Johnsons Corner - Alexander Crude Oil Pipeline and Tank Facilities

Combined Certificate of Corridor Compatibility and Route Permit Application

November 2016

Prepared for:

Targa Badlands LLC

1000 Louisiana Street
Suite 4300
Houston, TX 77002

Prepared by:

Lowham Walsh LLC

205 South Third Street
Lander, WY 82520

COMBINED CERTIFICATE OF CORRIDOR COMPATIBILITY AND ROUTE PERMIT APPLICATION CHECKLIST

The following table provides the North Dakota Public Service Commission with a guide to locate sections in the combined application that pertain to specific application requirements for the Certificate of Corridor Compatibility and Route Permit under the North Dakota Century Code and North Dakota Administrative Code.

State Authority	Description	Relevant Section
CENTURY CODE – Title 49		
Chapter 49-22	Energy Conversion and Transmission Facility Siting Act	--
49-22-05.1	Exclusion and avoidance areas – Criteria	7.1, 7.2.1
	500-foot avoidance area for inhabited rural residences	7.1, 7.2.1
49-22-07	Route permit required	1
49-22-08	**Application for a certificate for a corridor**	--
1.a	Description of size and type of facility	1
1.b	Summary of environmental impacts	7.2.2, 8.1
1.c	Need for facility	3.1
1.d	Site for energy conversion facility	N/A
1.e	Preferred transmission corridor	2.19, Fig. 1
1.f	Analysis of merits and detriments of facility location	7.2.2, 8.1
1.g	Mitigative measures	9
1.h	Corridor evaluation pursuant to 49-22-09 and 49-22-05.1	7.1, 7.2.1, 8.1
1.i	Other relevant information	8.1
49-22-08.1	**Application for Route Permit**	--
1.a	Description of size and type of facility	1
1.b	Description of location	1, Fig. 1
1.c	Route evaluation pursuant to 49-22-09 and 49-22-05.1	7.1, 7.2.1, 8.1
1.d	Mitigative measures	9
1.e	Describe right-of-way preparation, construction, and reclamation	2.20
1.f	Statements identifying how: 1. Landowners informed of right-of-way acquisition 2. How landowners will be compensated	2.21
1.g	Other relevant information	8.1
49-22-09	Factors to be considered in evaluating applications and designation of sites, corridors, and routes	8.1
1.	Available research and investigations relating to the effects of the location, construction, and operation of the proposed facility on public health and welfare, natural resources, and the environment	8.1.1
2.	Effects of new transmission technologies and systems designed to minimize adverse environmental effects	8.1.2
3.	Potential beneficial uses of waste energy from energy conversion facility	8.1.3
4.	Unavoidable adverse direct and indirect environmental effects	8.1.4
5.	Corridor or route alternatives developed during the hearing process and which minimize adverse effects	8.1.5

State Authority	Description	Relevant Section
6.	Irreversible and irretrievable commitments of natural resources if designated	8.1.6
7.	Direct and indirect economic impacts of the proposed facility	8.1.7
8.	Existing plans of state, local, and private entities for other developments at or in the vicinity	8.1.8
9.	Effect on existing scenic areas, historic sites and structures, and paleontological or archaeological sites	8.1.9
10.	Effect on unique biological areas or habitat for rare and endangered species	8.1.10
11.	Problems raised by federal, state, and local entities	8.1.11
ADMINISTRATIVE CODE – Title 69		
Chapter 69-06-05	Transmission Facility Permit	--
69-06-05-01	**Application for a transmission facility permit**	--
2.a. (1)	Type of facility proposed	1
2.a. (2)	Purpose of the facility	2.2
2.a. (3)	Technology to be deployed	2.5
2.a. (4)	Type of product to be transmitted	2.6
2.a. (5)	Source of the product to be transmitted	2.7
2.a. (6)	Final destination of the product to be transmitted	2.8
2.a. (7)	Size and design:	1, 2.1
2.a. (7)(a)	Width of right-of-way	2.9
2.a. (7)(b)	Approximate length of facility	2.10
2.a. (7)(c)	Estimated span length for electric facilities	N/A
2.a. (7)(d)	Anticipated type of structure for electric facilities	N/A
2.a. (7)(e)	Voltage for electric facilities	N/A
2.a. (7)(f)	Requirement for and general location of any new associated facilities	2.11
2.a. (7)(g)	Estimated distance between surface structures for pipeline facilities	2.12
2.a. (7)(h)	Pipe size for pipeline facilities	2.13
2.a. (7)(i)	Maximum design operating pressure and temperature for pipeline facilities	2.14
2.a. (7)(j)	Maximum design flow rate for pipeline facilities	2.15
2.a. (7)(k)	Number and general location of compressor or pumping stations	2.16
2.b.	Schedule	4
2.b. (1)	Obtaining the certification of corridor compatibility	4.1
2.b. (2)	Obtaining the route permit	4.2
2.b. (3)	Completing right-of-way acquisition	4.3
2.b. (4)	Starting construction	4.4
2.b. (5)	Completing construction	4.5
2.b. (6)	Testing operations	4.6
2.b. (7)	Commencing operations	4.7
2.c.	A copy of each evaluative study or assessment of the environmental impact of the proposed facility submitted to the agencies listed in section 69-06-01-05 and each response received	5.1, Appx. D, F, G, H, I

State Authority	Description	Relevant Section
2.d.	Need for the facility	3.1
2.e.	Description of alternatives	3.2
2.f.	Corridor width	5.2
2.g.	Study area that includes a proposed corridor of sufficient width to enable the Commission to evaluate factors listed in North Dakota Century Code 49-22-09	5.2
2.h.	Discussion of factors listed in North Dakota Century Code 49-22-09	8.1
2.i.	Discussion of the applicant's policies and commitments to limit the environmental impact of its facilities, including copies of board resolutions and management directives	6.1.1, 6.1.2
2.j.	Map of criteria that led to route location	Appx. J
2.k.	Discussion of the relative value of criteria, how location was selected, and how each criterion is affected by the location, construction, and operation of the facility	7.2.2
2.l.	Mitigative measures	9
2.m.	Qualifications of each person involved in the location study	10
2.n.	Map identifying criteria that led to the location of the route and new facilities	Appx. J
2.o.	Eight and one-half-inch by eleven-inch black and white map suitable for newspaper publication depicting the site area.	Appx. Q
2.p.	Discussion of present and future natural resource development in the area	11.1
2.q.	Map and GIS data meet Commission requirements	12
69-06-06-01	**Application for Waiver of Procedures and Time Schedules**	**Appx. A**
2.a.	Type of facility, including the purpose and the technology to be employed	1, 2.2, 2.5
2.b.	Products to be produced or transmitted	2.6
2.c.	Capacity and design of facility	2.1, 2.4
2.d.	Location map of the facility	Figs. 1-3
2.e.	Description of general area to be served by the facility	2.3
2.f.	Anticipated time schedule	4
2.g.	Future expansion plans	12.2
2.h.	Need for facility	3.1
2.i.	Reasonable alternatives	3.2, 3.3
2.j.	Justification for any deviations from most recent ten-year plan	6.2
2.k.	Estimated total cost of construction	2.17
2.l.	Specific provisions of law that the applicant requests the commission to waive or modify, with separate justifications	N/A
2.m.	Factual basis demonstrating facility will produce minimal adverse effects	7.2.2, 8.1, 9
69-06-08-02	**Transmission Facility Corridor and Route Criteria**	--
1.	Exclusion areas:	7.1
1.a.	Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; monuments; and wilderness areas	7.1

State Authority	Description	Relevant Section
1.b.	Designated or registered state: parks; historic sites; monuments; historical markers; archaeological sites; and nature preserves	7.1
1.c.	County parks and recreational areas; municipal parks; and parks owned or administered by other governmental subdivisions	7.1
1.d.	Areas critical to the life stages of threatened or endangered animal or plant species	7.1
1.e.	Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged	7.1
1.f.	Areas within 1,200 feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility	7.1
1.g.	Areas within 30 feet on either side of a direct line between intercontinental ballistic missile (ICBM) launch or launch control facilities to avoid microwave interference	7.1
2.	Avoidance areas:	7.2.1
2.a.	Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands	7.2.1
2.b.	Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands	7.2.1
2.c.	Historical resources which are not specifically designated as exclusion or avoidance areas	7.2.1
2.d.	Areas which are geologically unstable	7.2.1
2.e.	Within 500 feet of a residence, school, or place of business. This criterion shall not apply to a water pipeline transmission facility.	7.2.1
2.f.	Reservoirs and municipal water supplies	7.2.1
2.g.	Water sources for organized rural water districts	7.2.1
2.h.	Irrigated land	7.2.1
2.i.	Areas of recreational significance which are not designated as exclusion areas	7.2.1
3.	Selection Criteria:	7.2.2
3.a. (1)	Agricultural production	7.2.2.1
3.a. (2)	Family farms and ranches	7.2.2.2
3.a. (3)	Land economically suitable for irrigation	7.2.2.3
3.a. (4)	Surface drainage patterns and groundwater flow patterns	7.2.2.4, 7.2.2.5
3.b. (1)	Sound-sensitive land uses	7.2.2.6
3.b. (2)	Visual effect on the adjacent area	7.2.2.7
3.b. (3)	Extractive and storage resources	7.2.2.8
3.b. (4)	Wetlands, woodlands, and wooded areas	7.2.2.9, 7.2.2.10
3.b. (5)	Radio and television reception, and other communication or electronic control facilities	7.2.2.11
3.b. (6)	Human health and safety	7.2.2.12
3.b. (7)	Animal health and safety	7.2.2.13
3.b. (8)	Plant life	7.2.2.14
4.	Policy criteria:	7.2.3
4.a.	Location and design	7.2.3.1

State Authority	Description	Relevant Section
4.b.	Training and utilization of available labor in this state for the general and specialized skills required	7.2.3.2
4.c.	Economies of construction and operation	7.2.3.3
4.d.	Use of citizen coordinating committees	7.2.3.4
4.e.	Commitment of a portion of the transmitted product for use in this state	7.2.3.5
4.f.	Labor relations	7.2.3.6
4.g.	Coordination of facilities	7.2.3.7
4.h.	Monitoring of impacts	7.2.3.8
4.i.	Utilization of existing and proposed rights of way and corridors	7.2.3.9
4.j.	Other existing or proposed transmission facilities	7.2.3.10

TABLE OF CONTENTS

Section **Page**

Combined Certificate of Corridor Compatibility and Route Permit Application Checklist ii
List of Tables ix
List of Figures ix
Acronyms and Abbreviations x
Definitions xi

INTRODUCTION 1

1 SIZE AND TYPE OF FACILITY 1

2 DESCRIPTION OF THE FACILITY 1
2.1 Design of the Proposed Facility 1
2.2 Purpose of the Facility 6
2.3 General Area to Be Served 7
2.4 Capacity 7
2.5 Technology to Be Deployed/Employed 7
2.6 Type of Product to Be Transmitted 7
2.7 Source of Product to Be Transmitted 7
2.8 Final Destination of Product 7
2.9 Width of Right-of-Way 8
2.10 Approximate Length of Facility 9
2.11 Requirement for and General Location of Any New Associated Facilities 9
2.12 Estimated Distance between Surface Structures for Pipeline Facilities 9
2.13 Pipe Size for Pipeline Facilities 9
2.14 Maximum Design Operating Pressure and Temperature for Pipeline Facilities 10
2.15 Maximum Design Flow Rate for Pipeline Facilities 10
2.16 Number and General Location of Pumping Stations 10
2.17 Estimated Total Cost of Construction 10
2.18 Preferred Location of Facility 10
2.19 Preferred Location of Corridor 11
2.20 Description of Right-of-Way Preparation and Construction and Reclamation Procedures 11
2.21 Statements Describing How Targa Informs Affected Landowners 11

3 NEED 12
3.1 Need for the Facility 12
3.2 Alternatives to the Proposed Facility 13

4 SCHEDULE 13
4.1 Obtaining Certificate of Corridor Compatibility 13
4.2 Obtaining Route Permit 13
4.3 Completing Right-of-Way Acquisition 14
4.4 Starting Construction 14
4.5 Completing Construction 14
4.6 Testing Operations 14
4.7 Commencing Operations 14

5 STUDIES 14

Section **Page**

5.1 Summaries and Copies of Environmental Impact Studies or Assessments Submitted to Agencies Listed in NDAC § 69-06-01-05 and Each Response Received 14
5.2 Study Area Width 15

6 POLICIES 15
6.1 Discussion of Utilities Policies and Commitments to Limit the Environmental Impact, Including Board Resolutions/Management Directives 15
6.2 Justification for any Deviation from the Applicants Most Recent Ten-Year Plan 16

7 CRITERIA 16
7.1 Exclusion Areas 16
7.2 Avoidance Areas 18

8 MISCELLANEOUS 33
8.1 Evaluation Factors 33

9 MITIGATION 38

10 QUALIFICATIONS 39

11 DEVELOPMENT 40
11.1 Discussion of Present and Future Natural Resource Development in the Area 40
11.2 Plans for Future Expansion 40

12 MAPS 40
12.1 Map of Criteria within the Study Area 40
12.2 Maps of Study Area 41
12.3 Black and White Map for Publication 41

13 REFERENCES 41

Appendices (see Tab 2)

Appendix A: Application for Waiver or Reduction of Procedures and Time Schedules
Appendix B: Corporate Documents
Appendix C: Directional Bore Locations
Appendix D: Biological Resources Report
Appendix E: State and County Permits
Appendix F: Class I & III Cultural Resources Inventory Abstract and Addendum
Appendix G: SHPO Concurrence Letters
Appendix H: Wetlands Report
Appendix I: Agency Communication
Appendix J: Maps of Exclusion and Avoidance Areas
Appendix K: List of Trees and Shrubs Removed to Facilitate Construction
Appendix L: Facility Response Plans
Appendix M: Stormwater Pollution Prevention Plan and Erosion Control Plans
Appendix N: Integrity Management Plan
Appendix O: Construction Drawings and Best Management Practices
Appendix P: As-Built Diagrams
Appendix Q: Black & White Map

List of Tables

Table 1: Lateral Tie-in Locations 6
Table 2: Projected Average Barrels per Day to Be Moved Through the Pipeline 7
Table 3: Surface Structure Locations 9
Table 4: Projected Volume of Crude Petroleum to Be Transported by Truck 13
Table 5: Exclusion Areas 17
Table 6: Avoidance Areas 19
Table 7A: Listed Noxious Weeds – State of North Dakota 22
Table 7B: Listed Noxious Weeds – McKenzie County, North Dakota 22
Table 8A: Rights-of-Way Crossed and Adjacent to Smokey Trunk Line Pipeline Segment 30
Table 8B: Rights-of-Way Crossed and Adjacent to Midway to Alexander Pipeline Segment 31
Table 9: PLOTS Properties Near the Johnsons Corner - Alexander Pipeline Project 36
Table 10: Federally Endangered, Threatened, Proposed, and Candidate Species Currently Known or that May Occur in McKenzie County, North Dakota 38
Table 11: Personnel Qualifications 39

List of Figures

Figure 1 Johnsons Corner – Alexander Pipeline 2
Figure 2 Johnsons Corner Facility 3
Figure 3 Midway Facility 4
Figure 4 Alexander Facility 5
Figure 5 Targa Pipeline System in Dunn and McKenzie Counties 8

Acronyms and Abbreviations

°F	degrees Fahrenheit
ANSI	American National Standards Institute
API	American Petroleum Institute
Commission	North Dakota Public Service Commission
dB(A)	A-weighted decibels
Enbridge	Enbridge, Incorporated; *also* Enbridge Energy Partners, L.P.
EPA	U.S. Environmental Protection Agency
GIS	geographic information systems
HDD	horizontal directional drilling
HUC	hydrologic unit code
L_{dn}	day-night sound levels averaged over a 24-hour period
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OHWM	ordinary high water mark
PLOTS	Private Lands Open to Sportsmen
Project	Johnsons Corner - Alexander Pipeline Project
psi	pounds per square inch
ROW	right-of-way
Saddle Butte	Saddle Butte Pipeline LLC
SASR	Sakakawea Area Spill Response, LLC
SHPO	State Historic Preservation Office
SWQCA	SWCA Environmental Consultants
Targa	Targa Badlands LLC
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

Definitions

Permanent ROW	A legally defined corridor which for the Project is generally 50 feet wide
Pipeline Corridor	A corridor containing the Pipeline Route
Pipeline Route	Centerline of the Pipeline
Study Area	An area 200 feet wide centered on the Pipeline Route, plus the Johnsons Corner and Alexander facilities, and Midway valve station facility

INTRODUCTION

Targa Badlands LLC (Targa) submits this Combined Certificate of Corridor Compatibility and Route Permit Application to the North Dakota Public Service Commission (Commission) for the conversion of an approximately 54.35-mile-long, 8-inch existing crude oil gathering pipeline and associated facilities to a transmission line in McKenzie County, North Dakota (the "Project"). The Project will transport crude petroleum gathered by an associated but separate pipeline system Targa owns and operates in Dunn and McKenzie Counties. The crude oil is delivered to Enbridge Energy Partners, L.P. (Enbridge) facilities located near Alexander, North Dakota.

The pipeline for which Targa seeks a corridor certificate and route permit was originally constructed by Saddle Butte Pipeline LLC (Saddle Butte) as two gathering pipelines, the Smokey Trunk Line and the Midway to Alexander Pipeline. Both pipeline segments became operational on December 21, 2011. Targa acquired the pipeline segments, along with the Johnsons Corner and Alexander facilities, in late 2012.

Operationally, the two pipeline segments can be considered as a single pipeline, referred to hereafter as the Johnsons Corner - Alexander Pipeline. The pipeline includes storage tanks at both the Johnsons Corner and Alexander facilities. The Johnsons Corner facility possesses two 20,000-barrel-capacity storage tanks, and the Alexander facility possesses a single 30,000-barrel-capacity storage tank.

Targa now seeks the ability to utilize the storage tanks at Johnsons Corner and Alexander to store crude petroleum before the oil is transported by the Johnsons Corner - Alexander Pipeline. Additionally, Targa is planning for the ability to flow crude petroleum in either direction through the Johnsons Corner - Alexander Pipeline, thereby enabling delivery of crude petroleum to recipients near either the Alexander or Johnsons Corner facilities. In order to utilize the gathering pipeline and associated facilities as described, Targa seeks approval from the Commission for conversion of the Project to a transmission facility.

In accordance with Chapter 49-22 of the North Dakota Century Code, Section 69-06-08-02 of the North Dakota Administrative Code, and the Commission's Energy Conversion and Transmission Facility Siting Guidelines, Targa provides the following information to support its request for a Certificate of Corridor Compatibility and Route Permit for the Project.

1 SIZE AND TYPE OF FACILITY

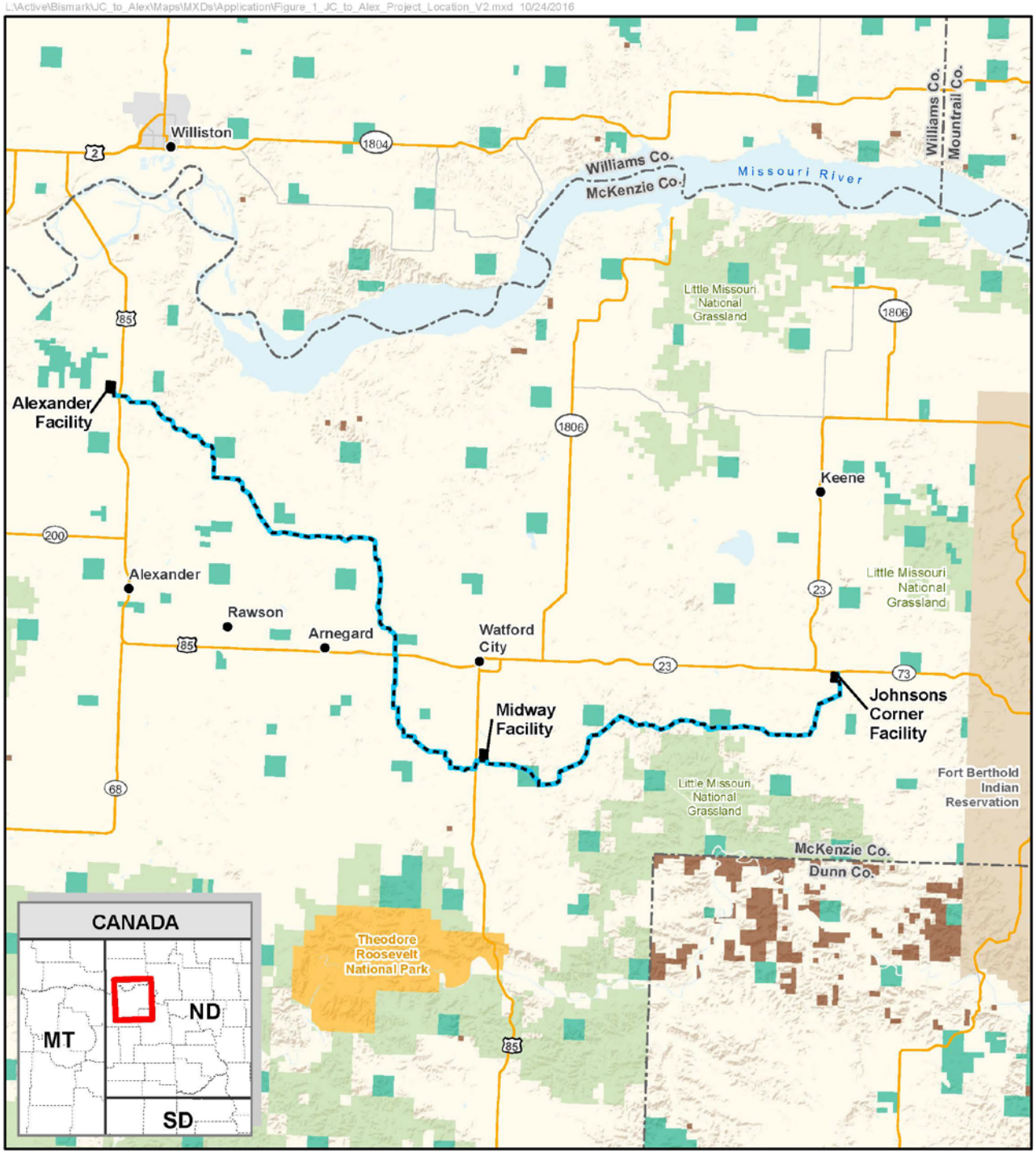
The facility consists of an underground pipeline for the transportation of crude petroleum and two terminals with storage tanks. The length of the pipeline is 286,949 feet (54.35 miles), and the pipeline is located between Johnsons Corner and Alexander, North Dakota (Figure 1). The Johnsons Corner facility possesses two 20,000-barrel-capacity storage tanks, and the Alexander facility possesses one 30,000-barrel-capacity storage tank. Targa will own and operate the described facility for the foreseeable future.

