NGL products to markets. The LCGP will be a 200 MMscfd natural gas processing plant with the opportunity for expansion which would

increase the capacity to 400 MMscfd. Without adequate infrastructure to transport this influx in NGLs, the LCGP would have to flare off this additional product or operate the Plant at a reduced capacity even without the possible expansion. Overall, regional oil and gas production would continue to be constrained by the limited volume of product that could be shipped utilizing existing infrastructure, resulting in continued or increased flaring of natural gas and/or curtailment of crude oil production. This alternative is not desirable. For these reasons, ONEOK rejected a *No Action Alternative.*

4.2.1.2 TRUCKING ALTERNATIVE:

A Trucking Alternative was reviewed and eliminated due to the volumes of NGLs that would be produced at the LCGP. The maximum daily capacity of the proposed Project would be equal to an estimated 30,000 barrels or 945,000 gallons of NGLs. The average load for an NGL truck is approximately 10,000 gallons per truck. Thus, it would require 95 trucks per day to be loaded at the LCGP, an average of four trucks every hour for 24 hours a day. Similarly, it would require these 95 trucks per day to be unloaded (trans-loaded) at the railcar facility terminal. This level of truck activity is not logistically feasible as it would cause significant amounts of heavy vehicle traffic for area residents as well as additional wear and tear on the infrastructure. Further, any disruption in the trucking capacity due to seasonal load restrictions on roads, inclement weather, or road repairs would result in a Plant shutdown and flaring of gas production. This alternative is not desirable; therefore, ONEOK rejected a *Trucking Alternative*.

4.2.1.3 RAIL ALTERNATIVE:

A Rail Alternative was also evaluated as a surface transportation alternative. However, the lack of active railroad service within reasonable proximity to the LCGP limited the viability of this alternative. Upon further analysis, this alternative was determined not feasible due to the associated environmental impacts and financial, logistic and time constraints necessary to acquire land and construct the requisite rail infrastructure. This alternative would also require a third party rail operator. For these reasons, ONEOK rejected a *Rail Alternative*.

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

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

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

ONEOK has several operating assets in the region. By its association with the LCGP and other related infrastructure ONEOK maintains contact with local and state agencies and through normal communications with these entities it has concluded that this project is not conflicted with any known developments planned in the area.

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

ONEOK provided project specific notification to various federal, state and local agencies; through this notification process, these agencies have the opportunity to identify possible sensitive environmental resources within the Corridor and any related agency concerns. A complete record of these communications is provided in Appendix C.

4.3 EXCLUSION AREAS (NDAC 69-06-08-02(1))

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

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

4.3.1 FEDERAL RESOURCE REVIEW

ONEOK provided project specific notification to various federal and state agencies and conducted a comprehensive review of published information. ONEOK concluded no national or memorial parks, natural landmarks or monuments, or wilderness areas would be crossed or affected by the Project. Refer to Section 2 of this document for a comprehensive discussion of ONEOK's agency notifications, and Appendix C for a record of these related correspondence.

ONEOK commissioned a Class I inventory of the Corridor. These efforts identified two historic sites within the Corridor (sites that are eligible or unevaluated for inclusion into the NRHP). Refer to Section 2 of this document for a comprehensive discussion of ONEOK's related agency correspondence, and Appendix E for the Cultural Resources Survey Report Abstract. The full cultural resources report and associated maps located in Volume 2 are privileged and not for internet publication.

4.3.2 STATE RESOURCE REVIEW

Through a combination of agency notifications, review of publicly available information and field studies, ONEOK confirmed the absence of state parks, historic sites, monuments, historical markers, or nature preserves within the proposed Corridor. Refer to Section 2 of this document for a comprehensive discussion of the results of agency correspondence and to the Route Permit Application for field studies conducted for this project.

ONEOK commissioned a Class I inventory of the Corridor. These efforts identified three previously recorded archaeological sites within the Corridor (cultural resources determined to be not eligible for inclusion into the NRHP). Refer to Section 2 of this document for a comprehensive discussion of ONEOK's related agency correspondence, and Appendix E for the Cultural Resources Survey Report Abstract. The full cultural resources report and associated maps located in Volume 2 are privileged and not for internet publication.

4.3.3 COUNTY RESOURCE REVIEW

ONEOK has confirmed through a combination of agency correspondence and review of publicly available information the absence of county parks or recreation areas, municipal parks, or parks owned by other subdivisions of government bodies within the proposed Corridor. Refer to Section 2 of this document for a comprehensive discussion of ONEOK's agency notifications, and Appendix C for documentation of agency correspondence.

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

ONEOK has conducted a comprehensive desktop review of the Corridor; these efforts were augmented with agency correspondence and additional field surveys to confirm presence or absence of critical habitat. Refer to Appendix C for documentation of the agency notifications, and Section 2 of the Route Permit Application for details of the field studies.

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

ONEOK provided project specific notification to various federal and state agencies, reviewed published information and conducted a desktop analysis of the Corridor to determine if areas of critical animal or plant habitat may occur. Based on these studies, ONEOK has confirmed the absence of protected species and/or their critical habitats. Refer Appendix C for supporting documentation of agency correspondence.

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

Based upon information compiled by the University of Wyoming regarding current and historic missile site locations, which was comprised of both tabular data describing these sites and supported with additional aerial imagery for each Minot Air Force Base Minuteman Intercontinental Ballistic Missile (ICBM) site, ONEOK has confirmed the absence of ICBM launch or launch control facility is located within 1,200 feet of the Corridor.

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

Based upon information compiled by the University of Wyoming regarding current and historic missile site locations, which was comprised of both tabular data describing these sites and supported with additional aerial imagery for each Minot Air Force Base Minuteman Intercontinental Ballistic Missile (ICBM) site, ONEOK has confirmed the absence of areas within 30 feet on either side of a direct line between ICBM launch or launch control facilities.

4.4 AVOIDANCE AREAS (NDAC 69-06-08-02(2))

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

Avoidance Area	Within Corridor
Federal	
Historic Districts	No
Wildlife Areas	No
Wild, Scenic or Recreational Rivers	No
Wildlife Refuges	No
Grasslands	No

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

4.4.1 FEDERAL RESOURCE REVIEW

ONEOK conducted a comprehensive review of publicly available information, and initiated project specific agency notification of the proposed Corridor. This review indicated the absence of designated or registered historic districts, refuges, grasslands, and wild, scenic or recreational rivers within the Corridor. Refer to Appendix C for documentation of agency correspondence.

4.4.2 STATE RESOURCE REVIEW

ONEOK conducted a review of publicly available information and initiated project specific agency notifications and through these efforts has concluded that there are no designated or registered state game refuges, game management areas, management areas, forests, forest management lands, grasslands or wild, scenic, or recreational rivers within the Corridor. Refer to Appendix C for documentation of agency correspondence.

4.4.3 HISTORICAL RESOURCES NOT MEETING EXCLUSION AREA CRITERIA

ONEOK conducted a review of publicly available information, initiated project specific agency consultations, and augmented agency review with field studies. Through these efforts, ONEOK has concluded there are no historic resources not meeting exclusion areas criteria within the Corridor. Refer to Appendix C for documentation of agency correspondence and Appendix E for the Cultural Resources Survey Report Abstract. The full cultural resources report and associated maps located in Volume 2 are privileged and not for internet publication.

4.4.4 AREAS OF KNOWN GEOLOGIC INSTABILITY

A desktop review of the North Dakota Geological Survey (NDGS) landslide mapping data was completed. Review of *Areas of Landslides, Watford City 100K Quad, North Dakota* indicated landslide deposits are present within the Corridor in Section 8, T149N, R100W. This area is not traversed by the Route.

North Dakota has not experienced an earthquake of sufficient magnitude to damage steel welded pipe or structural steel structures in recorded history. Sinkholes are known to occur in the region, but these are related to subsurface mining activities as opposed to limestone dissolution. No abandoned mines were located within the Corridor.

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

ONEOK utilized aerial photography to identify potentially occupied structures located within the Corridor. The desktop analysis identified two potentially occupied structures that occur within the Corridor. Refer to the Route Permit Application regarding further analysis of potentially occupied structures located within 500 feet of the Route.

4.4.6 RESERVOIRS AND MUNICIPAL WATER SUPPLIES

ONEOK has confirmed the Corridor does not contain reservoirs, municipal water supply sources, or wells.

4.4.7 WATER SOURCES FOR ORGANIZED RURAL WATER DISTRICTS

Desktop analysis confirmed the Corridor is not located within the boundaries of the McKenzie County Rural Water Association. There are no documented source water protection areas for community and non-community water supplies within the proposed Corridor.

4.4.8 IRRIGATED LAND

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

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

ONEOK confirmed the Corridor does not contain any areas of recreational significance that are not designated as exclusion areas.

4.5 SELECTION CRITERIA (NDAC 69.06-08-02.3)

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

4.5.1 AGRICULTURAL IMPACT

Agricultural Production: The Project would temporarily affect approximately 48 acres of private land in North Dakota. The majority of the land crossed can be characterized as either agricultural or natural vegetative cover. Once construction is completed, the land would be restored to its pre-construction contours and land use. ONEOK would provide settlements to landowners for crop loss resulting from Pipeline construction.

Family Farms and Ranches: The Project would temporarily affect approximately 48 acres of private land in North Dakota. Once construction is complete, the land would be restored to its pre-construction contours and land use. ONEOK would negotiate easements with all affected landowners. The Project would have no permanent impacts to lifestyle or farm/ranch operations once construction has been completed.

Lands Suitable for Irrigation: This section is not applicable to buried pipelines (69-06-08-02(2)(h)).

Surface Drainage: Standard pipeline construction techniques would not modify existing surface drainage patterns. Care would be taken throughout the construction process to minimize environmental impacts, including modification of drainage patterns. During restoration, those areas that were disturbed during construction would be restored, the local topography would be restored to its original contours, vegetation would be reestablished and impacts would be minimal and temporary.

Ground Water: Well data, recorded by the State Water Commission, has been reviewed for the Project area. Well data indicates that groundwater is located more than 14 feet below the surface. Typical subsurface excavations associated with the Project would not extend more than ten feet below the ground surface. At that depth, the Project would not intersect the groundwater table, nor would the Project alter recharge rates or the infiltration, permeability, or percolation of water into the groundwater reservoir. Additionally, construction would not affect the lateral movement and ground water quality.

4.5.2 THE IMPACTS UPON OTHER RESOURCES

Noise-Sensitive Land Uses: The Project is located in a rural setting, effectively isolating it from the majority of sensitive receptors. Construction of the proposed Project would temporarily affect the local noise environment. The ambient sound level of a region is defined by the total noise generated within the specific environment and is usually comprised of sounds emanating from natural and artificial sources. The construction of the proposed Project would be conducted during typical working hours and is expected to cause temporary increases in ambient sound within and adjacent to the Project area. The use of heavy equipment or trucks would be the primary noise source during construction and excavation. The level of impact would vary by equipment type, duration of construction activity, and the distance between the noise source and the receptor. Once constructed and in-service, normal pipeline operations and station operations are not audible.

Visual Effect on Adjacent Areas: The proposed pipeline would include a receiver site. These facilities are typically enclosed with fences which are padlocked shut against vandalism and accidental activation. The location would be clearly marked with a small placard that details ownership and contact information. The visual piping and equipment would be finished and maintained with a painted surface. These features are common throughout the landscape and are not obtrusive. No other permanent aboveground features are proposed as a part of the Project.

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

Wetlands, Woodlands and Wooded Areas: A comprehensive desktop review of published data, including aerial photography and NWI data, was conducted to assess the presence or absence of wetlands, woodlands and wooded areas. The review of the proposed Corridor confirmed the presence of these resources. ONEOK commissioned field surveys to identify and record the locations of these resources within the Survey Corridor. Refer to Section 2 of this document for a comprehensive discussion of ONEOK's agency notifications, Appendix C for copies of the correspondence, and Appendix D for the Natural Survey Report. Mitigation details are discussed in Section 5 the Route Permit Application.

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

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

The design of the Project has incorporated the use of a receiver site. The operation of the pipeline would be monitored in accordance with DOT regulations (49 CFR part 195 subpart F).

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

Plant Life: There would be no impacts to plant life associated with the conversion or operation of the pipeline. No species of special concern would be impacted by the Project. Reclamation would be completed utilizing native seed mixes where appropriate.

4.6 POLICY CRITERIA

4.6.1 POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

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

4.6.2 LOCATION AND DESIGN

This Project would connect two existing facilities, the LCGP and ONEOK's GCP. The GCP is part of a mainline transmission grid from which the NGL would be distributed to market hubs/centers in the south and south central United States. Refer to Appendix B for Project location maps.

The proposed pipeline would be approximately four miles in length, constructed of steel, and would be a nominal 8-inch diameter pipe. The pipe installed would have a nominal wall thickness of 0.188 inches denoted as API Code 5L specification ERW/FBE ARO pipe. The nominal wall thickness would increase to 0.219 for specific locations such as road crossings. The maximum operating pressure (MOP) of the pipeline would be 1,440 psi.

The proposed pipeline would meet US Department of Transportation regulations, specifically the design criteria outlined in 49 CFR part 195 subpart C, constructed per 49 CFR part 195 subpart D, and operated and maintained per 49 CFR part 195 subpart F.

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

Pipeline construction is a specialized construction market and the labor force needed to build the Project would be primarily comprised of a workforce with these niche construction skills. The primary contractor would supply specialized skilled labor and may draw upon the local labor force to supply general laborers. The workforce is anticipated to reach a peak of approximately 75 personnel.

4.6.4 ECONOMIES OF CONSTRUCTION AND OPERATION

The Project represents a total investment of approximately $6 million to be spent in McKenzie County, North Dakota for the construction of the pipeline. Once in-service, the continued costs of maintenance and operation of the proposed pipeline are expected to be minimal.

4.6.5 USE OF CITIZEN COORDINATING COMMITTEES

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

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

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

4.6.7 LABOR RELATIONS

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

4.6.8 THE COORDINATION OF FACILITIES

ONEOK owns and operates all of the affected facilities; thus, coordination would be seamless and executed from within ONEOK's internal management systems.

4.6.9 MONITORING OF IMPACTS

ONEOK has established and maintained positive landowner and community relationships throughout the region through its open communication and commitment to corporate citizenship standards that are based on integrity. ONEOK would monitor landowner concerns through its ROW department and would respond to all reasonable requests. In a similar manner, ONEOK would monitor community concerns and would respond to all reasonable concerns brought to its attention by local community leaders. ONEOK would select a contractor for construction of the Project and would coordinate the oversight responsibilities for construction activities with this contractor throughout the Project. Environmental responsibilities will be coordinated in the same manner.

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

ONEOK chose the preferred Project alignment in an effort to maximize the use of existing utility corridors. Approximately 99.1% (3.9 miles) of the project is co-located with existing utility corridors.

4.6.11 OTHER EXISTING OR PROPOSED TRANSMISSION FACILITIES

Refer to Appendix F for ONEOK's 10-Year Plan.

SECTION 5: MITIGATIVE MEASURES

5.1 LOCATION

The selection of the proposed Corridor was a multi-disciplinary effort that included socioeconomic, environmental, logistics, engineering and financial considerations. The Corridor described in this application meets the siting criteria and provides ONEOK with the opportunity to utilize existing assets, and minimize landowner and environmental impacts. Additionally, in selection of the Corridor and associated Route, ONEOK co-located 99.1% (3.9 miles) of the Project to existing utilities.

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

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

ONEOK and its affiliates own and operate several assets in the region. Planning and development of these assets are conducted in a manner that maximizes the benefits to the region's resources. The proposed Corridor and Route would allow ONEOK to draw upon existing pipeline and facility assets in the region. While siting is typically conducted on an individual, project specific basis, ONEOK's logistical planning includes consideration for potential inter-connects with existing infrastructure to gain and maximize operating functionality.

5.2 CONSTRUCTION

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

Construction is estimated to require a minimum of two months to complete. Construction techniques would be employed that minimize the area of ground disturbance, off-site deposition of sediments and long-term impacts to agricultural

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

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

5.3 OPERATION

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

SECTION 6: LIST OF PREPARERS

Todd Kelvington, CEP
Environmental Project Manager
ONEOK Partners, 100 West 5th Street, Tulsa, OK 74103

M.S. Environmental Policy and Management, American Military University; and B.S. Biology, Norwich University. Mr. Kelvington is an environmental specialist with 17 years of environmental planning experience in a wide range of development projects. He has both performed and managed the assessment, siting, permitting, and construction of a wide range of federal, state, and municipal infrastructure projects throughout the mid-west and east coast regions. He is a Certified Environmental Professional with the Academy of Board Certified Environmental Professionals. As Environmental Project Manager for ONEOK, Mr. Kelvington leads and directs the activities of ONEOK's third party consultants in the Rockies and Great Plains regions.

Matt Turpin
Project Supervisor
ONEOK Partners, 100 West 5th Street, Tulsa, OK 74103

B.S. Mechanical Engineering University of Oklahoma. Mr. Turpin has performed a wide range of gathering and processing projects for ONEOK Rockies Midstream in the Williston Basin. Most of Mr. Turpin's eight year career at ONEOK involved managing pipeline and facility projects. As Project Supervisor for ONEOK Mr. Turpin leads and directs project managers supporting high pressure steel pipeline construction and design projects for ONEOK, Inc.

Jim Kline, P.E.
Project Manager
7K Services PLLC, 20398 South 4092 Road, Claremore, OK 74019

B.S. Civil Engineering University of Oklahoma. Mr. Kline is a Project Manager with 35 years of managing pipeline projects and has been a project consultant to ONEOK for four years managing pipelines in the Williston Basin. Mr. Kline is a Licensed Professional Engineer in the State of Oklahoma.

Jacob Yokum
Field Engineer
ONEOK Partners, 100 West 5th Street, Tulsa, OK 74103

B.S. Mechanical Engineering – Texas Tech University. Mr. Yokum has one year of large projects and pipeline construction experience. Mr. Yokum has fulfilled the project engineer and project manager roles on gathering and processing and natural gas liquids pipeline and facility projects for ONEOK Partners Large Projects group. He also serves as project engineer 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, and in this role conducts and coordinates field studies, agency consolations, mitigation and avoidance plans.

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

B.A. in Environmental Studies and Geography, Gustavus Adolphus College; and J.D., Hamline University School of Law. Ms. Schmit has over six years of environmental consulting experience. Ms. Schmit has pursued a career focused on regulatory compliance and supports energy clients by providing regulatory review and permitting services. Ms. Schmit's experience includes authoring technical reports in compliance with NEPA requirements for a variety of infrastructure projects across the Midwest and coordination with federal, state, and local agencies.

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.

E3 ENVIRONMENTAL
Enhancing Execution with Experience

North Dakota Public Service Commission

Application for Route Permit

ONEOK Bakken Pipeline, L.L.C.

Lonesome Creek NGL Pipeline Project

Prepared by:
E3 Environmental, L.L.C.

April 2015

ONEOK
BAKKEN PIPELINE
A SUBSIDIARY OF ONEOK PARTNERS

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APPENDICES

INTRODUCTION

ONEOK Bakken Pipeline, L.L.C. (ONEOK) a wholly owned subsidiary of ONEOK Partners, L.P., owns and operates natural gas liquids (NGLs) assets in North Dakota. ONEOK is proposing the Lonesome Creek Pipeline Project (Project). The Project is a new approximately 4 mile, steel, 8-inch diameter NGL pipeline that would originate at the ONEOK Rockies Midstream, L.L.C. (ORM) Lonesome Creek Gas Plant (LCGP) in McKenzie County, North Dakota and would terminate at an interconnect with ONEOK's Garden Creek NGL Pipeline (GCP) south of Arnegard, North Dakota. The GCP originates at the ORM Garden Creek Gas Plant near Watford City and proceeds generally west and south through McKenzie County. The pipeline crosses the state line into Montana where it can deliver into the ORM Riverview Rail Facility near Sidney, Montana or continue southward on the pipeline.

ONEOK submits to the North Dakota Public Service Commission (PSC) a single consolidated application for a Certificate of Corridor Compatibility and Route Permit for the Project.

The application provides the information required by:

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

SECTION 1: DESCRIPTION

1.1 TYPE OF TRANSMISSION FACILITY

The proposed Project is a Y-grade NGL transmission pipeline. The steel pipeline would meet U.S. Department of Transportation (DOT) regulations, specifically the design criteria outlined in 49 CFR part 195 subpart C, constructed per 49 CFR part 195 subpart D, and operated and maintained per 49 CFR part 195 subpart F.

1.2 PURPOSE OF TRANSMISSION FACILITY

The purpose of the Project is to provide take away capacity for Y-grade NGLs (a mixture of ethane, propane, butanes, iso-butane mix, pentanes and natural gasoline) produced at the LCGP. The Project would provide products produced at the LCGP access to ONEOK's GCP for transport to facilities in the Mid-Continent and Gulf Coast for additional processing prior to distribution to various markets.

1.3 LENGTH, SIZE AND DESIGN OF PIPELINE FACILITY

1.3.1 LENGTH OF FACILITY

The proposed Project is approximately 4 miles in length.

1.3.2 PIPE SIZE

The Project pipeline specifications are detailed below:

- 8-inch outside diameter steel pipe
- 0.188-inch wall thickness (standard)
    - 0.219-inch wall thickness (road crossings)

1.3.3 OPERATING PRESSURE AND THROUGHPUT

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

- Maximum Operating Pressure: 1,440 pounds per square inch (psi)
- Maximum Throughput: approximately 30,000 barrels per day (bpd)
- Maximum Operating Temperature: 120 degrees Fahrenheit
- Normal Operating Conditions: 90 degrees Fahrenheit at 1,100 psig

1.4 ABOVEGROUND FACILITIES

The proposed pipeline would include a receiver site. The receiver would facilitate the introduction of in-line tools which perform various functions varying from cleaning to integrity monitoring. Receiver sites will typically include valves which can be used to isolate pipeline segments for maintenance or safety reasons. Refer to Appendix A for engineering documents.

1.5 WIDTH OF RIGHT-OF-WAY

This pipeline would be constructed utilizing a 100-foot construction right-of-way (ROW). ONEOK would maintain a typical 50-foot permanent ROW along the entire length of the Project.

1.6 LOCATION

The Project would be located in McKenzie County, North Dakota, originating at the LCGP, moving generally east and south, terminating at ONEOK's GCP approximately seven miles south of Arnegard, North Dakota. Refer to Project maps provided in Appendix B.

1.7 PROJECT SCHEDULE

1.7.1 ROUTE PERMIT

ONEOK seeks a Route Permit by or before August 2015.

1.7.2 CERTIFICATE OF CORRIDOR COMPATIBILITY

ONEOK seeks a Certificate of Corridor Compatibility by or before August 2015.

1.7.3 CONSTRUCTION SCHEDULE

ONEOK has scheduled construction activities to commence in the third quarter of 2015. The construction activities would take approximately two months to complete. Initial restoration activities would commence upon completion of construction activities to the extent conditions allow and would continue as weather conditions permit.

SECTION 2: ROUTE ANALYSIS AND ENVIRONMENTAL STUDIES

2.1 PIPELINE ROUTE

ONEOK has conducted a thorough analysis of the Corridor as reported in the Application for a Certificate of Corridor Compatibility. This analysis was a broad based study of a one mile corridor centered upon a proposed route (Corridor). The purpose of this analysis was to confirm that the proposed Project corridor is suitable and would cause minimal environmental impacts, thus conforming to the PSC siting criteria.

In conjunction with these efforts, ONEOK studied routing alternatives and developed the proposed Project alignment (Route). ONEOK chose this Project alignment to meet landowner requests and to minimize impacts to environmental features. The Route meets the Project's objectives while conforming to the PSC's transmission route siting requirements. Additionally, in selection of the Route, ONEOK co-located 91.1% (3.9 miles) of the Project to existing utilities.

In support of ONEOK's route selection, the desktop studies from the Corridor were refined and augmented with field studies along the entire length of the Project by trained natural and cultural resource specialists. The environmental survey was conducted at a minimum of 250 feet centered on the proposed Route (Survey Corridor). Field crews performed these comprehensive natural and cultural resource surveys on January 27-28, 2015. The purpose of these field studies was two-fold: (1) to definitively identify any potential resource issues (*e.g.*, wetlands, waterbodies, protected species, critical habitats or cultural resources) within the Survey Corridor; and (2) to provide the baseline field data necessary to prescribe alternative routing or mitigation as necessary to minimize environmental impacts. The results of these field surveys are discussed in the following sections, while the full Natural Resources Survey Report is contained in Appendix D, and the Class I and Class III cultural resource inventories are detailed in the Cultural Resources Survey Report Abstract located in Appendix E. The full cultural resources report and associated maps located in Volume 2 are privileged and not for internet publication.

2.2 ROUTE ALTERNATIVES

Construction of the proposed Project would provide firm, reliable service for up to 30,000 barrels of NGLs per day and would provide a critical link between the LCGP and GCP. The products would be delivered to the ORM Riverview Rail Facility near Sidney, Montana or continue southward on the pipeline. ONEOK identified and evaluated several project alternatives; however, none of these alternatives effectively satisfied the Project objective. These alternatives included:

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

No Action Alternative:

A No Action Alternative would leave the region constrained by limited transport capacity for safe and reliable transmission of NGL products to markets. The LCGP will be a 200 MMscfd natural gas processing plant with the opportunity for expansion which would increase the capacity to 400 MMscfd. Without adequate infrastructure to transport this influx in NGLs, the LCGP would have to flare off this additional product or operate the Plant at a reduced capacity even without the possible expansion. Overall, regional oil and gas production would continue to be constrained by the limited volume of product that could be shipped utilizing existing infrastructure, resulting in continued or increased flaring of natural gas and/or curtailment of crude oil production. This alternative is not desirable. For these reasons, ONEOK rejected a *No Action Alternative*.

Trucking Alternative:

A Trucking Alternative was reviewed and eliminated due to the volumes of NGLs that would be produced at the LCGP. The maximum daily capacity of the proposed Project would be equal to an estimated 30,000 barrels or 945,000 gallons of NGLs. The average load for an NGL truck is approximately 10,000 gallons per truck. Thus, it would require 95 trucks per day to be loaded at the LCGP, an average of four trucks every hour for 24 hours a day. Similarly, it would require these 95 trucks per day to be unloaded (trans-loaded) at the railcar facility terminal. This level of truck activity is not logistically feasible as it would cause significant amounts of heavy vehicle traffic for area residents as well as additional wear and tear on the infrastructure. Disruption in the trucking capacity due to seasonal load restrictions on roads, inclement weather, or road repairs would cause a delay in delivering this valuable resource to market. This alternative is not desirable; therefore, ONEOK rejected a *Trucking Alternative*.

Rail Alternative:

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

2.3 ENVIRONMENTAL SURVEY

Field surveys were conducted of the Survey Corridor on January 27-28 of 2015. The Survey Corridor is depicted on maps in Appendix B.

2.3.1 NOXIOUS WEEDS

"Noxious weed" is a general term used to describe fast-spreading, non-native plant species in a given area. They have adverse ecological and economic impacts due to their ability to outcompete native plant species for habitat and resources. No noxious weeds were identified within the Survey Corridor during field surveys. If noxious weeds are

later identified, ONEOK would implement the appropriate mitigation measures in this area to avoid spreading of the noxious weed. Refer to Appendix D for the Natural Resources Report and Section 5 for proposed mitigation procedures.

2.3.2 TREE/SAPLING/SHRUB SURVEY

During field survey, crews performed a detailed tree/shrub inventory. This inventory recorded the pre-construction status of these resources, which would form the baseline for restoration and mitigation reconciliation. Based on this effort, eight naturally occurring wooded areas were observed within the Survey Corridor. In total, approximately 152 trees were identified within the Survey Corridor; 15 of these features were located within the surveyed 100-foot wide construction ROW. Refer to Appendix D for the Natural Resources Report and Section 5 for planned mitigation measures.

2.3.3 WETLAND AND WATERBODIES SURVEY

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

2.3.3.1 WETLAND SURVEY

Field surveys identified three potentially jurisdictional wetland features within the 100-foot wide construction ROW. ONEOK would implement appropriate mitigation at these features, which may include avoidance (*e.g.* workspace modification or horizontal directional drill) or use of construction mats and other best management practices to minimize impacts when working in or around wetlands. Refer to the Project maps in Appendix B for the location of each feature, and Appendix D for the Natural Resources Report.

2.3.3.2 WATERBODIES SURVEY

No waterbodies or ephemeral drainages were identified during field surveys. Refer to Appendix D for the Natural Resources Report, and Section 5 for proposed mitigation measures.

2.3.4 WILDLIFE INVENTORY

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

2.3.4.1 FEDERALLY PROTECTED SPECIES SURVEY

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

On November 19, 2014, ONEOK requested a USFWS review of the Project, requesting information relating to the presence or absence of threatened and endangered species within the project area. A response from the USFWS is pending. Refer to Appendix C for agency correspondence.

ONEOK commissioned field studies to confirm the presence or absence of these species and/or their critical habitats within the Survey Corridor. The results of this assessment are outlined below. Refer to Appendix D for the Natural Resources Report, which outlines the results of these field studies, and Section 5 for proposed mitigation measures.

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

Suitable foraging habitat (*i.e.*, cultivated cropland and wetlands) was observed within the Survey Corridor. Additionally, the Project is located within the migratory corridor for the whooping crane. The proposed Project may affect but is not likely to adversely affect the whooping crane.

Least tern: Suitable shoreline habitat for breeding and nesting terns does not occur in the Survey Corridor. Least terns may transition through the project area during migration, however impacts to the least terns as a result of the Project are not anticipated.

Gray wolf: Suitable habitat for the gray wolf does not occur in the Survey Corridor and the activities associated with construction and later operations would likely serve as a deterrent to this species. Therefore, impacts to the gray wolf are not anticipated.

Pallid sturgeon: The preferred habitat of the pallid sturgeon does not occur in the Survey Corridor; therefore, impacts to the pallid sturgeon are not anticipated.

Piping plover: Suitable shoreline habitat for breeding and nesting does not occur in the Survey Corridor. The Piping plover may occur within the project area as a migrant,

however adverse impacts to the Piping plover as a result of the Project are not anticipated.

Dakota skipper: Suitable habitat is not present within the Survey Corridor; therefore, impacts to the Dakota skipper are not anticipated.

Rufa red knot: Suitable habitat is not present within the Survey Corridor. The red knot may occur within the project area as a migrant, however adverse impacts to the red knot as a result of the Project are not anticipated.

Bald Eagle: Field studies confirmed the absence of nesting or roosting habitat within 0.5 miles of the centerline of the Survey Corridor. Refer to Section 5 for mitigation measures should a bald eagle be observed during construction.

Golden Eagle: Field studies confirmed the absence of nesting or roosting habitat within 0.5 miles of the centerline of the Survey Corridor. Refer to Section 5 for mitigation measures should a golden eagle be observed during construction.

Migratory Bird: Field studies confirmed suitable habitat for migratory birds exists in within the Survey Corridor. However, project activities are not anticipated to occur within the February 1st through July 15th breeding season, and adverse impacts to migratory birds are not anticipated.

2.3.5 NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE

The North Dakota State Historic Preservation Office (NDSHPO) is responsible for managing the historic and archaeological resources of the state; as such, the NDSHPO maintains records of all previously recorded cultural resources within the state.

ONEOK commissioned a Class I cultural resources literature review of records from the NDSHPO to identify previously completed cultural resource investigations and recorded cultural resources within the Corridor. The Class I literature review was completed on December 2, 2014 and the results of the investigation identified five previously recorded cultural sites within the Corridor. The cultural resources consist of two prehistoric cultural material scatter sites (32MZ930 and 32MZ931); one prehistoric cultural material scatter and cairn site (32MZ932); one historic ceramic fragment isolated find (32MZX1131); and one unknown isolated find (32MZX1385). 32MZ931, 32MZ932 and 32MZX366 are all unevaluated for inclusion into the National Register of Historic Places (NHRP). The remaining resources have been recommended not eligible for the NRHP. None of the previously recorded cultural resources are located within the Survey Corridor.

The ensuing Class III Cultural Resource Inventory of the Survey Corridor was completed on January 27 and 28, 2015. During the inventory, no new cultural resources were recorded. Attempts were made to relocate 32MZX1382 and 32MZX1383, historic farm equipment isolated finds which had been inventoried by prior studies and reported to occur within the Project Area; however, current survey efforts failed to relocate these resources. Both 32MZX1382 and 32MZX1383 have been previously characterized as

isolated finds and therefore are not eligible for the NRHP, and no further work is recommended.

On February 10, 2015, ONEOK submitted the Cultural Resources Report. The NDSHPO responded on February 24, 2015 providing concurrence with the recommendation of *No Significant Sites Affected* for the Project. Refer to Appendix C for related agency notifications, and Appendix E for the Cultural Resources Survey Report Abstract. The full cultural resources report and associated maps located in Volume 2 are privileged and not for internet publication.

2.3.6 U.S. FISH AND WILDLIFE SERVICE MANAGED LANDS

On November 20, 2014, ONEOK requested a USFWS review of the Project and information relating to the presence or absence of USFWS managed land within the Survey Corridor. A response from the USFWS is pending. See Appendix C for a record of this correspondence.

SECTION 3: NEED FOR FACILITY

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

Technological advances in drilling and completion associated with horizontal wells currently employed in the Bakken Shale and Three Forks formations of the Williston Basin has dramatically increased hydrocarbon production in the area. Producers remain active in the region, creating demand for natural gas gathering infrastructure. In March of 2014, natural gas production in North Dakota was reported to reach 1040 MMcfd, with approximately 440 MMcfd of that statewide total produced in McKenzie County.

The increased production of oil and natural gas products continues to be constrained by the available infrastructure take away capacity. While near term demands associated with increased crude oil production can be readily addressed with the installation of tankage for temporary storage coupled with additional trucking or rail capacity to bring it to market, the associated natural gas production is typically lost to flaring until the required infrastructure is placed into service.

In June 2014, the state Industrial Commission, which regulates North Dakota's oil and gas industry mandated gas capture plans to be implemented on all new oil and gas drilling permits to reduce flaring. Companies that fail to meet their specified gas-capture targets will face penalties, including mandatory production curtailments. Prior to the enactment, North Dakota drilling flared more than 30 percent of gas compared to the national average of less than one percent. The plan set targets to reduce flaring to 23 percent by January 2015, ten percent by 2020, and potentially five percent beyond that. According to data released in December 2014, approximately 22 percent of gas produced is being flared, one percent below the January 2015 goal.

In order to continue to meet the gas capture plan goals, infrastructure needs to be added to accommodate the approximately 94 active drilling rigs in North Dakota. The requisite infrastructure includes gathering systems and gas processing facilities to separate commercial grade methane (*i.e.*, natural gas) from NGLs such as butane, propane and ethane; and in turn prepare these products for delivery.

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

Construction of the proposed Project would provide firm, reliable service for up to 30,000 barrels of NGLs per day and would provide a critical link between the LCGP and GCP.

The products would be delivered to the ORM Riverview Rail Facility near Sidney, Montana or continue southward on the pipeline.

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:

The proposed Project is designed to provide delivery throughput from the LCGP to the existing mainline transmission grid from which the NGL would be distributed to processing and market hubs nationwide. As such, all routing was anchored from the LCGP to potential destinations. ONEOK owns and operates the GCP, an existing transmission line that currently handles NGL products produced in the region. The GCP was determined to be the preferred destination for LCGP products due to its capacity to handle NGL products and provide greater access to more markets, as well as its proximity to the LCGP.

Route planning between the LCGP and the GCP identified and evaluated several options for routing this Project. These studies were designed to define a preferred route that achieves project objectives, is technologically and economically feasible to construct, and minimizes impacts on landowners and the environment. The key logistical considerations included the location of the LCGP, identification of existing utility corridors for collocation, and acquisition of pipeline ROW from area landowners.

Field studies were conducted to identify environmental, biological and cultural resources throughout the Survey Corridor; the results of these studies are discussed in Section 2 of this document, and the reports are provided in Appendices D and E. The possible effects on the public health and welfare are addressed in the subsequent sections.

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

The Project does not include energy conversion or transmission technologies/systems that are specifically designed to minimize adverse environmental impacts. The Project would be constructed in compliance with environmental permits; the conditions of these permits are designed to minimize adverse environmental impacts. Additionally, the proposed Project would utilize existing NGL transmission infrastructure and exploit a tie-in location in very close proximity to LCGP thereby significantly reducing potential environmental impacts of pipeline construction associated with alternatives. Refer to Section 5 of this document for a full description of the mitigation measures ONEOK has planned to minimize impacts resulting from the Project's location, construction and operation.

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

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

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

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

ONEOK would fully participate in the hearing process and would 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:

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

4.1.6 DIRECT AND INDIRECT ECONOMIC IMPACTS OF THE PROPOSED FACILITY:

Construction of this Project would provide firm, reliable service for 30,000 bpd of NGL and provide a critical transportation link between the LCGP and the GCP for delivery to critical United States markets.

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

ONEOK has several operating assets in the region. By its association with the LCGP and other related infrastructure ONEOK maintains contact with local and state agencies and through normal communications with these entities it has concluded that this project is not conflicted with any known developments planned in the area.

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

ONEOK has commissioned Class I and Class III cultural resource inventories. ONEOK developed mitigation plans for registered, eligible or unevaluated sites that encroach on the proposed construction corridor. The proposed mitigation is detailed in Section 5 of

this document. All related correspondence can be found in Appendix C, and supporting documentation of field studies can be found in Appendix E. The full cultural resources report and associated maps located in Volume 2 are privileged and not for internet publication.

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

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

The proposed Project is not anticipated to result in permanent adverse impacts to the environment. See Section 2 for a comprehensive discussion of ONEOK's efforts to identify sensitive environmental resources along the proposed Route and Section 5 for a comprehensive discussion of proposed mitigation. ONEOK has worked with agencies to develop a route that avoids or minimizes environmental impacts. The Project is not anticipated to result in any impact to listed or sensitive species or their habitats. Refer to Appendix C for complete federal and state agency correspondence and Appendix D for survey results.

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

ONEOK provided Project specific notification to various federal and state agencies; through this notification process, these agencies had the opportunity to identify possible sensitive environmental resources within the Route and any related agency concerns. A summary of these concerns is below; a complete record of these communications can be found in Appendix C; mitigations measures to address these concerns are discussed in Section 5 of this document.

- On December 15, 2014, the North Dakota Game and Fish Department (NDGF) provided comments to ONEOK regarding the Project. The NDGF noted that the project crossed two drainage ways with National Wetland Inventory attributes. The NDGF requested the following items:
    - Measures be taken to protect wetlands that cannot be avoided;
    - No alterations to existing drainage patterns; and
    - No placement of above-ground appurtenances in wetland areas.

The NDGF expressed no other concerns.

ONEOK will implement standard best management practices which include measures specific to protecting wetlands when constructing in wetlands.

The drainage patterns will not be altered, and ONEOK will restore the original contours and revegetate areas disturbed by pipeline construction.

The placement of above-ground appurtenances will avoid wetland areas.

- On December 10, 2014, the North Dakota Parks and Recreation Department (NDPRD) provided comments to ONEOK regarding the Project recommending that ONEOK revegetate impacted areas with native species. The agency expressed no other concerns.

ONEOK will revegetate disturbed areas to landowner specifications. In the absence of a landowner request, ONEOK will use a native seed mix.

4.2 EXCLUSION AREAS (NDAC 69-06-08-02(1))

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

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

4.2.1 FEDERAL RESOURCE REVIEW

ONEOK provided project specific notification to various federal agencies and conducted a comprehensive review of published information. ONEOK concluded no national parks, memorial parks, landmarks, natural landmarks, monuments, or wilderness areas would be affected by the Project. Refer to Appendix C for related agency correspondence.

A Class I and a subsequent Class III cultural resource inventory was conducted of the Corridor and Route. These efforts confirmed the absence of historic sites, districts or landmarks of federal interest. Refer to Section 2 of the Certificate of Corridor Compatibility and Appendix C for a comprehensive discussion of agency correspondence, and Appendix E for the Cultural Resources Survey Report Abstract. The full cultural resources report and associated maps located in Volume 2 are privileged and not for internet publication.

4.2.2 STATE RESOURCE REVIEW

ONEOK confirmed through a combination of agency coordination, review of publicly available information and field studies that no state parks, historic sites, monuments, historical markers, or nature preserves are located within the Survey Corridor. Refer to Section 2 of the Certificate of Corridor Compatibility for a comprehensive discussion of ONEOK's agency notifications, and Appendix C for a record of the correspondence.

ONEOK commissioned a Class I cultural resource inventory of the proposed Corridor and augmented the effort with a Class III cultural resource inventory of the Route. These efforts confirmed the absence of previously recorded archaeological sites within the Survey Corridor. Refer to Section 2 of this document for a comprehensive discussion of ONEOK's related agency correspondence, and Appendix E for the Cultural Resources Survey Report Abstract. The full cultural resources report and associated maps located in Volume 2 are privileged and not for internet publication.

4.2.3 COUNTY RESOURCE REVIEW

ONEOK confirmed through a combination of agency coordination, review of publicly available information and field studies the absence of county parks, county recreation areas, municipal parks, or parks owned by other subdivisions of government bodies within the Survey Corridor. Refer to Section 2 of the Certificate of Corridor Compatibility for a comprehensive discussion of ONEOK's agency notifications, and Appendix C for copies of the correspondence.

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

ONEOK commissioned natural resource surveys of the proposed Route. The scope of the surveys included documentation of the presence or absence of federally listed and state listed species of concern or evidence of suitable habitats for these species. Emphasis was placed on those species identified through agency coordination for the Corridor analysis that agencies indicated had the potential to occur within the Corridor and therefore, the Route. The results of these field studies are detailed in Section 2.3, and

planned mitigative measures are discussed in Section 5 of this document. Appendix D contains the Natural Resources Report.

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

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

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

Based upon information compiled by the University of Wyoming regarding current and historic missile site locations, which was comprised of both tabular data describing these sites and supported with additional aerial imagery for each Minot Air Force Base Minuteman Intercontinental Ballistic Missile (ICBM) site, ONEOK has confirmed the absence of ICBM launch or launch control facility is located within 1,200 feet of the Route.

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

Based upon information compiled by the University of Wyoming regarding current and historic missile site locations, which was comprised of both tabular data describing these sites and supported with additional aerial imagery for each Minot Air Force Base Minuteman Intercontinental Ballistic Missile (ICBM) site, ONEOK has confirmed the absence of areas within 30 feet on either side of a direct line between ICBM launch or launch control facilities.

4.3 AVOIDANCE AREAS (NDAC 69-06-08-02(2))

Avoidance areas are geographical areas that may not be considered in the routing of a transmission facility unless, under the circumstances, it is shown there is no reasonable alternative. The following table and text identify and discuss avoidance areas within the Survey Corridor.

Avoidance Area	Within Survey Corridor
Federal	
Historic Districts	No
Wildlife Areas	No
Wild, Scenic or Recreational Rivers	No
Wildlife Refuges	No
Grasslands	No

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

4.3.1 FEDERAL RESOURCE REVIEW

ONEOK conducted a comprehensive review of publicly available information and field studies of the Survey Corridor. This review confirmed the absence of designated or registered historic districts, refuges, grasslands, and wild, scenic or recreational rivers in the Survey Corridor.

4.3.2 STATE RESOURCE REVIEW

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

4.3.3 HISTORICAL RESOURCES NOT MEETING EXCLUSION AREA CRITERIA

ONEOK conducted a review of publicly available resources and augmented this review with field surveys. The results of these combined efforts confirmed the absence of historical resource within the Survey Corridor, including those that did not meet the exclusion area criteria. Refer to Section 5 of this document for additional mitigative measures, Appendix C for agency correspondence, and Appendix E for the complete Cultural Resources Survey Report Abstract. The full cultural resources report and associated maps located in Volume 2 are privileged and not for internet publication.

4.3.4 AREAS OF KNOWN GEOLOGIC INSTABILITY

A desktop review of the North Dakota Geological Survey (NDGS) landslide mapping data was completed. Review of *Areas of Landslides, Watford City 100K Quad, North Dakota* confirmed landslide deposits do not intersect with the Route.

North Dakota has not experienced an earthquake of sufficient magnitude to damage steel welded pipe or structural steel structures in recorded history. Sinkholes are known to occur in the region, but these are related to subsurface mining activities as opposed to limestone dissolution. According to review of PSC abandoned mine data, no mining activities are located within the Survey Corridor.

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

ONEOK utilized aerial photography to identify structures located within 500 feet of the proposed pipeline alignment. One potentially occupied structure is located within 500 feet of the Route near mile post 2. The executed landowner waiver can be found in Appendix G.

4.3.6 RESERVOIRS AND MUNICIPAL WATER SUPPLIES

ONEOK has confirmed the Route does not contain reservoirs or municipal source water protection areas for community water supply sources.

4.3.7 WATER SOURCES FOR ORGANIZED RURAL WATER DISTRICTS

ONEOK has confirmed the Survey Corridor does not contain known water sources.

4.3.8 IRRIGATED LAND

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

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

ONEOK has confirmed areas of recreational significance are not located within the Survey Corridor.

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

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

4.4.1 AGRICULTURAL IMPACTS

Agricultural Production: The Project would temporarily affect approximately 48 acres of private land in North Dakota. The majority of the land crossed can be characterized as either agricultural or natural vegetative cover. Once the construction is complete, the land would be restored to its pre-construction contours and land use. ONEOK would provide settlements to landowners for crop loss resulting from Project construction.

Family Farms and Ranches: The Project would temporarily affect approximately 48 acres of private land in North Dakota. Once construction is complete, the land would be restored to its pre-construction contours and land use. ONEOK would negotiate

easements with all affected landowners. The Project would have no permanent impacts to lifestyle or farm/ranch operations once construction is completed.

The location of pipeline markers is defined under 49 CFR part 195 for pipelines. ONEOK works with local landowners and county officials to ensure that pipeline markers are located where required but also in an acceptable location for these parties. These markers are to be placed in full view so that they are not accidentally damaged and do not cause damage to landowner or county equipment.

Lands Suitable for Irrigation: This section is not applicable to buried pipelines (NDAC 69-06-08-02(2)(h)).

Surface Drainage: Standard pipeline construction techniques to be employed would not modify existing surface drainage patterns. Care would be taken throughout the construction process to minimize environmental impacts, including modification of drainage patterns. During restoration, those areas that were disturbed during construction will be restored, the local topography will be restored to its original contours, vegetation will be re-established and impacts will be minimal and temporary. Best management practices would be implemented in accordance with the project-specific Storm water Pollution Prevention Plan (SWPPP), which would comply with the NDDoH Construction Storm Water General Permit requirements. Permanent impacts to surface drainage would be minimized to the maximum extent possible.

Ground Water: Well data has been recorded by the State Water Commission for the Project Area. Well data indicates that groundwater is located more than 14 feet below the surface. The required tie-in excavations for the proposed Project are not anticipated to reach these depths as such no impact to ground water is anticipated.

4.4.2 THE IMPACTS UPON OTHER RESOURCES

Noise-Sensitive Land Uses: The Project is located in a rural setting, effectively isolating it from the majority of sensitive receptors. Construction of the proposed Project would temporarily affect the local noise environment. The ambient sound level of a region is defined by the total noise generated within the specific environment and is usually comprised of sounds emanating from natural and artificial sources. The construction of the proposed Project would be conducted during typical working hours and is expected to cause temporary increases in ambient sound within and adjacent to the Project Area. The use of heavy equipment or trucks would be the primary noise source during construction and excavation. The level of impact would vary by equipment type, duration of construction activity, and the distance between the noise source and the receptor. Once constructed and in-service, normal pipeline operations are not audible.

Visual Effect on Adjacent Areas: The proposed pipeline would include a receiver site. These facilities are typically enclosed with fences, which are padlocked shut against vandalism and accidental activation. The location would be clearly marked with a small placard that details ownership and contact information. The visual piping and equipment would be finished and maintained with a tan painted surface. These features

are common throughout the landscape and are not obtrusive. No other permanent aboveground features are proposed as a part of the Project.

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

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

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

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

The design of the Project has incorporated the use of a receiver site. The operation of the pipeline would be monitored in accordance with DOT regulations (49 CFR part 195 subpart F).

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

Plant Life: There would be no impacts to plant life associated with the construction or operation of the pipeline. Temporary impacts due to construction would be minimized by construction timing and mitigated by restoration practices. No species of special concern would be impacted by the Project.

4.5 POLICY CRITERIA (NDAC 69-06-08-02(4))

4.5.1 POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

ONEOK is committed to conducting its business in compliance with all applicable environmental laws and regulations. These laws, regulations and standards are designed to safeguard the environment, human health, wildlife and natural resources.

ONEOK would conduct its activities with the objectives of providing a healthful and safe workplace for its employees, and preventing accidents and environmental incidents. All persons and firms providing service to ONEOK are required to conduct their work in compliance with environmental conditions, permit authorizations, and applicable regulations, and would be held accountable for their actions in that regard.

4.5.2 LOCATION AND DESIGN

This Project would connect two existing facilities, the LCGP and ONEOK's GCP. The GCP is part of ONEOK's existing mainline transmission grid from which the NGL would be distributed to market hubs/centers in the south and south central United States. Where feasible, the proposed Route would utilize existing utility corridors to reach existing NGL transmission infrastructure. Refer to Appendix B for Project location maps.

The proposed pipeline would be approximately 4 miles in length, constructed of steel, and would be a nominal 8-inch diameter pipe. The pipe installed would have a nominal wall thickness of 0.188 inches denoted as API Code 5L specification ERW/FBE ARO pipe. The nominal wall thickness would increase to 0.219 for specific locations such as road crossings. The maximum operating pressure (MOP) of the pipeline would be 1,440 psi. Approximately 99.1% (3.9 miles) of the Project are co-located with existing utilities.

The proposed pipeline would meet US Department of Transportation regulations, specifically the design criteria outlined in 49 CFR part 195 subpart C, constructed per 49 CFR part 195 subpart D, and operated and maintained per 49 CFR part 195 subpart F.

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

Pipeline construction is a specialized construction market and the labor force needed to build the Project would be primarily comprised of a workforce with these niche construction skills. The primary contractor would supply specialized skilled labor and may draw upon the local labor force to supply general laborers. The workforce is anticipated to reach a peak of approximately 75 personnel.

4.5.4 ECONOMIES OF CONSTRUCTION AND OPERATION

The Project represents a total investment of approximately $6 million to be spent in McKenzie County, North Dakota for the construction of the pipeline and station expansion. Once in-service, the continued costs of maintenance and operation of the proposed pipeline are expected to be minimal.

4.5.5 USE OF CITIZEN COORDINATING COMMITTEES

ONEOK has established and maintains a good relationship with the local residents through its long-term regional presence operating various assets in the area. Through these relationships, ONEOK has maintained several grass roots communication channels to inform local residents regarding the developments associated with the Project. ONEOK would continue to maintain contact with local government officials.

Through this contact, project related information would be exchanged and should concerns arise, ONEOK would work with officials to resolve those issues.

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

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

4.5.7 LABOR RELATIONS

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

4.5.8 THE COORDINATION OF FACILITIES

ONEOK owns and operates the GCP. ORM, ONEOK's affiliate, owns and operates the Riverview Terminal. Coordination with the LCGP is anticipated to be seamless as the proposed Project would provide critical takeaway transport of NGLs produced at the LCGP allowing it to operate at full capacity.

4.5.9 MONITORING OF IMPACTS

ONEOK has established and maintained positive landowner and community relationships throughout the region through its open communication and commitment to corporate citizenship standards that are based on integrity. ONEOK would monitor landowner concerns through its ROW department and would respond to all reasonable requests. In a similar manner, ONEOK would monitor community concerns and respond to all reasonable concerns brought to its attention by local community leaders. ONEOK would select a contractor for construction of the Project and would coordinate the oversight responsibilities for construction activities with this contractor throughout the Project. Environmental responsibilities will be coordinated in the same manner.

4.5.10 UTILIZATION OF EXISTING AND PROPOSED ROW AND CORRIDORS

ONEOK chose the preferred Project alignment in an effort to maximize the use of existing utility corridors. Much of the proposed Project is adjacent to existing roadways or would share a corridor with another pipeline. Approximated 99.1% (3.9 miles) of the project is co-located with existing utility corridors.

4.5.11 OTHER EXISTING OR PROPOSED TRANSMISSION FACILITIES

Appendix F contains ONEOK's 10-Year Plan.

SECTION 5: MITIGATIVE MEASURES

5.1 LOCATION

The location of the proposed route is a function of location of the LCGP and suitable routing. A significant portion of the proposed alignment would be co-located within an existing utility corridor and is routed in a manner that would provide access to existing NGL transmission infrastructure. ONEOK commissioned field surveys of the proposed Route to facilitate treatment of specific agency concerns expressed during correspondence; inventory the resources throughout the Survey Corridor; define the location and boundaries of resources that intersect the proposed alignment; identify potential impacts to natural resources; and identify avoidance or other mitigation opportunities to further minimize the impacts of the Project.

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

Wetlands and Waterbodies: ONEOK would minimize impacts to wetland and waterbodies by minimizing workspace through these features and by utilizing low-impact crossing methods such as horizontal directional drilling where appropriate. Furthermore, ONEOK would conduct all regulated crossings in compliance with the U.S. Army Corps of Engineers (USACE) Nationwide Permit #12. Features would be returned to their pre-construction condition and contours, and the placement of above-ground appurtenances will avoid wetland areas in compliance with the NDGFD.

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

Scientists assume that the changing length of daylight coupled with seasonal weather patterns trigger the annual fall migration event. In North Dakota, the cranes would typically pass through the state during the fall migration occurring late August through mid-October with peak migration typically occurring in September. The spring migration typically occurs from late-March to mid-April. Construction activities for the proposed Project are scheduled to begin in the third quarter of 2015, which should largely mitigate impacts to this species. Additionally, to mitigate potential impacts to Whooping cranes ONEOK would suspend heavy equipment operations when Whooping cranes are observed within 0.5 mile (line of sight) from active construction activities.

ONEOK would report Whooping crane observations to the USFWS. Suspended activities would resume in the absence of the Whooping cranes. Refer to Appendix C for ONEOK's project notification to the USFWS.

Least tern: The interior populations of the Least tern have historically been associated with large river systems for breeding and migratory habitats. Breeding birds are known to breed in colonies, utilizing sandbar habitat common to larger rivers. The least tern may occur within the Project Area as a migrant. The project timing is the primary mitigation and would avoid the sensitive breeding season.

Piping plover: The Piping plover is associated with shorelines along small alkaline lakes, large reservoir beaches, river islands and adjacent sand pits. Breeding birds select wide beaches with highly clumped vegetation covering less than 25 percent of the area. The Piping plover's current breeding range on the Northern Great Plains extends south along major prairie rivers including the Yellowstone and Missouri, and in alkali wetlands including those in northeastern Montana and North Dakota. The Piping plover may occur within the Project Area as a migrant. The project timing is the primary mitigation and would avoid the sensitive breeding season.

Rufa red knot: The Rufa red knot migrates between breeding grounds in Canada and wintering grounds in South America. A significant factor threatening the Rufa red knot is the loss or modification of its habitat due to beach erosion and shoreline protection efforts. The Rufa red knot may occur within the Project Area as a migrant. The project timing is the primary mitigation measure that would avoid the sensitive breeding season.

Bald and Golden Eagle: Field surveys conducted on January 27, 2015, confirmed the absence of nests or nesting activities where habitat was suitable along the route.

To mitigate potential adverse effects on nesting and breeding eagles, the USFWS generally recommends maintaining a nest buffer of at least 0.5 miles for any eagles nesting in the area. ONEOK would work with the USFWS as necessary if an eagle nest is identified within 0.5 miles of the proposed pipeline route. The project timing is the primary mitigation and would avoid the sensitive breeding season.

Migratory Bird Treaty Act: The commonly observed timeframe for migration of protected species in North Dakota is February 1st to July 15th. Construction activities for the proposed Project are planned to begin in the third quarter of 2015. Based on the Project's schedule, construction activities are not anticipated to occur during the recognized migration/breeding season. If necessary, ONEOK would develop and implement a mitigation plan which may include conducting survey for nesting birds prior to the commencement of ground disturbing activities and implementing avoidance and monitoring measures of any active nests.

Cultural Resources: On February 24, 2015, ONEOK received concurrence of *No Significant Sites Affected* for the Project from the NDSHPO, provided there are no changes to the nature or location of the proposed Project. No resources were identified

during field surveys and no further work is recommended. Refer to Appendix C for a complete record of this correspondence.

5.2 CONSTRUCTION

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

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

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

5.3 OPERATION

Once placed into service, the proposed Pipeline would operate continuously, delivering NGLs from the LCGP to the GCP. Normal pipeline operations are imperceptible to the public, as they are silent, buried and therefore not visible, and require only minimal aboveground activity. Standard operating procedures would conform to applicable DOT requirements, which include regular pipeline monitoring and periodic inspection. Additionally, routine maintenance of the ROW would likely be required on a regular basis to remain in compliance.

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

6.1 PIPELINE CONSTRUCTION

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

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

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

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

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

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

additional temporary work space (ATWS.) This material would be returned to the original location and preconstruction contours reestablished during restoration.

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

Following installation of the pipe and backfilling of subsoil in the trench, the ROW would be returned to the original grade and the topsoil would be redistributed over the work area.

Trenching: The trench would be excavated by using backhoes to a depth that provides sufficient cover over the pipeline after backfilling. The bottom width of the trench would be sufficient to accommodate the 8-inch-diameter pipeline. Typically, the trench would be excavated to a depth of about five feet deep to allow for a minimum of four feet of cover after construction. In cultivated areas, the depth of cover would be sufficient to be safely below the maximum tillage depth. Additional cover requirements may be applicable at public road crossings.

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

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

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

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

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

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

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

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

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

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

Final Tie-in and Commissioning: Following successful pressure testing, test manifolds would be removed and the final pipeline tie-ins would be made. After final tie-ins are complete, the tie-in welds have been inspected and the line is sufficiently dried,

the pipeline would be commissioned. Commissioning involves activities to verify that equipment is properly installed and working, the controls and communications systems are functional, and that the pipeline is ready for service. The pipeline would be cleaned and dried using mechanical devices; the line would be purged of air and then loaded with product.

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

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

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

Every reasonable effort would be made to complete final cleanup (including final grading and installation of erosion control devices).

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

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

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

- Temporary extra workspaces would be located at least 50 feet from the edges of the waterbody, unless a ten foot setback is identified for waterbodies located in actively cultivated agricultural fields.

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

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

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

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

Following backfilling, topsoil segregated before trenching would be returned to the area from which it was stripped. If timber mats or riprap were used, ONEOK would remove

the supports from the wetland. No lime, mulch or fertilizer would be used in wetlands, but ONEOK would apply annual ryegrass in wetlands without standing water.

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

Agricultural Land Restoration: Portions of the Project would involve construction through agricultural areas. These areas consist of active croplands and as agricultural lands are also used as range or pasture land used for livestock production. ONEOK would utilize the following general construction methods in agricultural areas, consistent with the requirements of landowners:

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

- ONEOK would respond promptly to landowner concerns following construction to mitigate areas of subsidence and erosion problems should they occur.
- ONEOK would require the contractor to thoroughly clean the equipment and materials (*e.g.*, timber mates, bridges, etc.) at the contractor yard prior to mobilization to the ROW to prevent spread of nuisance weeds.

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

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

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

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

7.2 COMPENSATION POLICY

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

SECTION 8: LIST OF PREPARERS

Todd Kelvington, CEP
Environmental Project Manager
ONEOK Partners, 100 West 5th Street, Tulsa, OK 74103

M.S. Environmental Policy and Management, American Military University; and B.S. Biology, Norwich University. Mr. Kelvington is an environmental specialist with 17 years of environmental planning experience in a wide range of development projects. He has both performed and managed the assessment, siting, permitting, and construction of a wide range of federal, state, and municipal infrastructure projects throughout the mid-west and east coast regions. He is a Certified Environmental Professional with the Academy of Board Certified Environmental Professionals. As Environmental Project Manager for ONEOK, Mr. Kelvington leads and directs the activities of ONEOK's third party consultants in the Rockies and Great Plains regions.

Matt Turpin
Project Supervisor
ONEOK Partners, 100 West 5th Street, Tulsa, OK 74103

B.S. Mechanical Engineering University of Oklahoma. Mr. Turpin has performed a wide range of gathering and processing projects for ONEOK Rockies Midstream in the Williston Basin. Most of Mr. Turpin's eight year career at ONEOK involved managing pipeline and facility projects. As Project Supervisor for ONEOK Mr. Turpin leads and directs project managers supporting high pressure steel pipeline construction and design projects for ONEOK, Inc.

Jim Kline, P.E.
Project Manager
7K Services PLLC, 20398 South 4092 Road, Claremore, OK 74019

B.S. Civil Engineering University of Oklahoma. Mr. Kline is a Project Manager with 35 years of managing pipeline projects and has been a project consultant to ONEOK for four years managing pipelines in the Williston Basin. Mr. Kline is a Licensed Professional Engineer in the State of Oklahoma.

Jacob Yokum
Field Engineer
ONEOK Partners, 100 West 5th Street, Tulsa, OK 74103

B.S. Mechanical Engineering – Texas Tech University. Mr. Yokum has one year of large projects and pipeline construction experience. Mr. Yokum has fulfilled the project engineer and project manager roles on gathering and processing and natural gas liquids pipeline and facility projects for ONEOK Partners Large Projects group. He also serves as project engineer for the proposed pipeline project.