2 DESCRIPTION OF THE FACILITY

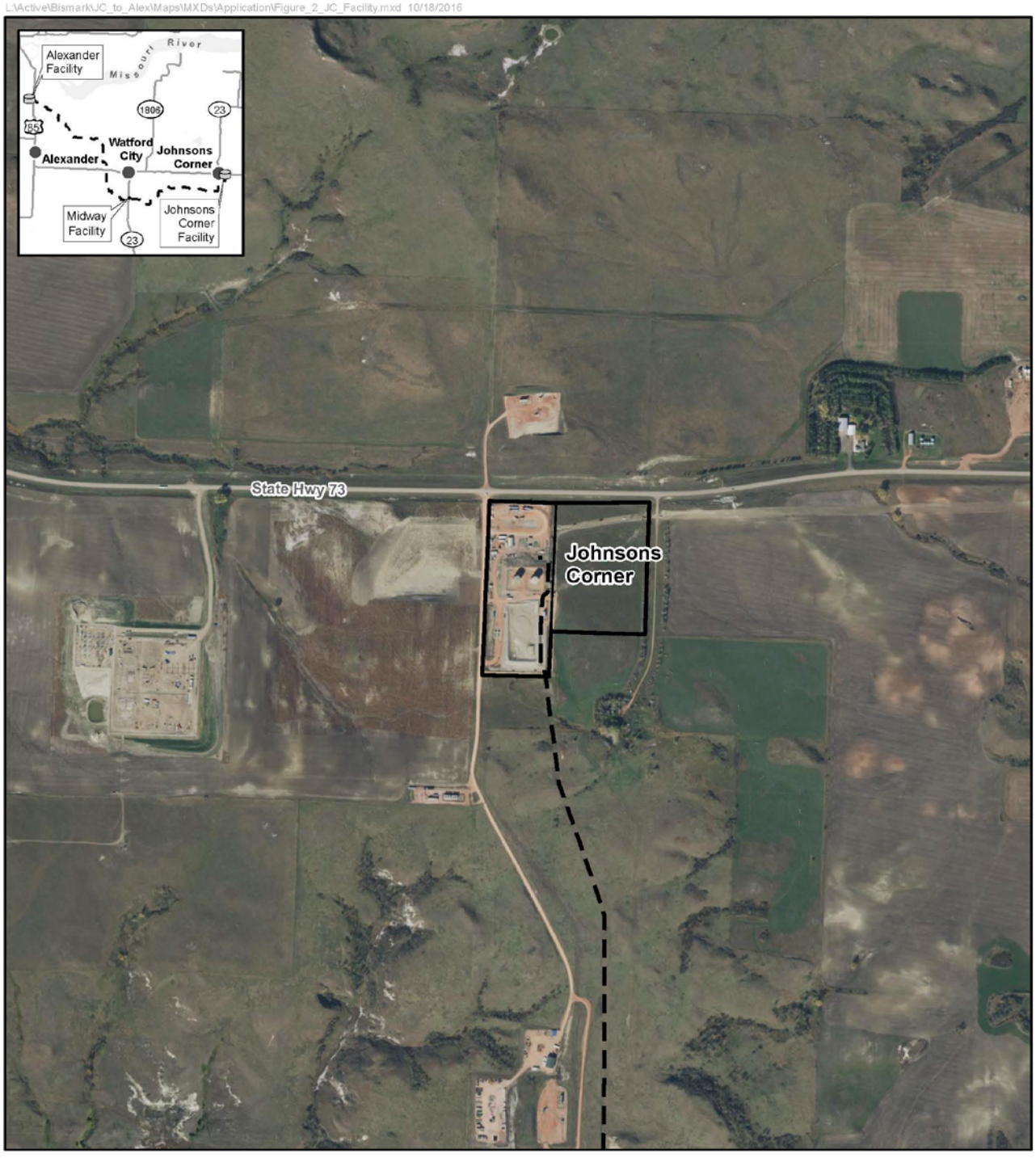
2.1 Design of the Proposed Facility

The facility design includes an existing underground gathering pipeline right-of-way (ROW), route, and associated valves and surface equipment, and tank facilities near Johnsons Corner and Alexander.

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_1_JC_to_Alex_Project_Location_V2.mxd 10/24/2016



L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_2_JC_Facility.mxd 10/18/2016



Johnsons Corner – Alexander Pipeline

Facility

Scale: 1:12,000

0 250 500 1,000 1,500

Feet

Esri, USDA Farm Service

Figure 2
Johnsons Corner Facility
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_3_Midway.mxd 10/18/2016

Johnsons Corner – Alexander Pipeline

Facility

Scale: 1:5,000

0 125 250 500

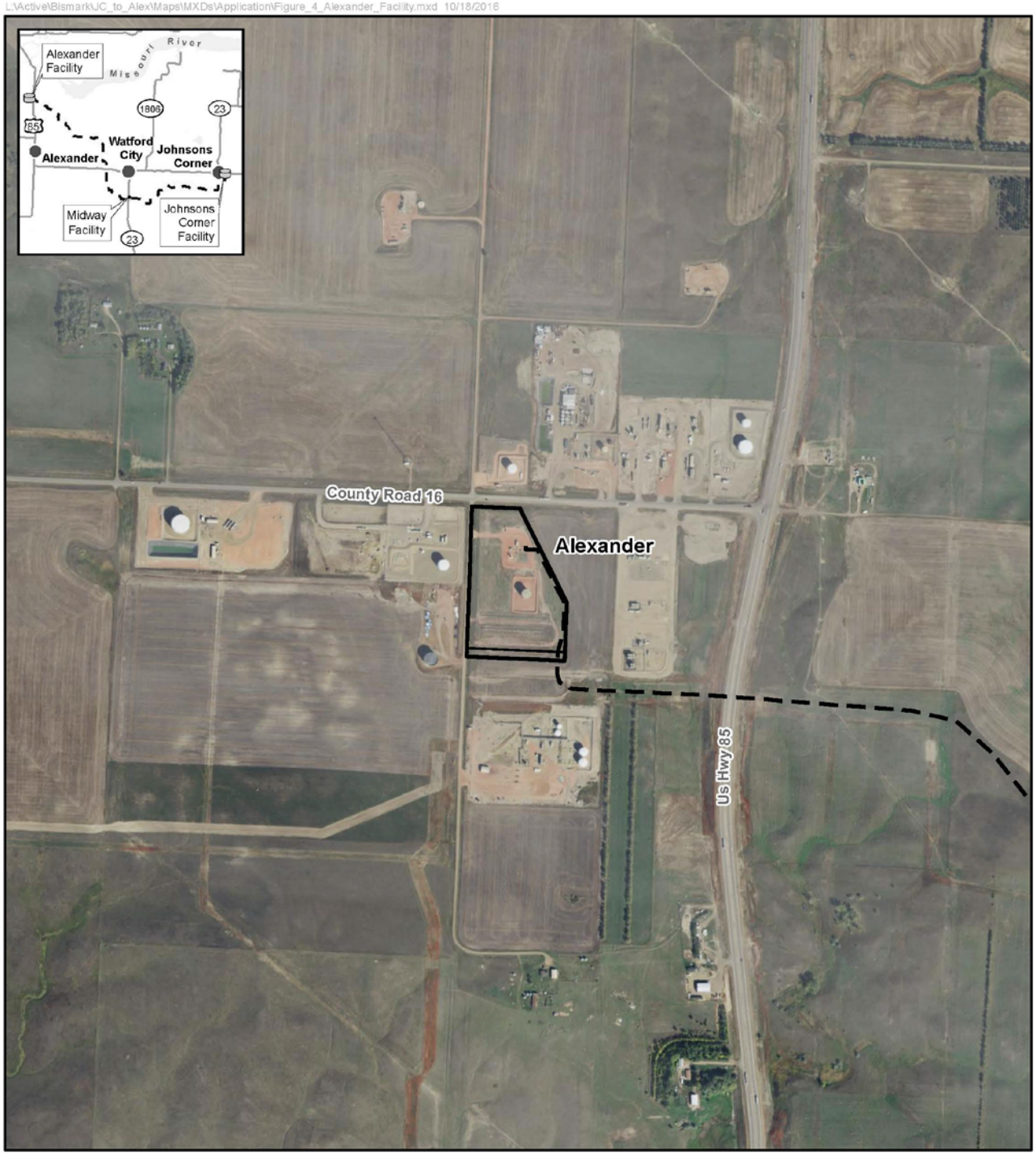
Feet

Esri, USDA Farm Service

Figure 3
Midway Facility
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_4_Alexander_Facility.mxd 10/18/2016



Johnsons Corner – Alexander Pipeline
Facility

Scale: 1:12,000
0 250 500 1,000 1,500
Feet
Esri, USDA Farm Service

Figure 4
Alexander Facility
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

(Figures 2 and 3). Also included in the facility is a valve station with pig launching and receiving capabilities termed "Midway," near Highway 85, south of Watford City.

The tank facility near Johnsons Corner includes a pig receiver, a sump tank, a booster pump station, outlet meter station, two 20,000-barrel-capacity tanks, tank inlet and outlet manifolds, an inlet meter station, a mainline pump station, a pig launcher, and a control building. The tank facility near Alexander includes a pig receiver, sump tank, control valve manifold, inlet meter station with leak detection equipment, 30,000-barrel-capacity tank, strainer station, transfer pump station, control building, and asset custody transfer station. From the Alexander facility, an underground pipeline connecting to the nearby Enbridge terminal is less than 1 mile in length, and is owned and operated by Enbridge.

The 54.35-mile underground pipeline system includes an 8-inch pipeline capable of transporting a maximum of 50,000 barrels of oil per day. The pipeline includes five aboveground valve stations (see Table 3 in Section 2.12).

The steel pipe meets the American Petroleum Institute (API) 5L specifications, with X-52 rating. In most areas, the pipeline comprises 8.625-inch outside diameter pipe with a 0.219-inch wall thickness and a maximum allowable operating pressure of 1,480 pounds per square inch (psi) at a maximum operating temperature of 100 degrees Fahrenheit (°F). Pipe with a 0.322-inch wall thickness is used where the pipeline encounters railway or roadway crossings, and sometimes used where the pipeline encounters natural drainages, ponds, sloughs, or other wetlands. Pipe welds were inspected by a qualified weld inspector according to industry standard practice. For more information on pipeline safety, see Section 7.2.2.12. The Johnsons Corner to Midway pipeline segment was installed at a recorded depth of 6.06 feet between the top of the cover and the top of the pipe. The Midway to Alexander segment was installed at a recorded depth of 4.93 feet between the top of the cover and the top of the pipe. The depth was not recorded where boring was utilized to cross a roadway, drainage, waterbody, or another pipeline, but typical depth is likely greater than 7 feet. The as-built diagrams for the Project are included in Appendix P to this application.

The existing pipeline was installed as part of a larger gathering system. The Johnsons Corner - Alexander Pipeline possesses a number of lateral connections from gathering systems that add crude petroleum to the system. The laterals and the barrels per day added by each lateral to the Johnsons Corner - Alexander Pipeline are listed in Table 1.

Table 1: Lateral Tie-in Locations

Feet from Johnsons Corner Facility	Maximum Capacity Supplied by Lateral (BPD)
0	1,506
118,365 (Midway)	7,707
162,024	2,843
198,499	2,375
209,399	710
246,399	2,409

Key: BPD = barrels per day

2.2 Purpose of the Facility

Upon conversion, the purpose of the Project will be to transport crude oil from other portions of the Targa crude gathering system and from various production sites across Dunn and McKenzie Counties and deliver the crude petroleum to the Enbridge terminal near Alexander, North Dakota. From the Enbridge terminal, pipelines owned and operated by third parties deliver crude petroleum to locations across the United States (U.S.) and Canada.

2.3 General Area to Be Served

The general area to be served by this pipeline is Dunn and McKenzie Counties. A map of the entire Targa gathering system is shown in Figure 5, which includes both Dunn and McKenzie Counties. The Johnsons Corner - Alexander Pipeline portion of the gathering system seeking conversion in this application is limited to serving areas in McKenzie County.

2.4 Capacity

The pipeline is designed to transport a daily maximum of 50,000 barrels per day to the locations listed in Section 2.2. Average daily use is presently substantially lower, at approximately 17,550 barrels per day. The storage capacity of the Johnsons Corner tank facility is 40,000 barrels (two 20,000-barrel-capacity tanks); the storage capacity of the Alexander tank facility is 30,000 barrels.

Table 2: Projected Average Barrels per Day to Be Moved Through the Pipeline

Year	Average Barrels Per Day
2016	17,550
2017	17,550
2018	17,550
2019	17,550

2.5 Technology to Be Deployed/Employed

The technology employed is an underground pipeline with aboveground storage tanks at each end. The pipeline, as a gathering system, was installed utilizing methods of trenching and horizontal directional drilling (HDD). Trenching was utilized in open areas with no wetlands, large or non-ephemeral drainages, streams and rivers, or other bodies of water. HDD methods were employed when roadways, railways, wetlands, large or non-ephemeral drainages, streams and rivers, and other bodies of water were encountered. Eight roads and one creek were crossed using trenching methods (see Tables 8A and 8B in Section 7.2.1.1).

Facilities were constructed using standard construction techniques, including site preparation (i.e., clearing, grubbing, grading), concrete pouring, and steel erection. Major features (e.g., tanks) were constructed on site. Major equipment (e.g., manifolds) was assembled in a local fabrication shop and then installed on site.

2.6 Type of Product to Be Transmitted

The type of product to be transmitted is crude petroleum produced and gathered from Dunn and McKenzie Counties. The product is categorized as light-sweet crude.

2.7 Source of Product to Be Transmitted

The sources of the crude petroleum are the Bakken and Three Forks formations beneath Dunn and McKenzie Counties. The wells producing the crude are located both inside and outside of the Fort Berthold Indian Reservation. However, the Project for which Targa seeks conversion is only located in McKenzie County and does not fall within the Fort Berthold Indian Reservation.

2.8 Final Destination of Product

The final destination may be any petroleum refinery in the U.S. or Canada. Product will be delivered to the refineries via interstate pipeline or rail service, or a combination of both methods.

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_5_Targa.mxd 11/8/2016

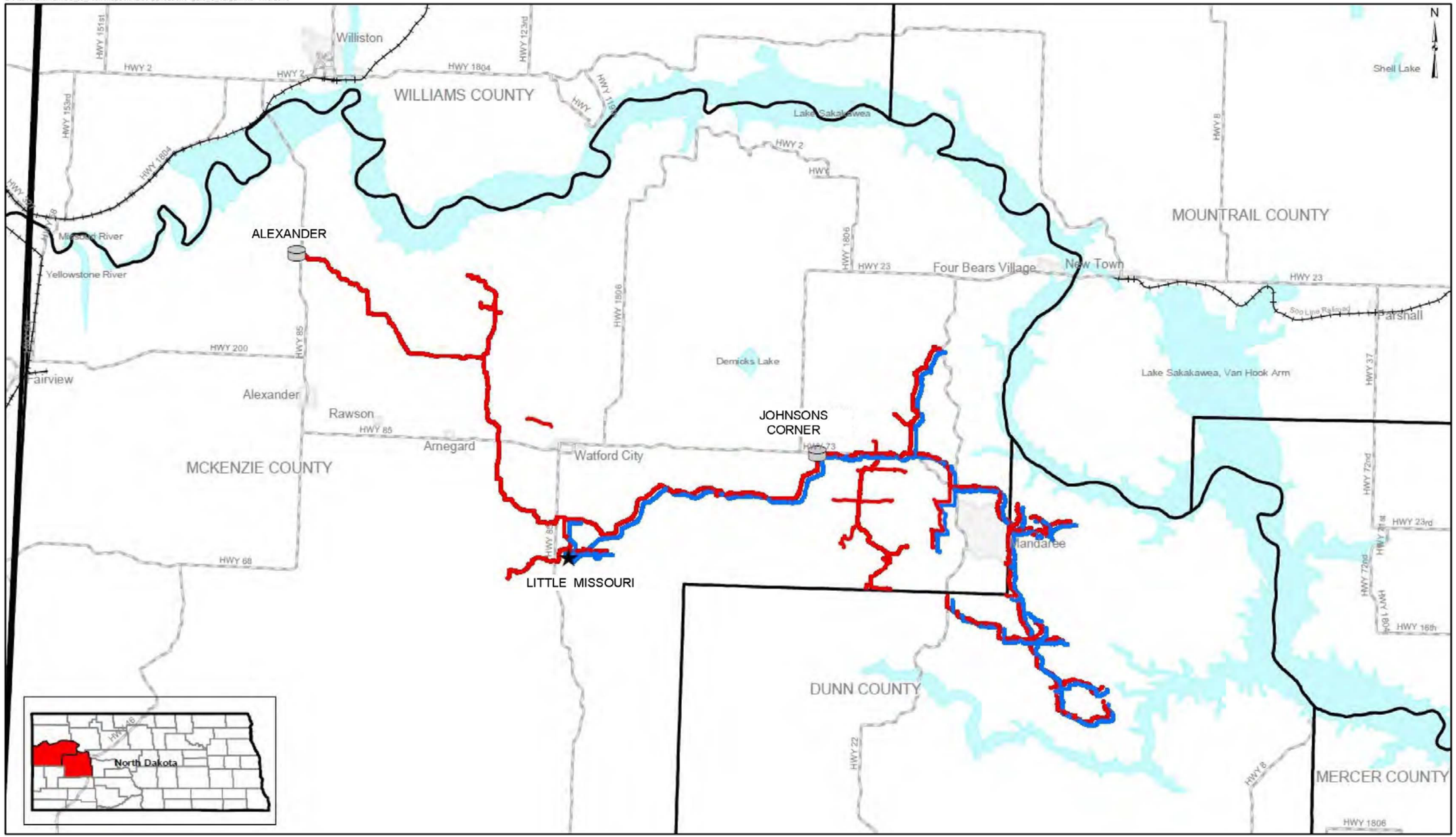


Figure 5
Targa Pipeline System in Dunn and McKenzie Counties

2.9 Width of Right-of-Way

The width of the construction ROW was 100 feet. The construction ROW utilized the "Trench and Spoil Side Method." Further discussion of methods used during construction are presented in Section 8.

The width of the permanent ROW is 50 feet.

2.10 Approximate Length of Facility

The final length of the pipeline is 286,949 feet (54.35 miles).

2.11 Requirement for and General Location of Any New Associated Facilities

The Project is located entirely within McKenzie County, North Dakota. The Johnsons Corner tank facility is located on 31.84 acres within Section 24 of Township 150 North, Range 96 West, McKenzie County. The facility is accessible from Highway 73 via a lease road. The physical address for the facility is 109th Avenue NW, 2680 ND-73, Watford City, ND 58854. The facility includes two above ground storage tanks, each with a 20,000-barrel-capacity. The tanks and associated equipment and piping are dispersed throughout the western half of the site. The eastern half of the Johnsons Corner site is presently undeveloped.

The Midway valve station is located on 39.19 acres within Section 7 of Township 149 North, Range 98 West, McKenzie County. The facility is accessible via a service road originating at the intersection of U.S. Highway 85 and 22nd Street NW. The service road is accessed on the east side of U.S. Highway 85. The service road is followed north approximately 750 feet, then east approximately 680 feet to arrive at the Midway valve station. The Midway site is presently largely undeveloped.

The Alexander tank facility is located on 16.10 acres within Section 19 of Township 152 North, Range 101 West, McKenzie County. The facility is accessible via Highway 85 and County Road 16. The physical address of the facility is 3894 144th Avenue NW Alexander, ND 58831. The facility possesses a single 30,000-barrel-capacity above ground storage tank. The tank and associated equipment and piping are dispersed about the site. The Alexander site is presently largely developed.

2.12 Estimated Distance between Surface Structures for Pipeline Facilities

Surface structures are located as shown in Table 3.

Table 3: Surface Structure Locations

Component Name	Location (Township-Range-Section)	Distance from Origin (pipeline feet)	Distance to Terminus (pipeline feet)
Johnsons Corner Facility	150-96-24	0	286949
Valve Station #1	150-97-35	48378	238571
Midway Station	149-98-07	118365	168584
Valve Station #2	150-99-28	161188	125761
Valve Station #3	151-99-19	197286	89663
Valve Station #4	151-100-24	208384	78565
Valve Station #5	151-101-01	245485	41464
Alexander Facility	152-101-19	286949	0

2.13 Pipe Size for Pipeline Facilities

The pipe used for the Project meets American National Standards Institute (ANSI) 600 specifications. In most areas, the pipeline comprises 8.625-inch outside diameter pipe with a 0.219-inch wall thickness

and a maximum allowable operation pressure of 1,480 pounds psi at a maximum operating temperature of 100°F. Pipe meeting the API 5L specification, with PSL-2 and X-52 ratings, and a 0.322-inch wall thickness was used where the pipeline encounters railway or roadway crossings, natural drainages, ponds, sloughs or other wetlands, and on each side of aboveground valve stations. The pipe used at the tank facilities meets the API 5L specification, with PSL-2 ratings, and a 0.322-inch wall thickness.

2.14 Maximum Design Operating Pressure and Temperature for Pipeline Facilities

The maximum allowed operating pressure for the pipeline is 1,480 psi at a maximum operating temperature of 100°F.

2.15 Maximum Design Flow Rate for Pipeline Facilities

The maximum flow rate for the pipeline is 50,000 barrels of crude oil per day.

2.16 Number and General Location of Pumping Stations

Presently, mainline pumps owned and operated by Targa are located only at the Johnsons Corner facility. The mainline pump provides boosting pressure to move crude petroleum to the Alexander facility. The pump is a HOSS Series 875 centrifugal-type pump employing 12 stages to provide a maximum capacity of 1,500 barrels-per-hour. The pump motor has a rating of 250 horsepower.

Additionally, pumping capacity is provided by pumps located on production well pads, which supply crude to the pipeline via the lateral locations listed in Table 1.

Targa may add more pumps to the pipeline if required to increase the throughput capacity of the pipeline if needed to accept an increased volume of petroleum provided by producers.

2.17 Estimated Total Cost of Construction

The total estimated cost of the Johnsons Corner - Alexander Pipeline Project was $85 million. This included $10 million for the Johnsons Corner tank facility, $5 million for the Alexander tank facility, and $70 million for the pipeline.

2.18 Preferred Location of Facility

The location of the proposed route is depicted on Figure 1. The locations of the two tank facilities and the Midway valve station are as follows:

- Johnsons Corner Facility: 109th Avenue NW, 2680 ND-73, Watford City, ND 58854: occupying 31.84 acres within Township 150 North, Range 96 West, Section 24;
- Alexander Facility: 3894 144th Avenue NW, Alexander, ND 58831: occupying 16.10 acres within Township 152 North, Range 101 West, Section 19; and
- Midway: 750 feet north and 680 feet east of the intersection of U.S. Highway 85 and 22nd Street NW, south of Watford City. The site occupies 39.19 acres within Section 7, Township 149 North, Range 98 West, McKenzie County.

Targa owns the acreage associated with the Johnsons Corner Facility, the Alexander Facility, and the Midway valve station.

2.19 Preferred Location of Corridor

The preferred location of the pipeline corridor is a 200-foot-wide corridor centered on the pipeline route depicted on Figure 1.

2.20 Description of Right-of-Way Preparation and Construction and Reclamation Procedures

2.20.1 Right-of-Way Preparation

The ROW was cleared, grubbed, and graded to allow for pipeline construction on the prescribed temporary construction width of 100 feet. All topsoil was segregated from subsoil. Topsoil was removed and stored to the side for replacement in the affected area after construction.

2.20.2 Construction Methods – Trenching and Boring

All trenching was performed mechanically with either an excavator or a ditching machine to a depth allowing a minimum of 4 feet from the top of the pipe to the top of the cover. When rock was present, an excavator with rock teeth was used. Boring and HDD pipe installation was performed when navigable waters were encountered or identified, or if crossing under a road, railroad, pipeline/utility, or areas where trenching was deemed unsafe or impractical. Casing of pipelines was not used as it leads to corrosion issues.

Directional boring was used to cross roadways, railways, larger natural drainages, and wetlands without causing disturbance to these areas. This method was utilized in 41 separate locations for this purpose (Appendix C).

2.20.3 Reclamation Methods

Typically, the ROW was continuously cleared of all construction material, uncovered rocks, and compacted areas. Holes and ruts were filled and graded. Revegetation of croplands was largely completed by farmers during the spring planting season. Revegetation of pasture/grazing land is complete at the present time, with construction and reclamation contractors assessing conditions and taking appropriate actions. A detailed discussion of observed revegetation is provided in Appendix D.

During the course of the pre-construction activities, all highway permits and other permitting requirements were secured prior to the start of construction.

2.21 Statements Describing How Targa Informs Affected Landowners

2.21.1 Easement Acquisition

Targa acquired the North Dakota–based assets of Saddle Butte Pipeline, LLC in December 2012. Most of the ROW for the pipeline had previously been procured by Saddle Butte. Targa therefore did not have the opportunity to deal directly with the majority of the landowners during the ROW acquisition process. However, upon conception of a pipeline project, Targa's Land and ROW Department follow these general steps in the acquisition process:

1. Identify the proposed route of the pipeline.
2. Determine from the tax records the current owner of record for each property along the pipeline corridor.
3. Once constructability is determined, contact all landowners along the route to obtain their permission to enter property (right-of-entry) for survey.

4. Survey the alignment and gather data sufficient to prepare a legal description, prepare land plats, and develop alignment sheets. Additionally, certain information is obtained along the route to aid in the design of the pipeline segment.
5. Select environmental consultants and determine appropriate environmental surveys to be conducted.
6. Conduct needed environmental surveys (e.g., delineate wetlands, threatened and endangered species, cultural resources).
7. Perform title work to verify ownership and identify any foreign lines.

2.21.2 Easement Conditions and Restrictions

Access to the ROW by Targa is required for maintenance and integrity inspections; thus, landowners may not construct any permanent structures within the ROW. Also, trees are not allowed to grow on the ROW, so if a landowner plants an orchard of trees, the trees would be removed. Native trees that grow on their own are cut down as a part of the ongoing maintenance of the ROW.

2.21.3 How Targa Compensates Landowners for Easements

The ROW form is prepared and the land plat with legal description is incorporated as part of the agreement. Targa ROW agents visit the landowners and negotiate terms and compensation, and the ROW agreement is signed when all parties are in agreement. The project moves to the construction phase only after the entire ROW has been procured. Targa considers the actual compensation provided to landowners as confidential information.

2.21.4 State and County Permits

Copies of State and County permits allowing construction of the Project are provided in Appendix E.

3 NEED

3.1 Need for the Facility

3.1.1 Pipeline Capacity is Constrained in Western North Dakota

Intrastate movement of crude oil is accomplished by either truck or pipeline. In McKenzie County, approximately 892 truckloads with an average of 220 barrels per truck are transported daily (Kringstad 2016a). The Project is capable of transporting 50,000 barrels of crude per day, which equates to 227 truckloads per day that do not need to move on a roadway.

3.1.2 Area Crude Supply is Anticipated to Increase

Crude oil production hit an all-time high of 1,227,483 barrels per day in December of 2014, but has declined to 1,026,584 barrels per day in June of 2016 (Helms 2016). However, projections indicate that production may bottom out in either 2017 or 2020, and ultimately increase to between 1.4 million and 1.8 million barrels per day around 2030 (Kringstad 2016b). The need for pipelines to transport this anticipated volume of crude petroleum is evident.

3.1.3 Planned Use and Purpose

The Johnsons Corner - Alexander Pipeline is capable of transporting a daily maximum average of 50,000 barrels per day to the Enbridge terminal north of Alexander, North Dakota. Presently, the Johnsons Corner - Alexander Pipeline, as part of the larger Targa gathering system, transports crude petroleum gathered from numerous production wells in Dunn and McKenzie Counties. Current production acreage dedicated to the midstream services provided by Targa will raise the number of wells

supplying this pipeline system. The projected volume of crude to be transported by the Johnsons Corner - Alexander Pipeline under existing midstream contracts is shown in Table 2 (Section 2.4, above).

Targa seeks the ability to utilize the two 20,000-barrel tanks at Johnsons Corner for temporary operational storage of oil and to return the oil back into the pipeline for delivery to Alexander. Targa seeks to utilize the Johnsons Corner tanks in this manner to better manage gathering operations and to have the ability to safely shut down the flow of oil in the gathering system in the event of an unanticipated interruption of service or unavailability of the delivery point in Alexander. Similarly, the storage tank at Alexander is not being utilized for storage of crude petroleum that is added to the Johnsons Corner – Alexander pipeline. Targa also seeks the ability to utilize this tank for storage of oil that may be added to the Johnsons Corner – Alexander Pipeline for transport toward Johnsons Corner.

3.2 Alternatives to the Proposed Facility

A feasible alternative would be the use of tanker trucks to transport crude oil from on-pad tank batteries to the Enbridge facility near Alexander via Highways 73 and 85. Although not as economical as a pipeline, tractor-trailer rigs are capable of moving the oil year round, except during periods when weather would prohibit such transport (e.g., blizzard conditions). Trucking crude oil would increase risk of highway-related incidents, including potential spillage of oil in the event of a traffic accident.

Transporting projected volumes of crude petroleum by truck on Highways 73 and 85 would require the number of trucks shown in Table 4 (approximately 220 barrels per truck) to complete round-trip journeys between Johnsons Corner and Alexander. Table 4 shows the estimated average time between trucks on the highway, and the number of trucks passing a single point in one direction over the highway between the Johnsons Corner and Alexander tank facilities.

Table 4: Projected Volume of Crude Petroleum to Be Transported by Truck

Year	Annual Average Barrels per Day	Trucks per Day	Estimated Minutes between Trucks
2016	17,550	80	36
2017	17,550	80	36
2018	17,550	80	36
2019	17,550	80	36

Based on Targa's projections for the next four years, and assuming that delivery of crude is divided equally between the Johnsons Corner and Alexander facilities, then the Johnsons Corner – Alexander pipeline could remove 80 trucks per day from McKenzie and Dunn County roadways. This also equates to one truck arriving at both facilities every 36 minutes.

4 SCHEDULE

4.1 Obtaining Certificate of Corridor Compatibility

Targa submits this combined certificate of corridor compatibility and route permit application to the Commission in November of 2016.

4.2 Obtaining Route Permit

Targa submits this combined certificate of corridor compatibility and route permit application to the Commission in November of 2016.

4.3 Completing Right-of-Way Acquisition

The ROW acquisition negotiations with landowners were completed on July 30, 2011. A building permit for the construction of the Johnsons Corner tank facility was approved on March 27, 2013, by McKenzie County. A building permit for the construction of the Alexander tank facility was approved on September 10, 2013, also by McKenzie County.

4.4 Starting Construction

Construction of the gathering pipeline commenced on August 15, 2011. Construction of the Johnsons Corner and Alexander tank facilities began August 15, 2011, and December 9, 2011, respectively.

4.5 Completing Construction

Construction of the gathering pipeline was completed on December 15, 2011. Construction of the Johnsons Corner and Alexander tank facilities was completed December 13, 2012, and February 5, 2012, respectively.

4.6 Testing Operations

Testing and commissioning of the pipeline commenced on December 20, 2011. Testing of the Johnsons Corner tank facility began on December 15, 2012. Testing and commissioning of the Alexander tank facility commenced May 26, 2012.

4.7 Commencing Operations

Operation of the pipeline began on December 21, 2011. Operation of the Johnsons Corner tank facility began on December 16, 2012. Operation of the Alexander tank facility began on May 27, 2012.

Targa has not yet integrated the bulk oil storage tanks at either the Johnsons Corner or Alexander facilities into operation with the Johnsons Corner - Alexander Pipeline where transporting of crude from either tank is concerned. Upon approval by the Commission for conversion of the Project to a transmission facility, Targa will utilize the storage tanks as described in this application.

5 STUDIES

5.1 Summaries and Copies of Environmental Impact Studies or Assessments Submitted to Agencies Listed in NDAC § 69-06-01-05 and Each Response Received

Targa retained specialized consultants to perform archaeological, historical, cultural, and biological surveys along the existing pipeline route. A Class I literature review of a 1-mile-wide corridor centered upon the pipeline route and a Class III intensive pedestrian survey of the Study Area were conducted by SWCA Environmental Consultants (SWCA), of Bismarck, North Dakota. The abstract of the Class I & Class III Cultural Resources Inventory is included in Appendix F. Appendix F also includes the Addendum to the Class I and Class III Cultural Resource Inventory performed for the Johnsons Corner, Midway, and Alexander Facilities. Copies of the letters of concurrence from the North Dakota State Historic Preservation Office (SHPO) are provided in Appendix G.

In 2016, SWCA performed desktop studies and field surveys for hydrology, topography, and vegetation of the Study Area (see Appendices D and H). This study included a determination of jurisdictional waters of the U.S. expected to be impacted by the Project. SWCA also reviewed the

potential for operation of the Project to impact federally listed species that are protected under the Endangered Species Protection Act (ESA).

SWCA provided the following conclusions and observations:

1. The Project would be authorized for construction in wetland areas under Nationwide Permit 12 if permit conditions continue to be met.
2. No threatened or endangered species were observed during the field survey.
3. Migratory birds and suitable nesting habitat were observed throughout the survey area.
4. No active raptor nests were observed within 0.5 miles of the permanent ROW. No bald or golden eagle nests were observed. No impacts to eagles are anticipated.

In addition, Project information was transmitted to many state and federal agencies for their review and comment by Targa's environmental consultant, Lowham Walsh, LLC (Lowham). Agency responses received to date are included in Appendix I, along with a sample of the typical letter sent.

5.2 Study Area Width

The desktop and field studies referenced in Section 5.1 focused on a 200-foot-wide Study Area centered on the pipeline route. The Study Area included the temporary workspace easement utilized during construction of the Johnsons Corner - Alexander gathering pipeline. To better understand the cultural setting, the area analyzed for the Class I literature review for previously identified cultural sites extended up to a 1-mile radius from the proposed pipeline alignment. For purposes of this combined application, the "Study Area" refers to the entire 200-foot-wide area within which the permanent 50-foot-wide ROW currently exists, plus the Johnsons Corner and Alexander facilities and the Midway valve station facility.

6 POLICIES

6.1 Discussion of Utilities Policies and Commitments to Limit the Environmental Impact, Including Board Resolutions/Management Directives

Targa is committed to protecting the health and safety of its employees, the people living in the communities in which Targa works, and everyone who uses Targa products. Wherever Targa operates, it conducts business with respect and care for the environment and systematically manages risks to drive sustainable business growth. Targa will not be satisfied until it succeeds in eliminating all injuries, occupational illnesses, unsafe practices, and incidents of environmental harm resulting from activities.

6.1.1 Safety and Health

Targa believes that each employee is responsible for their own safety and as such, anyone may STOP WORK any time they feel a particular job or situation is unsafe. As a result, Targa employees are empowered to take the time to do a job right. Targa wants everyone to go home safely each day. Targa's focus on safety and health extends beyond employees to include contract employees. Targa requires all contract employees to be ISNetworld Certified contractors and to comply with our safety and health policies and procedures.

6.1.2 Meeting the Highest Standards

The Occupational Safety and Health Administration Process Safety Management regulates Targa's gas plants and many of its storage terminals. Targa strives to design, operate, and audit its facilities according to industry standards and best management practices. Targa is proud of its safety record, especially during the present time, when its industry segment is seeing rapid growth and expansion.

6.1.3 Investing Our Energies into the Community

Targa employees live and work in the same community where most of its facilities are located. Therefore, Targa's goal is to be a corporate neighbor of choice. This means being committed to the advancement of communities, encouraging environmental sustainability, and working with our neighbors to address their concerns. Targa supports community initiatives and participates in or provides support to local fundraising events, festivals, charities, and school sports.

6.1.4 Safety Awards and Recognition

By fostering safe working attitudes and operating in an environmentally responsible manner, Targa Resources LLC, and its subsidiaries, have received numerous industry awards and honors, including:

- Gas Processors Association Presidents Award for Safety Improvement for 2008 and 2011.
- Safety Leadership Award presented by the National Safety Council to the Monument, Saunders and Yscloskey Gas Plants in 2011.
- National Safety Council Occupational Excellence Achievement Award in 2009.
- National Safety Council Safety Improvement Award in 2008.
- Targa Transport LLC won third place for Large Mixed Operation in the 2012 National Private Truck Council Fleet Safety Awards.
- Rail Shipping Safety Awards:
    - BNSF Product Stewardship Award (2008 & 2010)
    - CSX Chemical Safety Award (2008 & 2010)
    - UP Pinnacle Award (2009)
    - NS Thoroughbred Chemical Safety Award (2008 & 2010)
    - U.S. Environmental Protection Agency (EPA) Natural Gas STAR Partner of the Year Award for 2011

6.2 Justification for any Deviation from the Applicants Most Recent Ten-Year Plan

Targa submitted a Ten-Year Plan for 2016–2026 to the Commission on July 1, 2016, which includes a reference to the Project in Section H *(See* PSC Case No. PU-16-474). No additional transmission facilities are planned for the next 10 years. However, given the drilling and production activity in Targa's service area of North Dakota and the demand for crude oil transportation by pipeline, new pipeline projects by Targa are likely to be proposed in the future. If new transmission facilities are proposed, they will be included in the biennial update to Targa's Ten-Year Plan.

7 CRITERIA

7.1 Exclusion Areas

As set forth in Section 69-06-08-02(1) of the North Dakota Administrative Code, Exclusion Areas are areas that are to be excluded from consideration for transmission facility routes and may encompass only up to 50 percent of the width of transmission facility corridors unless there is no reasonable alternative.

Appendix J contains maps depicting Exclusion and Avoidance Areas within the 200-foot-wide Study Area centered on the Project route and the locations for the Johnsons Corner and Alexander facilities and the Midway valve station facility. Table 5 identifies Exclusion Areas located near the Project corridor. No Exclusion Areas are crossed by the route or are located within the Project corridor.

Table 5: Exclusion Areas

Feature	Location	Map ID	Closest Distance to Facility	Anticipated Effects	Within Study Area	Within Permanent ROW
Designated or Registered National: Parks, Memorial Parks, Historic Sites and Landmarks, Natural Landmarks, Monuments, and Wilderness Areas						
National Parks						
Theodore Roosevelt National Park – North Unit	T147N-R99W, T147N-R100W, T148N-R99W, T148N-R100W	1	8.41 miles	None	No	No
No National Memorials within 30 miles						
National Historic Sites and Landmarks						
Fort Union National Historic Site	T152N-R104W-S07	2	17.39 miles	None	No	No
Old Sod Post Office (NHR #80002919)	Grassy Butte	3	22.46 miles	None	No	No
Fairview Lift Bridge (NHR #97000239)	Cartwright	4	16.07 miles	None	No	No
Sandstone School (NHR #08000278)	Keene	5	2.88 miles	None	No	No
No National Natural Landmarks within 30 miles						
No National Monuments within 30 miles						
No National Wilderness Areas within 30 miles						
Designated or Registered State: Parks, Historic Sites, Monuments, Historic Markers, Archaeological Sites, and Nature Preserves						
State Parks						
Lewis & Clark	T154N-R98W-S25	6	18.74 miles	None	No	No
Tobacco Gardens	T153N-R97W-S01	7	20.14 miles	None	No	No
State Historic Sites						
Fort Bufford State Historic Site	T152N-R104W-S16	8	15.47 miles	None	No	No
Missouri-Yellowstone Confluence Interpretative Center	T152N-R104W-S15	9	14.98 miles	None	No	No
No State Monuments within 30 miles						
No Historical Markers in McKenzie County						
No Eligible Archaeological Sites within Area of Potential Effects						
County Parks and Recreational Areas, Municipal Parks or Parks Owned Or Administered By Other Government Subdivisions						
Parks and Museums						
Lewis & Clark Trail Museum	Alexander	10	6.45 miles	None	No	No
Long-X Trading Post Visitor Center	Watford City	11	3.95 miles	None	No	No
McKenzie County Heritage Park	Watford City	12	3.33 miles	None	No	No
Nature Park	Watford City	13	4.45 miles	None	No	No
Pioneer Museum of McKenzie County	Watford City	14	3.95 miles	None	No	No
Three Affiliated Tribes Museum	Four Bears Village	15	20.14 miles	None	No	No
Tourist Park Campground	Watford City	16	4.72 miles	None	No	No
Veteran's Memorial Park	Watford City	17	4.03 miles	None	No	No
Wild West Water Park	Watford City	18	4.11 miles	None	No	No
Recreation Areas						
Children's Playground	Watford City	19	3.99 miles	None	No	No
Crow Flies High	T152N-R93W-S14	20	21.29 miles	None	No	No

Table 5: Exclusion Areas

Feature	Location	Map ID	Closest Distance to Facility	Anticipated Effects	Within Study Area	Within Permanent ROW
Maah Daah Hey Trail (USFS)	T147N-R99W-S03	21	9.50 miles	None	No	No
Memorial Parks						
Four Bears Memorial Park	Four Bears Village	22	19.79 miles	None	No	No
Memorials						
Veteran's Memorial Building	Watford City	23	4.03 miles	None	No	No
Walter Chaloner Memorial	Near Entrance to Theodore Roosevelt National Park – North Unit	24	8.44 miles	None	No	No
Areas Critical to the Life Stages of Threatened or Endangered Animal or Plant Species						
Dakota Skipper Critical Habitat Units						
Unit 10	T149N-R94W-S28	25	10.31 miles	None	No	No
Unit 11	T153N-R95W-S13	26	18.75 miles	None	No	No
Unit 12	T153N-R96W-S12	27	19.51 miles	None	No	No
Areas Where Animal or Plant Species that are Unique or Rare to this State Would be Irreversibly Damaged						
None					No	No
Areas within 1,200 Feet of the Geographic Center of an ICBM Launch or Launch Control Center						
None					No	No
Areas within 30 Feet on Either Side of a Direct Line Between ICBM Launch Control Center						
None					No	No

Key: ICBM = Intercontinental ballistic missile
ID = identification
NHR = National Historic Registry
USFS = U.S. Forest Service

7.2 Avoidance Areas

Avoidance Areas, as set forth in Section 69-06-08-02(2) of the North Dakota Administrative Code, are areas that may not be considered in the routing of a transmission facility unless the applicant shows that there is no reasonable alternative under the circumstances. Avoidance Areas were identified within the Study Area (see Table 6).

Seventy-two previously recorded cultural resources are located within 1 mile of the Project. Two previously recorded sites fall within the Study Area. Site 32MZ1561 is a previously recorded Western Area Power Administration transmission line that intersects the Study Area in three separate locales and Site 32MZ2644 is a previously recorded lithic scatter. One site lead (32MZx71) falls within the Study Area that consists of a cultural resource lithic scatter. Two previously recorded isolated finds (32MZx1277 and 32MZx1559) have been documented within the Study Area.

Two of the previously recorded sites (32MZ1556 and 32MZ1560) are recommended as eligible for inclusion in the National Register of Historic Places (NRHP). Fourteen sites and all 26 isolated finds are recommended as not eligible for inclusion in the NRHP. The remaining 24 sites and five site leads are all unevaluated regarding their NRHP eligibility. No recommendations for the avoidance of these eligible and unevaluated sites have been made.

Twenty-one new cultural resources were found in the Study Area. Two previously recorded sites fall within or near the Study Area. Nine new cultural resource sites were identified during the evaluation of the Study Area. Five of the nine newly identified sites (32MZ3070, 32MZ3071, 32MZ3072, 32MZ3073, and 32MZ3074) have been identified as prehistoric cultural material scatters. Two of the newly identified

sites (32MZ3067 and 32MZ3068) consist of cairns on top of ridges within the Study Area. One site (32MZ3069) consists of two segments of a historic corduroy road. The last newly discovered site (32MZ3075) is a partial prehistoric stone circle. Two new cultural resource site leads were identified in the Study Area. The first (32MZx1614) consists of a cultural material scatter within the Study Area and a cairn and stone circle observed outside of the Study Area. The second (32MZx1615) consists of a single stone circle which falls partially in the Study Area. Ten new cultural resource isolated finds were documented within the Study Area (32MZx1616, 32MZx1617, 32MZx1618, 32MZx1619, 32MZx1620, 32MZx1621, 32MZx1622, 32MZx1623, 32MZx1624, and 32MZx1625).

Of the nine newly recorded sites within the Study Area, six (32MZ3069, 32MZ3070, 32MZ3071, 32MZ3072, 32MZ3073, and 32MZ3074) are recommended as not eligible for the NRHP. Three (32MZ3067, 32MZ3068, and 32MZ3075) of the nine new sites remain unevaluated for eligibility for the NRHP because the pipeline has already been constructed. Two new site leads (32MZx1614 and 32MZx1615) remain unevaluated as to their eligibility for the NRHP because the full extent of the sites could not be investigated and the pipeline has already been constructed. Of the 10 new isolated finds, all are recommended as not eligible for the NRHP. The remaining five sites are unevaluated regarding their NRHP eligibility.

No avoidance has been recommended for the newly discovered sites and new isolated finds that have been recommended as not eligible for the NRHP. A 50-foot avoidance zone is recommended for all new work and pipeline maintenance activities around newly discovered sites and new site leads whose eligibility for the NRHP remains unevaluated. If a 50-foot avoidance zone cannot be achieved during future work and maintenance activities, then it is recommended that the sites be fenced off and a 25-foot avoidance zone be established and that a cultural resource monitor be present on site during new construction or maintenance activities. Further discussion of these sites is provided in the complete Class III Cultural Resources report (privileged document available to the Public Service Commission upon request).

The North Dakota SHPO has determined in a letter of concurrence that the evaluated cultural resource site 32MZ2644 and the unevaluated cultural resource sites 32MZ3067, 32MZ3068, 32MZ3075, 32MZx1614, and 32MZx1615 should be avoided during future maintenance and/or construction activities to maintain the integrity of the sites (Appendix G).

Fourteen residences and one business are located within 500 feet of the Project. Targa is in the process of acquiring waivers from the appropriate property owners.

Table 6: Avoidance Areas

Feature	Location	Map ID	Closest Distance to Facility	Anticipated Effects	Within Study Area	Within Permanent ROW
Designated or Registered National: Historical Districts, Wildlife Areas, Wild/Scenic/Recreational Rivers, Wildlife Refuges, and Grasslands						
No National Historic Districts	NA					
No Wild/Scenic/Recreational Rivers within McKenzie County	NA					
No Wildlife Areas/Refuges in McKenzie County	NA					
National Grasslands						
Little Missouri National Grasslands		28	47 feet	None	Yes	No

Table 6: Avoidance Areas

Feature	Location	Map ID	Closest Distance to Facility	Anticipated Effects	Within Study Area	Within Permanent ROW
Designated or Registered State: Wild/Scenic/Recreational Rivers, Game Refuges, Game Management Areas, Management Areas, Forests, and Forest Management Lands						
Scenic Rivers						
Little Missouri River		29	8.99 miles	None	No	No
No Game Refuges in McKenzie County	NA					
Game Management Areas						
Antelope Creek WMA	T153N-R94W-S14	30	20.67 miles	None	No	No
Big Oxbow WMA	T152N-R104W-S27	31	14.54 miles	None	No	No
Lewis & Clark WMA	T153N-R100W-S06	32	7.97 miles	None	No	No
Neus Point WMA	T152N-R104W-S23	33	13.60 miles	None	No	No
Ochs Point WMA	T152N-R104W-S35	34	14.06 miles	None	No	No
Overlook WMA	T152N-R103W-S30	35	11.50 miles	None	No	No
Sullivan WMA	T152N-R104W-S35	36	14.13 miles	None	No	No
Tobacco Gardens WMA	T153N-R97W-S11	37	19.15 miles	None	No	No
Killdeer Mountains WMA – Unit 1	T148N-R95W-S16	38	20.15 miles	None	No	No
Killdeer Mountains WMA – Unit 2	T146N-R97W-S06	39	10.96 miles	None	No	No
State PLOTS Lands	T149N-R99W-S10	40	0 miles	None	Yes	Yes
	T149N-R99W-S11	41	0.75 mile	None	No	No
	T149N-R99W-S14	42	0 miles	None	Yes	Yes
	T149N-R99W-S15	43	0.57 mile	None	No	No
	T149N-R99W-S23	44	0.98 mile	None	No	No
No Management Areas in McKenzie County	NA					
No Forest or Forest Management Areas in McKenzie County	NA					
Historical Resources Not Designated as Exclusion or Avoidance Areas						
Evaluated Archaeological Sites						
32MZ1561	Restricted		Restricted	*Note*	Yes	Yes
32MZ2644				*comments in*	Yes	Yes
32MZ3069				*text above*	Yes	Yes
32MZ3070				*regarding*	Yes	No
32MZ3071				*future*	Yes	Yes
32MZ3072				*pipeline work*	Yes	Yes
32MZ3073				*and*	Yes	Yes
32MZ3074				*maintenance*	Yes	Yes
Unevaluated Archaeological Sites						
32MZ3067	Restricted		Restricted	*Note*	Yes	Yes
32MZ3068				*comments in*	Yes	No
32MZ3075				*text above*	Yes	No
32MZx1614				*regarding*	Yes	Yes
32MZx1615				*future*	Yes	No
				pipeline work		
				and		
				maintenance		
Geologically Unstable Areas						
No Geologically Unstable Areas	NA					
Within 500 Feet of a Residence						
Residence #1	T150N-R096W-S24	45	483 feet	None	No	No
Residence #2	T150N-R096W-S26	46	490 feet	None	No	No
Residence #3	T150N-R096W-S26	47	390 feet	None	No	No

Table 6: Avoidance Areas

Feature	Location	Map ID	Closest Distance to Facility	Anticipated Effects	Within Study Area	Within Permanent ROW
Residence #4	T150N-R096W-S26	48	292 feet	None	No	No
Residence #5	T150N-R096W-S26	49	223 feet	None	No	No
Residence #6	T150N-R096W-S26	50	263 feet	None	No	No
Residence #7	T150N-R096W-S26	51	349 feet	None	No	No
Residence #8	T152N-R101W-S20	52	385 feet	None	No	No
Residence #9	T151N-R101W-S01	53	450 feet	None	No	No
Residence #10	T151N-R101W-S01	54	498 feet	None	No	No
Residence #11	T149N-R099W-S10	55	357 feet	None	No	No
Residence #12	T149N-R098W-S08	56	349 feet	None	No	No
Residence #13	T149N-R098W-S08	57	231 feet	None	No	No
Residence #14	T149N-R098W-S17	58	343 feet	None	No	No
Within 500 Feet of a School						
No schools within 500 feet	NA					
Within 500 Feet of a Place of Business						
Business #1	T150N-R099W-S17	59	417 feet	None	No	No
Reservoirs and Municipal Water Supplies						
Lake Sakakawea	T150N-R094W-S01	60	12.5 miles	None	No	No
Water Sources for Organized Rural Water Districts						
Lake Sakakawea	T150N-R094W-S01	60	12.5 miles	None	No	No
Irrigated Land						
No Irrigated Land	NA					
Recreational Significant Areas Not Designated as Exclusion						
Lake Sakakawea	T150N-R094W-S01	60	12.5 miles	None	No	No
Little Missouri National Grasslands	T151N-R095W-S33	28	4.9 miles	None	No	No
Tobacco Gardens	T154N-R097-S35	37	20.5 miles	None	No	No

Key: ID = identification
PLOTS = Private Land Open to Sportsmen
WMA = Wilderness Management Area

7.2.1 Selection Criteria

State of North Dakota Administrative Rules specify several selection criteria to be considered in designating a pipeline corridor or route. Specifically, the Commission considers whether adverse effects from the location, construction, and maintenance of the facility, as they relate to these criteria, will be at an acceptable minimum and whether these effects will be managed and maintained at an acceptable minimum. Impacts, as they relate to each of the selection criteria, are discussed below.