William McCarthy, C.W.B.
Senior Environmental Compliance Analyst
E3 Environmental, LLC, 871 Jefferson Avenue, St. Paul, MN 55102

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

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

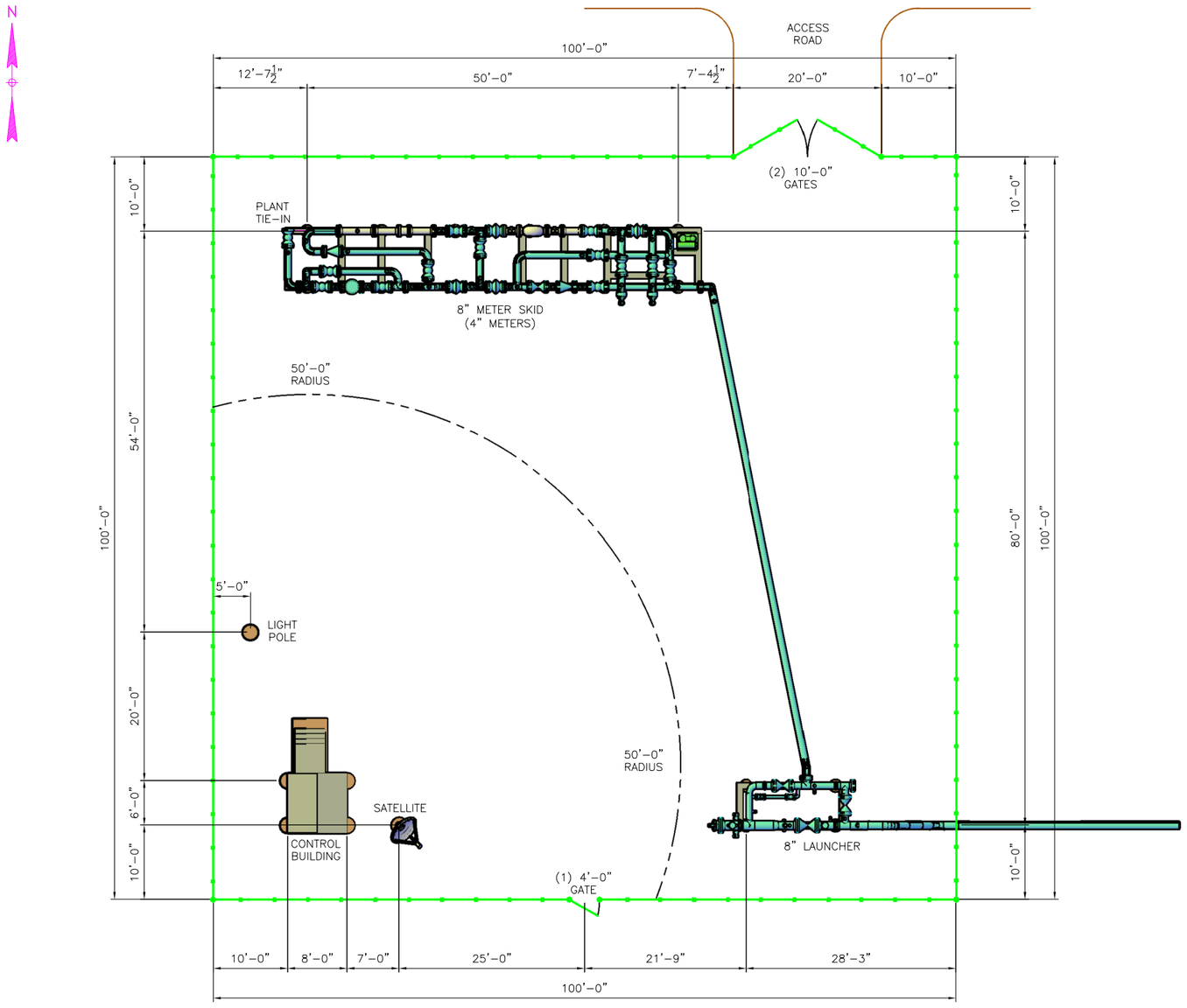
B.A. in Environmental Studies and Geography, Gustavus Adolphus College; and J.D., Hamline University School of Law. Ms. Schmit has over six years of environmental consulting experience. Ms. Schmit has pursued a career focused on regulatory compliance and supports energy clients by providing regulatory review and permitting services. Ms. Schmit's experience includes authoring technical reports in compliance with NEPA requirements for a variety of infrastructure projects across the Midwest and coordination with federal, state, and local agencies.

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

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

Appendix A

Engineering Documents



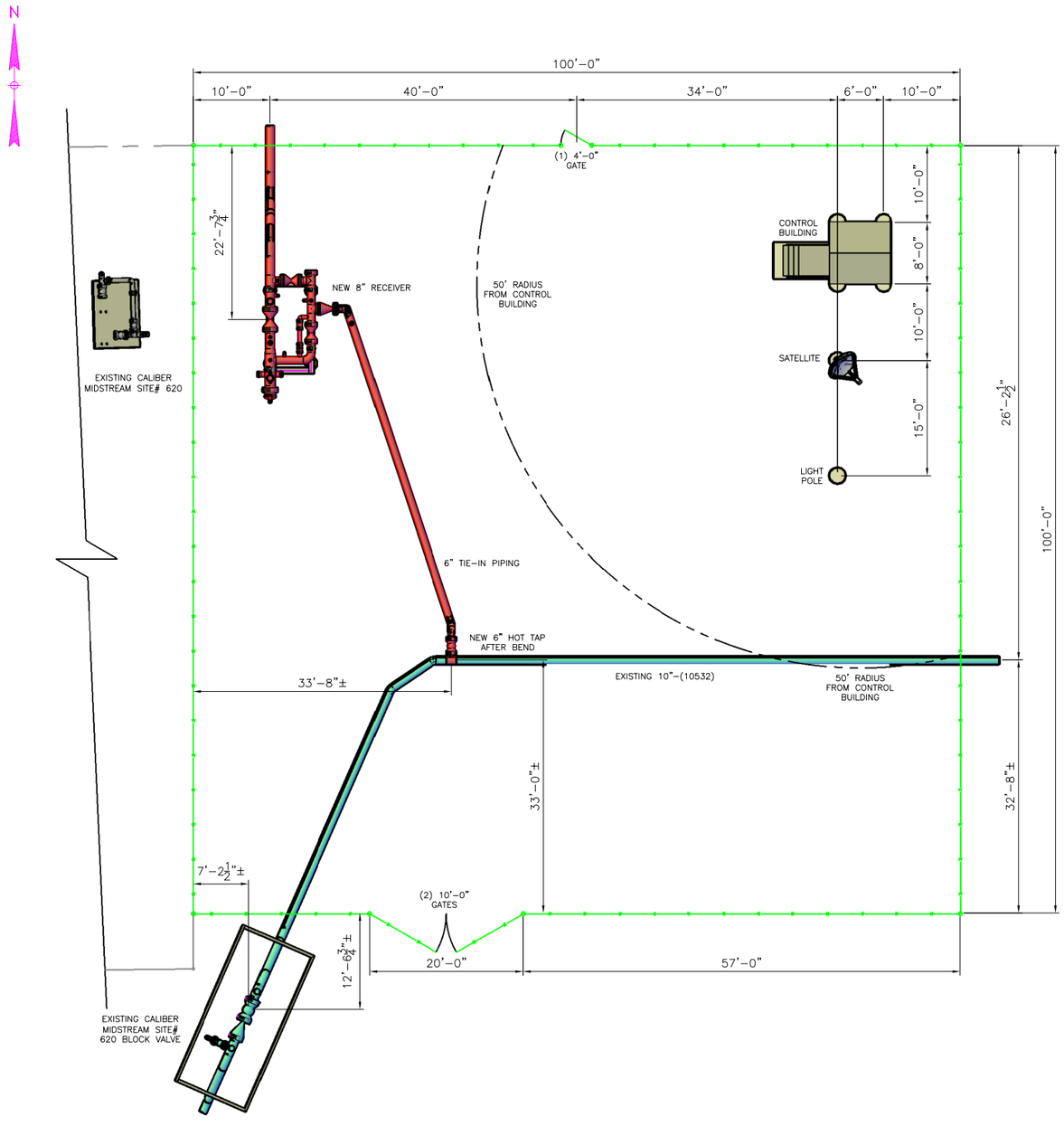
MK	DATE	REVISIONS	BY	AP.	MK	DATE	REVISIONS	BY	AP.
1	3/26/15	GENERAL REVISIONS	MBC		8				
2					9				
3					10				
4					11				
5					12				
6					13				
7					14				

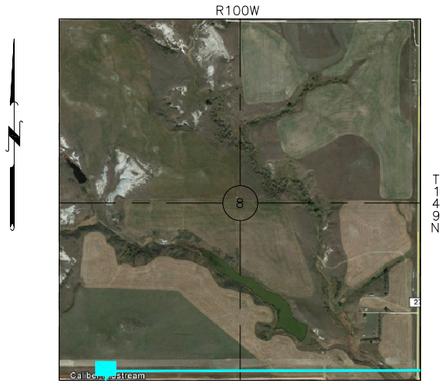
DWG. NO.	REFERENCE DRAWINGS

ONEOK HYDROCARBON, L.P.
P.O. BOX 29
MEDFORD, OK 73759

LONESOME CREEK SITE # 657
OVERALL SITE LAYOUT

DES.:	AFE#:	DATE: 1/23/15	
DR.: MBC		DWG. NO.:	REV.
CH.:	SCALE: 1/8"=1'	657–0–001	1
AP.:	CAD#: 657–0–001		





McKENZIE COUNTY, ND
SEC 8 T149N-R100W
LAT. 47.73265° LONG. -103.51617°

NOTE:
ALL UNDERGROUND PIPING IS APPROX. AND ASSUMED.

MK	DATE	REVISIONS	BY	AP.	MK	DATE	REVISIONS	BY	AP.
1	3/23/15	RELOCATED GATES	MBC		8				
2	3/26/15	GENERAL REVISIONS	MBC		9				
3					10				
4					11				
5					12				
6					13				
7					14				

DWG. NO.	REFERENCE DRAWINGS

ONEOK HYDROCARBON, L.P.
P.O. BOX 29
MEDFORD, OK 73759

LONESOME CREEK TIE-IN SITE# 658
OVERALL SITE LAYOUT

DES.:	AFE#:	DATE: 2/12/15	
DR.: MBC		DWG. NO.: 658-O-001	REV. 2
CH.:	SCALE: 1/8"=1'		
AP.:	CAD#: 658-O-001		

Appendix B

Project Maps

Document Path: P:\ONEOK\WillistonBasin\LonesomeCreek_NGL\MXDs\LC_NGL_11x17_NaturalResourceTopo.mxd

Date: 3/2/2015

Author: LDanielson

Butte

Lonesome Creek

Timber Creek

138TH AVE

137TH AVE

136TH AVE

139TH AVE

25TH ST

24TH ST

Well

Lonesome Creek Gas Plant

1

36

31

32

2318

2351

2404

2380

2362

2340

2335

2372

2386

2371

2375

2415

2431

2400

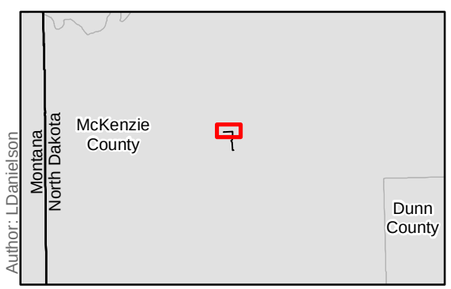
2436

2385

2463

2425

2390



- Milepost
- Centerline
- Survey Corridor
- Corridor (1 mile)
- NHD Waterways
- NHD Waterbody
- NWI Wetland

Criteria Data

- Federal Land
- State Land
- North Dakota Mineral Trust Lands
- NDGS Landslide Deposit

E3 Environmental
Enhancing Execution with Experience

N

0 500 1,000 2,000 Feet

1:12,000

Map not to scale, for environmental review purposes only.

ONEOK Bakken Pipeline, L.L.C.

Lonesome Creek NGL Pipeline Project

Siting Criteria

Natural Resource - Topo Map

Page 1 of 2

McKenzie County, North Dakota

Landslide Deposit

Garden Creek NGL Pipeline

Timber Creek

Cherry Creek

23RD ST

22ND ST

21ST ST

137TH AVE

2

3

Milepost
Centerline
Survey Corridor
Corridor (1 mile)
NHD Waterways
NHD Waterbody
NWI Wetland

Criteria Data

Federal Land
State Land
North Dakota Mineral Trust Lands
NDGS Landslide Deposit

Montana
North Dakota
McKenzie County
Dunn County

E3 Environmental
Enhancing Execution with Experience

0 500 1,000 2,000 Feet

1:12,000

Map not to scale, for environmental review purposes only.

ONEOK Bakken Pipeline, L.L.C.

Lonesome Creek NGL Pipeline Project
Siting Criteria
Natural Resource - Topo Map
Page 2 of 2
McKenzie County, North Dakota

Author: LDanielson
Date: 3/2/2015
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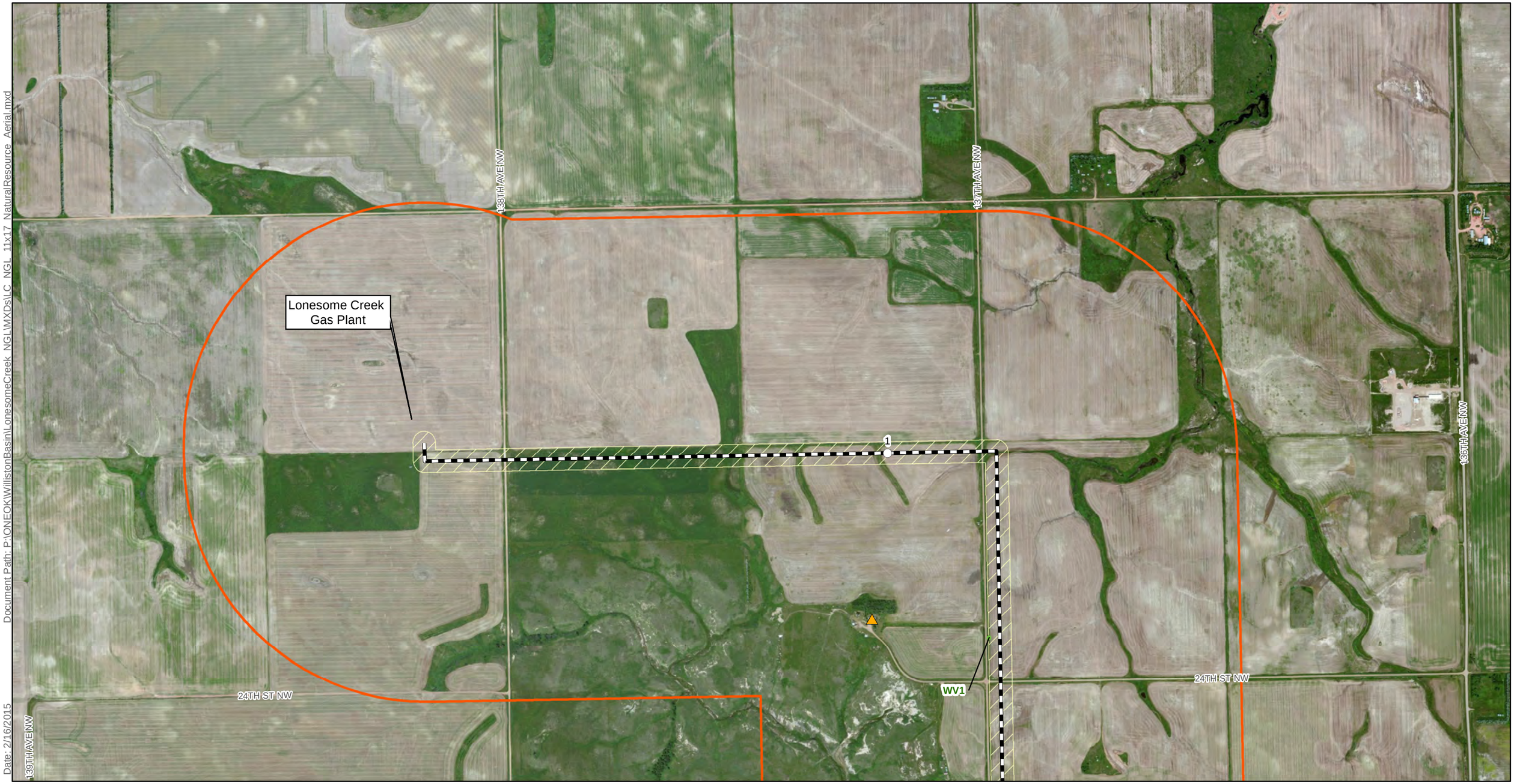
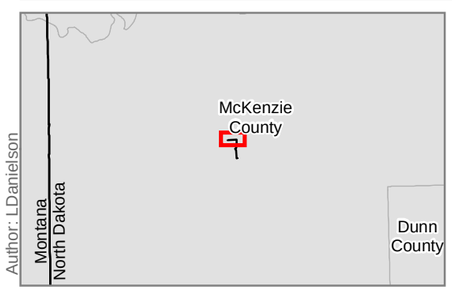
Document Path: P:\ONEOK\WillistonBasin\LonesomeCreek_NGL\MXDs\LC_NGL_11x17_NaturalResource_Aerial.mxd

Date: 2/16/2015

Author: LDanielson





- Milepost
- Centerline
- Survey Corridor
- Corridor (1 mile)

Survey Data
- Wetland
- Woody Vegetation

Criteria Data
- Occupied Structure
- Occupied Structure w/in 500ft of Alignment

E3 Environmental — Enhancing Execution with Experience

N

0 500 1,000 2,000 Feet

1:12,000

Map not to scale, for environmental review purposes only.

ONEOK Bakken Pipeline, L.L.C.

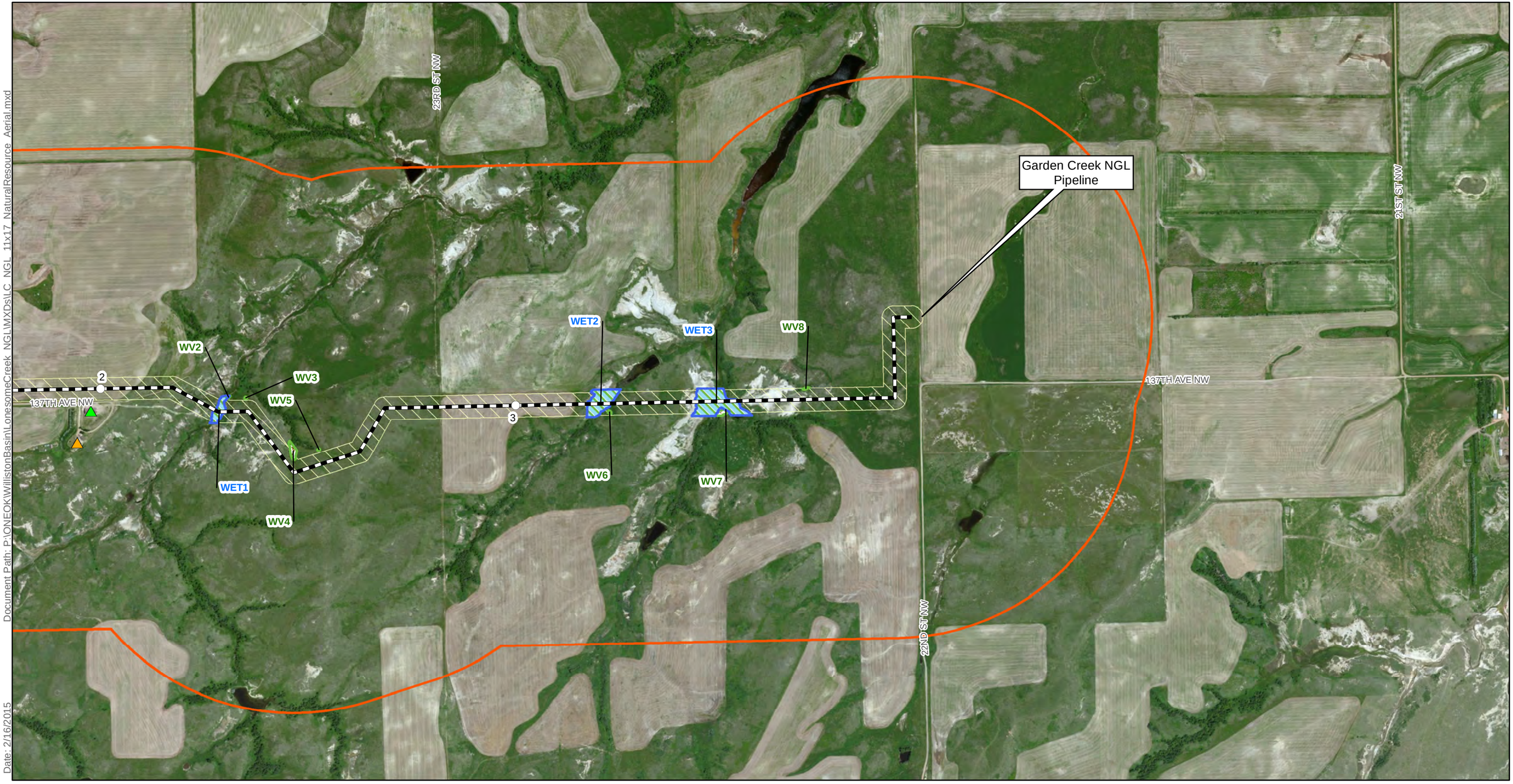
Lonesome Creek NGL Pipeline Project

Siting Criteria

Natural Resource - Aerial Map

Page 1 of 2

McKenzie County, North Dakota



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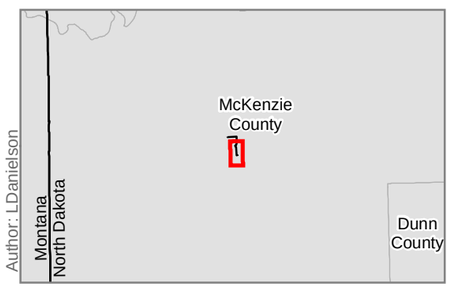
Date: 2/16/2015

Author: LDanielson



- Milepost
- Centerline
- Survey Corridor
- Corridor (1 mile)

Survey Data
- Wetland
- Woody Vegetation

Criteria Data
- Occupied Structure
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E3 Environmental — Enhancing Execution with Experience

0 500 1,000 2,000 Feet

1:12,000

Map not to scale, for environmental review purposes only.

ONEOK Bakken Pipeline, L.L.C.

Lonesome Creek NGL Pipeline Project

Siting Criteria

Natural Resource - Aerial Map

Page 2 of 2

McKenzie County, North Dakota

Appendix C

Agency Notifications

U.S. Fish and Wildlife Service

Agency Notification

ONEOK PARTNERS

CERTIFIED MAIL 7014 1200 0000 2236 3036
RETURN RECEIPT REQUESTED

November 20, 2014

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

ONEOK Bakken Pipeline, L.L.C. – Lonesome Creek Natural Gas Liquids Pipeline Project
Federally Listed Species, USFWS Managed Lands, and Migratory Bird Consultation

ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct the Lonesome Creek Natural Gas Liquids Pipeline Project (Project) in response to growing demand for gas processing capacity of natural gas and natural gas liquids (NGL) produced in North Dakota. The proposed project is a new 4.03 mile, 10-inch diameter NGL pipeline that will originate at Lonesome Creek Gas Plant in McKenzie County, North Dakota and will terminate at an interconnect with ONEOK's Garden Creek NGL pipeline. Pipeline construction activities would typically occupy a 100-foot right-of-way. Following construction, the pipeline would be operated within a 50-foot permanent easement. Pipeline construction involves temporary impacts, with post-construction restoration standard of restoring disturbed areas to their original pre-construction condition. Preparation and associated construction activities for the Project under consideration would be initiated during the second quarter of 2015, requiring approximately two months to place into service with restoration to immediately follow. To satisfy state siting authority requirements, ONEOK is providing this project notification for your consideration.

The proposed Project corridor is described below and depicted on the attached map and aerial photograph. In McKenzie County, North Dakota the pipeline crosses:

- Township 150N, Range 101W, Section 36;
- Township 150N, Range 100W, Section 31;
- Township 149N, Range 100W, Sections 6, 7, and 8.

The purpose of this request is to provide the U.S. Fish and Wildlife Service (USFWS) with notification of the proposed Project and to share ONEOK's analysis of the environmental topics relevant to the North Dakota Public Service Commission's siting requirements for Energy Conversion Facilities. On October 28, 2014, E3 Environmental, LLC (E3) conducted a web-based consultation using USFWS's IPaC system. This analysis is based upon results of the project specific query of the IPaC system.

Federally Listed Species Analysis:

The results of the search of the USFWS's IPaC system on October 28, 2014 found the following:

- Least tern – endangered
- Piping plover – threatened, and designated critical habitat
- Rufa red knot – proposed threatened
- Sprague's pipit – candidate
- Whooping crane – endangered
- Pallid sturgeon – endangered

- Dakota skipper – threatened, and proposed critical habitat
- Black-footed ferret – experimental population
- Gray wolf – endangered
- Northern long-eared bat – proposed endangered

Least Tern

The interior populations of the Least Tern have historically been associated with large river systems for breeding and migratory habitats. Breeding birds are known to congregate in colonies, utilizing sandbar habitat common to larger rivers. The Least Tern is found in North Dakota during the late spring and summer breeding season (mid-May through late August, with the peak of the nesting season occurring from mid-June to mid-July). Desktop analysis has concluded that no suitable habitat is present within the Project area; therefore, impacts to the Least Tern are not anticipated.

Piping plover

The Piping plover is associated with shorelines along small alkaline lakes, large reservoir beaches, and river islands and adjacent sand pits. Breeding birds select wide beaches with highly clumped vegetation covering less than 25 percent of the area. Breeding season in North Dakota occurs mid-April through August. The Missouri River and Lake Sakakawea, over 45 miles east of the site at its nearest point, are the closest designated critical habitats for the Piping plover. Desktop analysis has concluded that no suitable habitat is present within the Project area; therefore, impacts to the Piping plover or its designated critical habitat are not anticipated.

Rufa red knot

The Rufa red knot migrates between breeding grounds in Canada and wintering grounds in South America. A significant factor threatening the Rufa red knot is destruction and modification of its habitat due to beach erosion and shoreline protection and stabilization projects. Migratory behavior and habitat requirements of this species are poorly understood particularly for those populations occupying the midcontinent flyways. Inland stopovers include the Mississippi Valley, Great Lakes, and Great Plains. Desktop analysis has concluded that no suitable habitat is present within the Project area; therefore impacts to the Rufa red knot are not anticipated.

Sprague's pipit

The Sprague's pipit is a small passerine, 10–15 centimeters in length, endemic to the Northern Great Plains (USFWS, 2010). In North Dakota, the Sprague's pipit breeds throughout the state except for the easternmost counties. During the breeding season, they prefer large patches of well-drained, open, unplowed native grassland with a minimum size of 358.3 acres (range = 170–776 acres). They have not been observed in areas smaller than 71.6 acres on their breeding grounds. Sprague's pipits are sensitive to patch size and avoid edges between grasslands and other habitat features. They may avoid non-grassland features including roads, trails, oil wells, croplands, woody vegetation, and wetlands. Desktop analysis has concluded that no suitable habitat is present within the Project area; therefore, impacts to the Sprague's pipit are not anticipated.

Whooping crane

The whooping crane is a large bodied marsh species that breeds primarily in Canada and winters in the Gulf of Mexico. This species has been closely studied and monitored in recent years due to its small population. North Dakota provides migratory habitat for the species, providing roosting and feeding opportunities during migration. This species prefers larger wetland complexes for roosting habitat, typically using adjacent uplands for foraging opportunities.

Precautionary measures will be implemented if whooping cranes are sighted in or near the Project area. ONEOK will voluntarily suspend all heavy equipment operation activities and notify the USFWS should a whooping crane be spotted within 0.5 mile of the Project area. Heavy equipment activities will resume upon the departure of the individual(s). The Project under consideration will not result in a loss of crane habitat. The project schedule would avoid typical migration periods coupled with restoration of disturbed areas to their original land use will largely avoid and minimize impacts to this species.

Pallid Sturgeon

The pallid sturgeon's preferred habitat includes the benthic environment associated with swift waters of large turbid, free-flowing rivers with braided channels, dynamic flow patterns, periodic flooding of terrestrial habitats, and requiring extensive micro habitat diversity. The species inhabits the Missouri and Mississippi Rivers from Montana to Louisiana. In North Dakota, reaches of the Missouri River have been cited as providing suitable habitat for the pallid sturgeon. However, there is no suitable sturgeon habitat in the Project area as the Missouri River does not intersect the Project corridor; as such, impacts to the pallid sturgeon are not anticipated.

Dakota skipper

Dakota skippers require untilled, high-quality prairie. Habitat preferred by the skipper is wet-mesic prairie with little topographic relief on near-shore glacial lake deposits and in rolling native-prairie terrain over gravelly glacial moraine deposits. Larvae feed on grasses, favoring little bluestem (*Schizachyrium scoparium*). Adults commonly feed on nectar of flowering native forbs such as harebell (*Campanula rotundifolia*), wood lily (*Lilium philadelphicum*), and purple coneflower (*Echinacea angustifolia*). This species is not known to disperse widely and has low mobility, dispersing a maximum of 0.6-mile. The species is threatened by conversion of native prairie to cultivated agriculture or shrublands, over-grazing, invasive species, gravel mining, and inbreeding. Desktop analysis has concluded that no suitable habitat is present within the Project area; therefore, impacts to the Dakota skipper are not anticipated.

Black-footed ferret

Black-footed ferrets inhabit the extensive prairie dog complexes of the Great Plains, typically composed of several smaller colonies close to one another that provide a sustainable prey base. The *Black-footed Ferret Survey Guidelines for Compliance with the Endangered Species Act* published by the USFWS (1989), states 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. This species has not been observed in the wild for more than 20 years and is not anticipated to be impacted by the proposed Project.

Gray wolf

The gray wolf is a large carnivore that through conservation measures has experienced strong population recovery, particularly in the Great Lakes states of the upper Midwest. As populations rebound, individuals may break from packs to explore opportunities to establish packs in unoccupied territory. Roaming individuals can cover great distances without establishing viable breeding populations in previously unoccupied habitat(s). This species is not tolerant of human disturbance and will tend to avoid interaction with humans. The activities associated with construction would likely serve as a deterrent to this species. Therefore, this Project will have no effect on the gray wolf.

Northern long-eared bat

The northern long-eared bat roost underneath bark, in cavities, or in crevices of both live and dead trees. Populations have also been found in cool environments such as caves and mines and prefer to spend winter hibernating in locations with high humidity and no air currents. Breeding occurs in late summer or early fall in maternity colonies where females give birth around the same time, which may occur

anywhere from late May to late July. Desktop analysis has concluded that no suitable habitat is present within the Project area; therefore, impacts to the northern long-eared bat are not anticipated.

USFWS Managed Lands:

Conservation programs such as Waterfowl Production Areas and wetland and grassland easements represent an important tool used by USFWS to identify and manage high quality wildlife habitat. A review of public records failed to identify any of these USFWS managed lands in the Project area. ONEOK requests that USFWS notify ONEOK of any USFWS managed lands located within the proposed Project area.