7.2.1.1 Agricultural Production

Of the nearly 1,313 acres of land within the Study Area, none are considered Prime Farmland, 206 acres are considered Farmland of Statewide Importance, and the remaining 1,107 are considered Not Prime Farmland (NRCS 2014).

Noxious weeds can be a threat to agricultural productivity. Established populations of noxious weeds will out-compete desirable forbs and grasses in pastures, fields, and native grasslands, potentially impacting agricultural production and livestock forage. Species considered noxious weeds under North Dakota state law for the State and for McKenzie County are provided in Tables 7A and 7B. For more information on noxious weeds in the Study Area, refer to the July 2016 field report (Section 3.7, "Noxious Weeds") in Appendix D. During the 2016 field surveys, a patch of Canada thistle *(Cirsium arvense)* was identified within the Study Area (Appendix D).

Agricultural land was temporarily affected during construction due to use of construction equipment. Construction and restoration activities have the potential to introduce noxious weeds and invasive species in agricultural areas. It is believed that appropriate management practices were used to restore all areas to the landowners' satisfaction. It is also believed that mitigation requirements were implemented to avoid potential infestation and spread of noxious weeds on reclaimed land.

As a mitigation measure to construction impacts throughout the ROW, topsoil was segregated from ditch soil during trenching activities to ensure that any potential impacts to the land, including mixing of soils, was minimized to the greatest extent practicable. Following construction activities, the topsoil was re-spread over the ROW in all disturbed agricultural areas. No long-term impacts to Farmlands of Statewide Importance resulted from construction of the pipeline.

The pipeline was installed at a depth of more than 4 feet below the surface, which exceeds the typical tillage depth. Therefore, pipeline operations will not interfere with normal agricultural operations on cropland. Aboveground facilities that may be located on cropland are limited to pipeline appurtenances such as valves, line markers, and cathodic protection rectifiers. Therefore, zero to minimal long-term loss of farmland use is expected.

Table 7A: Listed Noxious Weeds – State of North Dakota

Common Name	*Scientific Name*
Absinth wormwood	*Artemisia absinthium*
Canada thistle	*Cirsium arvense*
Diffuse knapweed	*Centaurea diffusa*
Leafy spurge	*Euphorbia esula*
Musk thistle	*Carduus nutans*
Purple loosestrife	*Lythrum salicaria*
Russian knapweed	*Acroptilon repens*
Spotted knapweed	*Centaurea maculosa*
Yellow toadflax	*Linaria vulgaris*
Dalmatian toadflax	*Linaria genistifolia*
Saltcedar or Tamarisk	*Tamarix chinensis, T. parviflora, T. ramosissima*

Table 7B: Listed Noxious Weeds – McKenzie County, North Dakota

Common Name	*Scientific Name*
Black henbane	*Hyoscyamus niger*
Houndstongue	*Cynoglossum officinale*
Common burdock	*Arctium minus*
Halogeton	*Halogeton glomeratus*
Baby's breath	*Gypsophila paniculata*

7.2.1.2 Family Farms and Ranches

Approximately 1,313 acres of crop and grazing lands are within the 200-foot-wide Study Area (Appendix D, Table 4). The Project did not alter the pattern of landownership or create long-term disruptions of family farming operations. Easement payments are beneficial to landowners along the route, and no significant interference with farming operations is expected to occur. Equipment traversed only landowner-approved access routes to minimize disruption to soil, drainage, and crops. It is believed that Saddle Butte's crop loss compensation program compensated landowners for any crop damage caused by construction. Targa also will compensate landowners for crop damage that results from future pipeline maintenance and repairs.

Construction activity can cause short-term disruption of livestock operations and can inconvenience farm activities. It is believed that Saddle Butte worked with local landowners to minimize construction interference. Temporary access across the ROW was provided to allow for livestock and farm equipment movement, as needed. Temporary fences and gates were constructed as necessary to prevent livestock from entering into the construction zone. The Project was constructed in a timely manner and, upon completion, fences, gates, and roads were restored to pre-construction conditions, to the extent reasonably practicable.

7.2.1.3 Land Economically Suitable for Irrigation as Demonstrated by Landowners (Soil, Topography, Drainage, and Available Water Supply)

There are no irrigated lands within the Study Area. As defined by the U.S. Department of Agriculture, Prime Farmland has an adequate and dependable supply of moisture from precipitation or irrigation, and no irrigation systems were identified along the route.

7.2.1.4 Surface Drainage Patterns (Impact on Agriculture)

Surface water drainage in this area is generally well developed, with a few poorly drained depressions (wetlands). Some of the depressions contain water for only a few months during the spring and early summer, but others that have larger drainage areas or are sustained by groundwater may contain water year round. Additionally, manmade surface impoundments (stock ponds) can be observed in the general area.

Surface runoff generally moves toward either Lake Sakakawea or the Little Missouri River. SWCA identified 12 waterbodies that were classified as ephemeral, intermittent, or perennial streams. The six named streams are Big Timber Creek, Cherry Creek, Spring Creek, Seven Mile Creek, North Fork Creek, and Tobacco Garden Creek.

Construction of the Project did not alter surface drainage patterns. Directional drilling was used to install the pipeline beneath surface water areas in a manner that would not interfere with flow or future maintenance efforts by landowners or the drainage authority.

7.2.1.5 Groundwater Flow Patterns (Impact on Agriculture)

Groundwater in the vicinity of the Study Area is available in the Tongue River aquifer system (USGS 1985). The aquifer system ranges in depth from 140 to 500 feet below ground surface and consists of Lower Tertiary age, inter-bedded, sands, silts, mudstones, carbonaceous shales, and lignites of the Fort Union Formation (Carlson 1985). Recharge to the Tongue River aquifer system is from precipitation and seepage from lakes and streams. Discharge occurs to the north, outside of McKenzie County. The groundwater typically has a yellowish brown color due to nutrients and decayed organic materials. Well yields are typically around 25 gallons per minute. The Tongue River aquifer system is suitable for domestic and livestock uses, but not for irrigation or municipal uses.

Most local groundwater in McKenzie County is utilized for domestic and livestock use. Groundwater is virtually the sole source of water for domestic use by rural residents and residents of small communities with no public distribution system.

Due to the shallow depth of construction activities (average depth of cover is 6 feet, maximum depth of cover is 8 feet, minimum depth of cover is 4 feet) and the relatively deep location of the area's aquifers, installation of the Project did not have a significant effect on regional groundwater flow patterns.

7.2.1.6 Sound-Sensitive Land Uses

Fourteen residences and one business are located within 500 feet of the route alignment. These residences and business were constructed after the pipeline was installed and in service. None are within

the Study Area. No other sensitive noise receptors, such as schools or hospitals, are located in the vicinity of the Project. According to the EPA (EPA 1978), ambient day-night sound levels averaged over a 24-hour period (L_{dn}) for rural residences are often less than 50 A-weighted decibels (dB(A)). The A-weighting metric refers to the perceived overall "loudness" of a sound. For reference, the L_{dn} for urban areas can range from 85 to 90 dB(A).

During construction, residences in proximity to the construction experienced short-term increases in construction-related noise. The heavy construction equipment needed to construct the Project generated short-term increases in ambient noise levels. Increases in noise due to heavy equipment operation were limited to the period of construction, typically during daylight hours. For reference, a heavy truck at 50 feet would be about 75 to 90 dB(A), which is not harmful unless sustained for very long periods of time (EPA 1978). Intermittent higher sound levels associated with construction are less impactful than continuous sound levels. However, because of proximity, construction-related noise levels may have occasionally interfered with interior conversations at two of the 15 residences.

The storage tank locations and the other aboveground features are in areas of existing industrial activity. No noticeable noise is generated by the Project during normal operations.

7.2.1.7 Visual Effect on Adjacent Area

The visual landscape along the Study Area consists primarily of open grassland and agricultural fields with occasional rural structures, roadways, and power lines. Trees and taller vegetation occur infrequently as shelter belts or as riparian vegetation near drainage areas. The landscape is very open, with long sightlines and few vertical features to break the horizon.

Aboveground facilities constructed as part of the Project include mainline valves, line markers, cathodic protection equipment, test stations, and tanks. A mainline valve station is located between the Johnsons Corner and Alexander tank facilities (see Table 3). The tanks in both facilities are constructed near other industrial features and so are not incongruous with the local visual settings. Other than these permanent aboveground facilities, the Project resulted in only short-term visual effects related to the presence of heavy equipment, staging areas, and removal of vegetation within the temporary construction workspace. Disturbed areas have been reclaimed.

7.2.1.8 Extractive Storage Resources

No extractive or storage resources were identified that would be affected by the Project. Efforts have been employed to avoid current or planned oil extraction facilities and pipelines along the route.

7.2.1.9 Wetlands and Water Bodies

The Project is located within 13 subwatersheds of the Little Missouri and Lake Sakakawea watershed basins. Watersheds in the U.S. are delineated by the U.S. Geological Survey using a national standard hierarchical system based on surface hydrologic features and are classified into six types of hydrologic units. Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of 2 to 12 digits based on the six levels of classification:

- 2-digit HUC first-level (region)
- 4-digit HUC second-level (subregion)
- 6-digit HUC third-level (basin)
- 8-digit HUC fourth-level subbasin)
- 10-digit HUC fifth-level (watershed)
- 12-digit HUC sixth-level (subwatershed)

The subwatersheds are: Spring Creek, Elkhorn Creek, Upper Timber Creek, Cherry School, Rough Creek, Sevenmile Creek, Camp Creek, Northfork Creek, Dry Creek, Lower Timber Creek, Headwaters Tobacco Garden Creek, Lake Trenton, and Town of Watford City.

According to the 2016 desktop analysis of the National Wetlands Inventory (NWI) data available for McKenzie County, 16 freshwater emergent streams were identified within the Study Area. However, during the 2016 field surveys, 15 freshwater (palustrine) emergent wetlands were confirmed to occur within the Study Area; one of the NWI-mapped wetlands was determined to be upland because it lacked all three of the wetland qualifying features (Appendix H). These wetlands are generally associated with isolated prairie potholes and range in size from 0.1 acre to 1.1 acres. Prairie potholes are ecologically important for this region's biodiversity, as well as for water quality. Of the 15 wetlands, 13 are less than 1 acre in size (Appendix H).

Field studies identified 12 waterbodies, classified as ephemeral, intermittent, or perennial streams, within the Study Area; it is likely that all of the streams identified are jurisdictional under the U.S. Army Corps of Engineers regulations (Appendix H). Six named streams were surveyed within the proposed alignment. Timber Creek (BSTR8), Cherry Creek (BSTR4 and BSTR7), Spring Creek (BSTR6), and Sevenmile Creek (BSTR5) all displayed ordinary high water marks (OHWMs) and were recorded as streams. North Fork Creek (AWET1) did not have signs of an OHWM or flowing water; however, the area did meet the wetland criteria. Tobacco Garden Creek (ADP27U) was dominated by upland vegetation, did not have hydric soils present, and showed no indicators of an OWHM (Appendix H).

The Project alignment avoided isolated pothole wetlands and streams to the greatest extent practicable in a manner compatible with safe operation, maintenance, and inspection of the pipeline. Directional drilling was used to install the pipeline and avoid direct impacts to these sensitive resources. Any indirect impacts from pipe placement were temporary; no water was lost or groundwater recharge potential affected. Efforts have been made to restore all areas of disturbed wetland vegetation.

7.2.1.10 Woodlands and Wooded Areas

Tree rows and woody areas occur in limited amounts as isolated islands or rows throughout the Study Area. The Project traversed some wooded areas on rangeland and in wetland areas. Impacts to trees were avoided to the extent practicable in a manner compatible with safe operation, maintenance, and inspection of the pipeline. It was necessary to clear some trees and shrubs during construction; however, Saddle Butte did, and Targa will continue to, work with the appropriate state agencies and private landowners to ensure appropriate replacement in accordance with the Commission's tree and shrub mitigation specifications.

Because Saddle Butte assumed at the time of construction that the pipeline would be a gathering line, no pre-construction data is available as to the number of trees and shrubs impacted. Based on a comparative analysis of National Agricultural Imagery Program aerial imagery from 2009 and 2010 against similar 2014 imagery, an estimated 110 shrubs and trees were removed within the construction ROW and at the Johnsons Corner and Alexander tank facilities site to facilitate Project construction. Bing aerial imagery was utilized as an observation check method to validate the estimate. This is likely an overestimate because it is difficult to discern shrubby multi-stem trees that commonly occur in the area from groups of individual trees that are in proximity to one another. Appendix K lists locations where trees and shrubs were removed to facilitate pipeline construction.

7.2.1.11 Radio and Television Reception, and Other Communication or Electronic Control Facilities

No impacts on television or radio reception, or communication or electronic control facilities, occurred as a result of the Project.

7.2.1.12 Human Health and Safety

During construction, residences and businesses near construction activities were exposed to short-term increases in construction-related noise and dust. The construction ROW and access roads near residential areas were watered down to control fugitive dust during construction. After construction was completed, measures to stabilize and revegetate the ROW were taken promptly to minimize further dust emissions.

The heavy construction equipment needed to install the pipeline generated unavoidable short-term increases in sound levels. Increases in levels due to equipment operation were limited to the period of construction and were generally limited to daylight hours. No noticeable noise is generated by the Project during normal operations.

No residences or other occupied structures were razed due to construction. Future residential developments are not precluded by the Project; however, no construction can occur within the permanent ROW. Construction may have temporarily restricted access to residences along the Project route. When this occurred, Saddle Butte either limited the time such restrictions were in place or made arrangements to accommodate the landowner's access needs.

The major causes of pipeline leaks in the U.S. are corrosion (both internal and external), excavation damage, pipe or weld failure, incorrect operations, or natural causes (e.g., floods or outside force). To prevent these categories of failures, Saddle Butte constructed, and Targa will maintain, the Project to meet or exceed industry and governmental requirements and standards. Specifically, the steel pipe used meets U.S. Department of Transportation regulations under 49 Code of Federal Regulations, Part 195, and construction methods followed standards issued by the American Society of Mechanical Engineers, National Association for Corrosion Engineers, and the API. As a safety measure, the pipeline was designed to withstand pressure over and above its normal operating pressure and will operate according to all applicable laws, rules, and regulations. All pipe was inspected and integrity-tested at the factory per the highest technical standards. All pipe was manufactured with fusion-bonded epoxy coating to protect against corrosion.

The actual installation of the pipeline and all construction and testing records were subject to inspection. All of Targa's pipelines are externally coated to resist corrosion, internally inspected at regular intervals using in-line inspection technology, and equipped with a cathodic protection system to prevent external corrosion.

The pipeline was tested to verify integrity and compliance with specifications. A caliper pig was used to internally inspect the entire length of the pipeline. The pipeline also underwent hydrostatic testing to determine the maximum allowable operating pressure. The Project was placed into service only after inspection to verify compliance with all construction standards and requirements.

Targa conducts extensive public education and outreach programs that exceed industry practices (API Recommended Practice 1162) concerning public awareness of pipelines and pipeline safety. All Targa pipelines are marked with signage and warnings at road and highway crossings, railroad crossings, navigable rivers, and other locations to alert the public to the presence of underground lines and to provide information, contact numbers, and emergency data.

Pipeline workers and contractors performing critical tasks are qualified under U.S. Department of Transportation standards and are subject to federal drug and alcohol testing requirements. Targa meets or exceeds these requirements so that human error in construction and operation is avoided.

7.2.1.13 Animal Health and Safety

Construction activity within the Study Area had temporary impacts on domestic animals and wildlife. The clearing of vegetation temporarily reduced cover, nesting, and foraging habitat for some species, temporarily displacing individuals that used these areas. Following reclamation, it is likely that wildlife will be reestablished within the Study Area to preconstruction levels.

Pipeline trenching activities and associated spoil piles resulted in a short-term barrier restricting the movement of some wildlife species (typically two to four weeks at any one area). Except for short-term interruptions during construction, existing public roads, farm lanes, and livestock crossings were kept open, providing crossing access for wildlife. During construction, temporary fencing was erected, as necessary, to keep livestock and wildlife away from the pipeline trench and to minimize the length of time the trench was left open.

7.2.1.14 Plant Life

No sensitive plant species habitat was identified within the Study Area. All areas where vegetation was removed are being revegetated in accordance with applicable county agency standards and landowner requests. There were no permanent impacts to vegetation.

7.2.2 Policy Criteria

The Commission may give preference to an applicant that will maximize benefits resulting from the adoption of policies and practices identified in Section 69-06-08-02(4) of the North Dakota Administrative Code. These policies, and the extent to which the Project aligns with or reinforces these policies, are discussed below.

7.2.2.1 Location and Design

The facility design includes an existing underground gathering pipeline and associated valves and surface equipment, as well as two tank facilities near Johnsons Corner and Alexander, North Dakota (Figures 2 and 3). A lateral underground pipeline connection to the Enbridge terminal near Alexander, owned and operated by Enbridge, is less than 1 mile in length. An above ground valve station and pig launchers are located at the Midway Facility.

The Johnsons Corner tank facility is located on 31.84 acres within the southwest quarter of Section 24 of Township 150 North, Range 96 West, McKenzie County. The tank facility includes a pig receiver, sump tank, booster pump station, outlet meter station, two 20,000-barrel-capacity tanks, tank inlet and outlet manifolds, an inlet meter station, a mainline pump station, a pig launcher, and a control building. The location of the Johnsons Corner facility is shown on Figure 1 and Figure 2.

The Alexander tank facility is located on 16.10 acres in Section 19 of Township 152 North, Range 101 West, McKenzie County. The tank facility includes a pig receiver, sump tank, control valve manifold, leak detection equipment, 30,000-barrel-capacity tank, strainer station, transfer pump station, and an asset custody transfer station. The pipeline from the custody transfer station to the Enbridge terminal is owned by Enbridge. The location of the Alexander facility is shown on Figure 1 and Figure 4.

The Midway facility is located on 39.19 acres in Section 7 of Township 149 North, Range 98 West. The site includes two pig launchers, one for the Johnsons Corner facility and a second one for the Alexander facility. The facility also possesses above ground control valves.

The underground pipeline system includes an 8-inch pipeline capable of transporting a maximum of 50,000 barrels of oil per day. The pipeline includes a number of valve stations between the Johnsons Corner and Alexander tank facilities (see Table 3). The pipeline corridor includes a 50-foot permanent easement in most locations.

The steel pipe meets ANSI 600 specifications. In most areas, the pipeline consists of 8.625-inch outside-diameter pipe with a 0.219-inch wall thickness and a maximum allowable operation pressure of 1,480 pounds psi at a maximum operating temperature of 100°F. Pipe meeting the API 5L specification, with PSL-2 and X-52 ratings, and a 0.322-inch wall thickness, was used where the pipeline encounters railway or roadway crossings, natural drainages, ponds, sloughs or other wetlands, and on each side of aboveground valve stations. Pipe welds were inspected by a qualified weld inspector according to industry standard practice utilizing non-destructive methods. For more information on pipeline safety, see Section 7.2.2.12. The pipeline was installed at depths varying between 4 and 8 feet below ground surface.

The existing pipeline was installed as part of a gathering system. Saddle Butte designed and constructed the gathering system consistent with its contractual obligations to the primary customers served by the gathering system in Dunn and McKenzie Counties. Targa is not currently utilizing the two 20,000-barrel tanks at Johnsons Corner. Targa now seeks the ability to utilize those two tanks for temporary operational storage of oil and to redeliver the oil back into the pipeline for delivery to Alexander. Targa seeks to utilize the Johnsons Corner tanks in this manner to better manage gathering operations and to have the ability to safely shut down the flow of oil in the pipeline system in the event of an unanticipated interruption of service or unavailability of the delivery point at the Enbridge terminal north of Alexander. Similarly, the storage tank at Alexander is not being utilized for storage of crude petroleum that is added to the Johnsons Corner – Alexander pipeline. Targa also seeks the ability to utilize this tank for storage of oil that may be added to the Johnsons Corner – Alexander Pipeline for transport toward Johnsons Corner.

7.2.2.2 Training and Utilization of North Dakota Labor for General and Specialized Skills Required

Targa employs two full-time employees responsible for pipeline operation, one full-time employee responsible for line locating services, and one full-time electronics and instrumentation technician. All positions are located in North Dakota. All positions support the operation of the Johnsons Corner - Alexander Pipeline and the Johnsons Corner and Alexander tank facilities.

7.2.2.3 Economics of Construction and Operation

Materials used to construct the Johnsons Corner - Alexander tank facilities, as well as the pipeline, were obtained from suppliers in the U.S. whenever possible. Most materials were of foreign manufacture and were used in order to meet construction schedules. The total estimated construction cost of the Project is $85 million.

Annual wages and salaries for North Dakota employees to support operation and maintenance of the Project will be approximately $280,000.

7.2.2.4 Use of Citizen Coordinating Committees

A dialog was conducted with city officials and concerned citizens about siting of the Johnsons Corner and Alexander tank facilities. Ultimately, construction permits were issued by the proper authorities.

7.2.2.5 Commitment of a Portion of the Transmitted Product for Use in North Dakota

It is possible that a portion of the product transported by the Johnsons Corner - Alexander Pipeline and tank system will be committed to use within North Dakota. Product is sold to third parties according to contractual arrangements. Future contractual arrangements may direct a portion of the transmitted product for use in North Dakota.

7.2.2.6 Labor Relations

Targa is an Equal Opportunity Employer and works hard to foster excellent employee relations. As a growth-oriented provider of midstream natural gas and natural gas liquids services and one of the largest independent midstream energy companies in the country, Targa offers a dynamic work environment where employees can learn, develop, and grow. Targa encourages employee input and active involvement toward the company's continuous performance improvement in all areas of their business. With people as the priority, Targa is committed to safety and to providing the support required to help employees achieve their goals.

Targa offers a competitive benefits program for full-time employees, which includes: 1) medical plan and prescription drug coverage, 2) vision coverage, 3) dental coverage, 4) flexible spending accounts, 5) life insurance coverage, 6) disability coverage, 7) 401(k) Profit Sharing Plan wherein Targa contributes 3 percent of employees' pay into the plan, regardless of employee participation, and matches employee contributions up to 5 percent. Plus, Targa may make an additional contribution based on company profits. Eligibility for healthcare benefits, and 401(k) enrollment begins on the first day of employment.