Migratory Bird Consultation:

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

In recognition of these facts, ONEOK has proposed to initiate construction during the second quarter of 2015, requiring approximately two months to complete. The proposed project schedule would overlap with the 2015 breeding season; however ONEOK would implement its MBTA Conservation Plan to avoid impacts to breeding birds. Conservation measures would include such actions as habitat manipulation (e.g. brushing and/or topsoiling); physical screening for presence/absence of breeding birds; and buffering of active nest sites. Furthermore, construction activities one initiated would serve as an effective deterrent for breeding birds.

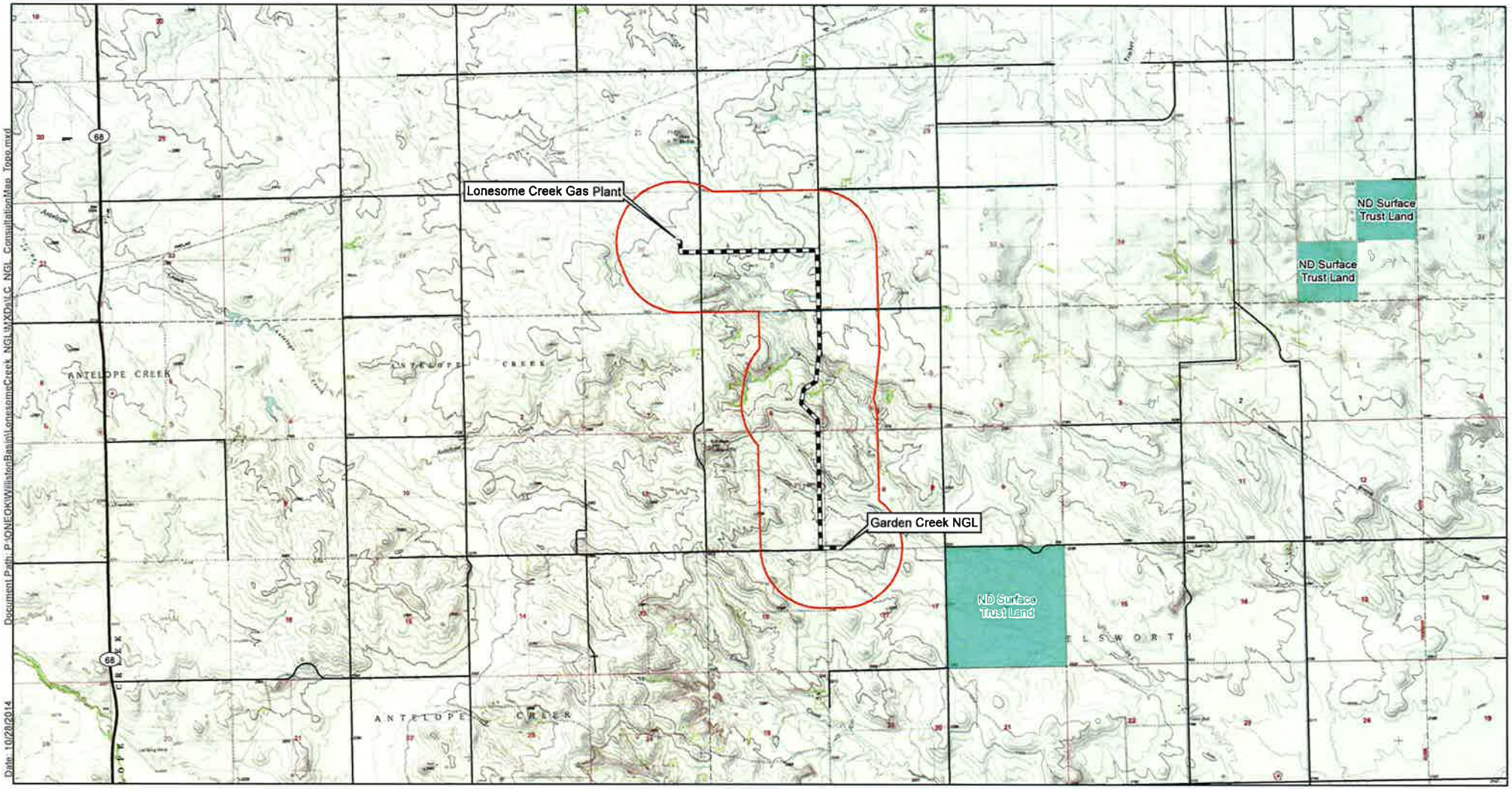
In closing, E3 has been retained by ONEOK to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact Bill McCarthy at 651.282.0650 or wmcarthy@go2e3.com; you may also contact me at 918.732.1472 or Todd.Kelvington@oneok.com.

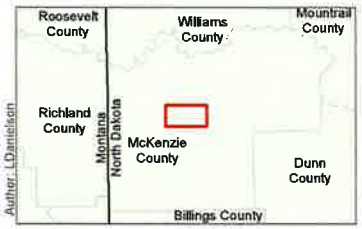
Sincerely,

Todd Kelvington
Environmental Project Manager

Enclosures: Project Map – USGS topographic
Project Map – Aerial photograph

xc: Bill McCarthy/Erica Davis/Melissa Schmit, E3 (pdf)
Jim Kline/Todd Kelvington, ONEOK (pdf)
Tulsa Large Construction – Lonesome Creek PL





Pipeline
Corridor (1 Mile)
Federal Land
State Land

E3 Environmental
Enhancing Execution with Experience

0 0.5 1 2 Miles

1:48,000

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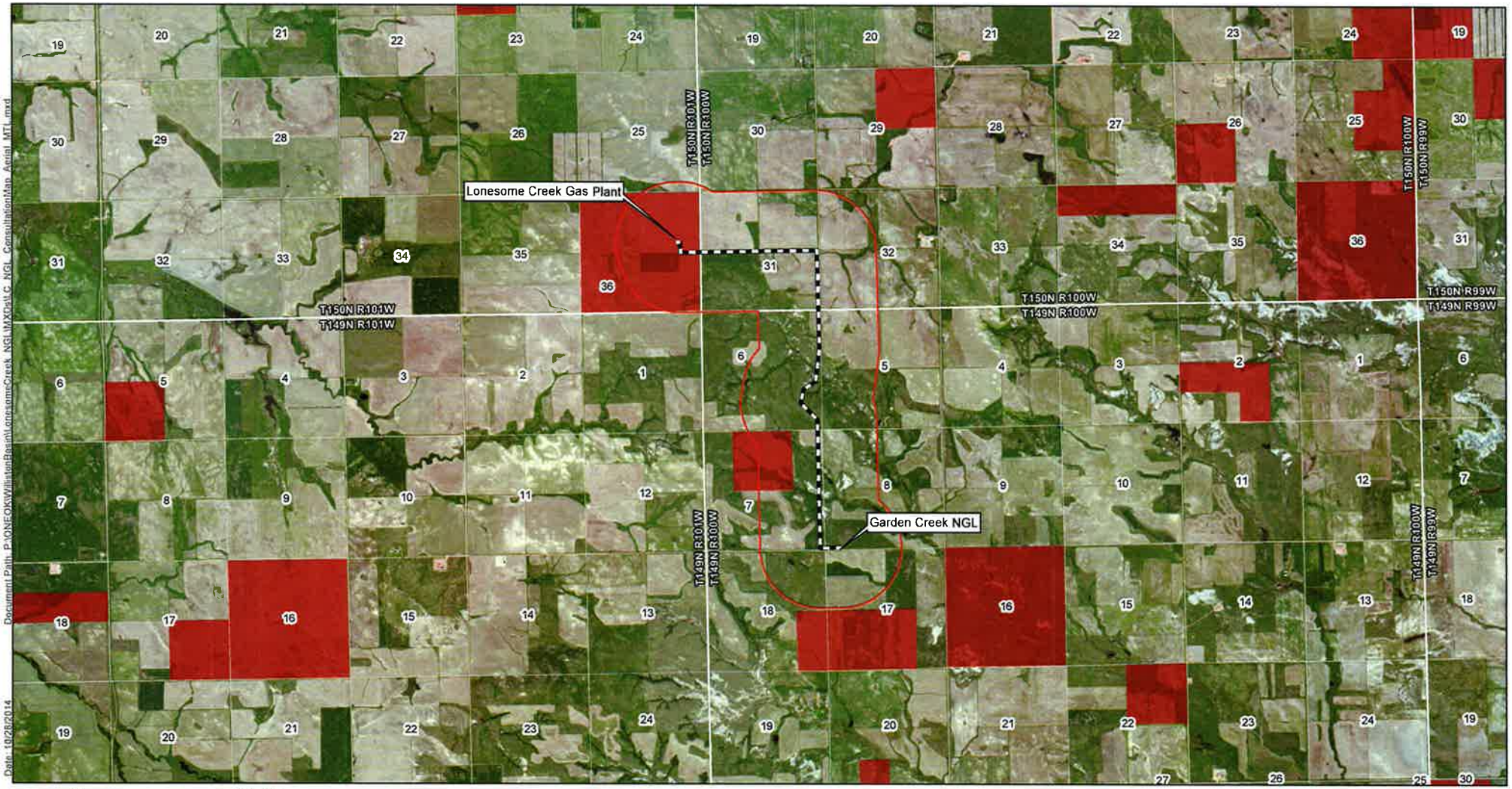
Map not to scale, for environmental review purposes only.

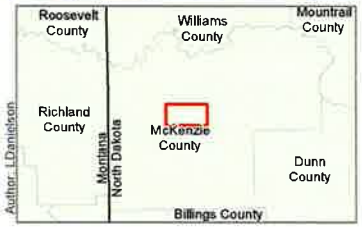
ONEOK Rockies Midstream L.L.C.

Lonesome Creek NGL Pipeline

Aerial Overview Map

McKenzie County, North Dakota





Pipeline

Corridor (1 Mile)

Mineral Trust Land

E3 Environmental
Enhancing Execution with Experience

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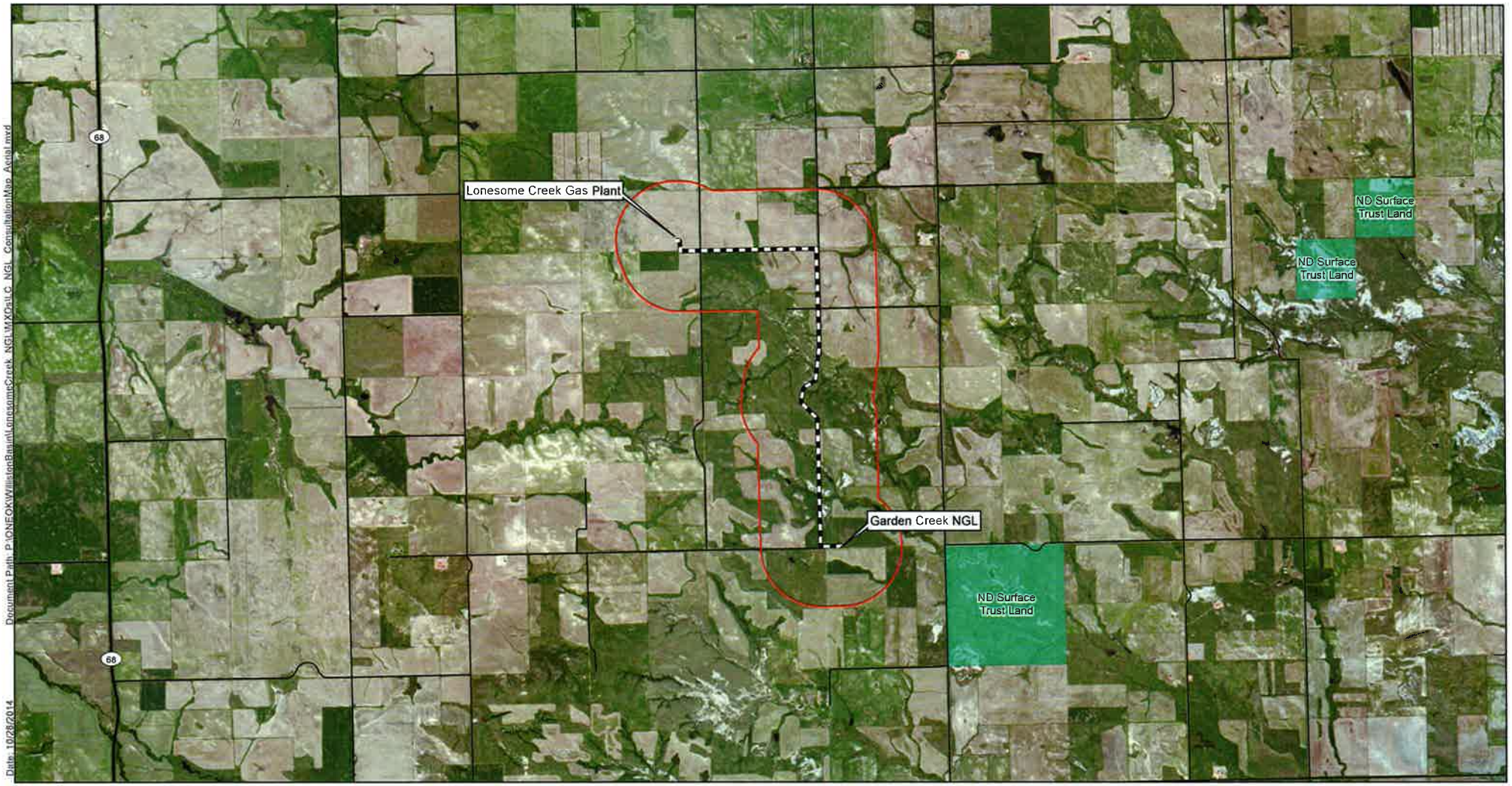
Map not to scale, for environmental review purposes only.

ONEOK Rockies Midstream L.L.C.

Lonesome Creek NGL Pipeline

ND Mineral Trust Lands

McKenzie County, North Dakota



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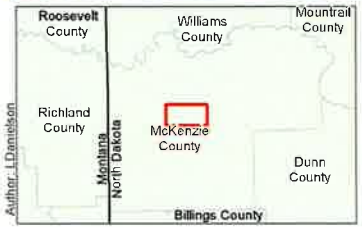
Author: LDanielson



Pipeline

Corridor (1 Mile)

Federal Land

State Land

E3 Environmental
Enhancing Execution with Experience

N

0 0.5 1 2 Miles

1:48,000

Map not to scale, for environmental review purposes only.

ONEOK Rockies Midstream L.L.C.

Lonesome Creek NGL Pipeline

Aerial Overview Map

McKenzie County, North Dakota

North Dakota Game and Fish Department

Agency Notification

ONEOK PARTNERS

CERTIFIED MAIL 7014 1200 0000 2236 3012
RETURN RECEIPT REQUESTED

November 20, 2014

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

ONEOK Bakken Pipeline, L.L.C. – Lonesome Creek Natural Gas Liquids Pipeline Project
State Conservation Priority Species Consultation, State Plots Land Review

ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct the Lonesome Creek Natural Gas Liquids Pipeline Project (Project) in response to growing demand for gas processing capacity of natural gas and natural gas liquids (NGL) produced in North Dakota. The proposed project is a new 4.03 mile, 10-inch diameter NGL pipeline that will originate at the Lonesome Creek Gas Plant in McKenzie County, North Dakota and will terminate at an interconnect with ONEOK's Garden Creek NGL pipeline. Pipeline construction activities would typically occupy a 100-foot right-of-way. Following construction, the pipeline would be operated within a 50-foot permanent easement. Pipeline construction involves temporary impacts, with post-construction restoration standard of restoring disturbed areas to their original pre-construction condition. Preparation and associated construction activities for the Project under consideration would be initiated during the second quarter of 2015, requiring approximately two months to place into service with restoration to immediately follow. To satisfy state siting authority requirements, ONEOK is providing this project notification for your consideration.

The purpose of this correspondence is twofold: to afford the North Dakota Game and Fish Department (Department) the opportunity to assess the Project corridor for the presence or absence of State Conservation Priority Species; and to assess the Project corridor for the presence or absence of Department managed PLOTS Lands.

The proposed Project corridor is described below and depicted on the attached map and aerial photograph. These have been provided to assist the Department's review of the Project.

In McKenzie County, North Dakota the pipeline crosses:

- Township 150N, Range 101W, Section 36;
- Township 150N, Range 100W, Section 31;
- Township 149N, Range 100W, Sections 6, 7, and 8.

100 West Fifth Street, Tulsa, OK 74103-4298
P. O. Box 871, Tulsa, OK 74102-0871

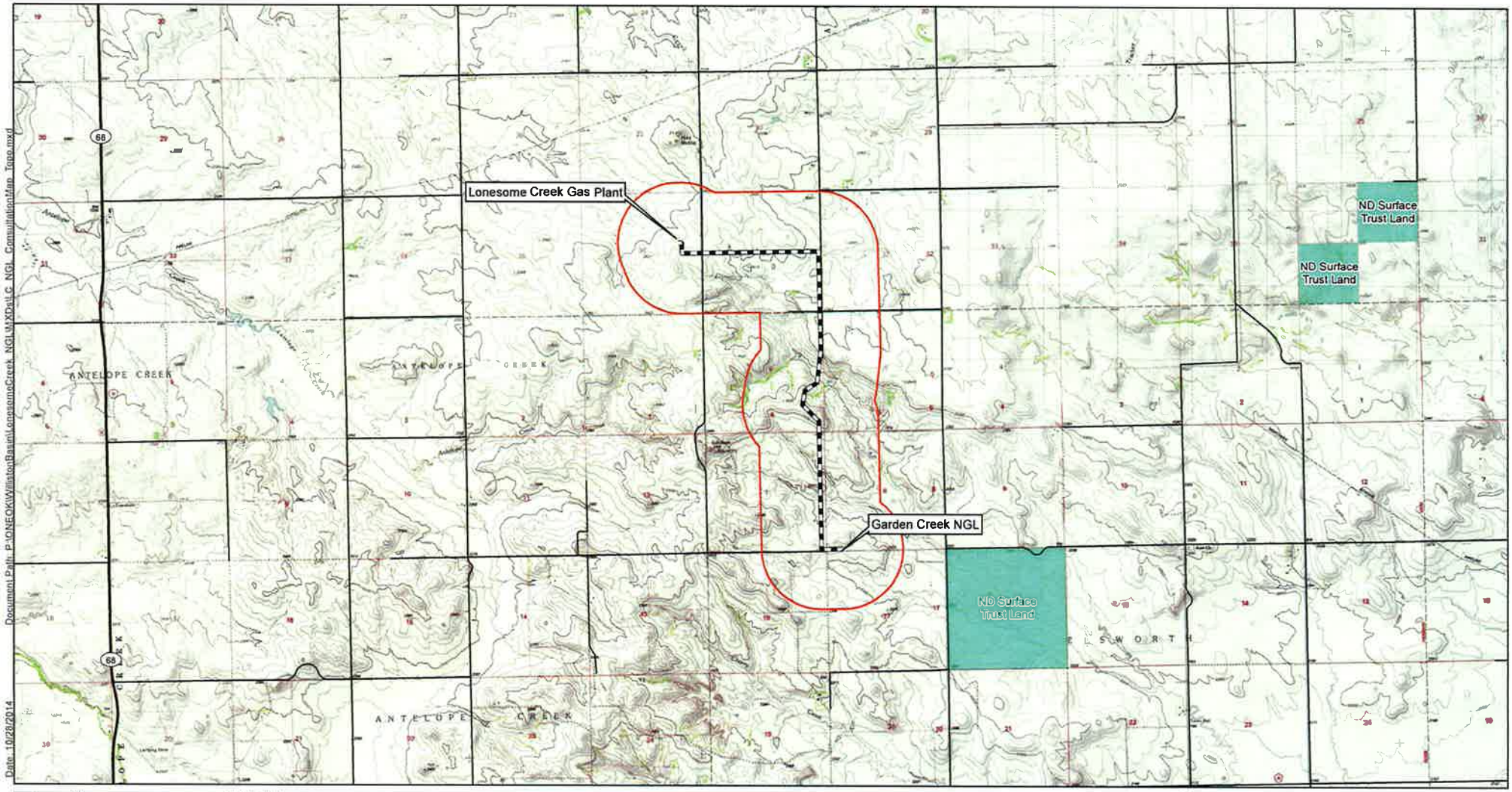
In closing, E3 Environmental, LLC has been retained by ONEOK to provide environmental consulting support for this project. Should you have any questions or require additional information, please contact Bill McCarthy at 651.282.0650 or wmcarthy@go2e3.com; you may also contact me at 918.732.1472 or Todd.Kelvington@oneok.com.

Sincerely,

Todd Kelvington
Environmental Project Manager

Enclosures: Project Map – USGS topographic
Project Map – Aerial photograph

xc: Bill McCarthy/Erica Davis/Melissa Schmit, E3 (pdf)
Jim Kline/Todd Kelvington, ONEOK (pdf)
Tulsa Large Construction – Lonesome Creek PL



Pipeline
Corridor (1 Mile)
Federal Land
State Land

E3 Environmental
Enhancing Execution with Experience

N

0 0.5 1 2 Miles

1:48,000

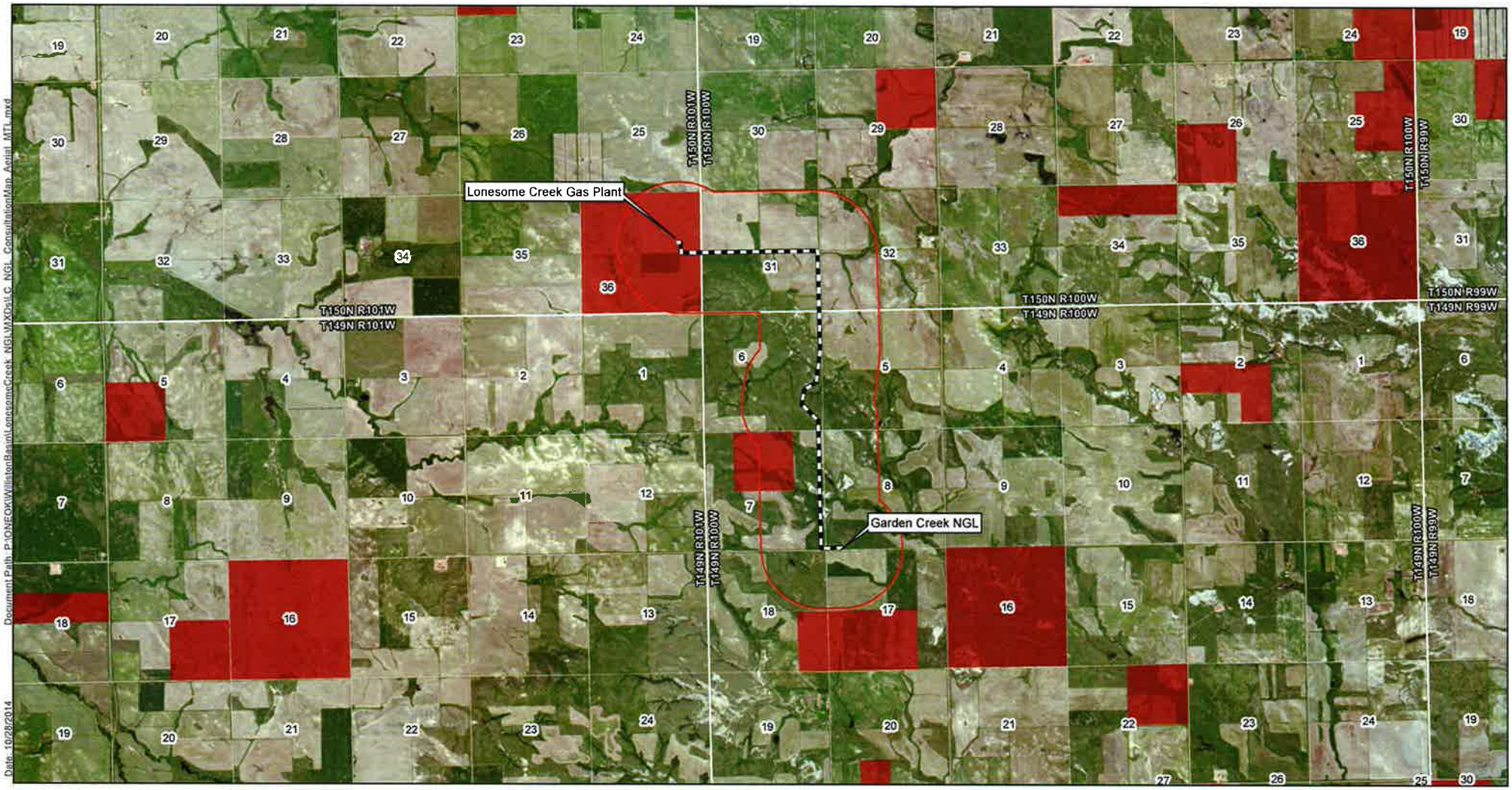
Map not to scale, for environmental review purposes only.

ONEOK Rockies Midstream L.L.C.

Lonesome Creek NGL Pipeline

Aerial Overview Map

McKenzie County, North Dakota



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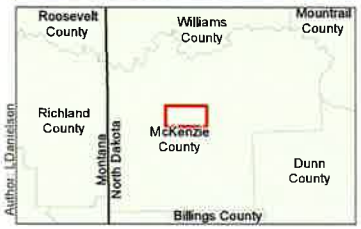
Date: 10/28/2014

Author: LDanielson



Pipeline

Corridor (1 Mile)

Mineral Trust Land

E3 Environmental
Enhancing Execution with Experience

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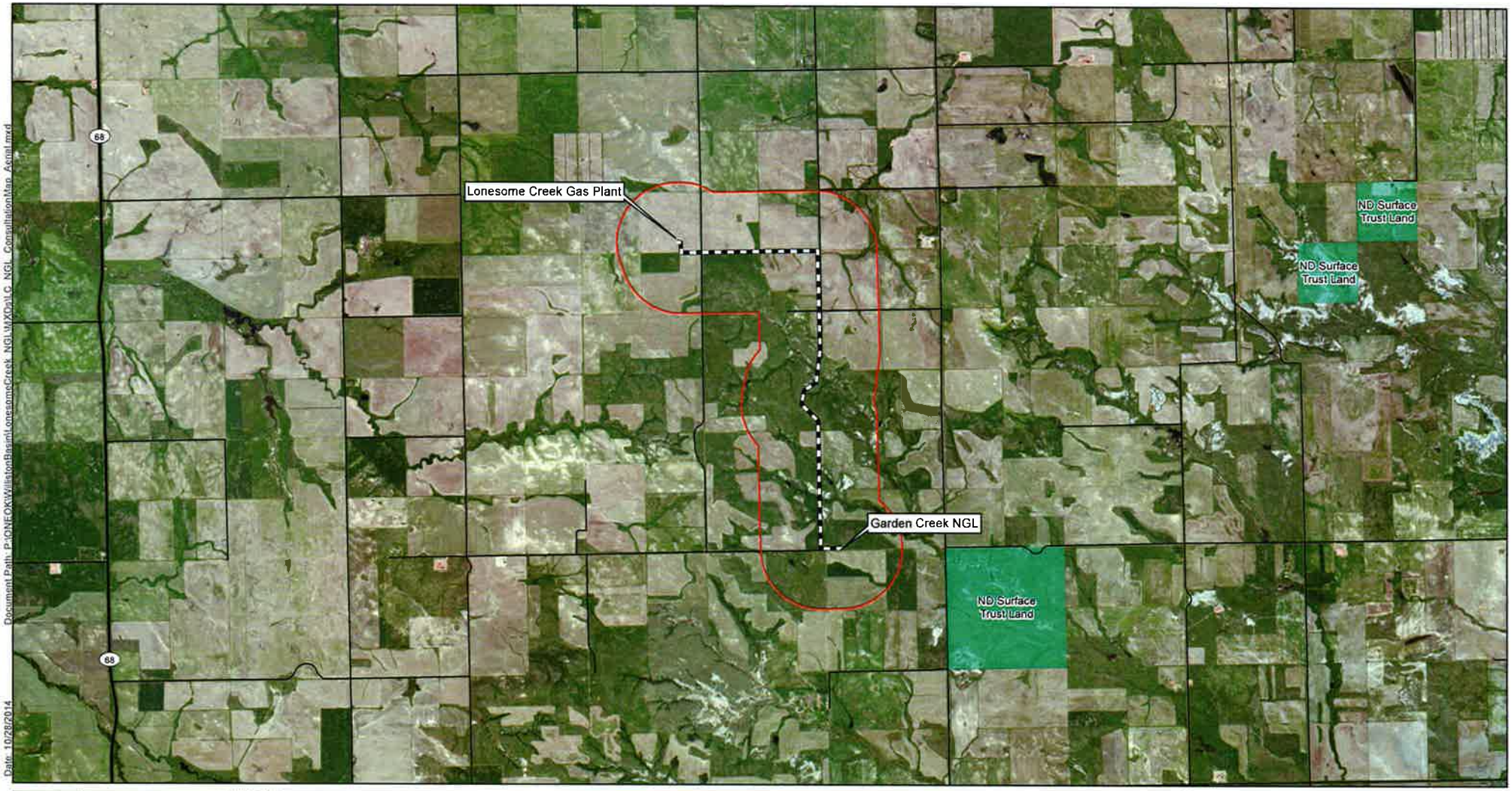
Map not to scale, for environmental review purposes only.

ONEOK Rockies Midstream L.L.C.

Lonesome Creek NGL Pipeline

ND Mineral Trust Lands

McKenzie County, North Dakota



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Date: 10/28/2014

Author: LDanielson

Pipeline

Corridor (1 Mile)

Federal Land

State Land

E3 Environmental
Enhancing Execution with Experience

N

0 0.5 1 2 Miles

1:48,000

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ONEOK Rockies Midstream L.L.C.

Lonesome Creek NGL Pipeline

Aerial Overview Map

McKenzie County, North Dakota

RECEIVED
DEC 29 2014
ONEOK
CORP ENVIRONMENTAL

"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

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

December 15, 2014

Todd Kelvington
Environmental Project Manager
ONEOK Partners
P.O. Box 871
Tulsa, OK 74102-0871

Dear Mr. Kelvington:

RE: Lonesome Creek Natural Gas Liquids Pipeline Project

ONEOK Bakken Pipeline, LLC is proposing to construct the Lonesome Creek Natural Gas Liquids Pipeline Project, a new 4.03-mile 10-inch diameter NGL pipeline that will originate at the Lonesome Creek Gas Plant and terminate at an interconnect with ONEOK's Garden Creek NGL pipeline in McKenzie County, North Dakota.

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

We do not believe this project will have significant adverse effects on wildlife or wildlife habitat, including species of conservation priority, provided disturbed areas are reclaimed to pre-project conditions.

Private Lands Open to Sportsmen (PLOTS) is a public access program which cost-shares with private landowners to help conserve fish and wildlife habitat. PLOTS lands are not owned or managed by the North Dakota Game and Fish Department. Information regarding PLOTS locations is available at: http://gf.nd.gov/hunting/private-land-open-sportsmen. This page is updated to reflect changes as tracts are added or removed.