7.2.2.7 Coordination of Facilities

Targa supports the mission of, and is a participating member of, the Sakakawea Area Spill Response, LLC (SASR) in order to better coordinate with other companies in the industry. SASR was formed by a coalition of companies operating in the area surrounding Lake Sakakawea. The focus of the coalition is to respond in a prepared manner to any spill of crude petroleum or other oilfield-associated material that could threaten to impact the waters of Lake Sakakawea. The coalition pre-positions supplies and equipment in strategic locations in the area and maintains the inventories and capabilities in a "constant ready" state. In the event of a spill, the resources are available to SASR members and, in some cases, non-members to mount a response. SASR non-members pay a rate for supplies and services greater than those paid by members.

SASR also performs both tabletop and field exercises to acquaint members in one company with their counterparts in other companies and to familiarize individuals with the standard practices that will be employed.

7.2.2.8 Monitoring of Impacts

Facilities are maintained according to industry standards. Tank inspections are performed on a regular basis according to API 653, which covers inspection, repair, alteration, and reconstruction of aboveground storage tanks. Per API 653, daily visual inspections of the tanks are conducted. The tanks also are subject to monthly inspections and gauge verification tests, including high-level shutdown verification.

The pipeline undergoes regular cleaning with scrapper pigs, as required on either a weekly or monthly basis. Every five years, inspections will be performed with smart pigs to check for deformation and cracks. Additionally, a line patrol is conducted every two weeks. This inspection is conducted from a low-flying aircraft.

There is no Supervisory Control and Data Acquisition system associated with this pipeline. The Alexander terminal possesses an incoming meter that is monitored for fluctuations in pipeline product flow rates (volume) that are lower than usual.

Targa maintains a facility response plan for the pipeline (see Appendix L) per the Oil Pollution Act of 1990. Targa also maintains a Stormwater Pollution Prevention and Erosion Control Plan (see Appendix M). Additionally, Targa maintains an Integrity Management Plan for the pipeline (see Appendix N).

The pipeline was subjected to weld inspection during construction and hydrostatic pressure testing prior to being placed into service.

7.2.2.9 Utilization of Existing and Proposed Rights-of-Way and Corridors

The pipeline ROW crosses or is adjacent to several other ROWs. These ROWs include aboveground electrical and telephone lines, underground telephone lines, and other pipeline ROWs. These ROWs are listed in Tables 8A and 8B.

Table 8A: Rights-of-Way Crossed and Adjacent to Smokey Trunk Line Pipeline Segment

Feature	Start (feet from Johnsons Corner)	Type	Notes
Telephone Line	1,239		
Natural Gas Pipeline	1,794		
Telephone Line	3,211		
Telephone Line	3,212		
Pipeline Crossing	5,743		
Pipeline Crossing	5,746		
Road	9,566		Bored (113 feet)
Road	11,174		Bored (53 feet)
Telephone Line	13,087		
25th Street NW	13,164		Bored (66 feet)
O.H. Electrical Line	13,255		
O.H. Electrical Line	17,264		
County Road 53	17,334		Bored (268 feet)
Lease Road	19,011		Bored (165 feet)
O.H. Electrical Line	19,041		
Natural Gas Pipeline	19,061		
Gas Line Crossing	28,075		
Gravel Road	29,378	Lease Road	Bored (166 feet)
Beaver Creek Road	30,926	Lease Road	Bored (222 feet)
County Road 45	31,946		Bored (included above)
Unknown Pipeline	42,504		
24th Street NW	48,527		Bored (31 feet)
Unknown Pipeline	48,601		
O.H. Electrical Line	48,611		
Road	56,444	Lease Road	Bored (220 feet)
Unknown Utility Line	60,224		
Road	60,364	Lease Road	Bored (44 feet)
Road	61,624	Lease Road	Bored (44 feet)
Gas Pipeline	61,700		
O.H. Electrical Line	79,136		
Cherry Creek	76,828		Bored (389 feet)
Drainage	78,043		Bored (131 feet)
County Road 37	79,251		Bored (296 feet)
Telephone Line	79,380		
122nd Avenue NW	93,734		Bored
Pipeline Crossing	100,265		
Private Road	~112,000		Did not exist at time of pipeline construction
Private Road	~112,900		Bored (unknown length)
125th Avenue NW	~113,200		Bored (unknown length)
Pipeline Crossing	~116,500		Bored (65 feet)

Key: NW = Northwest O.H. = overhead

Table 8B: Rights-of-Way Crossed and Adjacent to Midway to Alexander Pipeline Segment

Feature	Location (feet from Alexander)	Type	Notes
Utility Line Crossing	1,567		
Pipeline Crossing	1,902		
O.H. Electrical Line	2,301		
U.S. Highway 85	2,434		Bored (452 feet)
O.H. Electrical Line	2,985		
O.H. Electrical Line	3,183		
Road	6,043	Lease Road	Bored (125 feet)
Pipeline Crossing	9,394		
Road	9,430	Lease Road	Bored (134 feet)
Road	14,369	Lease Road	Bored (134 feet)
Unknown Utility	15,180		
Pipeline Crossing	26,739		
Road	31,534	Lease Road	Bored (134 feet)
O.H. Electrical Line	34,602		
County Road 16	34,644		Bored (180 feet)
Telephone Line	34,733		
Pipeline Crossing	34,740		
Unknown Utility	34,742		
Pipeline Crossing	35,840		
Telephone Line	39,076		
Road	41,402	Lease Road	Bored (134 feet)
O.H. Electrical Line	43,888		
Road	43,935	Lease Road	Bored (134 feet)
Pipeline Crossing	45,486		
O.H. Electrical Line	46,034		
Pipeline Crossing	46,116		
Pipeline Crossing	46,158		
Pipeline Crossing	46,224		
Pipeline Crossing	46,247		
Pipeline Crossing	48,112		
Pipeline Crossing	52,706		
34th Street NW	52,950		Bored (627 feet)
138th Avenue NW	53,156		Bored (included above)
O.H. Electrical Line	53,289		
O.H. Electrical Line	55,865		
Pipeline Crossing	58,400		
Unknown Utility	57,822		
Pipeline Crossing	62,395		
Unknown Utility	64,892		
O.H. Electrical Line	66,510		
Telephone Line	67,686		
Telephone Line	67,716		
Telephone Line	67,739		
Telephone Line	67,749		
County Road 29	67,843		Bored (267 feet)
Pipeline Crossing	71,058		
133rd Avenue NW	78,505		Trenched (graveled 2-track)
Pipeline Crossing	83,715		
132nd Avenue NW	83,730		Trenched (implement 2-track)
Road	85,155	Lease Road	Bored (135 feet)
Road	89,506	Lease Road	Bored (257 feet)

Table 8B: Rights-of-Way Crossed and Adjacent to Midway to Alexander Pipeline Segment

Feature	Location (feet from Alexander)	Type	Notes
32nd Street NW	90,594		Trenched (graveled 2-track)
O.H. Electrical Line	91,830		
Pipeline Crossing	93,337		
131st Avenue NW	93,780		Bored (270 feet)
31st Street NW	96,447		Bored (178 feet)
30th Street NW	101,769		Trenched (implement 2-track)
O.H. Electrical Line	107,182		
29th Street NW	107,207		Trenched (implement 2-track)
281/2th Street NW	109,904		Trenched (Implement 2-track)
Pipeline Crossing	119,858		
Telephone Line	119,942		
Pipeline Crossing	119,961		
U.S. Highway 85	120,083		Bored (447 feet)
Water Line Crossing	120,158		
Telephone Line	120,185		
130th Avenue NW	120,367		Bored (134 feet)
Pipeline Crossing	120,411		
Pipeline Crossing	120,792		
Creek	123,130		Bored (178 feet)
O.H. Electrical Line	125,423		
26th Street NW	125,537		Bored (193 feet)
Pipeline Crossing	125,598		
O.H. Electrical Line	125,761		
O.H. Electrical Line	128,313		
28th Street NW	130,958		Trenched (implement 2-track)
Pipeline Crossing	137,625		
Pipeline Crossing	138,025		
Pipeline Crossing	138,083		
Pipeline Crossing	138,110		
Unknown Utility	140,494		
22nd Street NW	140,512		Trenched (implement 2-track)
O.H. Electrical Line	140,549		
129th Avenue NW	144,954		Bored (179 feet)
O.H. Electrical Line	144,988		
Water Line	145,011		
County Road 30	145,934		Bored (258 feet)
Cherry Creek	149,200		Trenched
Pipeline Crossing	151,427		
Unknown Utility	151,810		
Unknown Utility	151,876		
O.H. Electrical Line	151,924		
Pipeline Crossing	151,958		
Pipeline Crossing	152,190		
Pipeline Crossing	154,637		
22nd Street NW	157,836		Bored (259 feet)
Telephone Line	157,900		
Telephone Line	157,915		
127th Avenue NW	160,317		Bored (275 feet)
Creek	162,106		Bored (310 feet)
O.H. Electrical Line	166,942		

Table 8B: Rights-of-Way Crossed and Adjacent to Midway to Alexander Pipeline Segment

Feature	Location (feet from Alexander)	Type	Notes
Telephone Line	166,965		Reservation Telephone Service
U.S. Highway 85	167,041		Bored (326 feet)
Telephone Line	167,170		Reservation Telephone Service
Telephone Line	167,186		Reservation Telephone Service
Telephone Line	167,444		Reservation Telephone Service
Unknown Utility	168,195		

Key: NW = Northwest
O.H. = overhead
U.S. = United States

7.2.2.10 Other Existing or Proposed Transmission Facilities

Targa does not have current plans for any new transmission pipeline systems.

7.2.3 Design and Construction Limitations

Design of the Johnsons Corner - Alexander Pipeline limits it to a maximum capacity of 50,000 barrels of crude petroleum per day at a maximum operating pressure of 1,480 pounds per square inch and a maximum operating temperature of 100°F. Design of the Johnsons Corner tank facility limits storage to a working maximum of 40,000 barrels of crude oil. Design for the Alexander tank facility limits storage to a maximum of 30,000 barrels of crude oil.

Construction limitations for the Project included restricting activities to approved areas, limiting activities to avoid impinging on breeding or nesting times for certain species, stopping work if previously unknown sensitive resources are identified during construction, and operating during favorable weather conditions and daylight hours.

7.2.4 Economic Considerations

When the Project is complete, Targa will have invested a total of $85 million into the Johnsons Corner - Alexander Pipeline and tank facilities. Targa plans to operate the facilities for the foreseeable future. Many of the materials needed for construction were obtained from U.S. suppliers. Workers and companies from North Dakota were hired and subsequently had a beneficial impact on local economies through payroll taxes, local expenditures, sales taxes, etc.

In addition, the crude oil transported by the pipeline allows for payment of royalties to mineral interest owners.

8 MISCELLANEOUS

8.1 Evaluation Factors

This section contains additional information that may be useful to the Commission’s decision-making process.

8.1.1 Available Research and Investigations Relating to the Effects of the Location/Construction/Operation on Public Health and Welfare, Natural Resources, and the Environment

Targa retained specialized consultants to perform archaeological, historical, cultural, and biological surveys of the existing pipeline corridor. A cultural resources Class I literature review of the proposed route and a Class III intensive pedestrian survey of the 200-foot-wide Survey Area was conducted by SWCA, of Bismarck, North Dakota. The Class III Cultural Resources Inventory cover page and abstract is included as Appendix F to this application. Appendix F also includes the Addendum to the Class I and Class III Cultural Resource Inventory performed for the Johnsons Corner, Midway, and Alexander Facilities. Copies of the letters of concurrence from the North Dakota SHPO are provided in Appendix G.

In 2016, SWCA performed desktop studies and field surveys for hydrology, topography, and vegetation of the Study Area (see Appendices D and H). This study included a determination of jurisdictional waters of the U.S. to be impacted by the Project. SWCA also reviewed the potential for operation of the Project to impact federally listed threatened and endangered species.

SWCA provided the following conclusions and observations:

1. The Project would be authorized for construction in wetlands under Nationwide Permit 12 if permit conditions continue to be met.
2. No threatened or endangered species were observed during the field survey.
3. Migratory birds and suitable nesting habitat was observed throughout the Survey Area.
4. No active raptor nests were observed within 0.5 miles of the Project. No bald or golden eagle nests were observed. No impacts to eagles are anticipated.

In addition, Project information was transmitted to many state and federal agencies for their review and comment by Lowham Walsh. Agency responses received to date are included in Appendix I, along with a sample of the typical letter sent.

8.1.2 Effects of New Energy Conversion and Transmission Technologies and Systems Designed to Minimize Adverse Environmental Effects

The Project involves conversion of a liquid petroleum (crude oil) gathering line to a transmission facility. The Project design is consistent with existing pipeline technologies.

Impacts to sensitive resources were avoided by HDD, rerouting, and timing of construction activities. HDD was employed during pipeline construction. HDD avoids the need for open cut trenches, thereby minimizing environmental impacts and eliminating ground-level surface hazards. Saddle Butte used HDD for crossing wetlands, large drainages, and many roadways along the route. Best management practices were used to minimize impacts from clearing, trenching, and reclamation of the construction ROW.

Potential impacts to cultural resource sites were avoided through rerouting. Pipeline construction activities were conducted in 2011 between August and December to avoid impacts to nesting birds.

8.1.3 Potential for Beneficial Uses of Waste Energy from a Proposed Energy Conversion Facility

The Project does not involve new energy conversion facilities; no usable waste energy will result from the Project.

8.1.4 Adverse Direct and Indirect Environmental Effects That Cannot Be Avoided Should the Proposed Site or Route Be Designated

Unavoidable adverse direct and indirect environmental effects included temporary construction-related effects on vegetation, wildlife, agricultural operations, transportation, and noise levels, as described in Section 7.2.2. Because construction was completed outside of the prime growing season, outside of the migratory bird and raptor nesting seasons, and on an accelerated timeline, impacts to agricultural operations were minimal and impacts to transportation were short term. Impacts on vegetation and wildlife were also minimized. Wildlife may have temporarily avoided the ROW during construction, but no long-term impacts are anticipated. Noise level increases were associated only with construction, and the Project does not generate noise while in operation. In addition, it is believed that Saddle Butte implemented thorough mitigation measures to minimize construction-related impacts, as shown in construction documents presented as Appendix O in this combined application.

The original route planned for this gathering pipeline was the route that was actually constructed. The selection of the route involved input from landowners.

8.1.5 Irreversible and Irretrievable Commitments of Natural Resources Should the Proposed Site, Corridor, or Route Be Designated

The Project required minimal irreversible or irretrievable commitments of natural resources. Steel was utilized for the pipeline, tank, and ancillary facilities, and petroleum fuel was required for construction equipment.

8.1.6 Direct and Indirect Economic Impacts of the Proposed Facility

The total expenditure by Saddle Butte for the Project was approximately $85 million. These dollars had significant direct and indirect economic impacts due to the purchase of construction materials from regional and national suppliers, employment of construction workers, infusion of money into local economies from hired workers and companies, and ongoing employment to support Project operations.

Construction workers were hired from pipeline contractors, equipment contractors, suppliers, and testing firms, including approximately 10 percent from the regional labor pool. Several businesses operating in North Dakota, including environmental consulting firms and safety, environmental, and construction inspectors, were contracted to provide services during the life of the Project. During the months of preparation, construction, and testing, these companies and individual workers made positive contributions to the regional economy through payroll taxes, local expenditures, and sales taxes. These benefits continue to this day in terms of full-time, part-time, and contracted employees.

Targa anticipates retaining two hourly wage and salaried employees for the operation of the Project. Additionally, Targa utilizes two part-time employees for maintenance and inspection of the pipeline. Annual wages and salaries for North Dakota employees to support operation and maintenance of the Project will be approximately $180,000.

In addition, the crude oil transported off of the Fort Berthold Indian Reservation by the pipeline allows for payment of royalties to mineral rights owners.

8.1.7 Existing Plans of the State, Local Government, and Private Entities for Other Developments at or in the Vicinity of the Proposed Corridor/Route

The North Dakota Department of Game and Fish maintains a number of Private Lands Open to Sportsmen (PLOTS) properties in the general area of the Project. The PLOTS program goals are to conserve habitat for fish and wildlife populations, provide landowners interested in wildlife conservation with cost-sharing assistance for developing and protecting wildlife habitat, and provide the public with opportunities to access fish and wildlife resources on private land. State law governing usage of PLOTS

properties limits public usage to walk-in hunting only. Table 9 lists PLOTS properties nearest the Project. The Project is not anticipated to impact any of these properties or their use by the public.

The U.S. Highway 85 corridor from south of Watford City to Williston has been and continues to be developed into a business corridor. Numerous industrial service providers have constructed buildings along this corridor to support the extraction of crude petroleum from the region. Additionally, this corridor has witnessed development of various types of hospitality businesses, including recreational vehicle parks, motels, hotels, and restaurants. In a total of 15 instances, structures utilized as either residences or places of business have been erected within 500 feet of the existing pipeline.

Table 9: PLOTS Properties Near the Johnsons Corner - Alexander Pipeline Project

Project Feature	Feature Location (Township-Range-Section)	PLOTS Location (Township-Range-Section)	Nearest Straight Line Distance to Feature (miles)
Pipeline	T149N-R98W-S17	T149N-R98W-S5	1.0
Pipeline	T151N-R100W-S17	T150N-R98W-S32	2.52
Pipeline	T151N-R100W-S17	T151N-R101W-S26	2.63
Pipeline	T151N-R100W-S17	T151N-R101W-S24	1.32
Pipeline	T151N-R100W-S17	T151N-R101W-S23	2.32
Alexander Facility	T152N-R101W-S19	T152N-R102W-S23	1.53
Alexander Facility	T152N-R101W-S19	T152N-R102W-S14	1.0

There are numerous private developments along the Project corridor in the form of either oil wells or crude oil terminals. Agricultural lands within the general area are spotted with oil well pads.

8.1.8 Effect of the Proposed Site or Route on Existing Scenic Areas, Historic Sites and Structures, and Paleontological or Archaeological Sites

SWCA of Bismarck, North Dakota, reviewed existing site file data maintained by the State Historical Society of the North Dakota SHPO to determine if any portion of the Project route was surveyed previously for cultural resources. In addition, a Class III intensive pedestrian survey of the 200-foot-wide Study Area was performed by SWCA. Twenty-one cultural resources were recorded during the pedestrian survey of the Study Area. Mitigation was recommended to avoid sites that may be affected by future maintenance activities and that are or were also considered to be potentially eligible or remain unevaluated for the NRHP. SWCA recommended a finding of No Significant Sites Affected and for the Project to proceed as planned. The remaining cultural resources were categorized as “no further work required”; therefore, no avoidance was necessary. Further discussion of these sites is provided in the complete Class I & III Cultural Resources Inventory.

8.1.9 Effect of the Proposed Route on Areas That Are Unique Because of Biological Wealth or Because They Are Habitats for Rare and Endangered Species

The following federally endangered, threatened, or candidate species are listed in McKenzie County: piping plover (*Charadrius melodus*), interior least tern (*Sterna antillarum*), red knot (*Calidris canutus rufa*), whooping crane (*Grus americana*), northern long-eared bat (*Myotis septentrionalis*), pallid sturgeon (*Scaphirhynchus albus*), black-footed ferret (*Mustela nigripes*), gray wolf (*Canis lupus*), and Dakota skipper (*Hesperia dacotae*). Golden eagle (*Aquila chryaestos canadensis*) and bald eagle (*Haliaeetus leucocephalus*) are also protected under the Bald and Golden Eagle Protection Act (BGEPA) and all of the aforementioned bird species listed are also protected under the Migratory Bird Treaty Act (MBTA), in addition to Section 7(c) of the federal Endangered Species Act (ESA).

Based on biological field reconnaissance conducted in July 2016 (see Appendix D), none of the wetlands that are intersected by the Project appear to contain the appropriate habitat characteristics typical of breeding piping plovers. The wetlands and ponds within and near the Study Area provide possible, but

unlikely, stopovers for migrating piping plovers. Piping plover critical habitat occurs within McKenzie County but does not occur within the Study Area. The nearest designated piping plover critical habitat occurs approximately 3.2 miles northeast of the Study Area. Due to the lack of appropriate wetland habitats, distance to foraging habitats, and distance from designated critical habitat, the probability of a piping plover occurring in the Study Area is relatively low.

The ponds in the Study Area could not support breeding interior least terns, as they do not provide the sparsely vegetated areas of sand necessary to support even a small colony. Furthermore, waterbodies in the area are likely not large enough to support the fish populations necessary to feed least tern colonies. Given the distance to the nearest suitable habitat, the interior least tern is unlikely to occur in the Study Area. The nearest documented least tern nest occurs approximately 21 miles north of the pipeline.

Whooping crane migration stopover habitats include emergent wetlands and shallow waterbodies for roosting and crop fields (e.g., wheat stubble) for forage. Both are present in the Study Area, though individuals may perceive much of the suitable habitat as unfavorable due to nearby human disturbance (e.g., roads, agricultural use).

The red knot is unlikely to occur in the Study Area and is not expected to be impacted by the project. More desirable, suitable habitat can be found along Lake Sakakawea, which is approximately 3.2 miles northeast of the Study Area.

The northern long-eared bat may occur in the Study Area but is not expected to be impacted by the Project. Nearby trees and rocky outcrops may provide suitable day roosts outside of the Study Area. However, suitable hibernaculum for the northern long-eared bat is not present in North Dakota. Moreover, biological field reconnaissance conducted in July 2016 (see Appendix D) indicate that suitable trees potentially used as day roosts were removed from the Study Area when the pipeline was initially installed. The Study Area does not contain suitable winter habitat for the northern long-eared bat.

During the biological assessment of the Study Area, cultivated, non-native prairie and mixed-grass prairie were noted to be dominant in the Study Area (Appendix D). These habitat types are generally not suitable to Dakota skippers. The Dakota skipper has a very low tolerance for grazing in its habitat areas; however, as noted in the biological assessment grazing in the Study Area is classified as moderate to severe (Appendix D). The Dakota skipper is not known to occur in the Study Area. The nearest known populations of Dakota skipper occur over 10 miles southeast of the Study Area. Additionally, no Dakota skipper were observed during the July 2016 field surveys (Appendix D). The nearest designated critical habitat for the Dakota skipper is located more than 18 miles to the north of the Study Area.

Pallid sturgeon occur in Lake Sakakawea and portions of the Missouri River and its tributaries. According to the biological assessment (Appendix D), there is no suitable habitat for the pallid sturgeon within the Study Area and the pallid sturgeon will not occur in the Study Area. Activities associated with the pipeline are not expected to result in impacts to the pallid sturgeon.

Gray wolves are highly unlikely to occur in the Study Area because of the high density of roads and people in the area, coupled with its distance from Manitoba and Minnesota.

Black-footed ferrets are not expected to occur in the Study Area. The Black-footed Ferret Survey Guidelines for Compliance with the Endangered Species Act (USFWS 2013) 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 1989). Prairie dog towns of this size were not observed during the field survey. Therefore, the black-footed ferret is not expected to inhabit the Study Area.

Two bald eagles were observed during the July 2016 surveys. No golden eagles were observed in the Study Area during the July 2016 surveys. No golden or bald eagle nests were observed during the July 2016 surveys. See Appendix D for more details.

Because Project construction occurred largely outside of nesting, breeding, and migratory seasons, and the limited populations of sensitive plant species occurred well outside of the construction ROW, Targa's environmental consultants have concluded that the Project had no significant effect on unique areas of biological wealth or habitats for rare and endangered species.

Table 10: Federally Endangered, Threatened, Proposed, and Candidate Species Currently Known or that May Occur in McKenzie County, North Dakota

Common Name	Latin Name	Status
Birds		
Whooping Crane	*Grus americana*	Endangered
Piping plover	*Charadrius melodus*	Threatened
Interior least tern	*Sterna antillarum*	Endangered
Red knot	*Calidris canutus rufa*	Threatened
Bald and Golden Eagles	*Haliaeetus leucocephalus* and *Aquila chrysaetos*	None; protected under BGEPA and MBTA
Fish		
Pallid sturgeon	*Scaphirhynchus albus*	Endangered
Invertebrates		
Dakota skipper	*Hesperia dacotae*	Threatened
Mammals		
Black-footed ferret	*Mustela nigripes*	Endangered
Gray wolf	*Canis lupus*	Endangered
Northern Long-eared Bat	*Myotis septentrionalis*	Proposed Endangered

Source: USFWS 2015
Key: BGEPA = Bald and Golden Eagle Protection Act
MBTA = Migratory Bird Treaty Act

8.1.10 Problems Raised by Federal Agencies, Other State Agencies, and Local Entities

No objections were raised by federal, state, or local agencies in relation to the Project. See Appendix I for the agency correspondence undertaken for the Project.