Sincerely,

Greg Link
Chief
Conservation & Communication Division

js

North Dakota Parks and Recreation Department

Agency Notification

ONEOK PARTNERS

CERTIFIED MAIL 7014 1200 0000 2236 3029
RETURN RECEIPT REQUESTED

November 20, 2014

Kathy Duttenhefner
North Dakota Parks and Recreation
1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649

ONEOK Bakken Pipeline, L.L.C. – Lonesome Creek Natural Gas Liquids Pipeline Project
Natural Heritage Inventory Review Request

ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct the Lonesome Creek Natural Gas Liquids Pipeline Project (Project) in response to growing demand for gas processing capacity of natural gas and natural gas liquids (NGL) produced in North Dakota. The proposed project is a new 4.03 mile, 10-inch diameter NGL pipeline that will originate at the Lonesome Creek Natural Gas Plant in McKenzie County, North Dakota and will terminate at an interconnect with ONEOK's Garden Creek NGL pipeline. Pipeline construction activities would typically occupy a 100-foot right-of-way. Following construction, the pipeline would be operated within a 50-foot permanent easement. Pipeline construction involves temporary impacts, with post-construction restoration standard of restoring disturbed areas to their original pre-construction condition. Preparation and associated construction activities for the Project under consideration would be initiated during the second quarter of 2015, requiring approximately two months to place into service with restoration to immediately follow. To satisfy state siting authority requirements, ONEOK is providing this project notification for your consideration.

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

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

The proposed Project corridor is described below and depicted on the attached map and aerial photograph. These have been provided to assist the Department's review of the Project for the presence or absence of any lands, projects, and sensitive species.

In McKenzie County, North Dakota the pipeline crosses:

- Township 150N, Range 101W, Section 36;
- Township 150N, Range 100W, Section 31;
- Township 149N, Range 100W, Sections 6, 7, and 8.

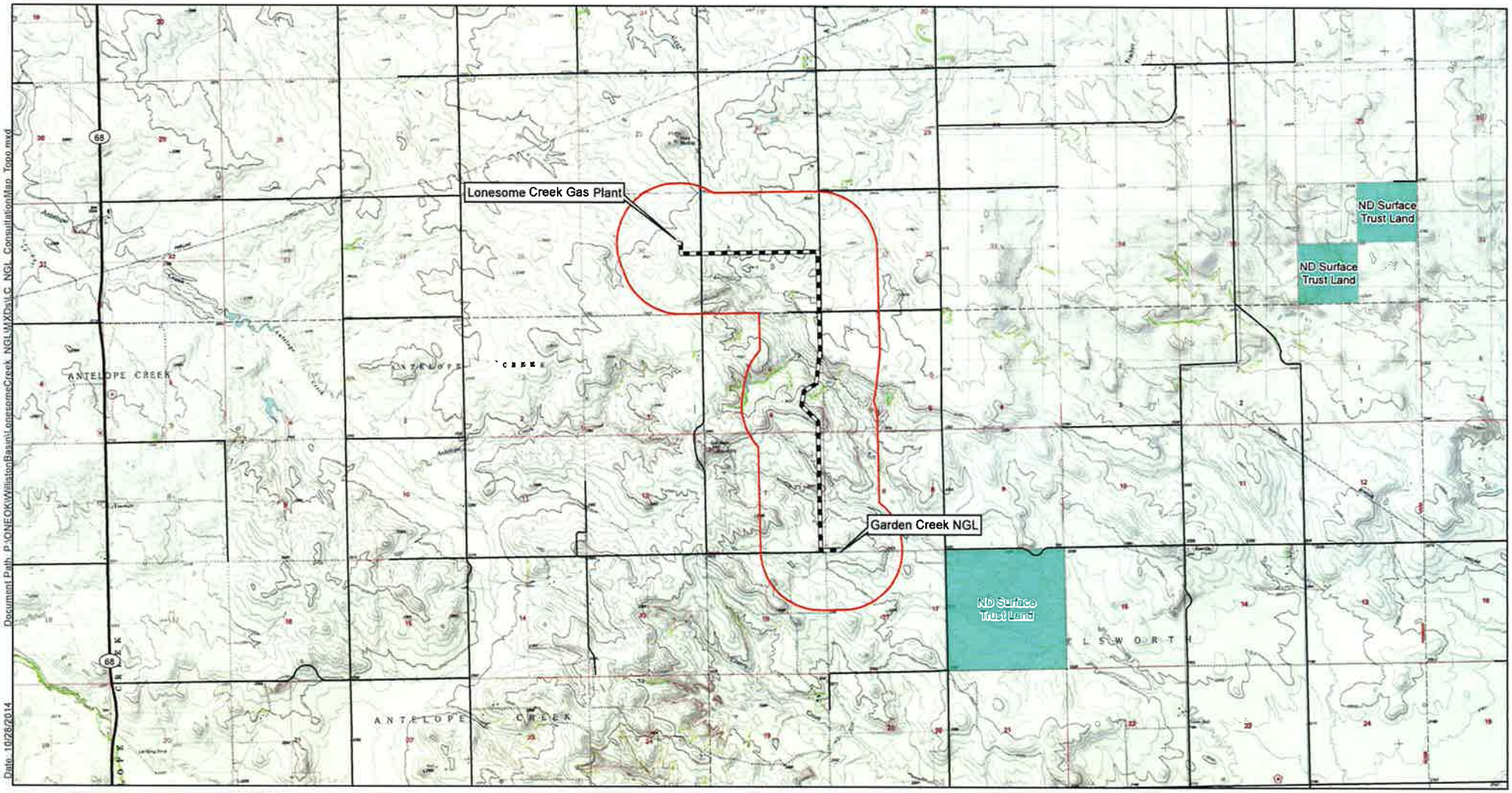
In closing, E3 has been retained by ONEOK to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact Bill McCarthy at 651.282.0650 or wmcarthy@go2e3.com; you may also contact me at 918.732.1472 or Todd.Kelvington@oneok.com.

Sincerely,

Todd Kelvington
Environmental Project Manager

Enclosures: Project Map – USGS topographic
Project Map – Aerial photograph

xc: Bill McCarthy/Erica Davis/Melissa Schmit, E3 (pdf)
Jim Kline/Todd Kelvington, ONEOK (pdf)
Tulsa Large Construction – Lonesome Creek PL



Pipeline
Corridor (1 Mile)
Federal Land
State Land

E3 Environmental
Enhancing Execution with Experience

0 0.5 1 2 Miles

1:48,000

N

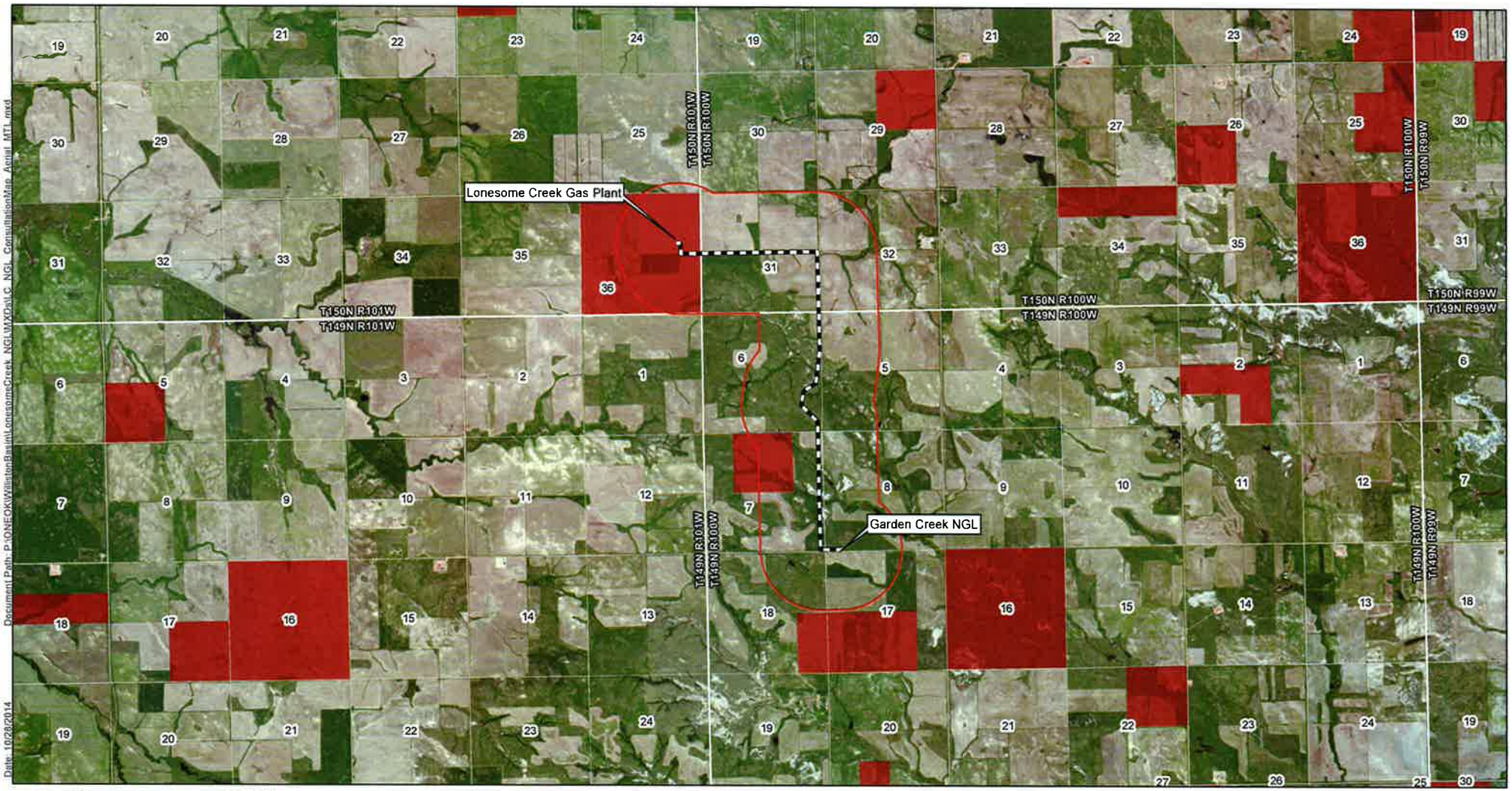
Map not to scale, for environmental review purposes only.

ONEOK Rockies Midstream L.L.C.

Lonesome Creek NGL Pipeline

Aerial Overview Map

McKenzie County, North Dakota



Roosevelt County
Williams County
Mountrail County
Richland County
McKenzie County
Dunn County
Billings County
Montana
North Dakota

Pipeline
Corridor (1 Mile)
Mineral Trust Land

E3 Environmental
Enhancing Execution with Experience

0 0.5 1 2 Miles

1:48,000

N

Map not to scale, for environmental review purposes only.

ONEOK Rockies Midstream L.L.C.

Lonesome Creek NGL Pipeline

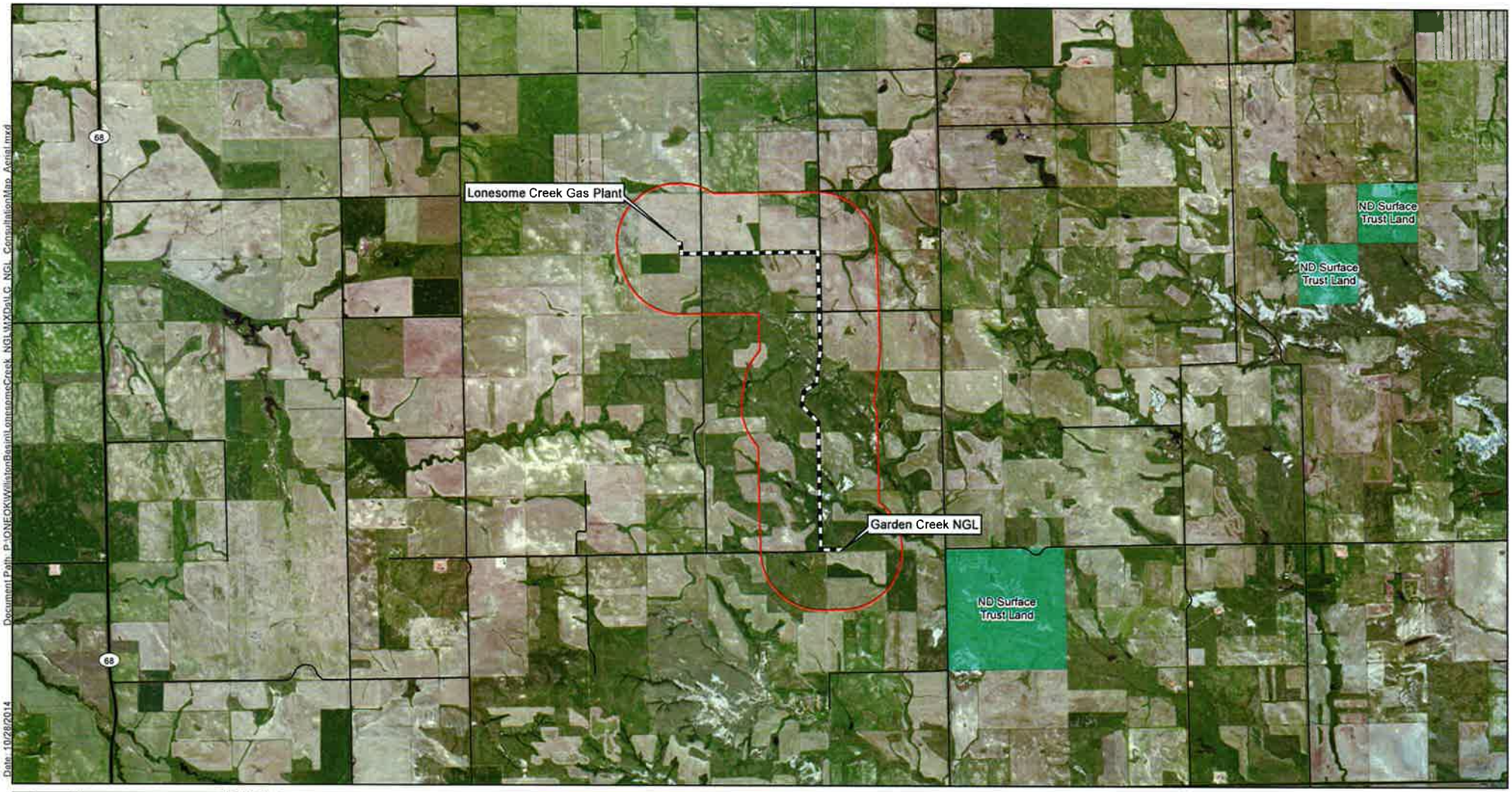
ND Mineral Trust Lands

McKenzie County, North Dakota

Author: LDanielson

Date: 10/28/2014

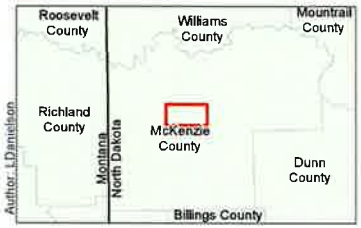
Document Path: P:\ONEOK\WillistonBasin\LonesomeCreek_NGL\MXD\LC_NGL_ConsultationMap_Aerial_MTL.mxd



Document Path: P:\ONEOK\WillistonBasin\LonesomeCreek_NGL\MXD\Cult_C_NGL_ConsultationMap_Aerial.mxd

Date: 10/28/2014

Author: LDanielson



Pipeline

Corridor (1 Mile)

Federal Land

State Land

E3 Environmental
Enhancing Execution with Experience

N

0 0.5 1 2 Miles

1:48,000

Map not to scale, for environmental review purposes only.

ONEOK Rockies Midstream L.L.C.

Lonesome Creek NGL Pipeline

Aerial Overview Map

McKenzie County, North Dakota

Jack Dalrymple, Governor
Mark A. Zimmerman, Director

1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649
Phone 701-328-5357
Fax 701-328-5363
E-mail parkrec@nd.gov
www.parkrec.nd.gov

December 10, 2014

Todd Kelvington
ONEOK Partners
100 West Fifth Street, PO Box 871
Tulsa, OK 74103-4298

Re: ONEOK Partners – Bakken Pipeline LLC Lonesome Creek Natural Gas Liquids Pipeline Project

Dear Mr. Kelvington,

The North Dakota Parks and Recreation Department (the Department) has reviewed the above referenced proposed Bakken Pipeline LLC Lonesome Creek Natural Gas Liquids Pipeline Project in McKenzie County.

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

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

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

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

Sincerely,

Kathy Duttenhefner

Kathy Duttenhefner, Coordinator
Natural Resources Division

R.USNDNHI*2014_208KD12/10/2014DL12.10.2014

Agency Notification

ONEOK PARTNERS

CERTIFIED MAIL 7014 1200 0000 2236 3043
RETURN RECEIPT REQUESTED

November 20, 2014

Mr. Michael Haupt, Land Management Professional
North Dakota Department of Trust Lands
Surface Management Division
1707 North 9th Street, P.O. Box 5523
Bismarck, ND 58506-5523

ONEOK Bakken Pipeline, L.L.C. – Lonesome Creek Natural Gas Liquids Pipeline Project
School Trust Lands Consultation

ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct the Lonesome Creek Natural Gas Liquids Pipeline Project (Project) in response to growing demand for gas processing capacity of natural gas and natural gas liquids (NGL) produced in North Dakota. The proposed project is a new 4.03 mile, 10-inch diameter NGL pipeline that will originate at the Lonesome Creek Gas Plant in McKenzie County, North Dakota and will terminate at an interconnect with ONEOK's Garden Creek NGL pipeline. Pipeline construction activities would typically occupy a 100-foot right-of-way. Following construction, the pipeline would be operated within a 50-foot permanent easement. Pipeline construction involves temporary impacts, with post-construction restoration standard of restoring disturbed areas to their original pre-construction condition. Preparation and associated construction activities for the Project under consideration would be initiated during the second quarter of 2015, requiring approximately two months to place into service with restoration to immediately follow. To satisfy state siting authority requirements, ONEOK is providing this project notification for your consideration.

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

The proposed Project corridor is described below and depicted on the attached map and aerial photograph. These have been provided to assist the Department's review of the Project.

In McKenzie County, North Dakota the pipeline crosses:

- Township 150N, Range 101W, Section 36;
- Township 150N, Range 100W, Section 31;
- Township 149N, Range 100W, Sections 6, 7, and 8.

100 West Fifth Street, Tulsa, OK 74103-4298
P. O. Box 871, Tulsa, OK 74102-0871

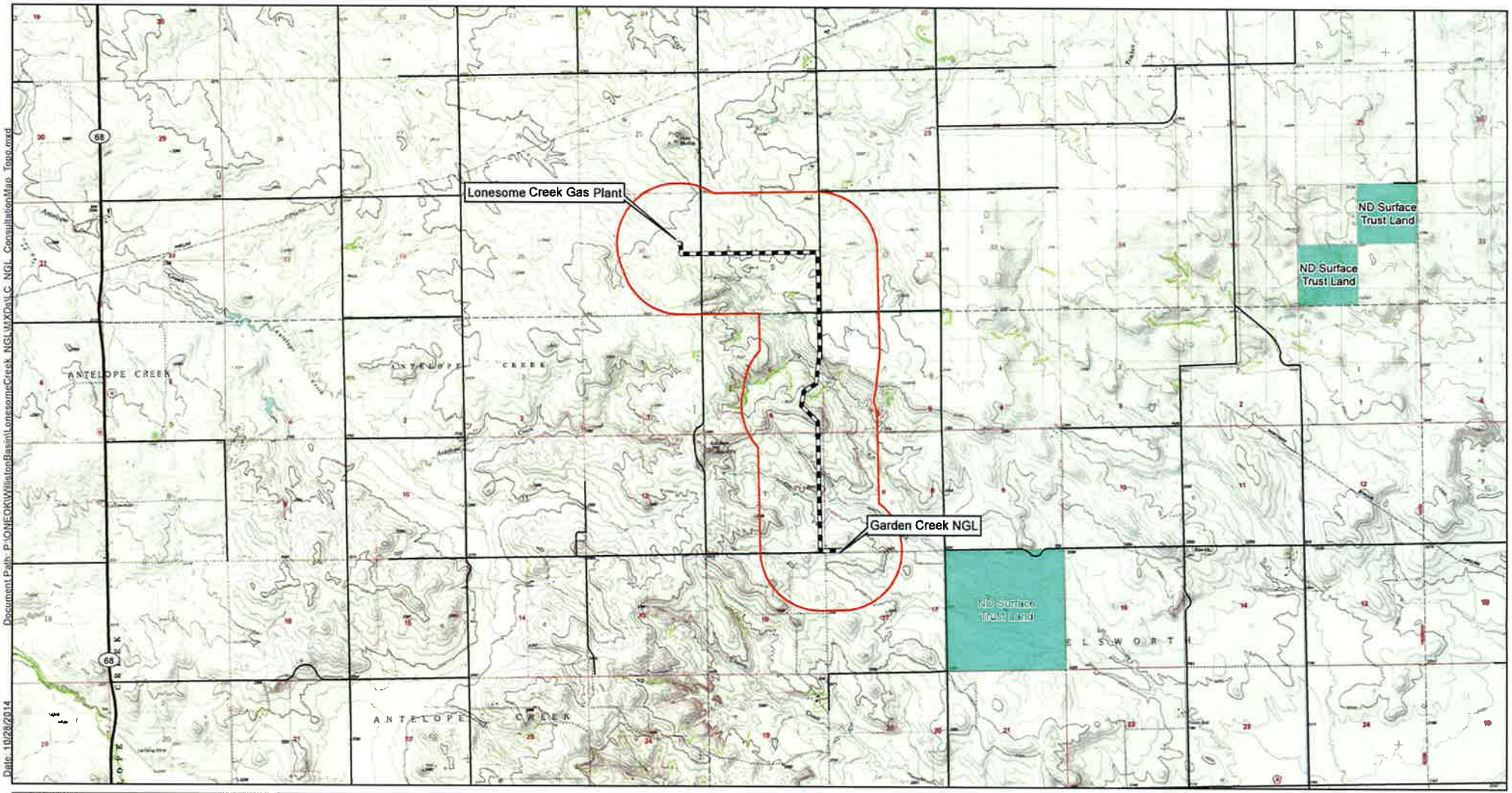
In closing, E3 Environmental, LLC has been retained by ONEOK to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact Bill McCarthy at 651.282.0650 or wmcarthy@go2e3.com; you may also contact me at 918.732.1472 or Todd.Kelvington@oneok.com.

Sincerely,

Todd Kelvington
Environmental Project Manager

Enclosure: Project Map – USGS topographic
Project Aerial photograph

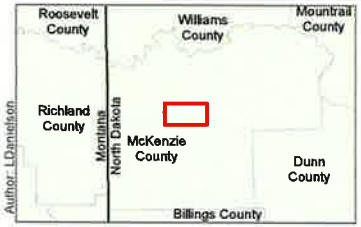
xc: Bill McCarthy/Erica Davis/Melissa Schmit, E3 (pdf)
Jim Kline/Todd Kelvington, ONEOK (pdf)
Tulsa Large Construction – Lonesome Creek PL



Document Path: P:\ONEOK\WillistonBasin\LonesomeCreek_NGL\MXD\alC_NGL_ConsultationMap_Topo.mxd

Date: 10/28/2014

Author: LDanielson



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

N

E3 Environmental
Enhancing Execution with Experience

0 0.5 1 2 Miles

1:48,000

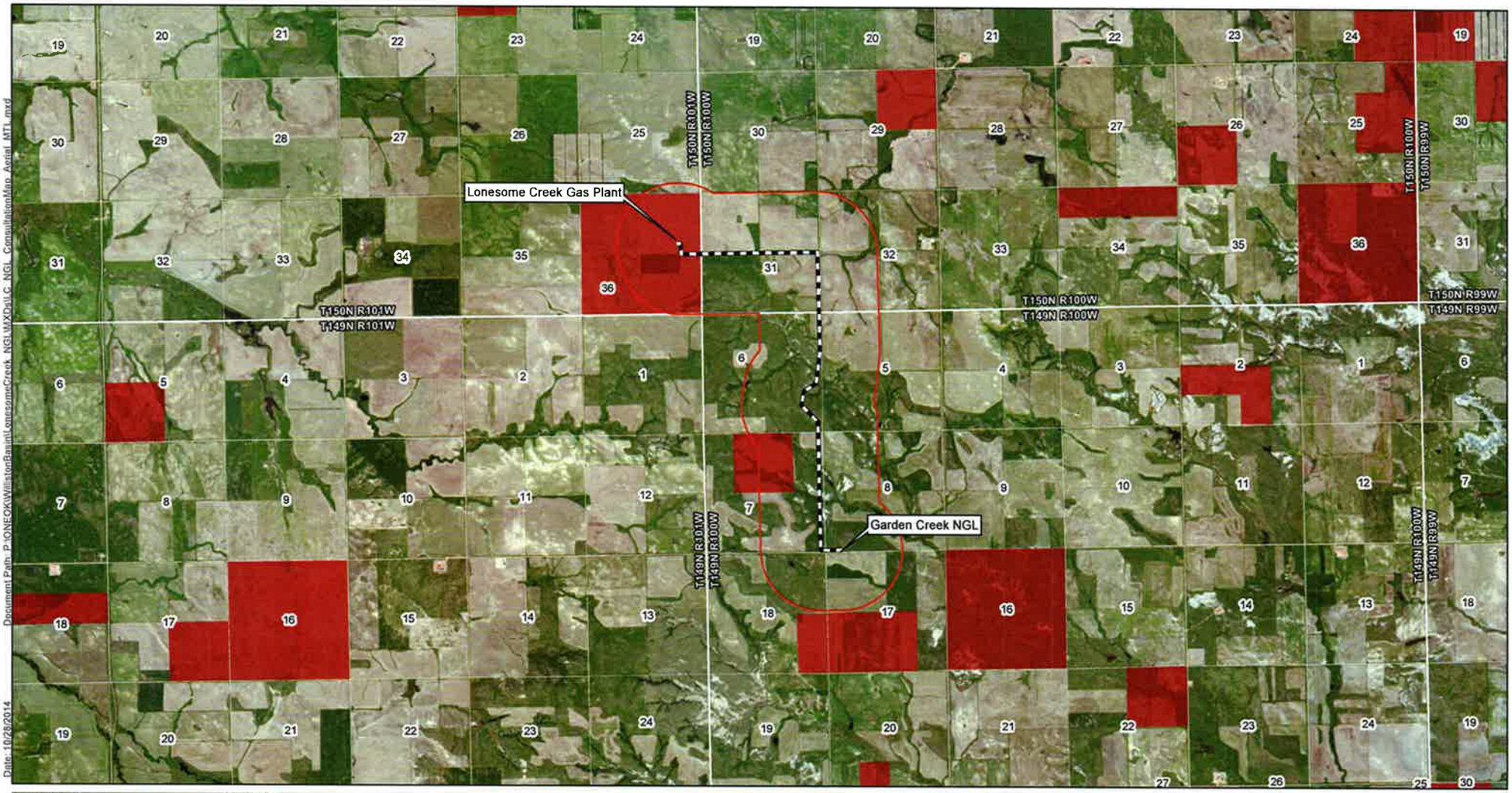
Map not to scale, for environmental review purposes only.

ONEOK Rockies Midstream L.L.C.

Lonesome Creek NGL Pipeline

Aerial Overview Map

McKenzie County, North Dakota



Pipeline

Corridor (1 Mile)

Mineral Trust Land

E3 Environmental
Enhancing Execution with Experience

0 0.5 1 2 Miles

1:48,000

N

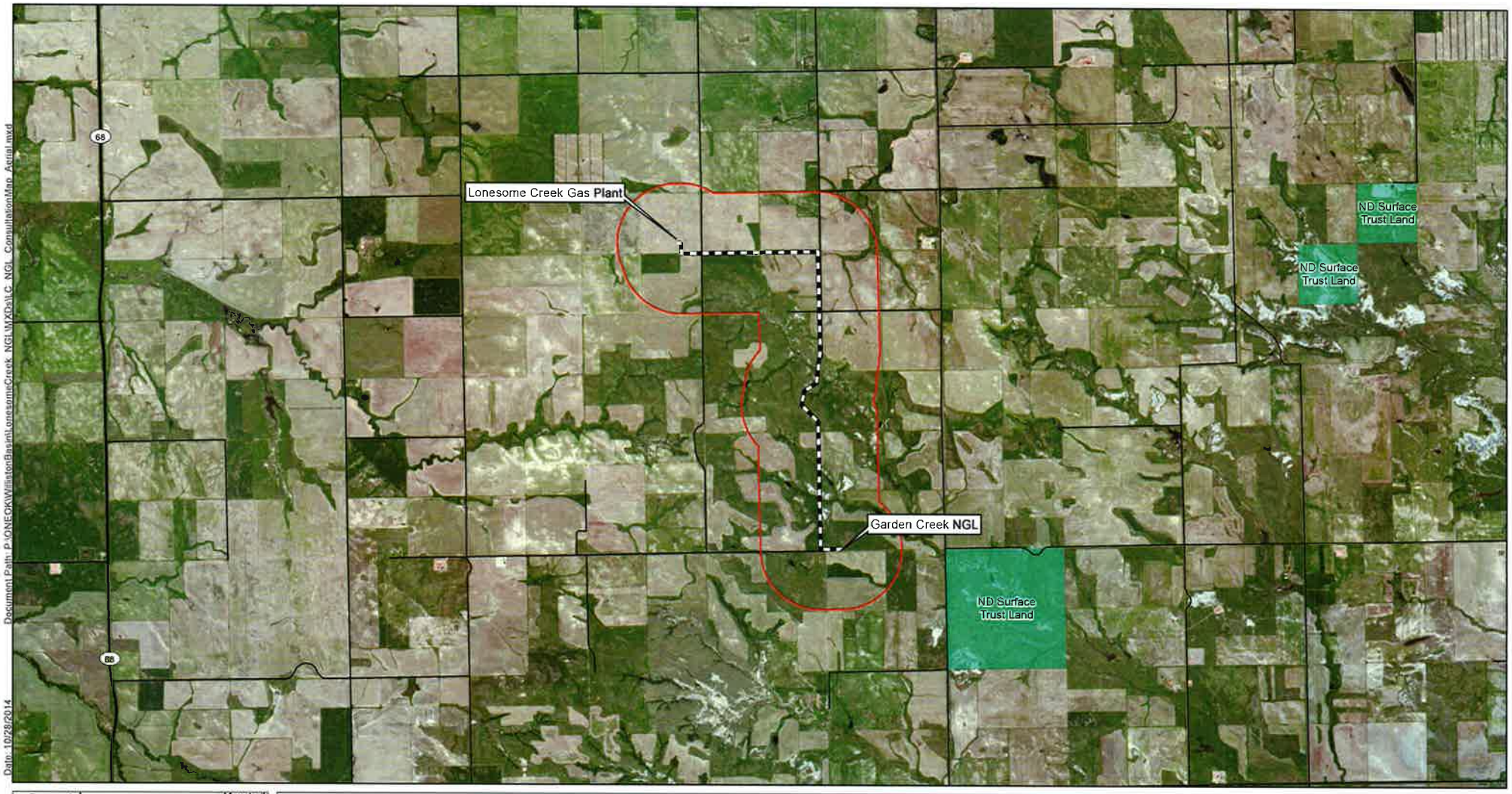
Map not to scale, for environmental review purposes only.