9 MITIGATION

Two primary mitigation measures used as an integral part of the Project to avoid or minimize disturbance to sensitive resources were HDD and pipeline rerouting. HDD methods were employed when wetlands, large and non-ephemeral drainages, streams and rivers, other bodies of water, and roads were encountered. See Appendix C for a list of locations where directional boring was used. Trenching was used in open areas where these features were absent. The pipeline was rerouted to avoid numerous archaeological sites and in response to requests made by landowners and lease operators impacted by the pipeline (Section 8.1.5).

Other mitigation measures included temporal construction constraints. Construction activities in the region were timed to avoid potential impacts to birds during the prime nesting season (mid-April through August).

In addition, it is believed that Saddle Butte implemented thorough mitigation measures to minimize construction-related impacts as shown in the construction documents (Appendix O).

10 QUALIFICATIONS

The qualifications of the personnel who contributed to this combined application are provided in Table 11.

Table 11: Personnel Qualifications

Name	Degree(s)	Qualifications and Experience
Jessica Keiser	B.S., Environmental Engineering	Currently serves as Vice President of Environmental, Safety, and Health for Targa Resources Corporation and manages Targa's compliance, due diligence, and advocacy efforts. She previously worked as an environmental engineer at Milliken Chemical in Spartanburg, South Carolina, and focused on air- and wastewater-related projects, safety, and Total Quality Management efforts. In 2000, she worked for Trinity Consultants, where she conducted air permitting and federal Clean Air Act work for refineries, petrochemical, and batch chemical manufacturing, as well as the midstream natural gas industry.
Rodolfo Salazar	B.S. Marine Biology	Nine years of experience with the National Environmental Policy Act, federal Endangered Species Act, Clean Water Act, Migratory Bird Treaty Act, National Historic Preservation Act, and other state and federal regulations. He joined Targa in 2014 and is responsible for Targa's natural resources permitting for pipelines and terminals. Mr. Salazar has a strong background in aquatic wildlife and plants. He has led and conducted wetland delineation, migratory bird surveys, and threatened and endangered species surveys, including piping plover, and bald eagle monitoring.
Paul Pansegrau, Ph.D.	Ph.D., Chemistry B.S., Chemistry	22 years of experience in the North Dakota energy and fuels industries. Experienced in production, operations, and environmental areas. Specific areas include lignite utilization and conversion to fuels and chemicals, and renewable fuels and chemical production. Dr. Pansegrau also possesses expertise in environmental sampling, analyses, and reporting.
Gordon Ferguson	B.S. Bacteriology	30 years of experience in environmental studies and permitting, with a focus on permitting for power and pipeline projects. His areas of expertise include identification of permitting requirements and environmental support cost estimates for energy projects, wetland delineation and water resource permitting, and investigation of threatened and endangered species, cultural resources, wastewater, and stormwater.
Joseph Carlo	B.S. Biology M.S. Evolution, Ecology, and Behavior	Regularly assists in development of state-specific and federal permit applications and the preparation of environmental impact statements, environmental assessments, and environmental reports. Specializes in wildlife surveys, habitat assessments, and data interpretation regarding avian fauna. With seven years' experience, Mr. Carlo supports permitting and environmental compliance processes for existing and proposed wind farm, transmission line, and pipeline development and habitat enhancement projects. He conducts a broad array of wildlife surveys, including migratory bird surveys, breeding bird surveys, bald eagle monitoring, winter mammal tracking surveys, bat mist netting, stream delineation, and surveys for threatened and endangered species, including desert tortoise.

Table 11: Personnel Qualifications

Name	Degree(s)	Qualifications and Experience
Grant Young	B.S. Biology	Specializes in the National Environmental Policy Act, Endangered Species Act, Clean Water Act, Migratory Bird Treaty Act, National Historic Preservation Act, and other state and federal regulations. This experience allows him to offer on-point insight into permitting and compliance issues for energy clients. His strengths include habitat and threatened and endangered species assessments, sampling and field data collection, applying information technology/geographic information system solutions to project siting, and developing scientifically rigorous and defensible technical reports.

11 DEVELOPMENT

11.1 Discussion of Present and Future Natural Resource Development in the Area

The two tank facilities and the pipeline corridor are surrounded by agricultural lands and private industrial developments, including oil wells and gathering systems, and crude oil terminals.

The Johnsons Corner tank facility is surrounded by several natural resource development projects, including a StatOil terminal located approximately 2 miles to the east along Highway 73. There are several petroleum production sites in the immediate vicinity of the Johnsons Corner facility. However, the lands in the area are largely used for agricultural production.

The land use along the pipeline corridor is still largely for agricultural production, but a significant number of oil wells and other pipeline systems are encountered along the corridor. Further petroleum production development and transport along the route can be expected from a number of entities. However, Targa has no current plans in this area.

The area surrounding the Alexander tank facility has experienced industrial development in the past years. Nearby crude oil terminals are operated by Brigham, Enbridge, and StatOil. A nearby waste processing and disposal facility is operated by Tervita. Outside the immediate areas described above, the land is predominantly used for agricultural production, with petroleum production wells interspersed about the general area. Targa has no current plans in this area.

11.2 Plans for Future Expansion

There are presently no plans to expand the transmission pipeline system.

12 MAPS

12.1 Map of Criteria within the Study Area

Since a combined application for a Certificate of Corridor Compatibility and a Route Permit is being submitted, the maps of the proposed corridor and route of the Project can be found in Section 2 (Figures 1 through 3). The locations of Exclusion and Avoidance Areas, as defined in Section 69-06-08-02 of the North Dakota Administrative Code, within the corridor are depicted on the maps provided in Appendix J.

12.2 Maps of Study Area

The GIS software in current use by the Commission is ESRI's ArcGIS and companion software packages. A CD-ROM containing copies of ArcGIS shapefiles has been included with this application.

12.3 Black and White Map for Publication

A black and white map for publication in the appropriate newspaper is provided in Appendix P.

13 REFERENCES

Carlson, Clarence G. 1985. Geology of McKenzie County, North Dakota. Prepared by the North Dakota Geological Survey in cooperation with the U.S. Geological Survey, North Dakota State Water Commission, and the McKenzie County Water Management District. http://www.swc.nd.gov/info_edu/reports_and_publications/county_groundwater_studies/pdfs/McKenzie_Part_I.pdf Accessed September 22, 2016

Helms, Lynn. 2016. "Director's Cut." August 8, 2016. https://www.dmr.nd.gov/oilgas/directorscut/directorscut-2016-08-12.pdf Accessed September 7, 2016

Kringstad, Justin. 2016a. North Dakota Energy Development & Transmission Interim Committee, "Energy Development and Transmission Committee." February 3, 2016. https://ndpipelines.files.wordpress.com/2012/04/kringstad-slides-edt-feb-3-2016.pdf Accessed September 7, 2016

_____. 2016b. Williston Basin Petroleum Conference, "Understanding North Dakota's Natural Gas Production and Midstream Infrastructure." May 24, 2016. https://ndpipelines.files.wordpress.com/2012/04/kringstad-wbpc-5-24-2016.pdf Accessed September 7, 2016

Natural Resources Conservation Service (NRCS). 2014. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/. Accessed September 19, 2016.

United States Environmental Protection Agency (EPA). 1978. Protective Noise Levels: Condensed Version of EPA Levels Document. EPA 550/9-79-100. EPA, Office of Noise Abatement and Control, Washington, DC. November 1978.

United States Fish and Wildlife Service (USFWS). 2013. Black-footed Ferret Recovery Plan. Denver: U.S. Fish and Wildlife Service.

_____. 1989. Black-footed Ferret Survey Guidelines for Compliance with the Endangered Species Act. Denver and Albuquerque: U.S. Fish and Wildlife Service.

United States Geological Survey (USGS). 1985. Groundwater Resources of McKenzie County, North Dakota. By M.G. Croft

APPENDIX A

APPLICATION FOR WAIVER OR REDUCTION OF PROCEDURES AND TIME SCHEDULES

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF NORTH DAKOTA

IN THE MATTER OF THE COMBINED APPLICATION OF TARGA BADLANDS, LLC, FOR A CERTIFICATE OF CORRIDOR COMPATIBILITY AND ROUTE PERMIT FOR TARGA BADLANDS, LLC'S CRUDE OIL PIPELINE PROJECT IN MCKENZIE COUNTY, AND REQUEST FOR WAIVER OF PROCEDURES AND TIME SCHEDULES	CASE NO. PU-16-_____

Application of Targa Badlands, LLC,
for Waiver or Reduction of Procedures and Time Schedules

In connection with its submission of a consolidated application for a Certificate of Corridor Compatibility and Route Permit ("Consolidated Application") for the conversion of an approximately 54.35-mile-long, 8-inch existing crude oil gathering pipeline and associated facilities to a transmission line (the "Project"), Targa Badlands, LLC ("Targa") submits to the North Dakota Public Service Commission ("Commission") this application for a waiver or reduction of procedures and time schedules set forth in Chapter 49-22 of the North Dakota Century Code ("Siting Act") and Article 69-06 of the North Dakota Administrative Code ("Siting Rules"). Targa requests the Commission waive and/or reduce procedures and time schedules required by the Siting Act and Siting Rules to accomplish the purposes as requested herein. In accordance with North Dakota Century Code Sections 49-22-07.2 and 49-22-13, and North Dakota Administrative Code Section 69-06-01-02 and Chapter 69-06-06, Targa's request includes, but is not limited to:

1. That the Commission waive the provisions of North Dakota Century Code Sections 49-22-08, 49-22-08.1, and 49-22-13, and North Dakota Administrative Code Section 69-06-01-02 insofar as they require the separate filing of

applications for waiver of procedures and time schedules, a Certificate of Corridor Compatibility ("Corridor Certificate"), and a Route Permit, separate notices of such applications, separate hearings on such applications, and certain time schedules as set forth in said statutes and rules.

2. That the Commission allow for consolidation of the applications for a Corridor Certificate and a Route Permit, and allow for a consolidated notice of publication.

3. That the Commission hold a single consolidated hearing on this waiver request and the Consolidated Application.

4. That the Commission waive the requirements of Section 69-06-05-01(2)(f) of the North Dakota Administrative Code insofar as this section may require a corridor width of ten percent of the corridor's length with a maximum width of six miles, reducing the required corridor width to between 200 feet and one mile for the Project.

Consistent with the Commission's Energy and Transmission Facility Siting Guidelines ("Commission's Guidelines"), Targa provides the following information in support of its waiver requests:

A. Description of Proposed Project.

1. **Type:** The Project consists of two terminals with storage tanks and an underground pipeline for the transportation and storage of crude petroleum. The existing crude oil pipeline was originally constructed by Saddle Butte Pipeline LLC ("Saddle Butte") as two gathering pipelines, namely the Smokey Trunk Line and the Midway to Alexander Pipeline. Both gathering pipeline segments became operational in December of 2011. Targa acquired the

Project in late 2012. Operationally, the two pipeline segments are considered as a single pipeline, hereinafter referred to as the Johnsons Corner-Alexander Pipeline.

The Johnsons Corner-Alexander Pipeline, which is part of the larger Targa gathering system, currently transports crude oil gathered from numerous well sites in Dunn and McKenzie Counties. The Johnsons Corner-Alexander Pipeline consists of 54.35-miles of 8-inch underground pipe, and includes five aboveground valve stations. Targa desires to convert the Johnsons Corner-Alexander Pipeline into a transmission line to flow crude oil in either direction, thereby enabling delivery of crude oil to recipients near either the Alexander or Johnsons Corner facilities.

The tank facility near Johnsons Corner includes a pig receiver, a sump tank, a booster pump station, outlet meter station, two 20,000-barrel-capacity tanks, tank inlet and outlet manifolds, an inlet meter station, a mainline pump station, a pig launcher, and a control building. The tank facility near Alexander includes a pig receiver, sump tank, control valve manifold, inlet meter station with leak detection equipment, 30,000-barrel-capacity tank, strainer station, transfer pump station, control building, and asset custody transfer station. Targa also seeks approval to utilize the storage tanks located at the Johnsons Corner and Alexander facilities for temporary operational storage of crude oil before the oil is transported by the Johnsons Corner–Alexander Pipeline.

2. **Product:** The type of product to be transmitted by the Project is crude oil, specifically light-sweet crude.

3. **Size and Design:** The maximum operating pressure for the Project is 1,480 pounds of pressure per square inch gauge with a maximum temperature of 100 degrees Fahrenheit. The Johnsons Corner-Alexander Pipeline will have a maximum design flow rate of

50,000 barrels per day. The steel pipeline used for the Johnsons Corner-Alexander Pipeline meets United States Department of Transportation regulations, specifically the design criteria outlined in 49 CFR Part 195, Subpart C. The Johnsons Corner-Alexander Pipeline was constructed, and will be operated and maintained, in accordance with 49 CFR Part 195.

With respect to the storage facilities, the Johnsons Corner facility possesses two 20,000-barrel-capacity storage tanks, and the Alexander facility possesses a single 30,000-barrel-capacity storage tank. The facilities were constructed using standard construction techniques, including site preparation (i.e., clearing, grubbing, grading), concrete pouring, and steel erection.

4. Location:

The Project is located entirely within McKenzie County, North Dakota. The Johnsons Corner tank facility is located on 31.84 acres within Section 24 of Township 150 North, Range 96 West, McKenzie County. The Midway valve station is located on 39.19 acres within Section 7 of Township 149 North, Range 98 West, McKenzie County. The Alexander tank facility is located on 16.10 acres within Section 19 of Township 152 North, Range 101 West, McKenzie County.

The total length of the Johnson Corner-Alexander Pipeline is approximately 54.35 miles located between Johnsons Corner and Alexander, North Dakota. Maps of the Johnsons Corner-Alexander Pipeline and the locations of the above-ground associated facilities are provided in the Consolidated Application, submitted herewith.

5. Geographic Service Area:

As noted above, the Johnsons Corner-Alexander Pipeline is a gathering line located between Johnsons Corner and Alexander, North Dakota which interconnects with other portions of the Targa crude gathering system. Upon conversion, the Project will transport and store crude

oil from portions of the Targa crude gathering system and from various production sites across Dunn and McKenzie Counties and deliver the oil to the Enbridge terminal near Alexander, North Dakota. The immediate area served by the Project will be western North Dakota; however, the crude oil will ultimately be distributed throughout the United States and Canada.

6. **Time Schedule:** Targa proposes to develop the Project on the following schedule:

- **November 2016**— Targa files with the Commission a consolidated application for a Corridor Certificate and Route Permit.
- **February 2017** — The Commission issues a Corridor Certificate and Route Permit for the Project.
- **Upon Approval** — Targa begins utilizing the gathering line as a transmission line along with utilization of the storage tanks as described in the Consolidated Application.

7. **Future Plans:** At this time, Targa has no specific plans for additions to or modifications of the Project.

B. Need for the Project.

The major constraint in transporting oil from North Dakota to refining centers is the lack of pipeline capacity. In December 2014, crude oil production hit an all-time high of 1,227,483 barrels per day.[1] As of June 2016, production declined to 1,026,584 barrels per day.[2] However, projections indicate that production may bottom out in either 2017 or 2020, and ultimately

---

[1] Lynn Helms, NDIC Department of Mineral Resources, Director's Cut (Aug. 12, 2016), https://www.dmr.nd.gov/oilgas/directorscut/directorscut-2016-08-12.pdf (last visited Oct. 21, 2016).

[2] *Id.*

increase to between 1.4 million and 1.8 million barrels per day around 2030.[3] The need for pipelines to transport this anticipated volume of crude petroleum will be required in the future.

Additionally, transporting crude oil in western North Dakota currently involves significant movement of crude oil by tanker truck over public roadways, a public safety issue that the Project will help prevent. In McKenzie County, approximately 892 truckloads with an average of 220 barrels per truck are transported daily.[4] The Johnsons Corner-Alexander Pipeline is capable of transporting 50,000 barrels of crude oil per day, which equals 227 truckloads per day that could be removed from roadways in McKenzie County.

The Johnsons Corner-Alexander Pipeline will help provide necessary storage and capacity for the safe and economic transportation of crude oil from the Bakken and Three Forks formations to facilities with access to major markets. For additional analysis of the need for the Project, including a discussion of alternatives evaluated, please see Section 3 of the Consolidated Application, which accompanies this waiver application.

C. Cost.

The total estimated cost of the Project was $85 million. This includes $10 million for the Johnsons Corner tank facility, $5 million for the Alexander tank facility, and $70 million for the Johnsons Corner-Alexander Pipeline.

---

[3] Justin Kringstad, North Dakota Pipeline Authority, Energy Development and Transmission Committee (Feb. 3, 2016), https://ndpipelines.files.wordpress.com/2012/04/kringstad-slides-edt-feb-3-2016.pdf (last visited Oct. 21, 2016).

[4] *Id.*

D. Waiver Request.

Targa requests the Commission grant the waivers requested herein because said waivers are needed to prevent potential delays to utilization of the Project as a transmission facility. As noted above, converting the Johnsons Corner-Alexander Pipeline from a gathering line to a transmission line is needed to provide additional capacity as production increases. Utilizing the Johnsons Corner-Alexander Pipeline as requested will eliminate the need to transport the crude oil to rail facilities or other pipeline facilities via truck, which, in turn, will reduce truck traffic on North Dakota roads and highways. Without the waivers of time schedules and procedures requested, the Project will not be able to satisfy the need for a safer, more efficient means of transporting crude oil to facilities that have access to major markets.

Section 49-22-07.2 of the North Dakota Century Code provides that the Commission may waive procedures and time schedules upon a finding that "the proposed facility is of such length, design, location, or purpose that it will produce minimal adverse effects." Based upon the investigation and analysis set forth in Targa's Consolidated Application, granting the waivers requested is appropriate because the proposed facility will produce minimal adverse effects due to its length (approximately 54.35 miles), its design (an underground, small-diameter pipeline with few above-ground appurtenances), its location (avoiding Exclusion and Avoidance Areas), and its purpose (storage and underground transportation of crude oil).

In determining whether the proposed facility will result in adverse impacts on the environment, Targa evaluated the Project using the criteria set forth in the Siting Act, the Siting Rules, and the Commission's Guidelines. More specifically, Targa evaluated the impacts of the Johnsons Corner-Alexander Pipeline and associated facilities considering the siting criteria set forth in Section 69-06-08-02 of the North Dakota Administrative Code and the factors set forth

in Section 49-22-09 of the North Dakota Century Code. Impacts associated with the Project, and mitigation measures that were taken with respect to said impacts, are summarized in Sections 7, 8, and 9 of Targa's Consolidated Application. Based upon Targa's siting criteria evaluation, and the factors set forth in the Guidelines, the Johnsons Corner-Alexander Pipeline and associated facilities will have minimal adverse effects.

Accordingly, Targa respectfully requests the Commission grant the requested waivers and render an expeditious decision.

Dated this 7th day of November, 2016.

FREDRIKSON & BYRON, P.A.

By _____

LAWRENCE BENDER, ND Bar #03908
DANIELLE KRAUSE, ND Bar #06874
Attorneys for Targa Badlands, LLC
1133 College Drive, Suite 1000
Bismarck, ND 58501-1215
(701) 221-8700

STATE OF NORTH DAKOTA)
) ss.
COUNTY OF BURLEIGH)

LAWRENCE BENDER, of lawful age, being first duly sworn, on oath deposes and says:

That he is one of the attorneys for Applicant in the foregoing application; that he executed the foregoing application for and on behalf of said Applicant and as its said attorney that he has read said application and knows the contents thereof, and that the statements made and contained therein are, to the best of his knowledge and belief, true and correct.

LAWRENCE BENDER

Subscribed and sworn to before me this 7th day of November, 2016.

BETH E. RIPPLINGER
Notary Public
State of North Dakota
My Commission Expires January 13, 2022

Notary Public
My Commission Expires:

59850039_4.docx

APPENDIX B

CORPORATE DOCUMENTS

State of North Dakota

SECRETARY OF STATE

CERTIFICATE OF GOOD STANDING
OF

TARGA BADLANDS LLC

The undersigned, as Secretary of State of the State of North Dakota, hereby certifies that TARGA BADLANDS LLC, a FOREIGN LIMITED LIABILITY COMPANY, authorized to transact business in the State of North Dakota on January 11, 2013, and according to the records of this office as of this date, has paid all fees due this office as required by North Dakota statutes governing a FOREIGN LIMITED LIABILITY COMPANY.

ACCORDINGLY the undersigned, as such Secretary of State, and by virtue of the authority vested in him by law, hereby issues this Certificate of Good Standing to

TARGA BADLANDS LLC

Issued: September 28, 2016

Alvin A. Jaeger
Secretary of State

Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "TARGA BADLANDS LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF SEPTEMBER, A.D. 2016.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN PAID TO DATE.

5260122 8300

Authentication: 203063224

SR# 20165954149

Date: 09-27-16

You may verify this certificate online at corp.delaware.gov/authver.shtml

APPENDIX C

DIRECTIONAL BORE LOCATIONS

Alexander to Midway Pipeline Section			
Bore Location			
Begin Bore	End Bore	Length of Bore	Crossing Description
2208	2660	452	U.S. 85
5984	6109	125	Lease Road
9316	9450	134	Lease Road
14304	14438	134	Lease Road
31461	31595	134	Lease Road
34554	34744	180	County Road 16
41360	41450	90	Farmstead Driveway
43854	43988	134	Lease Road
43803	43937	134	Lease Road
52689	53316	627	34th Street NW & 138th Avenue NW
67640	67907	267	County Road 29
85090	85225	135	Lease Road
89441	89698	257	Lease Road
93613	93883	270	131st Avenue NW
96338	96516	178	31st Street NW
119765	120212	447	U.S. 85
120312	120446	134	130th Avenue NW
123043	132321	178	Drainage
125459	125652	193	26th Street NW
144863	145042	179	129th Avenue NW
145811	146059	258	County Road 30
157753	158012	259	22nd Street NW
160290	160465	275	127th Avenue NW
162957	163267	310	Creek Crossing
166904	167230	326	U.S. 85

Johnsons Corner to Midway Pipeline Section		
Location of Center of Crossing	Length	Crossing Description
9566	113	Private Road
11174	53	Private Road
13163	66	25th Street NW
17340	268	County Road 53
19011	165	Lease Road
29377	166	Lease Road
30926	222	Lease Road
31969	176	County Road 45
48527	31	Road 115/24th Street NW
56444	220	Lease Road
60364	44	Lease Road
61624	44	Lease Road
76828	389	Cherry Creek
78043	131	Drainage (Sevenmile Creek?)
79250	296	County Road 37
93733	116	122nd Avenue NW

APPENDIX D

BIOLOGICAL RESOURCES REPORT

SWCA®
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.®

Natural Resources and Wetland Delineation Report for the Johnsons Corner to Alexander Pipeline Project, McKenzie County, North Dakota

Prepared for

Targa Resources Corp.

Prepared by

SWCA Environmental Consultants

September 2016

Natural Resources and Wetland Delineation Report for the Johnsons Corner to Alexander Pipeline Project, McKenzie County, North Dakota

Prepared for

Targa Resources Corp.
1000 Louisiana Street, Suite 4300
Houston, Texas 77002

Prepared by

Allen Stegeman and Jason Bivens, Environmental Specialists

Reviewed by

Doug Faulkner, M.S.
Senior Biologist

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

SWCA Project No. 38605

September 13, 2016

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1
1.1 Background 1
1.2 Survey Area 1
1.3 Regulatory Background 2
1.3.1 North Dakota Administrative Code Section 69-06-08-02 2
1.3.2 Clean Water Act, Section 404 2
1.3.3 USACE Nationwide Permit 12 2
1.3.4 USACE Regional Conditions 2
1.3.5 Endangered Species Act 2
1.3.6 Migratory Bird Treaty Act 3
1.3.7 Bald and Golden Eagle Protection Act 3
2.0 METHODS 3
2.1 Pre-Field Review 3
2.2 Wetlands 3
2.2.1 Hydrophytic Vegetation 4
2.2.2 Wetland Hydrology 4
2.2.3 Hydric Soil 4
2.3 Waterbodies 4
2.4 Tree, Sapling, and Shrub Count 5
2.5 Noxious Weed Surveys 5
2.6 Wildlife Including Threatened and Endangered Species 5
2.7 Mapping 6
3.0 RESULTS 6
3.1 Vegetation 6
3.1.1 Herbaceous Upland 6
3.1.2 Shrubland and Woody Vegetation 7
3.1.3 Cropland 7
3.1.4 Hydrophytic Vegetation 7
3.2 Hydrology 7
3.3 Wetlands 8
3.4 Waterbodies 9
3.5 Soils 10
3.5.1 Zahl 12
3.5.2 Williams 12
3.5.3 Vebar 12
3.5.4 Flasher 13
3.5.5 Tally 13
3.5.6 Cabba 13
3.5.7 Maschetah 13
3.5.8 Rhame 13
3.5.9 Fleak 14
3.6 Tree, Sapling, and Shrub Count 14
3.7 Noxious Weeds 14

TABLE OF CONTENTS (continued)

Page

3.8 Wildlife 15
3.8.1 Wildlife Observed 15
3.8.2 Gray Wolf 15
3.8.3 Black-footed Ferret 16
3.8.4 Whooping Crane 16
3.8.5 Interior Least Tern 17
3.8.6 Pallid Sturgeon 18
3.8.7 Piping Plover 18
3.8.8 Designated Critical Habitat of Piping Plover 19
3.8.9 Dakota Skipper 19
3.8.10 Rufa Red Knot 20
3.8.11 Northern Long-eared Bat 21
3.8.12 Migratory Birds 21
3.8.13 Bald Eagle 22
3.8.14 Golden Eagle 22
4.0 CONCLUSIONS AND RECOMMENDATIONS 23
5.0 LITERATURE CITED 24

LIST OF TABLES

Table **Page**

1 Monthly Recorded Rainfall at National Weather Service Station in Williston, North Dakota 7
2 PEM Wetland Acreage within the Survey Area 8
3 Streams within the Survey Area 10
4 NRCS Derived Soil Series Present within the Survey Area 10
5 Estimated Tree, Sapling, and Shrub Count within the Survey Area 14
6 Wildlife Observed during Field Surveys of the Pipeline Route 15

LIST OF APPENDICES

Appendix

A Vicinity and Site Layout Maps
B Wetland Delineation Data Forms
C Photographs of Project Area

1.0 INTRODUCTION

1.1 BACKGROUND

Targa Resources Corp. (Targa) proposes to convert the existing Johnsons Corner to Alexander Pipeline, which is an approximately 54-mile-long gathering pipeline located on private lands in McKenzie County, North Dakota, to a transmission line (the project). Conversion of the Johnsons Corner to Alexander Pipeline requires a Certificate of Corridor Compatibility and Route Permit from the North Dakota Public Service Commission (NDPSC) but will not require any new ground disturbance or facilities. Targa contracted SWCA Environmental Consultants (SWCA) to conduct natural resources and wetland delineation field surveys to identify any species or their habitats protected by the Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), and Bald and Golden Eagle Protection Act (BGEPA), as well as any wetlands or potential waters of the U.S., as specified in Section 404 of the Clean Water Act.

SWCA conducted field surveys on July 5 through 8, 2016, to determine the potential presence and extent of wetlands and waterbodies, including those that are likely jurisdictional waters of the U.S. according to the U.S. Army Corps of Engineers (USACE) regulatory program, within a 200-foot-wide pipeline survey corridor along the entire length of the approximately 54-mile-long pipeline. Concurrently with the wetland determinations, SWCA conducted a cursory threatened and endangered species survey and habitat assessment; a tree, sapling, and shrub estimation 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 to complete each of the aforementioned surveys. Additionally, this report presents the results of the completed field surveys and provides regulatory recommendations to comply with the NDPSC and Clean Water Act, including the USACE Nationwide Permit (NWP) 12. Lastly, this report ensures observance of and offers mitigation measures for resources protected by the ESA, MBTA, and BGEPA.

1.2 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. The project is located in the Northwestern Great Plains (level III ecoregion) which is a semiarid rolling plain of shale and sandstone-derived soils punctuated by occasional buttes and badlands (U.S. Geological Survey [USGS] 2014).

The surveyed area for the project area discussed herein is situated on the USGS Camp Creek East (1978), Camp Creek West (1979), Watford City NW (1978), Watford City (1978), Arnegard (1978), Schafer (1995), Shafer SE (1995), Tepee Buttes (1995), Lone Butte NW (1995), and Johnson Corner (1995), North Dakota, quadrangles. The Johnsons Corner to Alexander project corridor that was surveyed in July 2016 encompasses portions of 64 sections within 11 townships and ranges.

- Sections 19–21, 27, 28, 34, and 35, Township (T) 152 North (N), Range (R) 101 West (W)
- Sections 1 and 2, T151N, R101W
- Sections 6, 7, 17, 18, and 20–24, T151N, R100W
- Sections 19, 29, 30, and 32, T151N, R99W
- Sections 5, 8, 17, 20, 21, 28, 29, 32, and 33, T150N, R99W
- Sections 3, 4, 10, 11, 13, and 14, T149N, R99W
- Sections 1, 7, 11, 12, and 14–18, T149N, R98W
- Sections 31–36, T150N, R97W
- Sections 4 and 6, T149N, R97W
- Sections 24–26, 31, 32, 34, and 35, T150N, R96W
- Sections 3–5, T149N, R96W

1.3 REGULATORY BACKGROUND

1.3.1 North Dakota Administrative Code Section 69-06-08-02

In accordance with North Dakota Administrative Code (NDAC) Section 69-06-08-02, Transmission Facility Corridor and Route Criteria, certain geographical areas shall be either excluded or avoided from consideration for a transmission facility route.

1.3.2 Clean Water Act, Section 404

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

1.3.3 USACE Nationwide Permit 12

NWP 12 authorizes the construction of utility line projects in non-tidal waters of the U.S., provided the activity does not result in the permanent loss of greater than 0.5 acre of waters of the U.S., including wetlands.

NWP 12 requires that the permittee submit a pre-construction notification (PCN) prior to commencing construction if certain criteria are met, including if discharges result in the loss of greater than 0.10 acre of waters of the U.S.

1.3.4 USACE Regional Conditions

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

1.3.5 Endangered Species Act

In the absence of a federal nexus (i.e., any action carried out, funded, or permitted by a federal agency), the ESA protects endangered and threatened species and their habitats by prohibiting the "incidental take" of a listed animal, except as authorized by the U.S. Fish and Wildlife

Service (USFWS) pursuant to Section 10 of the ESA. The lack of discovery of threatened or endangered species does not signify their non-existence within any particular area, but only that no primary or secondary indications of these species were recorded.

1.3.6 Migratory Bird Treaty Act

The MBTA provides that it is unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture, or kill; possess, offer to sell, barter, purchase, deliver, or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. Oil and gas developments are advised to consider this federal act when considering seasonal timing, best management practices, and pre-construction survey requirements.

1.3.7 Bald and Golden Eagle Protection Act

The BGEPA prohibits anyone, without a permit issued by the Secretary of the Interior, from "take" of an eagle. This may include 1) injury to an eagle; 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. Oil and gas developments in North Dakota are subject to compliance with the BGEPA, and should consider this federal act when planning spatial and temporal aspects of construction or other disruptive activities, best management practices, and pre-construction survey requirements.

2.0 METHODS

2.1 PRE-FIELD REVIEW

Prior to conducting field surveys, SWCA reviewed applicable National Wetlands Inventory (NWI) data (USFWS 2012a), National Hydrography Dataset (NHD) flowline data, the threatened and endangered species list for McKenzie County (USFWS 2015a), as well as preliminary National Weather Service climatic data.

2.2 WETLANDS

NWI mapping for the region indicates the presence of wetlands within the project area (USFWS 2012a). SWCA biologists conducted wetland delineations within the survey area based on the principles and guidelines provided in the *Corps of Engineers Wetlands Determination Manual* (Manual) (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Determination Manual: Great Plains Region Version 2.0* (Supplement) (USACE 2010). According to the Manual, an area is a wetland if three specific wetland indicators—hydrophytic vegetation, wetland hydrology, and hydric soils—are present, with certain exceptions. All wetlands and waterbodies geographically referenced within the survey area during field survey are depicted on the site layout maps in Appendix A. Wetland delineation data forms are provided in Appendix B.

2.2.1 Hydrophytic Vegetation

SWCA recorded all plants within the vegetative community of the survey area based on the respective stratum in which each species is located. The Supplement defines a tree as a woody-stemmed plant with a trunk diameter at breast height of equal to or greater than 3 inches, regardless of height. The sapling and shrub stratum is composed of woody-stemmed plants with a trunk diameter at breast height 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 noted each plant species' respective USFWS indicator status (i.e., upland [UPL], facultative upland [FACU], facultative [FAC], facultative wetland [FACW], and obligate [OBL]). Vegetation communities met the hydrophytic vegetation criterion for wetlands if greater than 50% of dominant species had an indicator status of FAC, FACW, or OBL.

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.

2.2.3 Hydric Soil

Biologists recorded detailed notes regarding soil profiles including the hue, value, and chroma (i.e., color) of the soil (using Munsell Soil Color Charts); the depth and extent of that soil color within the entire soil profile; the concentration of any redoximorphic concentrations or depletions; and the texture of the soil at each depth where a color change was observed. Common hydric soil indicators of the Northern Great Plains subregion include the presence of hydrogen sulfide gas within the soil pit, redox depressions, redox dark surfaces, and depleted matrix.

2.3 WATERBODIES

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

The NHD is a digital vector dataset referred to by SWCA biologists in the field to confirm or disprove the existence of features such as lakes, ponds, streams, rivers, canals, dams, and stream gages (USGS 2011). NHD flowlines (24k lines) are features that contain flow direction and form a network (USGS 2011). In the field, SWCA can confirm or disprove 24K lines based on the presence of streams, OHWM, hydrophytic vegetation, wetland hydrology, and hydric soils. A desktop analysis is then performed to determine if the confirmed 24K lines show significant nexus to waters as described in Title 33 Code of Federal Regulations Part 328.3 (a) (1)–(3).

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

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

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

2.4 TREE, SAPLING, AND SHRUB COUNT

SWCA determined the tree and shrub species likely present, as well as estimated acreage, within the survey area before the construction of the original gathering system. Because natural resource surveys were completed post-construction, SWCA was not able to provide a precise enumeration of trees, saplings, and shrubs encountered during the field surveys. The boundary of all potential forested upland, shrubland, and shelterbelt habitat was geographically referenced using a Trimble GeoXT series hand-held global positioning system (GPS) unit. Tree and shrub species present in adjacent areas, as well as their size and percent cover, was used to inform estimates for areas of the project cleared during construction of the gathering line.

2.5 NOXIOUS WEED SURVEYS

SWCA conducted a noxious weed survey for North Dakota state- or county-listed noxious weeds within the survey area. Surveys were conducted during the growing season, which aides in detection and identification of noxious weed species. Targa will monitor and control noxious weeds within their right-of-way (ROW) prior to and subsequent to construction.

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 2015a) regarding the presence of threatened or endangered species that may occur within the survey area. This

document does not represent a comprehensive survey, but rather acknowledges the potential presence of listed species. Wildlife sightings can involve primary observations (i.e., actual sighting of an animal) or secondary observations (i.e., observation of scat, tracks, feathers, or fur deposits).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. In addition, SWCA completed surveys for suitable habitats that would have the potential to support any listed species.

A line-of-sight binocular survey for raptor nests was also conducted for a distance of approximately 0.5 mile. SWCA noted all wildlife observed during the field survey.

2.7 MAPPING

The boundaries of each wetland, waterbody, and woody vegetation habitat were geographically recorded using a Trimble GeoXT global positioning system (GPS) unit. This 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 v10.3 (ESRI Redlands, California) was used to analyze recorded features, calculate areas, and generate the maps provided in Appendix A. Please note that all data recorded using the GPS unit and displayed on the attached maps are for review purposes only and do not represent a professional civil survey.

3.0 RESULTS

3.1 VEGETATION

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

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

3.1.1 Herbaceous Upland

The herbaceous upland community consisted of areas dominated by non-woody vegetation such as grasses and forbs. The dominant herbaceous community within the proposed transmission line survey area includes non-native grasses and forbs such as smooth brome (*Bromus inermis*), alfalfa (*Medicago stiva*), Kentucky bluegrass (*Poa pratensis*), and crested wheatgrass (*Agropyron cristatum*). The remaining herbaceous upland consists of mixed-grass prairie composed of green needlegrass (*Nassella viridula*), western wheatgrass (*Pascopyrum smithii*), western yarrow (*Achillea millefolium*), American licorice (*Glycyrrhiza lepidota*), white sagebrush (*Artemisia ludoviciana*), prairie rose (*Rosa arkansana*), upright prairie coneflower (*Ratibida columnifera*), and purple coneflower (*Echinacea angustifolia*).

3.1.2 Shrubland and Woody Vegetation

Shrubland communities occurring throughout the survey area consisted of upland areas dominated by woody-stemmed vegetation including primarily silver buffaloberry (*Shepherdia argentea*), chokecherry (*Prunus virginiana*), and western snowberry (*Symphoricarpos occidentalis*).

Within the survey area, forested upland vegetation consisted of American elm (*Ulmus americana*), Rocky Mountain juniper (*Juniperus scopulorum*), peachleaf willow (*Salix amygdaloides*), and green ash (*Fraxinus pennsylvanica*).

3.1.3 Cropland

Cropland was confirmed in the survey area and classified as small grains. Common crops in the area include wheat (*Triticum aestivum*), durum (*Tricum durum*), canola (*Brassica napus*), oats (*Avena sativa*), and barley (*Hordeum vulgare*) (U.S. Department of Agriculture 2006).

3.1.4 Hydrophytic Vegetation

Aquatic vegetation species confirmed during the survey included prairie cordgrass (*Spartina pectinata*), baltic rush (*Juncus balticus*), broadleaf cattail (*Typha latifolia*), foxtail barley (*Hordeum jubatum*), Common threesquare (*Schoenoplectus pungens*), curly dock (*Rumex crispus*), softstem bulrush (*Schoenoplectus tabernaemontani*), and swamp smartweed (*Persicaria amphibian*).

3.2 HYDROLOGY

Although precipitation data are not available for the exact site of the project, it is likely analogous to the precipitation data for Williston, Williams County, North Dakota, due to proximity of the Williston weather station to the project. Williston is approximately 16.8 miles southwest of the project.

According to National Weather Service preliminary climatological data for Williston, 6.44 inches of precipitation were recorded from April 1 through July 8, 2016 (Table 1). This amount is 0.34 inch above normal for this time period, suggesting slightly wetter than normal conditions.

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

Month	Recorded Precipitation (inches)	Normal Precipitation (inches)	Difference (inches)
April 2016	1.95	1.00	0.95
May 2016	1.81	1.92	-0.11
June 2016	1.84	2.52	-0.68
July 1–8, 2016	0.84	0.66	0.18
Total	**6.44**	**6.10**	**0.34**

Source: National Oceanic and Atmospheric Administration 2016.

Wetland communities observed during the delineation 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 and hydric soils criteria defined by the Manual and Supplement. Common indicators of wetland hydrology observed during field surveys included Surface Water (A1), Saturation (A3), Algal Mat or Crust (B4), Surface Soil Cracks (B6), Inundation Visible on Aerial Imagery (B7), Drainage Patterns (B10), Aquatic Invertebrates (B13), Saturation Visible on Aerial Imagery (C9), Geomorphic Position (D2), and FAC-Neutral Test (D5).

3.3 WETLANDS

SWCA recorded 15 PEM wetlands within the 200-foot-wide survey corridor, totaling approximately 4.05 acres (Table 2). According to NWI data, one additional wetland is within the survey area (USFWS 2012a); however, during the field surveys that area was confirmed as an upland (ADP2U) and lacked all of the three wetland criteria. All 15 of the recorded wetlands showed connectivity to local streams and drainages and therefore all are potentially jurisdictional; however, the USACE has the final authority to determine jurisdictional status.

Table 2. PEM Wetland Acreage within the Survey Area

Feature ID	Associated Sampling Point	Sample Point Location		Total Size (acres)	Wetland Acres within 200-foot-ROW	Length of Required Crossing (feet)
		Latitude	Longitude			
AWET1 (North Fork Creek)	ADP3W	47.779795	-102.936974	0.37	0.19	128
	ADP4U	47.779971	-102.936935			
AWET2	ADP5W	47.762606	-102.942999	0.06	0.01	37
	ADP6U	47.762560	-102.943006			
AWET3	ADP7W	47.759482	-102.950032	0.08	0.03	27
	ADP8U	47.759477	-102.950138			
AWET4	ADP9W	47.758867	-102.963600	0.19	0.07	48
	ADP10U	47.758870	-102.963518			
AWET5	ADP11W	47.763616	-103.014212	0.25	0.12	62
	ADP12U	47.763599	-103.014298			
AWET6	ADP13W	47.763233	-103.021186	1.05	0.59	131
	ADP14U	47.763333	-103.021429			
AWET7	ADP23W	47.796899	-103.368629	0.16	0.07	45
	ADP24U	47.796820	-103.368610			
AWET8	ADP31W	47.921024	-103.551973	0.10	0.00	0
	ADP32U	47.921089	-103.551970			
AWET9	ADP33W	47.921023	-103.552875	0.04	0.00	20
	ADP34U	47.921029	-103.552922			
AWET10	ADP35W	47.921460	-103.556350	0.19	0.11	85
	ADP36U	47.921432	-103.556414			
BWET1	BDP2W	47.761641	-103.041042	0.27	0.10	148
	BDP3U	47.761614	-103.041072			

Feature ID	Associated Sampling Point	Sample Point Location		Total Size (acres)	Wetland Acres within 200-foot-ROW	Length of Required Crossing (feet)
		Latitude	Longitude			
BWET2	BDP4W	47.763270	-103.051275	0.16	0.08	52
	BDP5U	47.763294	-103.051299			
BWET3	BDP10W	47.740168	-103.334180	0.02	0.00	0
	BDP11U	47.740186	-103.334228			
BWET4	BDP19W	47.926719	-103.561528	0.01	0.00	0
	BDP20U	47.926682	-103.561481			
BWET5	BDP22W	47.954185	-103.602640	1.10	0.57	267
	BDP23U	47.954271	-103.602708			
NWI	ADP2U	47.787680	-102.915383	0.00	0.00	0
Total				**4.05**	**1.94**	**1,050**

ROW = right-of-way

3.4 WATERBODIES

SWCA identified 12 waterbodies, classified as either ephemeral, intermittent, or perennial streams, within the survey area (Table 3). All recorded streams are likely jurisdictional; however, the USACE has the final authority to determine jurisdictional status. Six named streams (USGS 2011) were surveyed within the proposed alignment. Timber Creek (BSTR8), Cherry Creek (BSTR4 and BSTR7), Spring Creek (BSTR6), and Sevenmile Creek (BSTR5) all displayed OHWMs and were recorded as streams. North Fork Creek (AWET1) did not have signs of an OWHM or flowing water; however, the area did meet the wetland criteria. Tobacco Garden Creek (at ADP27U) was dominated by upland vegetation, did not have hydric soils present, and showed no indicators of an OWHM. As such, this crossing was recorded as upland. In addition to the recorded waterbodies, SWCA recorded one upland swale and 24 upland data points that fell along NHD 24K flowlines (Appendices A and B). These areas did not show indicators of hydrology; UPL or FACU vegetation species were dominant in the plant communities; and they lacked hydric soils. Therefore, they do not meet the criteria to be considered waters of the U.S., including wetlands.

Table 3. Streams within the Survey Area

Feature ID	Description	Location		Total Acres within 200-foot ROW	Length of Required Crossing (feet)
		Latitude	Longitude		
ASTR1	Ephemeral	47.762703	-102.94339	0.01	4
ASTR2	Intermittent	47.763119	-103.02117	0.07	19
BSTR1	Ephemeral	47.761836	-103.041462	0.05	28
BSTR2	Ephemeral	47.761387	-103.044151	0.08	32
BSTR3	Intermittent	47.765775	-103.129038	0.08	51
BSTR4 (Cherry Creek)	Perennial	47.756173	-103.157667	0.27	65
BSTR5 (Sevenmile Creek)	Ephemeral	47.754595	-103.161697	0.08	22
BSTR6 (Spring Creek)	Perennial	47.727888	-103.293639	0.15	38
BSTR7 (Cherry Creek)	Perennial	47.740313	-103.333978	0.34	87
BSTR8 (Timber Creek)	Perennial	47.950991	-103.589956	0.13	34
BSTR9	Ephemeral	47.95408	-103.602424	0.03	12
BSTR10	Intermittent	47.957486	-103.604769	0.06	207
Total				**1.35**	**599**

ROW = right-of-way

3.5 SOILS

Based on Natural Resources Conservation Service (NRCS) mapping (NRCS 2013), 71 soil types are present in the project corridor. The project area analyzed for soils covers the 200-foot-wide construction corridor. Table 4 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 2013).