ONEOK Rockies Midstream L.L.C.

Lonesome Creek NGL Pipeline

ND Mineral Trust Lands

McKenzie County, North Dakota



Document Path: P:\ONEOK\Williston Basin\LonesomeCreek_NGL\MXD's\LC_NGL_ConsultationMap_Aerial.mxd

Date: 10/28/2014

Author: LDanielson

Pipeline

Corridor (1 Mile)

Federal Land

State Land

E3 Environmental
Enhancing Execution with Experience

N

0 0.5 1 2 Miles

1:48,000

Map not to scale, for environmental review purposes only.

ONEOK Rockies Midstream L.L.C.

Lonesome Creek NGL Pipeline

Aerial Overview Map

McKenzie County, North Dakota

Melissa Schmit

Subject: FW: (External) Lonesome Creek Gas Liquids Pipeline

From: Brand, Mike D. [mailto:mbrand@nd.gov]
Sent: Wednesday, November 26, 2014 1:30 PM
To: Kelvington, Todd E.
Subject: (External) Lonesome Creek Gas Liquids Pipeline

Dear Mr. Kelvington,

I have reviewed the proposed Lonesome Creek Natural Gas Liquids Pipeline and confirmed that there are no school trust surface lands on the proposed route. The commons schools trust fund has 50% of the minerals in Section 36, T150N, R101W, McKenzie County and 50% of the minerals in the W2NE4 and E2NW4 Section 7, T149N, R100W, McKenzie County. The proposed pipeline project will not interfere with the trusts ability to develop the hydrocarbon minerals.

Sincerely,
Michael D. Brand, Ph.D., Director
Surface Management Division
ND Department of Trust Lands
701-328-1918

From:	Haupt, Michael L.
To:	Melissa Schmit
Cc:	Kelvington, Todd E.; Sober, Joy E.; William McCarthy
Subject:	(External) RE: ONEOK Bakken Pipeline, L.L.C. - Lonesome Creek NGL Pipeline Project & School Trust Lands
Date:	Saturday, November 22, 2014 12:40:59 PM
Attachments:	image001.png

Melissa,

Good afternoon! The ND School Trust does not own surface within the proposed project area. Thanks.

Michael L. Haupt
Land Management Professional, CPRM
North Dakota Department of Trust lands
1707 Nth 9th Street
Bismarck ND 58506-5523
701-328-1916
mhaupt@nd.gov

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

From: Melissa Schmit [mailto:MSchmit@go2e3.com]
Sent: Thursday, November 20, 2014 3:39 PM
To: Haupt, Michael L.
Cc: Kelvington, Todd E.; Sober, Joy E.; William McCarthy
Subject: ONEOK Bakken Pipeline, L.L.C. - Lonesome Creek NGL Pipeline Project & School Trust Lands

Dear Mr. Haupt:

E3 Environmental, LLC has been retained by ONEOK Bakken Pipeline, L.L.C. (ONEOK) to provide environmental consulting support for the Lonesome Creek NGL Pipeline Project (see attached). For your convenience, E3 is submitting an electronic copy of the project notification letter and maps to assist in your review of the Project. ONEOK will send concurrently with this mailing the original notification letter and project map via certified/return receipt mail.

Please let me know if I can be of further assistance, or if you have any questions or concerns regarding the attached files.

Thank you for your time and consideration.

Sincerely,

Melissa Schmit
Consultant
E3 Environmental, LLC
mschmit@go2e3.com

O: 651.282.0656
871 Jefferson Avenue
St. Paul, MN 55102
www.go2e3.com

cid:image001.png@01CF23E2.46668A60

From:	Haupt, Michael L.
To:	Melissa Schmit
Cc:	Kelvington, Todd E.; Sober, Joy E.; William McCarthy
Subject:	(External) RE: ONEOK Bakken Pipeline, L.L.C. - Lonesome Creek NGL Pipeline Project & School Trust Lands
Date:	Saturday, November 22, 2014 10:11:33 AM
Attachments:	image001.png

Dear Ms. Schmit:

I have reviewed the proposed pipeline and the ND Department of Trust Lands does not have any comments. Thank you for contacting us.

Sincerely,
Michael D. Brand, Ph.D., Director
Surface Management Division
ND Department of Trust Lands
701-328-1918

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

From: Melissa Schmit [MSchmit@go2e3.com]
Sent: Thursday, November 20, 2014 3:38 PM
To: Haupt, Michael L.
Cc: Kelvington, Todd E.; Sober, Joy E.; William McCarthy
Subject: ONEOK Bakken Pipeline, L.L.C. - Lonesome Creek NGL Pipeline Project & School Trust Lands

Dear Mr. Haupt:

E3 Environmental, LLC has been retained by ONEOK Bakken Pipeline, L.L.C. (ONEOK) to provide environmental consulting support for the Lonesome Creek NGL Pipeline Project (see attached). For your convenience, E3 is submitting an electronic copy of the project notification letter and maps to assist in your review of the Project. ONEOK will send concurrently with this mailing the original notification letter and project map via certified/return receipt mail.

Please let me know if I can be of further assistance, or if you have any questions or concerns regarding the attached files.

Thank you for your time and consideration.

Sincerely,

Melissa Schmit
Consultant
E3 Environmental, LLC
mschmit@go2e3.com

O: 651.282.0656
871 Jefferson Avenue
St. Paul, MN 55102
www.go2e3.com

cid:image001.png@01CF23E2.46668A60

Agency Notification

ONEOK PARTNERS

CERTIFIED MAIL 7014 1200 0000 2236 3050
RETURN RECEIPT REQUESTED

November 20, 2014

Mr. Keith Bayley, Land Professional
North Dakota Department of Trust Lands
Minerals Management Division
1707 North 9th Street, P.O. Box 5523
Bismarck, ND 58506-5523

ONEOK Bakken Pipeline, L.L.C. – Lonesome Creek Natural Gas Liquids Pipeline Project
State Mineral Trust Lands Consultation

ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct the Lonesome Creek Natural Gas Liquids Pipeline Project (Project) in response to growing demand for gas processing capacity of natural gas and natural gas liquids (NGL) produced in North Dakota. The proposed project is a new 4.03 mile, 10-inch diameter NGL pipeline that will originate at the Lonesome Creek Gas Plant in McKenzie County, North Dakota and will terminate at an interconnect with ONEOK's Garden Creek NGL pipeline. Pipeline construction activities would typically occupy a 100-foot right-of-way. Following construction, the pipeline would be operated within a 50-foot permanent easement. Pipeline construction involves temporary impacts, with post-construction restoration standard of restoring disturbed areas to their original pre-construction condition. Preparation and associated construction activities for the Project under consideration would be initiated during the second quarter of 2015, requiring approximately two months to place into service with restoration to immediately follow. To satisfy state siting authority requirements, ONEOK is providing this project notification for your consideration.

The proposed Project corridor is described below and depicted on the attached map and aerial photo.

In McKenzie County, North Dakota the pipeline crosses:

- Township 150N, Range 101W, Section 36;
- Township 150N, Range 100W, Section 31;
- Township 149N, Range 100W, Sections 6, 7, and 8.

A review of the Project corridor (see attached) for the presence of State Mineral Trust Lands was conducted using available information at www.land.nd.gov. The results of this search concluded that Township 150N, Range 101W, Section 36 and Township 149N, Range 100W, Section 7 intersect State Lands in McKenzie County, which fall within the Project corridor. The enclosed topographic map depicts the Project corridor and State Mineral Trust Lands within the corridor. This has been provided to assist the Department's review of the Project.

100 West Fifth Street, Tulsa, OK 74103-4298
P. O. Box 871, Tulsa, OK 74102-0871

The purpose of this correspondence is to seek your concurrence with this analysis. This information will be included in a North Dakota Public Service Commission application for the project. For your convenience, I have directed E3 Environmental, LLC (E3) to submit an electronic copy of this letter, attached map, and shapefiles concurrently with this mailing.

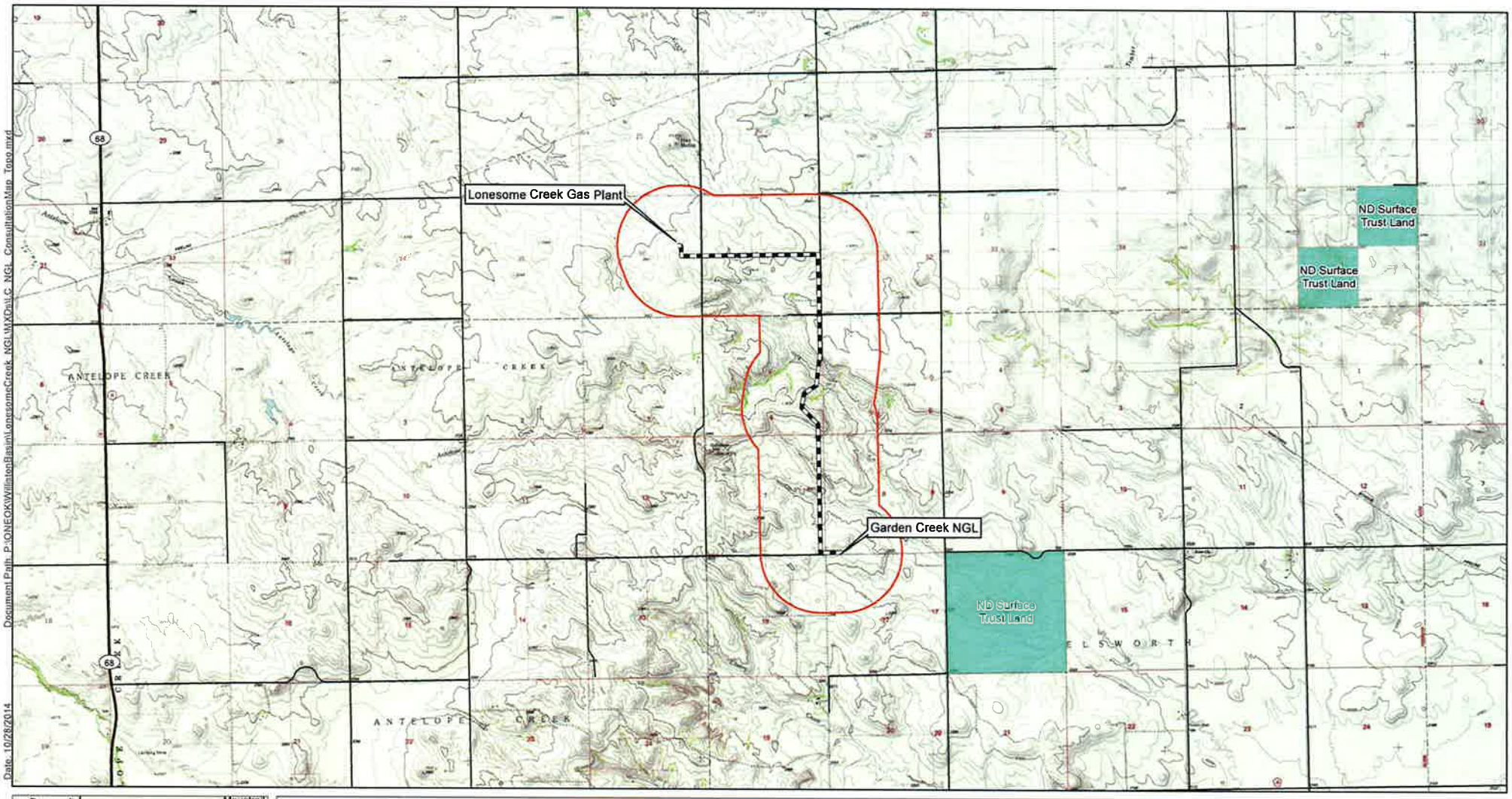
In closing, E3 Environmental, LLC has been retained by ONEOK to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact Bill McCarthy at 651.282.0650 or wmcarthy@go2e3.com; you may also contact me at 918.732.1472 or Todd.Kelvington@oneok.com.

Sincerely,

Todd Kelvington
Environmental Project Manager

Enclosures: Project Map and State Mineral Trust Lands – USGS topographic
Project Map – Aerial photograph

xc: Bill McCarthy/Erica Davis/Melissa Schmit, E3 (pdf)
Jim Kline/Todd Kelvington, ONEOK (pdf)
Tulsa Large Construction – Lonesome Creek PL



Pipeline
Corridor (1 Mile)
Federal Land
State Land

E3 Environmental
Enhancing Execution with Experience

N

0 0.5 1 2 Miles

1:48,000

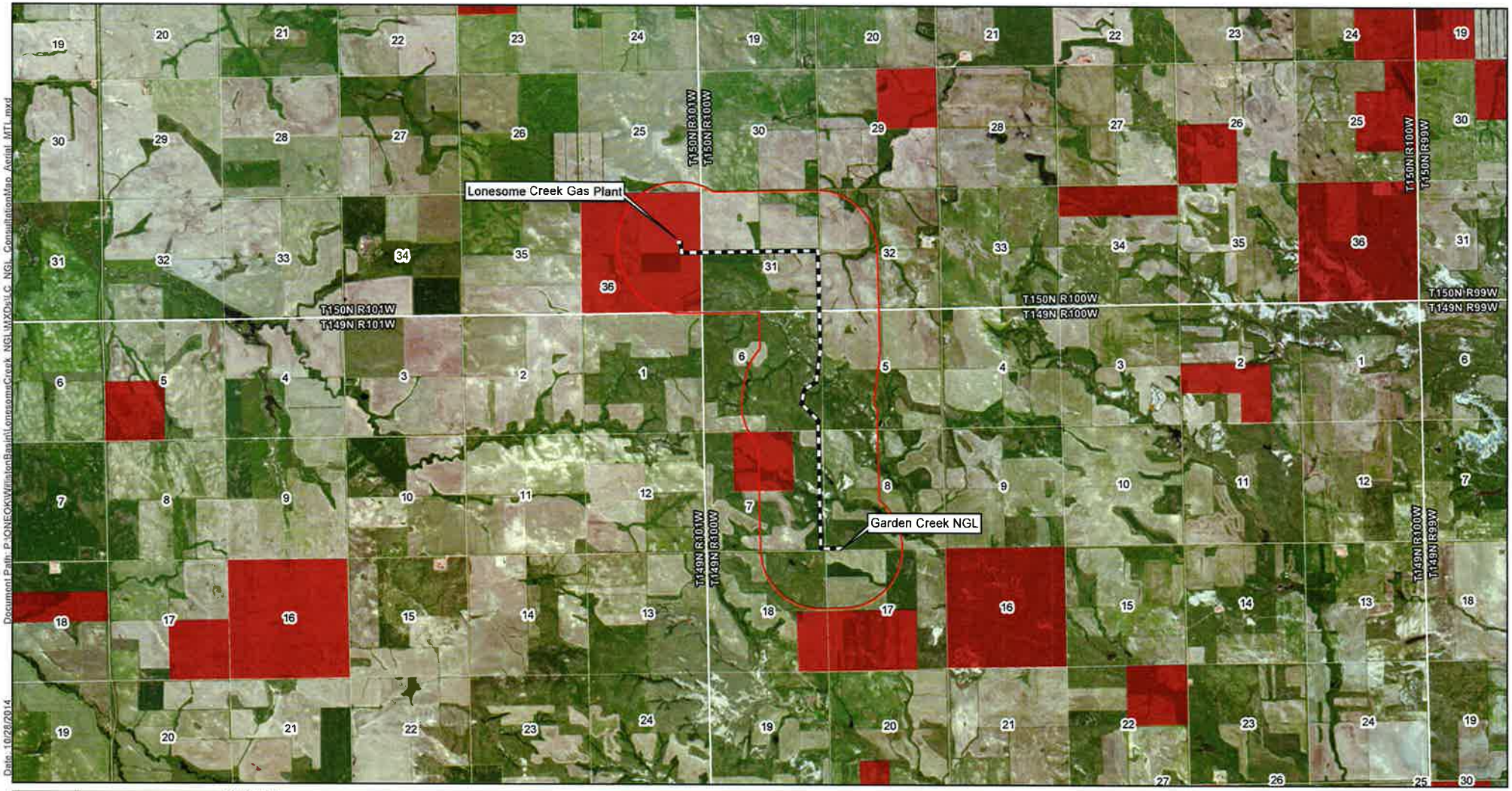
Map not to scale, for environmental review purposes only.

ONEOK Rockies Midstream L.L.C.

Lonesome Creek NGL Pipeline

Aerial Overview Map

McKenzie County, North Dakota



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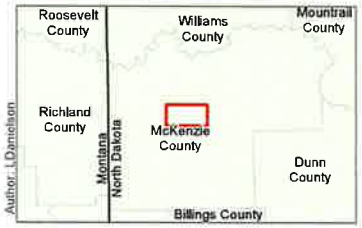
Date: 10/28/2014

Author: LDanielson



Pipeline

Corridor (1 Mile)

Mineral Trust Land

E3 Environmental
Enhancing Execution with Experience

N

0 0.5 1 2 Miles

1:48,000

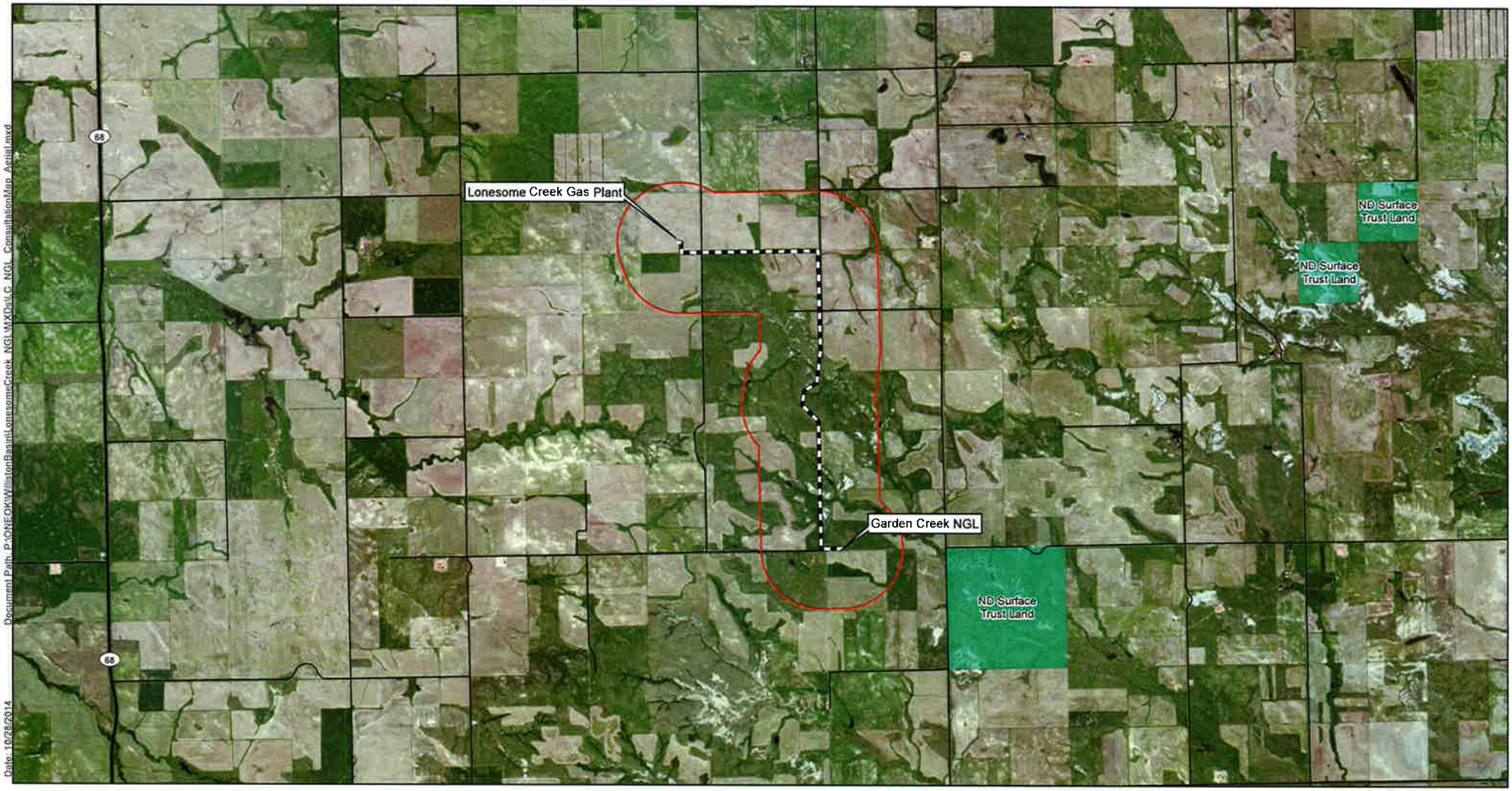
Map not to scale, for environmental review purposes only.

ONEOK Rockies Midstream L.L.C.

Lonesome Creek NGL Pipeline

ND Mineral Trust Lands

McKenzie County, North Dakota



Pipeline

Corridor (1 Mile)

Federal Land

State Land

N

0 0.5 1 2 Miles

1:48,000

Map not to scale, for environmental review purposes only.

E3 Environmental
Enhancing Execution with Experience

ONEOK Rockies Midstream L.L.C.

Lonesome Creek NGL Pipeline

Aerial Overview Map

McKenzie County, North Dakota

Author: LDanielson

Date: 10/28/2014

Document Path: P:\ONEOK\WillistonBasin\LonesomeCreek_NGL\MXD\LC_NGL_ConsultationMap_Aerial.mxd

From: Bement, Allisen C.
To: Melissa Schmit
Subject: RE: ONEOK Bakken Pipeline, L.L.C. - Lonesome Creek NGL Pipeline Project & Mineral Trust Lands
Date: Thursday, February 19, 2015 3:59:59 PM
Attachments: image002.png
image003.png

Melissa,

We agree that the data provided fairly represents the approximate location of the NGL Pipeline Project as indicated by E3 Environmental and the proximity of mineral interests managed by this office, for use in a filing with the PSC in the state of North Dakota.

Allisen Bement
Land Professional
ND Department of Trust Lands
701.328.1952
abement@nd.gov

From: Melissa Schmit [mailto:MSchmit@go2e3.com]
Sent: Tuesday, February 17, 2015 10:47 AM
To: Bement, Allisen C.
Subject: ONEOK Bakken Pipeline, L.L.C. - Lonesome Creek NGL Pipeline Project & Mineral Trust Lands

Ms. Bement-

E3 Environmental, LLC (E3) has been retained by ONEOK Bakken Pipeline, L.L.C. (ONEOK) to provide environmental consulting support for the Lonesome Creek NGL Pipeline Project (see attached). For your convenience, E3 is submitting an electronic copy of the project notification letter, a map, and shapefiles to assist in your review of the Project. E3 sent an electronic request for your review on November 20, 2014 to Mr. Bayley (see email below) and ONEOK concurrently mailed the original notification letter and project map via certified/return receipt mail.

Please let me know if I can be of further assistance, or if you have any questions or concerns regarding the attached files.

Thank you for your time and consideration.

Sincerely,

Melissa Schmit
Consultant
E3 Environmental, LLC
mschmit@go2e3.com
O: 651.282.0656
M: 651.263.7916

From: Melissa Schmit
Sent: Thursday, November 20, 2014 3:55 PM
To: kbayley@nd.gov
Cc: Kelvington, Todd E.; Joy.Sober@oneok.com; William McCarthy; abement@nd.gov
Subject: ONEOK Bakken Pipeline, L.L.C. - Lonesome Creek NGL Pipeline Project & Mineral Trust Lands

Dear Mr. Bayley:

E3 Environmental, LLC has been retained by ONEOK Bakken Pipeline, L.L.C. (ONEOK) to provide environmental consulting support for the Lonesome Creek NGL Pipeline Project (see attached). For your convenience, E3 is submitting an electronic copy of the project notification letter, a map, and shapefiles to assist in your review of the Project. ONEOK will send concurrently with this mailing the original notification letter and project map via certified/return receipt mail.

Please let me know if I can be of further assistance, or if you have any questions or concerns regarding the attached files.

Thank you for your time and consideration.

Sincerely,

Melissa Schmit
Consultant
E3 Environmental, LLC
mschmit@go2e3.com
O: 651.282.0656
871 Jefferson Avenue
St. Paul, MN 55102
www.go2e3.com

North Dakota State Historic Preservation Office

Agency Notification

ONEOK PARTNERS

CERTIFIED MAIL 7009 0960 0000 9324 5824
RETURN RECEIPT REQUESTED

February 10, 2015

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

ONEOK Bakken Pipeline L.L.C. – Lonesome Creek NGL Pipeline
Cultural Resource Inventory Review Request

Dear Mr. Picha,

ONEOK Bakken Pipeline, L.L.C. (ONEOK) is proposing to construct the Lonesome Creek NGL Pipeline Project (Project) in response to growing demand for gas processing capacity of natural gas and natural gas liquids (NGL) produced in North Dakota. This project includes the construction of an approximately four mile NGL transmission pipeline and as such is subject to the North Dakota Public Service Commission (PSC) Siting Act. The Project is located in of Section 36 of Township 150N, and Range 101W and Sections 31 and 32 of Township 150N, and Range 100W, and Sections 5 through 8 of Township 149N, and Range 100W in McKenzie County, North Dakota. To satisfy state siting authority requirements, ONEOK is providing this Project notification for your consideration.

The purpose of this request is to provide the State Historical Society of North Dakota (SHSND) notice of the Project and to share ONEOK's analysis of cultural resource studies relevant to the PSC Siting Act. Enclosed is the *Class I and Class III Cultural Resource Inventory of the Lonesome Creek NGL Pipeline, McKenzie County, North Dakota* (Report). In addition, following protocols prescribed by the North Dakota State Historical Preservation Office (NDSHPO) permit, a digital copy of the Report and related geospatial data have been uploaded to the SHSND FTP site.

The enclosed Report documents the results of a Class I and Class III inventory conducted by SWCA Environmental Consultants (SWCA) for the Project. Two previously recorded isolated finds consisting of pieces farm equipment were mapped in the project area, but could not be relocated during the Class III inventory. Both isolated finds are not eligible for inclusion to the National Register of Historic Places (NRHP). No newly recorded cultural resources were recorded on the Project. Due to the lack of cultural resources present on the project, it is recommended that a determination of *No Significant Sites Affected* and *No Historic Properties Affected* be granted for the Project to proceed as planned.

100 West Fifth Street, Tulsa, OK 74103-4298
P. O. Box 871, Tulsa, OK 74102-0871

In closing, E3 Environmental has been retained by ONEOK to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact Bill McCarthy at 651.282.0650 or wmcarthy@go2e3.com; you may also contact me at 918.732.1472 or Todd.Kelvington@oneok.com. Please notify ONEOK in writing with the results of your review at the address listed below.

Sincerely,

Todd Kelvington, CEP
Environmental Project Manager

Enclosures: Report in hard copy: *Class I and Class III Cultural Resource Inventory of the Lonesome Creek NGL Pipeline, McKenzie County, North Dakota.*

cc Bill McCarthy, Melissa Schmit – E3 (pdf)
Tulsa Environmental Files – Lonesome Creek NGL Pipeline

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

February 24, 2015

Mr. Todd Kelvington, CEP
Environmental Project Manager
ONEOK
100 West Fifth Street
Tulsa, OK 74103-4298

ND SHPO REF.: 15-0742 "Class I and Class III Cultural Resource Inventory of the Lonesome Creek NGL Pipeline, McKenzie County, North Dakota"

Dear Mr. Kelvington,

We reviewed ND SHPO REF.: 15-0742 "Class I and Class III Cultural Resource Inventory of the Lonesome Creek NGL Pipeline, McKenzie County, North Dakota," dated February 2015 and find it acceptable. We concur with a "No significant sites" (state review process) determination, provided the project remains as mapped and described in this report.

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

Sincerely,

Claudia J. Berg
Director, State Historical Society of North Dakota

Appendix D

Natural Resources Report

Natural Resources and Wetland Determination Report for the Lonesome Creek NGL Pipeline, McKenzie County, North Dakota

Prepared for

E3 Environmental, LLC

On behalf of

ONEOK, Inc.

Prepared by

SWCA Environmental Consultants

February 2015

Natural Resources and Wetland Determination Report for the Lonesome Creek NGL Pipeline, McKenzie County, North Dakota

Prepared for:

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

On behalf of:

ONEOK, Inc.
100 West 5th Street
Tulsa, Oklahoma 74103

Prepared by:

Jason Bivens, B.S.
Natural Resource Specialist

Reviewed by:

Richard Wadleigh
Senior Environmental Analyst, Bismarck, ND Office

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

SWCA Project No. 31405

February 10, 2015

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1.0 INTRODUCTION

1.1 BACKGROUND

ONEOK, Inc. (ONEOK) proposes to construct an approximately 4.04-mile-long pipeline in McKenzie County, North Dakota. SWCA Environmental Consultants (SWCA) conducted natural resources field surveys to identify exclusion and avoidance areas as specified in North Dakota Administrative Code 69-06-08-02 for the proposed Lonesome Creek natural gas liquids (NGL) pipeline project.

As proposed, the Lonesome Creek NGL pipeline is approximately 4.04 miles long, spanning private lands in North Dakota (Appendix A). The project falls under the jurisdiction of the North Dakota Public Service Commission (NDPSC). E3 Environmental, LLC, 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 a 200-foot-wide survey corridor (100-foot-wide construction right-of-way [ROW]) on January 27, 2015, to determine the potential presence and extent of wetlands and waterbodies, including potentially jurisdictional waters of the U.S., within the proposed survey area. Concurrently with the wetland/waterbody determinations, SWCA conducted a cursory wildlife including 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 that the activity does not result in the permanent loss of greater than 0.5 acre of waters of the U.S., including wetlands, and meets the Nationwide Permit General Conditions.

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 U.S. Army Corps of Engineer Regional Conditions

The USACE has published several regional conditions for projects operating under Nationwide Permits in North Dakota (USACE 2013). 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. Further, the proposed project is located in the West-Central Semi-Arid Prairies (level II) ecoregion, Northwestern Great Plains (level III) ecoregion, and Missouri Plateau (level IV) ecoregion. The Missouri Plateau ecoregion was largely unaffected by glaciation and retains its original soils and complex stream drainage pattern. Primary land uses are grazing, small grain agriculture, and recreation (Bryce et al. 1998). Figures 1 and 2 are overviews of the project area.

The inventoried area discussed herein is situated on the U.S. Geological Survey Rawson (1976) and Bear Butte (1976), North Dakota, quadrangles. The proposed project corridor that was surveyed on January 27, 2015, encompasses portions of 11 sections within three townships and ranges.

- Section 36, Township (T) 150 North (N), Range (R) 101 West (W)
- Sections 31 and 32, T150N, R100W
- Sections 5 through 9, T149N, R100W

Figure 1. Project area overview depicting general topography toward northeast end of pipeline corridor (DP1U), facing south (photo taken January 27, 2015).

Figure 2. Project area overview depicting general topography toward south end of pipeline corridor (WV6), facing north (photo taken January 27, 2015).

2.2 WETLANDS

National Wetlands Inventory (NWI) mapping for the region indicates the presence of wetlands within the project area (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). As requested, SWCA ecologists delineated wetland boundaries by recording indicators of hydrology and hydrophytic vegetation. The Supplement suggests that soils also be taken into account. Therefore, soil data would be collected at a later date if project permitting requirements dictate. 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 more than 50% of dominant species had an indicator status of FAC, FACW, or 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 water marks on structures that are inundated during normal high water conditions. The OHWM typically represents the potential limits of the USACE jurisdiction. 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, whereas 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 using several different techniques, depending on the type of woody vegetation habitat (i.e., forested upland, shrubland, or shelterbelt) encountered and the overall extent of each habitat within the ROW. The boundary of all forested upland, shrubland, and shelterbelt habitat was geographically referenced using a Trimble GeoXT series handheld global positioning system (GPS) unit. In forested upland and shrubland habitat, SWCA counted or estimated the number of all woody-stemmed vegetation with a DBH of ≥1 inch. In shelterbelt areas, all woody-stemmed vegetation, regardless of DBH, was inventoried via direct count. 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 2015) regarding the 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 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 and Appendix B. 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 more 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 commonly consisted of smooth brome (*Bromus inermis*), crested wheatgrass (*Agropyron cristatum*), Kentucky bluegrass (*Poa pratensis*), little bluestem (*Schizachyrium scoparium*), needle and thread (*Hesperostipa comata*), quackgrass (*Elymus repens*), sweetclover species (*Melilotus* spp.), prickly rose (*Rosa acicularis*), white sage (*Artemisia ludoviciana*), rough cocklebur (*Xanthium strumarium*), stiff goldenrod (*Oligoneuron rigidum*), blue grama (*Bouteloua gracilis*), western wheatgrass (*Pascopyrum smithii*), junegrass (*Koeleria macrantha*), and American licorice (*Glycyrrhiza lepidota*).

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 green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoids*), chokecherry (*Prunus virginiana*), and western snowberry.

3.1.3 Cropland

Cropland was confirmed in the survey area; however, the crop(s) had been harvested at the time of survey. The crops were likely hard red spring wheat (*Triticum aestivum*) and/or barley (*Hordeum vulgare*).

3.1.4 Hydrophytic Vegetation

Aquatic vegetation species confirmed during the survey included foxtail barley (*Hordeum jubatum*), tufted hairgrass (*Deschampsia cespitosa*), saltgrass (*Distichlis spicata*), mountain rush (*Juncus arcticus*), fowl mannagrass (*Glyceria striata*), softstem bulrush (*Schoenoplectus tabernaemontani*), Dudley's rush (*Juncus dudleyi*), prairie cordgrass (*Spartina pectinata*), and broad-leaf cattail (*Typha latifolia*).

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), Drift Deposits (B3), Inundation Visible on Aerial Imagery (B7), Drainage Patterns (B10 Saturation Visible on Aerial Imagery (C9), and Geomorphic Position (D2).

According to National Weather Service preliminary climatological data for Williston, North Dakota (approximately 26 miles north of the project area), 1.14 inches of precipitation were recorded from November 1, 2014, through January 31, 2015 (Table 1). This amount is 0.70 inch 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)
November 2014	0.63	0.65	-0.02
December 2014	0.03	0.60	-0.57
January 2015	0.48	0.59	-0.11
Total	**1.14**	**1.84**	**-0.70**

Source: National Oceanic and Atmospheric Administration (2014).

3.3 WETLANDS

SWCA recorded three PEM wetlands within the survey area, totaling approximately 4.95 acres. Approximately 1.84 acres of PEM wetlands are proposed to be temporarily impacted in the 100-foot-wide construction ROW (Table 2). The wetlands are all greater than 75 river miles to the nearest navigable waterbody with numerous stock dams located near the project area; however, all three wetlands are potentially jurisdictional due to their eventual connectivity with waters of the U.S. The USACE has the final authority to determine jurisdictional status.

Table 2. PEM Wetland Acreage within the Survey Area

Feature ID	Wetland Type	USACE Jurisdiction*	Total PEM Size (acres)	Temporarily Impacted Area within 100-foot-wide ROW (acres)	Length of Required Crossing (feet)
WET1	Semipermanent	Potentially Jurisdictional	0.61	0.25	139
WET2	Semipermanent	Potentially Jurisdictional	1.56	0.58	280
WET3	Semipermanent	Potentially Jurisdictional	2.78	1.01	479
Total			**4.95**	**1.84**	**898**

* 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 during the field survey. SWCA did record one upland swale that is likely to contain flowing water during high rain events or spring run-off; however, no OHWM or hydrophytic vegetation was present.

3.5 SOILS

Based on Natural Resources Conservation Service (NRCS) mapping (NRCS 2014) (Appendix B), 15 soil types are present in the project construction corridor. 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 100-foot-wide ROW

Soil Types	Slopes (%)	Acres within 100-foot-wide ROW	Percent within Map Unit
Cabba-Badland complex	6 to 70	10.20	21.21
Chama-Cabba-Sen silt loams	6 to 9	4.57	9.50
Rhoades-Daglum complex	0 to 6	4.05	8.42
Dooley-Zahl complex	6 to 9	3.64	7.57
Cabba-Chama-Shambo loams	9 to 50	3.59	7.46
Chama-Sen-Cabba silt loams	3 to 6	3.58	7.44
Williams-Bowbells loams	3 to 6	3.48	7.24
Farnuf loam	2 to 6	3.26	6.77
Vebar-Cohagen fine sandy loams	6 to 9	2.94	6.11
Reeder-Famuf loams	3 to 6	2.57	5.33
Cabba-Chama-Sen silt loams	9 to 15	2.32	4.83
Regent-Savage silty clay loams	3 to 6	1.25	2.61
Vebar-Flasher-Tally complex	9 to 15	1.15	2.39
Dooley-Zahl complex	9 to 15	0.76	1.59
Moreau-Wayden silty clays	6 to 9	0.73	1.53
Total		**48.09**	**100.00**

Source: Natural Resources Conservation Service (2014).
ROW = right-of-way

3.5.1 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 degrees Fahrenheit (°F). The most common vegetation species found on this soil type are little bluestem, green needlegrass (*Nasella viridula*), and other various herbs, forbs, and shrub species (NRCS 2014).

3.5.2 Chama

The Chama soil series consists of well-drained soils found in materials weathered from soft siltstone, mudstone, and shale on uplands. These soils are reasonably deep to soft siltstone, mudstone, or shale. These soils are moderately or moderately slowly permeable. The slope ranges from 0 to 45 percent. The mean annual precipitation found throughout the spatial extent of this soil type is 15 inches and the mean annual air temperature is 42°F. Soils are cropped to small grains, which are mostly wheat, where a significant acreage is in rangeland. The native vegetation is principally western wheatgrass, needle and thread, and blue grama (NRCS 2014).

3.5.3 Rhoades

The Rhoades series consists of deep and very deep, well- to moderately well-drained, very slowly permeable soils found on swales and uplands with slopes ranging from approximately 0 to 25 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°F. This soil type is largely used for rangeland foraging. Native vegetation species common to this soil type include western wheatgrass and blue grama (NRCS 2014).

3.5.4 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°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, blue grama, and green needlegrass (NRCS 2014).

3.6 TREE, SAPLING, AND SHRUB COUNT

During SWCA's field survey, eight upland tree and shrubland areas were geographically referenced within the survey area. SWCA recorded all trees and shrubs with a DBH of greater than 1 inch. Table 4 summarizes the number of trees estimated to be impacted by the project as currently proposed. The NDPSC requires a 2:1 post- to pre-construction mitigation for all trees, saplings, and shrubs impacted during the construction of the proposed pipeline. Therefore, SWCA estimates that approximately 30 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
			Survey Corridor	100-foot-wide Construction ROW*	
WV1	Eastern cottonwood (*Populus deltoides*)	Natural	1	0	0
WV2	Green ash (*Fraxinus pennsylvanica*)	Natural	3	0	0
WV3	Green ash	Natural	5	0	0
WV4	Green ash American elm (*Ulmus Americana*)	Natural Natural	61 5	0 0	0 0
WV5	American elm	Natural	2	0	0
WV6	Green ash	Natural	3	0	0
WV7	Green ash Silver buffaloberry (*Shepherdia argentia*)	Natural Natural	8 60	2 13	4 26
WV8	Green ash	Natural	4	0	0
Total			**152**	**15**	**30**

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

3.7 NOXIOUS WEEDS

"Noxious weeds" is a general term used to describe plant species that are not native to a given area, spread rapidly, and have adverse ecological and economic impacts. These species may have high reproduction rates and are usually adapted to occupy a diverse range of habitats otherwise occupied by native species. These species may subsequently out-compete native plant species for resources, causing a reduction in native plant populations.

Noxious weeds have the potential to detrimentally affect public health, ecological stability, and agricultural practices. North Dakota Century Code (Chapter 63-01.1) and the North Dakota Department of Agriculture recognize 11 species as noxious, as shown in Table 5 (North Dakota Department of Agriculture 2013). Each county has the authority to add additional species to their list of noxious weeds. McKenzie County has listed black henbane (*Hyoscyamus niger*), common burdock (*Arctium minus*), houndstongue (*Cynoglossum officinale*), halogeton (*Halogeton glomeratus*), and baby's breath (*Gypsophila paniculata*) in addition to the 11 state-listed noxious weeds. In 2012, all state noxious weed species were found on 122,646 acres in McKenzie County.

Table 5. Documented Noxious Weed Occupied Area in McKenzie County, North Dakota

Common Name	Scientific Name	McKenzie County (acres)
absinth wormwood	*Artemisia absinthium*	155
Canada thistle	*Cirsium arvense*	35,883
diffuse knapweed	*Centaurea diffusa*	35,008
leafy spurge	*Euphorbia esula*	26,363
musk thistle	*Carduus nutans*	20
purple loosestrife	*Lythrum salicaria*	28
Russian knapweed	*Acroptilon repens*	35
spotted knapweed	*Centaurea stoebe*	42
yellow toadflax	*Linaria vulgaris*	28
Dalmatian toadflax	*Linaria dalmatica*	57
salt cedar	*Tamarix ramosissima*	25,027

Source: North Dakota Department of Agriculture (2013).

No noxious weeds were noted during the survey for the proposed Lonesome Creek NGL pipeline.

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 gray wolf (*Canis lupus*), black-footed ferret (*Mustela nigripes*), whooping crane (*Grus americana*), pallid sturgeon (*Scaphirhynchus albus*), Dakota skipper (*Hesperia dacotae*), rufa red knot (*Calidris canutus rufa*), interior least tern (*Sterna antillarum*), and piping plover (*Charadrius melodus*) and its designated critical habitat. Two additional species have USFWS

designations: the northern long-eared bat (*Myotis septentrionalis*) is proposed for listing as endangered and Sprague's pipit (*Anthus spragueii*) is a candidate species (USFWS 2015). 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.

Due to a lack of suitable habitat, the proposed project would have no effect on the gray wolf, black-footed ferret, Dakota skipper, or rufa red knot. Whooping crane, interior least tern, and piping plover have the potential to occur within the project area as migrants. As a result, these species may be affected, but are not likely to be adversely affected by the proposed project. The proposed project does occur within the same watershed as Lake Sakakawea; however, the project is more than 75 river miles from the lake and therefore the proposed project would have no effect on the pallid sturgeon and the designated critical habitat for piping plover. The proposed project is not likely to jeopardize the Sprague's pipit or northern long-eared bat.

3.8.1 Black-footed Ferret

Federal Status: Endangered
Effects 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 reintroduction 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
Effects 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
Effects 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 1.62 miles southwest of the proposed alignment (unpublished data, M. Tacha, USFWS). SWCA

recommends that 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, to stop construction and notify the USFWS. 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
Effects 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 proposed project area. It is unlikely, but possible, that plovers could find the area suitable for nesting or foraging. Therefore, the proposed project **may affect, but is not likely to adversely affect,** piping plovers.

3.8.5 Designated Critical Habitat of Piping Plover

Effects Determination: No effect

The USFWS has designated critical habitat for the Great Lakes and Northern Great Plains populations of piping plover (USFWS 2002). Designated critical habitat for the piping plover includes 183,422 acres and 1,207.5 river miles of habitat, including various wetland locations in Burke and Divide Counties, North Dakota (USFWS 2002).

Since the proposed project would not modify, alter, disturb, or affect the shoreline of Lake Sakakawea or the Missouri River, and the proposed project is more than 75 river miles from designated critical habitat, the proposed project would have **no effect** on designated critical habitat of the piping plover.

3.8.6 Interior Least Tern

Federal Status: Endangered
Effects 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 survey area, and Lake Sakakawea is approximately 14.50 straight-line miles north of the survey area. It is unlikely, but possible, 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
Effects Determination: No effect

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 use the 15.5 miles (25 km) of riverine habitat that would be inundated by Lake Sakakawea at full pool (Bramblett 1996, cited in 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, USFWS, to SWCA, September 3, 2010).

Suitable habitat for pallid sturgeon is not present in the survey area, and Lake Sakakawea is more than 75 river miles from the survey area. Therefore, the proposed would have **no effect** on pallid sturgeon.

3.8.8 Dakota Skipper

Federal Status: Threatened
Effects Determination: No effect

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, overgrazing, invasive species, gravel mining, and inbreeding (USFWS 2005). Suitable habitat does not exist within the proposed project area. Construction activities are not anticipated to 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 would have **no effect** on 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.

3.8.9 Rufa Red Knot

Federal Status: Threatened
Effects Determination: No effect

The rufa red knot is a robin-sized shorebird that migrates long distances annually between its breeding grounds in the Canadian Arctic and several wintering regions, including the southeast United States, the northeast Gulf of Mexico, northern Brazil, and Tierra del Fuego at the southern tip of South America (USFWS 2013e). 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 2013e). 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 14.50 straight-line miles 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 would have **no effect** on the rufa red knot.

3.8.10 Sprague's Pipit

Federal Status: Candidate
Effects Determination: Not likely to jeopardize

The Sprague's pipit is a small passerine, 4 to 6 inches in length, endemic to the Northern Great Plains (USFWS 2011). The Sprague's pipit requires large tracts of native prairie habitat, unplowed, throughout its 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, combined with 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 the lack of adequate patch sizes required by the Sprague's pipit for breeding grounds in the immediate project area, but it may indirectly contribute to reduced use of any nearby suitable grassland habitat patches within 1,148 feet of the proposed project. Therefore, the proposed project **is not likely to jeopardize** the Sprague's pipit.

3.8.11 Northern Long-eared Bat

Federal Status: Proposed
Effects 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 2013f). This medium-sized bat ranges across the eastern and north-central United States and all of the Canadian provinces (USFWS 2013f). 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 either to a lack of suitable hibernacula present or to a lack of survey efforts (USFWS 2013g). This bat species occupies a wide range of rocky and forested habitats. Suitable winter habitat contains large caves and mines (USFWS 2013f). 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 survey 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 survey area, the proposed project **is not likely to jeopardize** the species.

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 be conducted outside the migratory bird nesting season. The proposed action is unlikely to cause any adverse effects on 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 typically consists of any mature stands of conifer or cottonwood trees in association with rivers, streams, reservoirs, lakes, or any significant body of water. Bald eagles in North Dakota 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** on 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** on golden eagles are anticipated.

3.8.15 Wildlife Observed

During the field survey, SWCA ecologists observed various wildlife species that use wetlands and other habitat within the survey area (Table 6). Common wildlife species may be affected both directly through incidents with construction equipment or indirectly through the temporary fragmentation of habitat as a result of construction activities.

Table 6. Wildlife Observed during Field Surveys of the Proposed Pipeline Route

Common Name	Scientific Name	Observation Type
American crow	*Corvus brachyrhynchos*	Primary
Coyote	*Canis latrans*	Secondary
Gray partridge	*Perdix perdix*	Primary
Ring-necked pheasant	*Phasianus colchicus*	Primary
Sharp-tailed grouse	*Tympanuchus phasianellus*	Primary
White-tailed deer	*Odocoileus virginianus*	Secondary
Porcupine	*Hystricomorph hystricidae*	Secondary

4.0 CONCLUSIONS AND RECOMMENDATIONS

1. SWCA ecologists recorded approximately 4.95 acres of wetlands within the survey area.
2. In total, approximately 1.84 acres of PEM wetland *may* be temporarily impacted by construction activities. If USACE permitting is required by the project, SWCA would recommend requesting an official Jurisdictional Determination be completed by the USACE.
3. SWCA estimates 15 trees, saplings, and shrubs may be impacted. Therefore, approximately 30 2-year-old saplings may need to be replanted to fulfill the 2:1 mitigation requirement.

   According to the recommendations of the North Dakota Forest Service, tree species selection for replacement should be accomplished through collaboration with a reputable area nursery. This will allow for species to be selected based on various factors, including species hardiness and area soil type.
4. No threatened or endangered species were observed during the field survey. Suitable roosting and foraging habitat exists within the project area for the whooping crane. SWCA recommends that 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, to stop construction and notify the USFWS.

   It is unlikely, but possible, that piping plover and least tern could find the area suitable for nesting or foraging. SWCA recommends that if construction is to occur during the spring and summer nesting season, and a plover or tern is observed in the project area, to stop construction and notify the USFWS.

   The other listed threatened and endangered species that occur in McKenzie County are not likely to be detrimentally impacted by construction activities.
5. Migratory birds and habitat were observed throughout the entire project area. A 0.5-mile line-of-sight survey was conducted throughout the survey area. No raptor nests were observed during the survey.

   In order to reduce impacts to migratory birds, SWCA recommends conducting all construction outside 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 more than 5 days before construction begins. If active nests are discovered, notify the USFWS.
6. No areas of noxious weeds were identified in the survey area. 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, **undisturbed areas, or areas planted with native species**.

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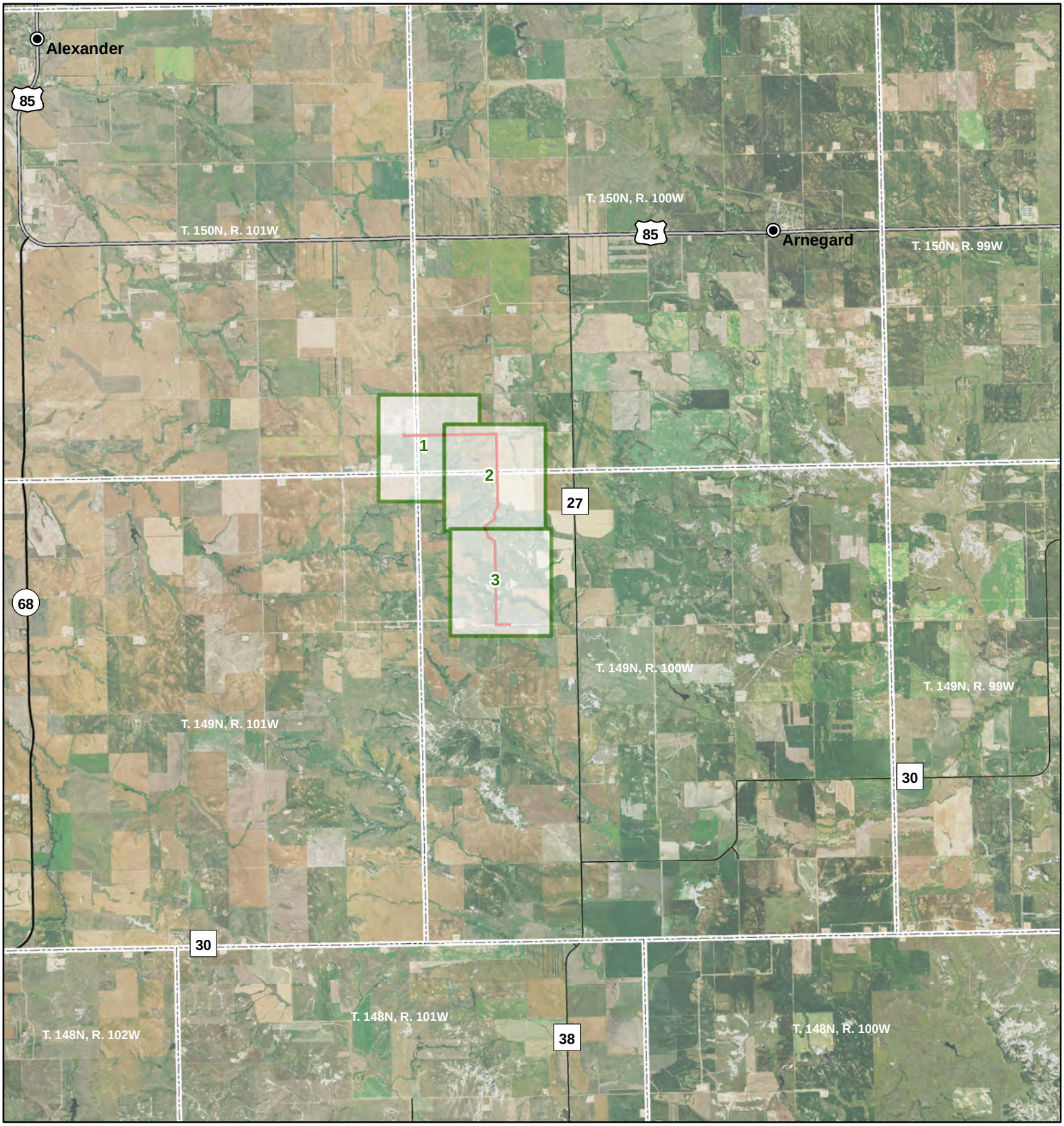
APPENDIX A
Vicinity and Site Layout Maps



Lonesome Creek NGL Pipeline

- City
- Proposed Pipeline
- U.S. Highway
- State Highway
- County Highway
- Township/Range Boundary

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Kilometers
0 2.5 5

Miles
0 2.5 5

Base Map: 2014 Aerial Imagery
Source: USDA/FSA -
Aerial Photography Field Office
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

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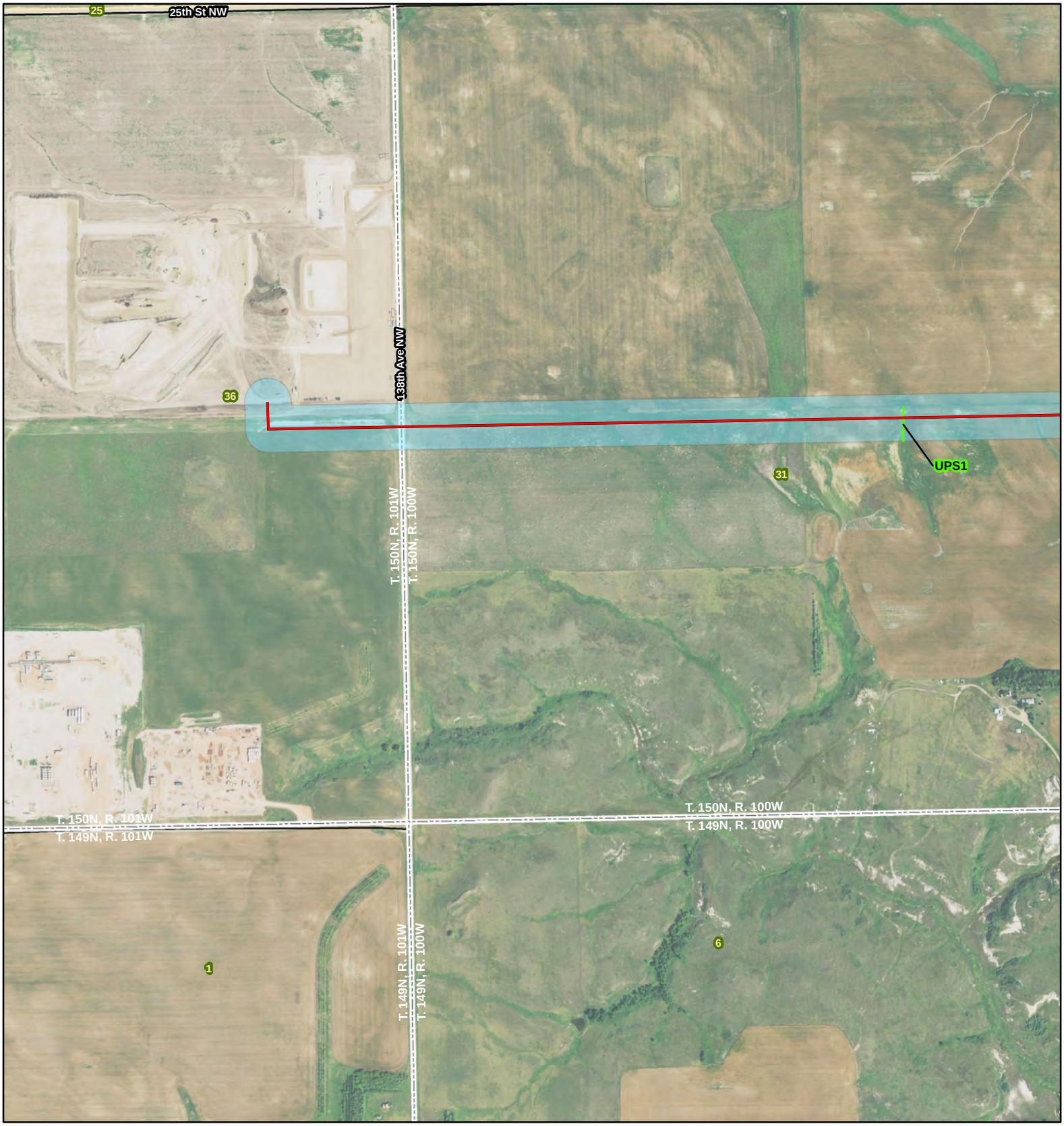

Lonesome Creek NGL Pipeline

- Upland Data Point
- Proposed Pipeline
- Upland Swale
- Existing Road
- Wetland
- Woody Vegetation
- Survey Area
- Section Boundary
- Township/Range Boundary

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Kilometers
0 0.25 0.5

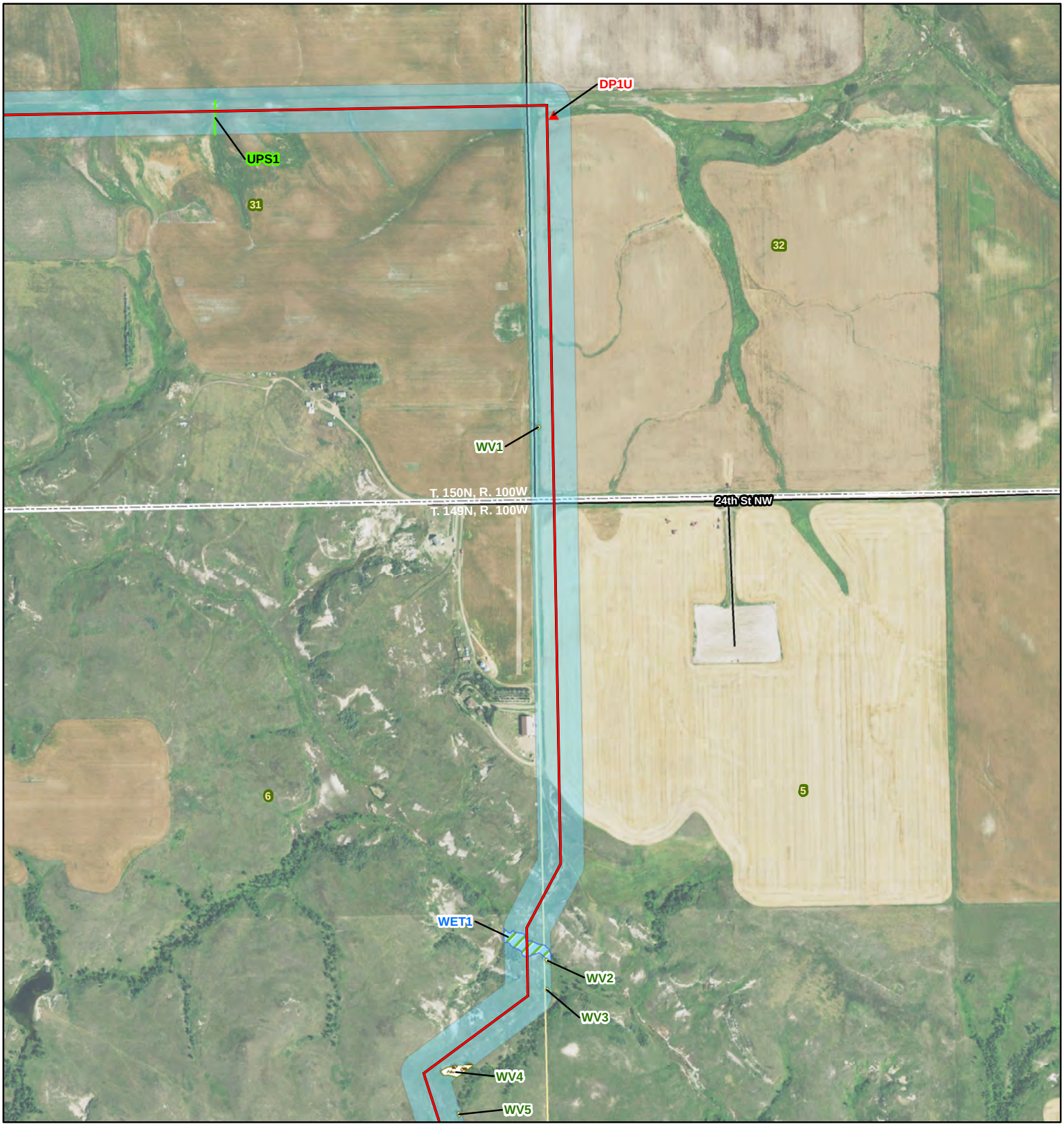
Miles
0 0.25 0.5

Base Map: 2014 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Rawson (1972)

Township/Range: T. 150N, R. 101W &
T. 150N, R. 100W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S



Lonesome Creek NGL Pipeline

- Upland Data Point
- Proposed Pipeline
- Upland Swale
- Existing Road
- Wetland
- Woody Vegetation
- Survey Area
- Section Boundary
- Township/Range Boundary

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Miles
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Base Map: 2014 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Rawson (1972)

Township/Range: T. 150N, R. 100W &
T. 149N, R. 100W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S

Lonesome Creek NGL Pipeline

- Upland Data Point
- Proposed Pipeline
- Upland Swale
- Existing Road
- Wetland
- Woody Vegetation
- Survey Area
- Section Boundary
- Township/Range Boundary

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Kilometers
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Miles
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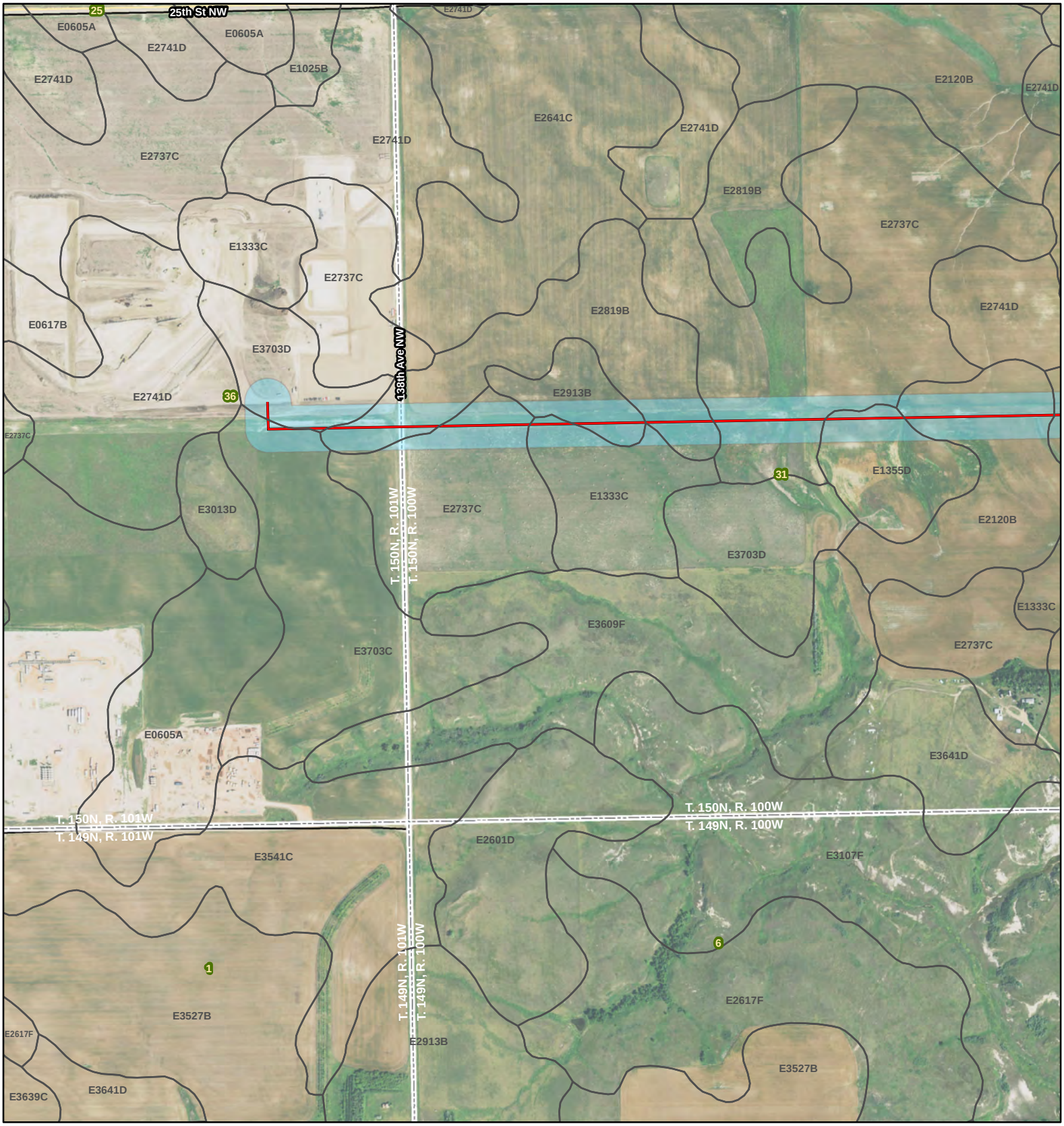
Base Map: 2014 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Rawson (1972),
Bear Butte (1995)
Township/Range: T. 149N, R. 100W

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

N W E S

APPENDIX B

Survey Area Soil Series Map



Lonesome Creek NGL Pipeline

- Proposed Pipeline
- Existing Road
- Survey Area
- Soil Unit Boundary
- Section Boundary
- Township/Range Boundary

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Kilometers
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Miles
0 0.25 0.5

Base Map: 2014 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Rawson (1972)

Township/Range: T. 150N, R. 101W &
T. 150N, R. 100W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

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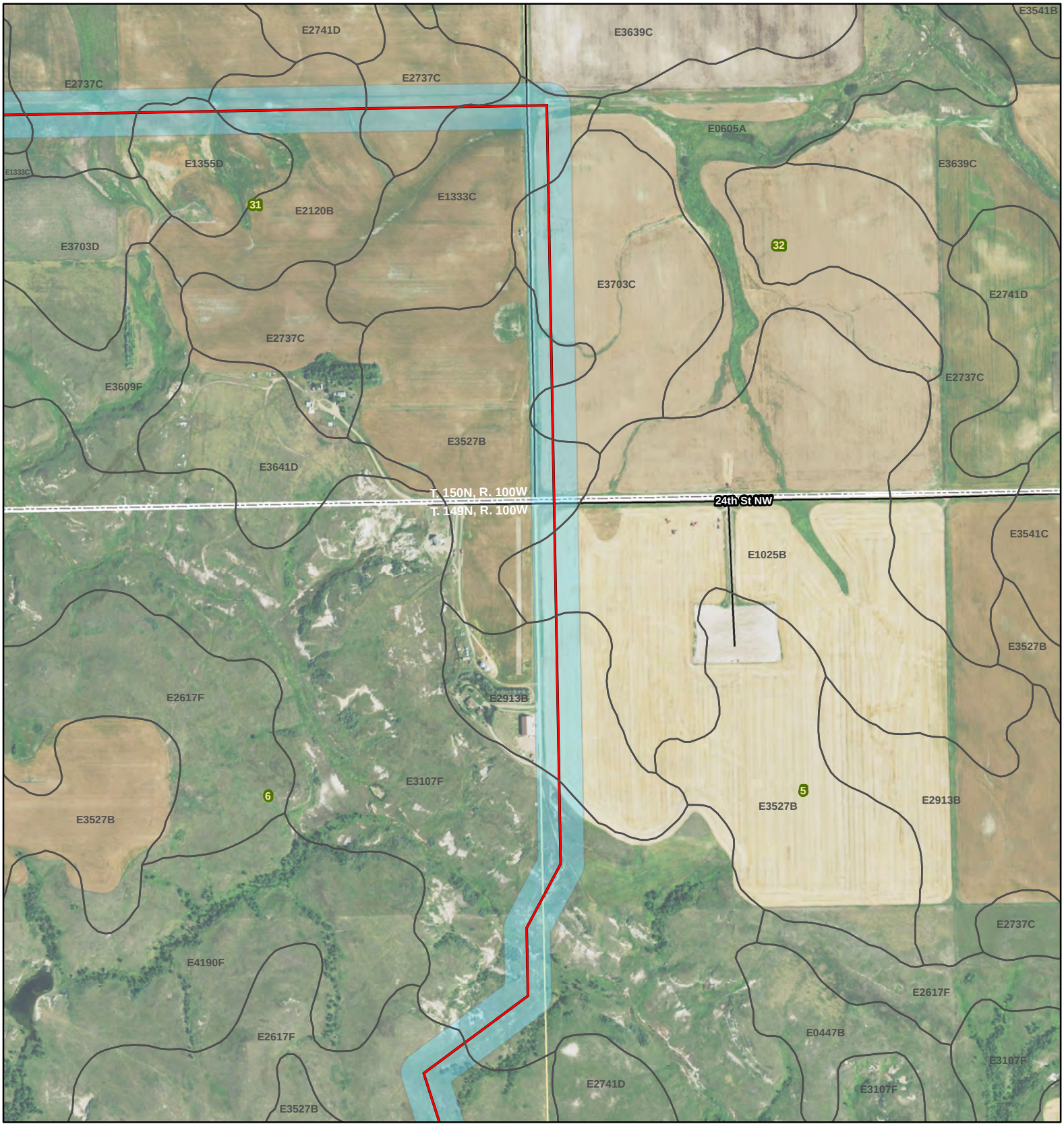

Lonesome Creek NGL Pipeline

- Proposed Pipeline
- Existing Road
- Survey Area
- Soil Unit Boundary
- Section Boundary
- Township/Range Boundary

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Kilometers
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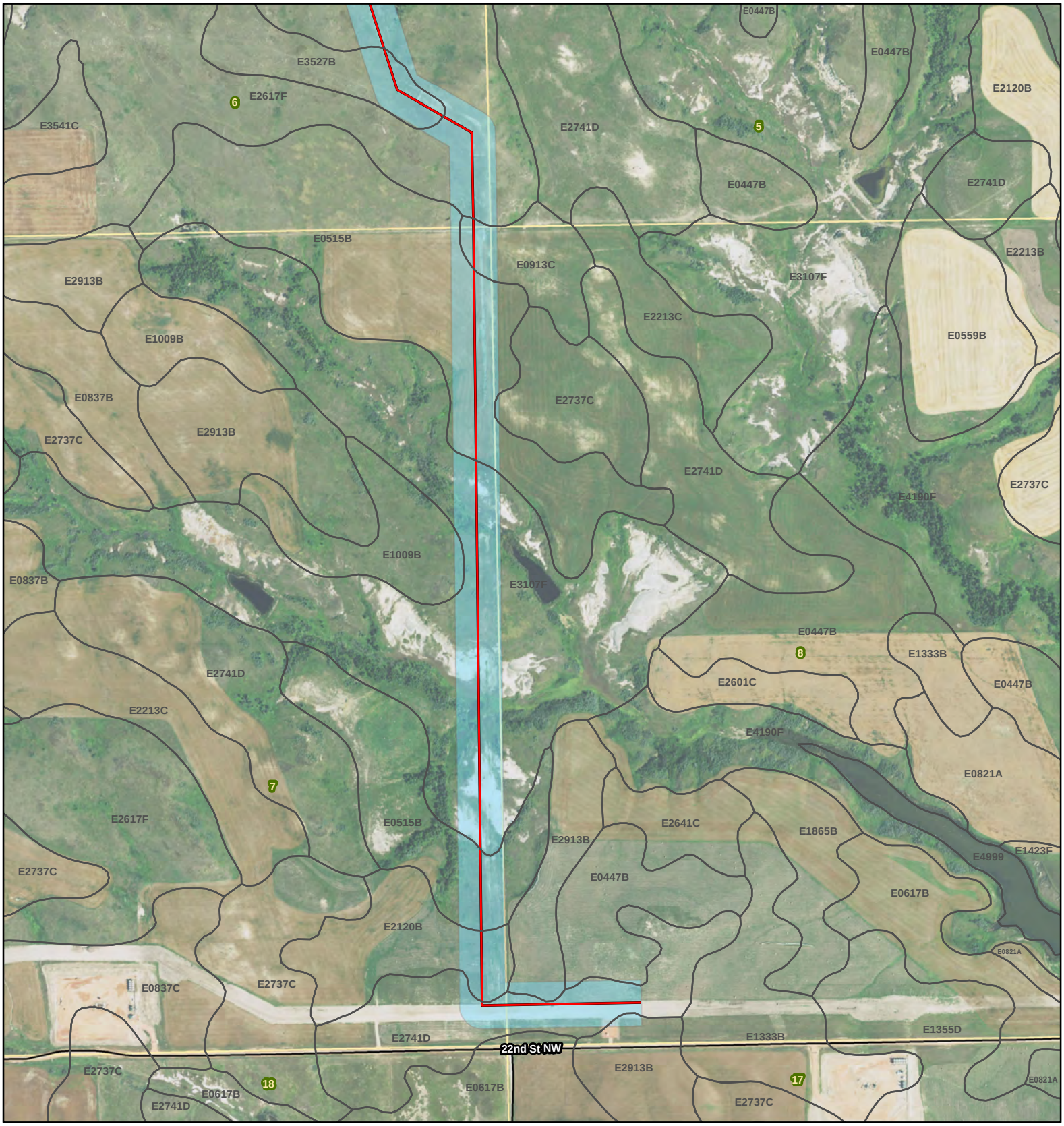
Miles
0 0.25 0.5

Base Map: 2014 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Rawson (1972)

Township/Range: T. 150N, R. 100W &
T. 149N, R. 100W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S



Lonesome Creek NGL Pipeline

- Proposed Pipeline
- Existing Road
- Survey Area
- Soil Unit Boundary
- Section Boundary
- Township/Range Boundary

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Kilometers
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Miles
0 0.25 0.5

Base Map: 2014 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Rawson (1972),
Bear Butte (1995)
Township/Range: T. 149N, R. 100W

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

N W E S

APPENDIX C
Photographs of Project Area

Figure C.1. Eastern cottonwood (*Populus deltoides*) (WV1), facing west (photo taken January 27, 2015).

Figure C.2. Semipermanent wetland (WET1), facing northwest (photo taken January 27, 2015).

Figure C.3. Green ash (*Fraxinus pennsylvanica*) (WV2), facing northeast (photo taken January 27, 2015).

Figure C.4. Semipermanent wetland (WET2), facing east (photo taken January 27, 2015).

Figure C.5. Semipermanent wetland (WET2), facing west (photo taken January 27, 2015).

Figure C.6. Silver buffaloberry (*Shepherdia argentia*) and green ash (WV7), facing northeast (photo taken January 27, 2015).

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Appendix E

Cultural Resources Survey Report Abstract

A Class I and Class III Cultural Resource Inventory of the Lonesome Creek NGL Pipeline, McKenzie County, North Dakota

Prepared for

E3 Environmental, LLC

Prepared by

SWCA Environmental Consultants

February 2015

MANUSCRIPT DATA RECORD FORM

1. Manuscript Number: [SHPO assigns]

2. SHPO Reference #:

3. Author(s): Jolene Schleicher

4. Title: A Class I and Class III Cultural Resource Inventory of the Lonesome Creek NGL Pipeline, McKenzie County, North Dakota

5. Report Date: February 9, 2105

6. Number of Pages: 49

7. Type – I, T, E, O: I

8. Acres: 144.8

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 online 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

COUNTY	TWP	RNG	SEC	SU
McKenzie	150N	101W	36	LM
McKenzie	150N	100W	31, 32	GA
McKenzie	149N	100W	5–8	LM

A Class I and Class III Cultural Resource Inventory of the Lonesome Creek NGL Pipeline, McKenzie County, North Dakota

Submitted to

State Historical Society of North Dakota

Prepared for

E3 Environmental, LLC
871 Jefferson Street
St. Paul, Minnesota 55114

Prepared by:

Jolene Schleicher

Principal Investigator:

William Harding

SWCA Environmental Consultants
116 North 4th Street, Suite 200
Bismarck, North Dakota 58501
(701) 258-6622
www.swca.com

SWCA Project No. 31405
SWCA Cultural Resources Report No. 15-56

February 9, 2015

ABSTRACT

SWCA Environmental Consultants conducted a Class I and Class III cultural resource inventory on behalf of E3 Environmental, LLC (E3) for the Lonesome Creek natural gas liquids (NGL) pipeline project. This pipeline is approximately 3.97 miles long and is located on private lands in McKenzie County, North Dakota. The only regulatory agencies to be involved are 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 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, the Class I and Class III inventory of the project area assists E3 in meeting the cultural resource requirements within the North Dakota Public Service Commission's Certificate of Corridor Compatibility and Route Permit application. Additionally, the inventory assisted 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 Lonesome Creek NGL pipeline would be located on private lands in Section 36, Township (T) 150 North (N), Range (R) 101 West (W); Sections 31 and 32, T150N, R100W; and Sections 5 through 8, T149N, R100W.

The Class I inventory was conducted on November 25, 2014, and the Class III inventory was conducted on January 27 and 28, 2015. The Class III survey area consisted of a 300-foot-wide survey corridor centered on the 3.97-mile-long proposed pipeline centerline. In total, 144.8 acres were inventoried.

During the inventory no cultural resources were encountered and none of the previously recorded cultural resources occur within the project area. No further work is recommended. Therefore, it is recommended that a determination of *No Significant Sites Affected* and *No Historic Properties Affected* be granted for the project to proceed as planned.

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Bismarck Office
116 N. 4th Street, Suite 200
Bismarck, North Dakota 58501
Tel 701.258.6622; Fax 701.258.5957
www.swca.com

December 2, 2014

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

SWCA Project Number: 31405

RE: Class I Inventory Results of the Lonesome Creek NGL and Cherry Creek to Lonesome Creek Pipeline

Dear Mr. McCarthy:

On September 19, 2014, SWCA Environmental Consultants (SWCA) completed a Class I cultural resource inventory for the proposed Lonesome Creek NGL and the proposed Cherry Creek to Lonesome Creek pipeline in McKenzie County, North Dakota. The proposed Lonesome Creek NGL is located in Section 36, Township (T) 150 North (N), Range (R) 101 West (W); Section 31, T150N, R100W; and Sections 6-8, T149N, R100W. The proposed Cherry Creek to Lonesome Creek pipeline is located in Section 36, T150N, R101W; Section 31, T150N, R100W; and Sections 6-10, 14, and 15, T149N, R100W. The westernmost segment of the Cherry Creek to Lonesome Creek pipeline will be co-located with the Lonesome Creek NGL. The lengths of the proposed pipelines are 4.03 and 7.70 miles long, Lonesome Creek NGL and Cherry Creek to Lonesome Creek pipeline respectively, and will occur on privately-owned lands. Because the proposed pipelines are co-located, only one Class I inventory was conducted.

The only regulatory agencies to be involved are the North Dakota Public Service Commission under the North Dakota Energy Conversion and Transmission Facility Siting Act (excluding any applicable county or local requirements) (Lonesome Creek NGL only), and 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. This letter report provides the results of the Class I cultural resource inventory conducted by SWCA archaeologist Aidan McCarty to determine whether previously recorded cultural resources are located within the proposed project area.

CLASS I CULTURAL RESOURCE INVENTORY

The Class I cultural resource files search was conducted by Mr. McCarty for the project location and surrounding 1-mile area (0.5 mile either side of each proposed alignment) on November 25, 2014, of files maintained at the State Historical Society of North Dakota. The results of the files search are discussed below and illustrated in Figures 1a through 1d.

Five previous cultural resource projects were conducted within the 1-mile study area (0.5 mile on either side of both pipeline centerlines) surrounding the project area between 1988 and 2014 (Table 1). The projects were primarily in support of oil and gas development, however one previous project (manuscript #015379) was in support of a communication tower site.

Six previously recorded cultural resources are located in the 1-mile study area (0.5-mile either side of both alignments). The cultural resources consist of two prehistoric cultural material scatter sites (32MZ930 and 32MZ931); one prehistoric cultural material scatter and cairn site (32MZ932); one historic mine site lead (32MZX366); one historic ceramic fragment isolated find (32MZX1131); and one unknown isolated find (32MZX1385). 32MZ931, 32MZ932 and 32MZX366 are all unevaluated for the National Register of Historic Places (NRHP). The remaining resources have been recommended not eligible for the NRHP. There are no previously recorded resources located within the proposed survey area for the Lonesome Creek NGL or the proposed survey area for the Cherry Creek to Lonesome Creek pipeline.

Table 1. Previous Cultural Resource Inventories Conducted within 1 Mile of the Project Area

Manuscript Number	Title	Authors	Year
004724	A Cultural Resources Inventory of the Proposed Northern Border Connection Pipeline McKenzie County, North Dakota, Vol. I and II	M. Floodman	1988
012263	A Class I and Class III Cultural Resource Inventory of the Bear Paw Energy Natural Gas Liquids Garden Creek Pipeline, Private Lands, McKenzie Co., ND	C. Riordan, J. Cooper, S. Lechert, S. Slessman	2011
014984	E3 Environmental, LLC's Lonesome Creek Gas Plant: A Class III Cultural Resource Inventory in McKenzie County, North Dakota	E. France, J. Wulffen	2014
015289	A Class III Cultural Resources Inventory at the Buffalo Wallow Central Tower Site NESE Section 36, T150N, R101W, McKenzie County, North Dakota	B. Molyneaux, J. Morrison	2014
015379	A Class III Cultural Resource Inventory of the Caliber Natural Gas Liquids Project, McKenzie County, North Dakota	K. Redman, J. Omvig, J. Pfertsh	2014

Table 2. Previously Documented Cultural Resources within 1 Mile of the Project Area.

Site Number	Site Type(s)	Cultural Affiliation	NRHP Eligibility	Recommendation
32MZ930	Cultural Material Scatter	Prehistoric (Late Prehistoric)	Not Eligible	No Further Work
32MZ931	Cultural Material Scatter	Unknown Prehistoric	Unevaluated	50 Feet of Avoidance

Site Number	Site Type(s)	Cultural Affiliation	NRHP Eligibility	Recommendation
32MZ932	Cultural Material Scatter, Cairn	Unknown Prehistoric	Unevaluated	50 Feet of Avoidance
32MZX366	Torstenson/Thorstenson Mine Site Lead	Historic (1929-1940)	Unevaluated	50 Feet of Avoidance/ Field Visit
32MZX1130	Isolated Ceramic Fragment	Unknown Historic	Not Eligible	No Further Work
32MZX1385	Unknown Isolated Find	Unknown	Not Eligible	No Further Work

CONCLUSIONS

On November 25, 2014, SWCA completed a Class I cultural resource inventory of the proposed Lonesome Creek NGL and Cherry Creek to Lonesome Creek pipeline. The results of the file search are summarized as follows.

- Five previous cultural resource projects were conducted within the 1-mile study area surrounding the project area between 1988 and 2014, support of oil and gas development, however one previous project was in support of a communication tower site.
- Six previously recorded cultural resources are located in the 1-mile study area surrounding the project area. There are no previously recorded resources located within the proposed survey area for the Lonesome Creek NGL or the proposed survey area for the Cherry Creek to Lonesome Creek pipeline.
- Because 32MZX366 is a site lead and was only recorded in terms of the quarter-section in which it is located, it is not possible to identify the exact location of the site lead without a field visit.

Please contact me at 701.258.6622 or jschleicher@swca.com should you have any further questions or concerns regarding the information assembled during SWCA's Class I cultural resource inventory.

Sincerely,

Jolene R. Schleicher

Jolene Schleicher
Archaeologist/Project Manager

JRS:js

Appendix F

10-Year Plan

ONEOK Bakken Pipeline, L.L.C. ("OBPL") hereby submits its ten-year plan pursuant to North Dakota Century Code § 49-22-04 and North Dakota Administrative Code Chapter 69-06-02.

SECTION A: Existing Energy Conversion Facilities

OBPL has no existing energy conversion facilities in North Dakota.

SECTION B: Energy Conversion Facilities Under Construction

OBPL has no energy conversion facilities under construction in North Dakota.

SECTION C: Proposed Energy Conversion Facilities on Which Construction is Intended Within the Ensuing Five Years

OBPL has no proposed energy conversion facilities on which construction is intended within the ensuing five years in North Dakota.

SECTION D: Proposed Energy Conversion Facilities During the Next Ten-Year Time Period

OBPL has no proposed energy conversion facilities during the next ten-year time period in North Dakota.

SECTION E: Existing Transmission Facilities (Electric)

OBPL has no existing electrical transmission facilities in North Dakota.

SECTION F: Existing Transmission Facilities (Pipeline)

Part I – Stateline Natural Gas Liquids ("NGL") Pipeline

1. Location. OBPL owns an NGL pipeline for the transportation of y-grade NGLs originating at the Stateline 1 and Stateline 2 Gas Plants (collectively "Stateline Plants") owned and operated by ONEOK Rockies Midstream, L.L.C. ("ORM") and located in Township 155 North, range 103 West, Section 21 in Williams County, and proceeding due west and south to Township 153N, Range 104W, Section 10. At this point the pipeline crosses the state line into Montana where it can deliver into the ORM Riverview Rail Facility near Sidney, Montana or continue southward on the pipeline.

2. Type and Capacity. The design specifications for this facility are as follows:

   Product Type: - Y-Grade NGLs (Ethane, propane, butane and iso-butane mix, and pentanes and heavier NGLs)
   Length of Facility in Miles: 13.19 miles (total line length is approximately 55.16 miles including the Montana portion)
   Pipe Size: 10.75 inches

Maximum Design Operating Pressure: 1,440 psig
Maximum Design Flow Rate: 2,300 gpm
Compressor or pumping station specifications, including type, horsepower, output pressure and capacity: None – Injection pressure at the Stateline Plants is adequate to move the product through the pipeline.
Minimum Cover Over Pipe: 48 inches

3. In-Service Date for Pipeline: October 22, 2012

4. Retirement: There is no projected retirement date during the next ten-year period for this pipeline.

Part II – Garden Creek NGL Pipeline

1. Location. OBPL owns an NGL pipeline for the transportation of y-grade NGLs originating at the Garden Creek 1, Garden Creek 2 (coming online in 2014) and Garden Creek 3 (coming online in 2015) Gas Plants (collectively "Garden Creek Plants") owned and operated by ORM and located in Township 151 North, Range 98 West, Section 35 in McKenzie County, and proceeding due west and south to Township 150 N, Range 99 West, Section 17 to bypass Watford City, then south and west to angle into existing pipeline corridors in Township 148 North, Range 103 West, travel south and west to pass near the Grasslands Gas Plant and through Section 34, Township 148 North, Range 105 West, McKenzie County. At this point, the pipeline crosses the state line into Montana where it can deliver into the ORM Riverview Rail Facility near Sidney, Montana or continue southward on the pipeline.

2. Type and Capacity. The design specifications for this facility are as follows:

   Product Type: - Y-Grade NGLs (Ethane, propane, butane and iso-butane mix, and pentanes and heavier NGLs)
   Length of Facility in Miles: 54.8 miles (total line length is approximately 64.18 miles including the Montana portion)
   Pipe Size: 10.75 inches
   Maximum Design Operating Pressure: 1,440 psig
   Maximum Design Flow Rate: 2,100 gpm
   Compressor or pumping station specifications, including type, horsepower, output pressure and capacity: None – Injection pressure at the Garden Creek Plants is adequate to move the product through the pipeline.
   Minimum Cover Over Pipe: 48 inches

3. In-Service Date for Pipeline: January 20, 2012

4. Retirement: There is no projected retirement date during the next ten-year period for this pipeline.

SECTION G: Proposed Transmission Facilities on Which Construction is Intended Within the Ensuing Five Years (Electric)

OBPL has no proposed electric transmission facilities on which construction is intended within the ensuing five years in North Dakota.

SECTION H: Proposed Transmission Facilities on Which Construction is Intended Within the Ensuing Five Years (Pipeline)

Part I – Targa Lateral NGL Pipeline

1. Location: OBPL plans to build an approximately 10-mile NGL pipeline for the transportation of Y-grade NGLs originating at the Little Missouri Plant owned and operated by Targa Badlands LLC and located in Township 149 North, Range 98 West, Section 30 in McKenzie County, and proceeding North West to Township 149 N, Range 100 West, Section 1 where it will tie into the Garden Creek NGL Pipeline. OBPL anticipates filing an application with the PSC for Corridor Certificate and Route Permit for the Targa Lateral Pipeline.

2. Type and Capacity. The design specifications for this facility are as follows:

    a. Product Type: Y-Grade NGLs (Ethane, propane, butane and iso-butane mix, and pentanes and heavier NGLs)
    b. Length of Facility in Miles: 10 miles Pipe Size: 6.625 inches
    c. Maximum Design Operating Pressure: 1,440 psig
    d. Maximum Design Flow Rate: 290 gpm
    e. Pumping station specifications, including type, horsepower, output pressure and capacity: None anticipated – Injection pressure at the plant is assumed to be adequate to move the product through the pipeline.
    f. Minimum Cover Over Pipe: 48 inches

3. In-Service Date for Pipeline: First Quarter 2015

Part II – Lonesome Creek NGL Pipeline

1. Location: OBPL plans to build a NGL pipeline for the transportation of Y-grade NGLs originating at the Lonesome Creek Gas Plant to be owned and operated by ORM and for which ORM requested a Certificate of Site Compatibility in Township 150 North, Range 101 West, Section 36 in McKenzie County, and into the Garden Creek NGL Pipeline.

2. Type and Capacity. The design specifications for this facility are as follows:

    a. Product Type: Y-Grade NGLs (Ethane, propane, butane and iso-butane mix, and pentanes and heavier NGLs)
    b. Length of Facility in Miles: Route yet to be determined
    c. Pipe Size: Hydraulics yet to be confirmed.
    d. Maximum Design Operating Pressure: 1,440 psig
    e. Maximum Design Flow Rate: Capacity yet to be determined

f. Pumping station specifications, including type, horsepower, output pressure and capacity: None anticipated – Injection pressure at the Lonesome Creek Plant is assumed to be adequate to move the product through the pipeline.
g. Minimum Cover Over Pipe: 48 inches

3. In-Service Date for Pipeline. First Quarter 2016

4. Retirement. There is no projected retirement date during the next ten-year period for this pipeline.

SECTION I: Proposed Transmission Facilities during the Next Ten-Year Time Period (Electric and Pipeline)

If producer drilling activity in the Bakken/Three Forks continues at current levels, it is possible that OBPL may need to build additional NGL transportation capacity in Western North Dakota sometime within the five-year period.

SECTION J: Regional Coordination

OBPL has regional coordination with other processors of associated NGLs, however OBPL does not have contact with other pipelines due to confidentiality concerns and potential antitrust issues.

SECTION K: Environmental Information

OBPL recognizes the various federal, state and municipal regulatory agencies within the state of North Dakota that have environmental compliance authority over the operations and maintenance aspects of its existing Stateline NGL Pipeline and Garden Creek NGL Pipeline. In its effort to ensure regulatory compliance, OBPL commits to developing and fostering an ongoing working relationship with each of these agencies. OBPL will continue risk mitigation collaborations and community right-to-know reporting with the Local Emergency Planning Commissions. OBPL is committed to maintaining a strong safety record and is well prepared to meet any emergency and mitigate the impact of a pipeline failure.

OBPL is also committed to environmental compliance during the execution of any future expansion or routine growth project. OBPL commits to actively seek the approval of and comply with the conditions of all federal, state and municipal agencies having jurisdictional authority over the construction and installation of new facilities.

SECTION L: Projected Demand for Service

Crude oil prices and technology will sustain the long-term production of Bakken Shale / Three Forks crude oil and the production of natural gas associated with such production. The processing of the associated natural gas will provide a source of NGL supply to OBPL, which in turn can provide access to NGL markets.

Appendix G

Landowner Waivers

ONEOK
BAKKEN PIPELINE

Roger & Kay Thompson
2381 137th Avenue NW
Arnegard, ND 58835

RE: ONEOK Bakken Pipeline, L.L.C. ("ONEOK") – Lonesome Creek Pipeline

Please review the attached site map noting the proposed location of the Lonesome Creek Pipeline (hereinafter referred to as "Facilities"). 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. In exchange for your no objection, ONEOK agrees to protect, indemnify, and hold you harmless from and against any cost, claim, damage or liability to the extent arising out of ONEOK's negligent acts or omissions, willful misconduct or illegal acts in connection with the construction, operation, or maintenance of ONEOK's pipeline. ONEOK further agrees that it will maintain, through any combination of self-insurance, primary or excess policies, a policy of commercial general liability insurance in an amount of not less than $250,000.00 to cover its indemnification obligations provided above.

Your cordial cooperation in this matter is greatly appreciated.

Please contact me at (580) 371-7950 if you have any questions or concerns.

Respectfully,

Land Agent
ONEOK Bakken Pipeline, LLC

BY

Roger Thompson