Table 4. NRCS Derived Soil Series Present within the Survey Area

Soil Type	MUSYM	% Slope	Area within 200-foot ROW (acres)	% of Total Area
Zahl-Williams loams	E3555D	9 to 15	99.65	7.58
Williams-Zahl loams	E3541C	6 to 9	90.17	6.86
Vebar-Flasher-Tally complex	E1355D	9 to 15	72.43	5.51
Zahl-Cabba-Maschetah complex	E3609F	6 to 70	70.92	5.40
Rhame-Fleak complex	L1425F	9 to 50	70.92	5.40
Flasher-Vebar-Parshall complex	E1423F	9 to 35	65.08	4.95
Cabba-Chama-Sen silt loams	E2741D	9 to 15	64.54	4.91
Williams-Zahl loams	E3541B	3 to 6	63.44	4.83
Zahl-Beisigl-Tally complex	E3637D	9 to 15	59.71	4.54
Vebar-Cohagen fine sandy loams	E1333C	6 to 9	40.49	3.08

Soil Type	MUSYM	% Slope	Area within 200-foot ROW (acres)	% of Total Area
Dogtooth-Janesburg-Cabba complex	E0701F	6 to 35	32.48	2.47
Zahl-Max loams, dissected	E3567F	15 to 45	30.03	2.29
Belfield-Grail clay loams	E0605A	0 to 2	27.35	2.08
Chama-Cabba-Sen silt loams	E2737C	6 to 9	27.03	2.06
Cabba-Chama-Shambo loams	E2617F	9 to 50	23.97	1.82
Zahl-Max loams	E3559E	15 to 25	23.90	1.82
Williams-Bowbells loams	E3527B	3 to 6	23.41	1.78
Beisigl-Flasher-Telfer loamy fine sands	E1403D	6 to 15	21.20	1.61
Korchea-Fluvaquents complex, channeled, frequently flooded	E4139A	0 to 2	19.98	1.52
Beisigl-Telfer loamy fine sands	E1603D	6 to 15	17.69	1.35
Boxwell-Kremlin loams	L2807D	9 to 15	17.45	1.33
Cabba-Chama-Havrelon, occasionally flooded complex	E4190F	2 to 70	17.38	1.32
Amor-Cabba loams	E2601C	6 to 9	17.37	1.32
Dooley-Zahl complex	E3703D	9 to 15	15.59	1.19
Daglum-Belfield complex	E0447B	0 to 6	15.09	1.15
Zahl-Tally-Williams complex	E3635C	6 to 9	14.95	1.14
Dooley-Zahl complex	E3703B	3 to 6	14.48	1.10
Farnuf loam	E2120B	2 to 6	14.34	1.09
Cabba-Badland complex	E3107F	6 to 70	14.13	1.08
Belfield-Savage-Daglum complex	E0617B	2 to 6	12.22	0.93
Dogtooth-Janesburg silt loams	E0559B	0 to 6	11.43	0.87
Zahl-Williams-Cabba complex	E3639C	6 to 9	10.78	0.82
Savage silty clay loam	E0837B	2 to 6	10.39	0.79
Boxwell-Cabbart-Arikara complex	L2633F	9 to 70	9.99	0.76
Chama-Sen-Cabba silt loams	E2913B	3 to 6	9.95	0.76
Golva silt loam	E2213C	6 to 9	9.86	0.75
Niobell-Williams loams	E3513B	3 to 6	9.70	0.74
Dooley-Zahl complex	E3703C	6 to 9	8.98	0.68
Williams-Bowbells loams	E3527A	0 to 3	8.72	0.66
Vebar-Cohagen fine sandy loams	E1333B	3 to 6	8.42	0.64
Golva silt loam	E2213B	2 to 6	6.73	0.51
Lawther silty clay	E0821A	0 to 2	6.69	0.51
Havrelon loam, occasionally flooded	E4121A	0 to 2	6.53	0.50
Amor-Cabba loams	E2601D	9 to 15	6.33	0.48
Cherry silt loam	E3203C	6 to 9	6.23	0.47
Lihen-Parshall complex	E1805B	0 to 6	6.14	0.47
Rhame-Kremlin-Archin complex	L2335D	6 to 15	5.67	0.43
Ridgelawn silt loam, occasionally flooded	E4153A	0 to 2	5.33	0.41
Regent-Cabba complex	E0921C	6 to 9	5.24	0.40
Rhame-Chinook fine sandy loams	L1355D	9 to 15	4.99	0.38
Farnuf loam	E2120A	0 to 2	4.99	0.38
Savage-Grail silty clay loams	E0835A	0 to 2	4.98	0.38

Soil Type	MUSYM	% Slope	Area within 200-foot ROW (acres)	% of Total Area
Farnuf loam	E2120C	6 to 9	4.91	0.37
Brandenburg-Cabba-Dogtooth complex	E3013F	15 to 70	4.68	0.36
Moreau-Barkof silty clays	E1009B	3 to 6	4.52	0.34
Amor-Shambo loams	E2803B	3 to 6	4.27	0.33
Tally-Parshall fine sandy loams	E1865B	2 to 6	4.27	0.32
Cabbart-Badland complex	L3107F	6 to 70	4.20	0.32
Zahl-Cabba-Williams complex	E3641D	9 to 15	4.18	0.32
Boxwell-Kremlin loams	L2803B	3 to 6	2.94	0.22
Flasher-Rock outcrop-Vebar complex	E1475F	9 to 70	2.84	0.22
Scairt-Maltese-Boxwell complex	L2311E	2 to 25	2.10	0.16
Golva silt loam	E2213A	0 to 2	1.88	0.14
Moreau-Cabba complex	E0907D	9 to 15	1.68	0.13
Moreau-Wayden silty clays	E0913C	6 to 9	1.45	0.11
Sen-Janesburg silt loams	E2439B	3 to 6	1.36	0.10
Dooley fine sandy loam	E3701B	3 to 6	1.29	0.10
Noonan-Niobell-Williams loams	E3517B	3 to 6	1.11	0.08
Manning-Schaller-Wabek complex	E4561F	6 to 35	0.40	0.04
Arikara-Shambo-Cabba loams	E2725F	9 to 70	0.30	0.03
Lonna silt loam	L3203C	6 to 9	<0.002	<0.01
Total			**1,313.84**	**100.00**

Source: Natural Resources Conservation Service 2013
ROW = right-of-way

3.5.1 Zahl

The Zahl series consists of very deep, slowly permeable, well-drained soils found on glacial till plains, moraines, and valley side slopes at approximately 1 to 60 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 14 inches and mean annual air temperature is approximately 40 degrees Fahrenheit (°F). This soil type is largely used for rangeland foraging. Native vegetation species common to this soil type include western wheatgrass, little bluestem (*Schizachyrium scoparium*), and needle and thread (*Hesperostipa comata*) (NRCS 2013).

3.5.2 Williams

The Williams series consists of very deep, slowly permeable, well-drained soils found on glacial till plains and moraines with slopes at approximately 0 to 35 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 14 inches and mean annual air temperature is approximately 42°F. This soil type is largely used for cultivation. Native vegetation species common to this soil type include western wheatgrass, needle and thread, blue grama (*Bouteloua gracilis*), and green needlegrass (NRCS 2013).

3.5.3 Vebar

The Vebar series consists of moderately deep, moderately rapidly permeable, well-drained soils found on uplands with slopes ranging from approximately 0 to 65 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 cultivation of corn (*Zea mays*) and small grains. Native vegetation species common to this soil type include needle and thread, and prairie sandreed (*Calamovilfa longifolia*) (NRCS 2013).

3.5.4 Flasher

The Flasher series consists of shallow, somewhat excessively drained soils formed in soft sandstone on side slopes, shoulder slopes, and summits of hills and ridges on uplands, and side slopes of valleys. Permeability is moderately rapid or rapid. Slopes range from 3 to 70 percent. The mean annual precipitation found throughout the spatial extent of this soil type is about 14 inches and mean annual temperature is about 42°F. These soils are used mainly for range and pasture. Native vegetation is prairie sandreed, blue grama, little bluestem, upland sedges (*Carex* sp.), some creeping juniper (*Juniperus horizontalis*), and other shrubs (NRCS 2013).

3.5.5 Tally

The Tally series consists of very deep, well-drained soils that formed in material derived from eolian deposits, alluvium, or glaciofluvial deposits. These soils are on stream terraces, alluvial fans, till plains, drainage ways, hills, sedimentary plains, and outwash plains. Slopes are 0 to 45 percent. The mean annual precipitation found throughout the spatial extent of this soil type is about 15 inches, and mean annual temperature is about 43°F. Potential native vegetation is mainly western wheatgrass, needle and thread, prairie junegrass (*Koeleria macrantha*), prairie sandreed, forbs, and shrubs (NRCS 2013).

3.5.6 Cabba

The Cabba series consists of shallow, well-drained, moderately permeable soils found on hills, escarpments, and sedimentary plains. The soil slopes broadly range between 2 and 70 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 16 inches and mean annual air temperature is approximately 43°F. The most common vegetation species found on this soil type are little bluestem, green needlegrass, and other various herbs, forbs, and shrub species (NRCS 2013).

3.5.7 Maschetah

The Maschetah series consists of very deep, well-drained soils found on sedimentary plains and hills. Slopes range from 1 to 50 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 17 inches and mean annual air temperature is approximately 43°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, green needlegrass, and fringed sagewort (*Artemisia frigida*) (NRCS 2013).

3.5.8 Rhame

The Rhame series consists of moderately deep, well-drained soils that form on pediments, hills, escarpments, and ridges. Slopes range from approximately 0 to 45 percent. Soils consist of fine sandy loam or sandy loam textures. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 17 inches and mean annual air temperature is approximately 43°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, green needlegrass, and fringed sagewort (NRCS 2013).

3.5.9 Fleak

The Fleak series consists of shallow, excessively drained soils that form on ridges and hilltops. Slopes range from 6 to 70 percent. Soils consist of fine sand or loamy fine sand textures. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 17 inches and mean annual air temperature is approximately 43°F. The potential native vegetation is primarily mid- and short grasses such as western wheatgrass, prairie sandreed, green needlegrass, little bluestem, needle and thread, blue grama, shrubs, and forbs (NRCS 2013).

3.6 TREE, SAPLING, AND SHRUB COUNT

SWCA recorded four woody vegetation areas that were impacted during the construction of the gathering system. Because natural resource surveys were completed post-construction, SWCA was not able to provide a precise enumeration of trees, saplings, and shrubs encountered during the field surveys. Additionally, it is likely that smaller patches (confined to the construction disturbance area) of naturally occurring woody vegetation would have been impacted by construction; however, species, number, and size of additional woody vegetation removed would be highly speculative. Table 5 presents an estimation of stems that would have been present at the four recorded areas before construction of the gathering system. Species found in adjacent areas that likely also occurred within the project's construction ROW include green ash, American elm, and Rocky Mountain juniper.

Table 5. Estimated Tree, Sapling, and Shrub Count within the Survey Area

Feature ID	Description	Species	Area (acres)	Estimated number of Stems
AWV1	Planted	Green ash	0.13	30
AWV2	Planted	Green ash	0.30	35
BWV1	Planted	American elm	0.80	40
BWV2	Planted	Rocky Mountain juniper	0.15	30
Total			**1.38**	**135**

3.7 NOXIOUS WEEDS

North Dakota Century Code Chapter 63-01.1 and the North Dakota Department of Agriculture recognize 11 species as noxious weeds. The species are absinth wormwood (*Artemisia absinthium*), Canada thistle (*Cirsium arvense*), diffuse knapweed (*Centaurea diffusa*), leafy spurge (*Euphorbia esula*), musk thistle (*Carduus nutans*), purple loosestrife (*Lythrum salicaria*), Russian knapweed (*Acroptilon repens*), spotted knapweed (*Centaurea stoebe*), yellow toadflax (*Linaria vulgaris*), dalmatian toadflax (*Linaria dalmatica*), and salt cedar (*Tamarix ramosissima*). SWCA identified one approximately 0.52-acre patch of Canada thistle within the survey corridor.

3.8 WILDLIFE

Nine wildlife species that may occur in McKenzie County are listed as threatened or endangered under the ESA (16 United States Code 1531 et seq.). According to the USFWS (2015a), ESA-listed endangered species in McKenzie County, North Dakota, include the gray wolf (*Canis lupus*), black footed ferret (*Mustela nigripes*), whooping crane (*Grus americana*), interior least tern (*Sterna antillarum*), and pallid sturgeon (*Scaphirhynchus albus*). Threatened species include the piping plover (*Charadrius melodus*) and its designated critical habitat, northern long-eared bat (*Myotis septentrionalis*), Dakota skipper (*Hesperia dacotae*), and rufa red knot (*Calidris canutus rufa*).

SWCA conducted a cursory threatened and endangered species survey concurrently with the wetland determinations. SWCA did not observe any primary (i.e., actual sighting) or secondary (i.e., tracks, scat, feather, or fur) indication of the presence of threatened or endangered species.

3.8.1 Wildlife Observed

During the field survey, SWCA observed various wildlife species within the survey area (Table 6). Common wildlife species may be affected both directly via death or injury from construction activities or indirectly through the temporary fragmentation of habitat as a result of construction activities and disturbance which may disrupt normal activities such as breeding, feeding, and sheltering.

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

Common Name	Scientific Name	Observation Type
Ring-necked pheasant	*Phasianus colchicus*	Primary
Mourning dove	*Zenaida macroura*	Primary
Gray partridge	*Perdix perdix*	Primary
Western meadowlark	*Sturnella neglecta*	Primary
Thirteen-lined ground squirrel	*Ictidomys tridecemlineatus*	Primary
White-tailed deer	*Odocoileus virginianus*	Primary

3.8.2 Gray Wolf

Federal Status: Endangered

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 the 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 from the northeast corner of North Dakota.

The gray wolf uses a variety of habitats that support a large prey base, including montane and low-elevation forests, grasslands, and desert scrub (USFWS 2013a). Due to a lack of forested

habitat and the 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. The gray wolf is not expected to be impacted by the project.

3.8.3 Black-footed Ferret

Federal Status: Endangered

Black-footed ferrets are nocturnal, solitary carnivores of the weasel family that have been largely extirpated from the wild primarily due to range-wide decimation of the prairie dog (*Cynomys* sp.) ecosystem (Kotliar et al. 1999). They have been listed by the USFWS as endangered since 1967, and have been the object of extensive re-introduction programs (USFWS 2013f). 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. Therefore, the black-footed ferret is not expected to be impacted by the project.

3.8.4 Whooping Crane

Federal Status: Endangered

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

The July 2010 total wild population was estimated at 383 (USFWS 2013b). There is only one self-sustaining wild population, the Aransas-Wood Buffalo National Park population, which nests in Wood Buffalo National Park and adjacent areas in Canada, where approximately 83% of the wild nesting sites occur (Canadian Wildlife Service and USFWS 2007; USFWS 2013b). 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 0.62 mile 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).

It is well-documented that migrating whooping cranes use habitats in the vicinity of the project for roosting and feeding. The project area is located within the migratory corridor for the whooping crane, with the nearest sighting being approximately 5.4 miles north-northeast from the pipeline corridor (USFWS, M. Tacha, unpublished data). Suitable whooping crane foraging habitat (i.e., cultivated cropland) was observed within the survey area; however, high levels of disturbance near the project area from existing roads, railroads, oil and gas activity, etc., minimize the likelihood for cranes to use the area within or near the pipeline corridor. The whooping crane is not expected to be impacted by the project.

3.8.5 Interior Least Tern

Federal Status: Endangered

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

The interior population of least terns breeds in isolated areas along the Missouri, Mississippi, Ohio, Red, and Rio Grande river systems, where they nest in small colonies. From late April to August, terns nest in a shallow hole scraped in an open sandy area, gravel patch, or exposed flat; and in 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 often will be found sharing sandbars with the piping plover, a threatened species (USFWS 2013c).

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

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

The nearest documented least tern nest is located approximately 20.9 miles north of the pipeline. Given the distance to suitable habitat, the likelihood of observing a tern in the area of the pipeline is relatively low. The interior least tern is not expected to be impacted by the project.

3.8.6 Pallid Sturgeon

Federal Status: Endangered

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

Pallid sturgeon populations occur in the Missouri River below Fort Peck Dam to the headwaters of Lake Sakakawea and the lower Yellowstone River up to the confluence of the Tongue River in Montana (USFWS 2007). This population consists of approximately 136 wild adult pallid sturgeon (USFWS 2007). Hatchery-reared sturgeon have also been stocked since 1998. The pallid sturgeon has been found to use the 15.5 miles of riverine habitat that would be inundated by Lake Sakakawea at full pool (Bramblett 1996 per USFWS 2007). Larval pallid sturgeons have also been found to drift into Lake Sakakawea. Although 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).

Desktop analysis concluded that suitable habitat is not present in the project ROW corridor. Potential pollution from the transmission line operations is a concern for downstream populations of the pallid sturgeon. Activities associated with the transmission line are not anticipated to adversely affect water quality and subsequently the pallid sturgeon. The pallid sturgeon is not expected to be impacted by the project.

3.8.7 Piping Plover

Federal Status: Threatened

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 1985b).

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).

The lack of alkali wetlands, minimal disturbance to foraging wetlands, and distance to critical habitat deem the likelihood of a piping plover occurring as relatively low. The piping plover is not expected to be impacted by the project.

3.8.8 Designated Critical Habitat of Piping Plover

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 354.6 river miles of the Missouri River (ND Unit 11) that flows from the Montana/North Dakota border to the North Dakota/South Dakota border (USFWS 2002). Additionally, North Dakota contains 10 units (ND Units 1–10) of designated critical habitat, which consist primarily of alkaline lakes and wetlands located north and northeast of ND Unit 11 (USFWS 2002).

Desktop analysis concluded that designated critical habitat for the threatened piping plover is not present in the transmission line ROW. The nearest designated critical habitat for piping plovers is approximately 3.2 miles northeast from the pipeline. The transmission line would not modify, alter, disturb, or affect the shoreline within ND Unit 11 or the alkaline lakes and wetlands within ND Units 1 through 10. Designated critical habitat of the piping plover is not expected to be impacted by the project.

3.8.9 Dakota Skipper

Federal Status: Threatened

The Dakota skipper is a small butterfly with a 1-inch wingspan. The male wing ranges from a tawny-orange to brown and the female wing is darker brown with tawny-orange spots and faint white spots (USFWS 2011). On October 24, 2014, the USFWS determined a threatened species status for the Dakota skipper, and the final rule became effective November 24, 2014 (USFWS 2014). Two units of designated critical habitat—Unit 11 (McKenzie Pasture 11 East) and Unit 12 (McKenzie Pasture 12 West)—are located on the Little Missouri National Grassland, in McKenzie County. Additionally, a known population of Dakota skipper is located at the Eagle Nest Butte site and at a confidential site known to SWCA on the Fort Berthold Indian Reservation.

The primary cause for the decline of this species includes the loss of high-quality native prairie habitat due to overgrazing, conversion to agriculture, and disruption of natural prairie fire cycles (USFWS 2011). ‘Type A’ habitat is low wet-mesic prairie with little topographic relief occurring in near-shore glacial lake deposits (Royer and Marrone 1992). Three plants species dominate ‘Type A’ habitat and include wood lily (*Lilium philadelphicum*), bluebell bellflower (*Campanula rotundifolia*), and mountain deathcamas (*Zigadenus elegans*) (McCabe 1981).

'Type B' habitat of the Dakota skipper occurs on rolling terrain over gravelly glacial moraine deposits and is dominated by big bluestem (*Andropogon gerardii*), little bluestem, and needlegrasses (*Stipa* spp.), and may include bluebell bellflower and wood lily (USFWS 2015d). Additionally, 'Type B' habitat supports extensive stands of purple coneflower, upright prairie coneflower, and common gaillardia (*Gaillardia artistata*) (USFWS 2015d).

During the surveys, cultivated, non-native grass prairie and mixed-grass prairie were dominant in the project area. Dominant species recorded during surveys included smooth brome, alfalfa, Kentucky bluegrass, and crested wheatgrass. The remaining herbaceous upland consisted of mixed-grass prairie composed of green needlegrass, western wheatgrass, western yarrow, American licorice, white sagebrush, prairie rose, upright prairie coneflower, and purple coneflower.

Dakota skippers are not known to occur in the project area. Adult Dakota skipper dispersal is limited due to a short adult life span of 3 weeks (Dana 1991) and one annual flight per year (USFWS 2015d). The Dakota skipper may disperse an average 0.62 mile to an area that contains sufficient vegetative diversity and emigrants (Cochrane and Delphey 2002). Unless a site is within about 0.62 mile of an area that generates a sufficient number of emigrants, the species' extirpation from a site is likely permanent.

Larval Dakota skipper habitat within dry-mesic habitat is associated with more gravelly glacial landscapes of relatively higher relief, more variable soil moisture, and somewhat higher soil temperatures (Royer et al. 2008). Soils in these habitats are classified predominantly as sandy loams, and occasionally as loamy sands (Royer et al. 2008). Soil compaction and vegetation removal substantially alter soil water movement and evaporation, thereby altering near-surface humidity (Royer et al. 2008). Livestock grazing has been shown to increase bulk density and soil compaction, which are correlated with decreased soil water content and hydraulic conductivity (Royer et al. 2008). Dakota skippers will tolerate little to no grazing in mixed-grass prairie (Cochrane and Delphey 2002; McCabe 1981). Grazing pressure in the project area is categorized as moderate or severe based on visual observance by the SWCA in the field.

The nearest known population of Dakota skippers is the Eagle Nest Butte site which is 10.6 miles southeast of the project. The nearest designated critical habitat unit, Unit 11, is located 18.7 miles north of the project. Because of the lack of suitable habitat and the distance to the nearest known population, the Dakota skipper is not expected to be impacted by the project.

3.8.10 Rufa Red Knot

Federal Status: Threatened

The rufa red knot is a medium-sized shorebird approximately 9 to 11 inches in height with breeding plumage consisting of red around the face and a prominent stripe above the eye, breast, and upper belly, and non-breeding plumage a dusky gray and white (USFWS 2013d). The USFWS published a proposal to list the rufa red knot as threatened under the ESA in the *Federal Register* in September 2013 (78 *Federal Register* 60023). On December 11, 2014, the USFWS determined a threatened species status for the rufa red knot, and the final rule became effective January 12, 2015 (79 *Federal Register* 73705).

The primary reason for decline of this species includes reduced food supplies in Delaware Bay due to commercial harvest of horseshoe crabs, but also includes areas of range loss due to rising sea levels, shorelines project, and development (USFWS 2013d). The rufa red knot breeds in the Canadian Arctic and migrates 19,000 miles to winter on the U.S. Gulf Coast and in South America. The species generally occurs along the ocean coasts during migration, but a small number have been reported across the interior United States.

Suitable habitat along Lake Sakakawea is approximately 3.2 miles northeast from the project. The likelihood of the rufa red knot occurring in the transmission line ROW is very low due to the distance to Lake Sakakawea. The rufa red knot is not expected to be impacted by the project.

3.8.11 Northern Long-eared Bat

Federal Status: Threatened

On May 4, 2015, the USFWS listed the northern-long eared bat as threatened under the ESA (USFWS 2015b). The USFWS also issued an interim rule pursuant to Section 4(d) of the ESA in conjunction with the final rule. For areas within the species' range that are not affected by white-nose syndrome (i.e., areas outside the 150-mile white-nose syndrome buffer zone), including all of North Dakota, the interim 4(d) rule exempts incidental take from certain activities.

This medium-sized bat ranges across the eastern and north-central United States and all of the Canadian provinces (USFWS 2015c). Throughout most of this species' range, populations are patchily distributed. They emerge at dusk to fly through the understory of forested hillsides and ridges, feeding on moths, flies, leafhoppers, caddisflies, and beetles.

Most records of northern long-eared bats are from winter hibernacula surveys, with more than 780 hibernacula identified within the United States. No known hibernacula are located in North Dakota, due to either no suitable hibernacula present or a lack of survey effort (USFWS 2013e). This bat species occupies a wide range of rocky and forested habitats. Suitable winter habitat includes large caves and mines (USFWS 2015c). Summer day roosts include abandoned buildings, bridges, hollow trees, stumps, under loose bark, and rock fissures (Jones and Choate 1978). The summer roosting period is from May through October. Removal of any potential roost trees may impact the northern long-eared bat; however, no additional woody vegetation would be cleared for the project

Suitable winter habitat for northern long-eared bats does not occur in the transmission line ROW. Nearby trees and rocky outcrops can act as suitable summer day roosts. No additional trees will be impacted by the project; therefore, the northern long-eared bat is not expected to be impacted by the project.

3.8.12 Migratory Birds

Status: Protected under the MBTA

Suitable habitat for migratory birds exists in the entire transmission line ROW. Specifically, grassland nesting birds have the potential to occur, feed, and nest in the project area, especially during the migratory bird breeding season, which generally occurs between February 1 and July 15. Suitable woodland nesting habitat occurs in the project area, but it is minimal. All take of

migratory birds, their parts, or their active nests, including eggs and young, must be avoided to prevent a violation of the MBTA.

3.8.13 Bald Eagle

Federal Status: Delisted in 2007; protected under the MBTA and the BGEPA

The bald eagle (*Haliaeetus leucocephalus*) feeds on fish and carrion and typically roosts in large trees near a water source. Bald eagle nesting habitat is typically any mature stands of conifer (Pinophyta) or cottonwood (*Populus* sp.) 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 (North Dakota Game and Fish Department 2015a) and Yellowstone River. Bald eagles frequently migrate through the grassland habitats. Two bald eagles were observed during the field surveys; however, no nests were observed during the field surveys. The nearest known historical eagle nest is approximately 6.5 miles south from the pipeline (North Dakota Game and Fish Department 2015b). The USFWS generally recommends a buffer of 0.5 mile from any eagle nest. If any active nests are discovered within 0.5 mile of the pipeline route, construction should halt and the USFWS should be contacted for further direction. If these recommendations are followed, bald eagles are not expected to be impacted by the project.

3.8.14 Golden Eagle

Federal Status: Unlisted; protected under the MBTA and the BGEPA

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. The USFWS generally recommends a buffer of 0.5 mile from any eagle nest. If any active nests are discovered within 0.5 mile of the pipeline route, construction should halt and the USFWS should be contacted for further direction. If these recommendations are followed, golden eagles are not expected to be impacted by the project.

4.0 CONCLUSIONS AND RECOMMENDATIONS

1. SWCA biologists recorded 15 wetlands, totaling approximately 4.05 acres within the 200-foot-wide survey area. In total, approximately 1.94 acres of PEM wetlands are within the 100-foot construction ROW. None of the wetland crossings exceeded 500 feet and SWCA did not observe any fill material placed into the wetlands during initial construction of the project. The project would be authorized under NWP 12 if permit conditions continue to be met.
2. SWCA recorded 12 streams within the survey corridor, totaling approximately 1.35 acres. The longest stream crossing is approximately 207 feet, remaining under the 500-foot threshold of NWP 12. All recorded streams exhibited characteristics of waters of the U.S. and may be considered jurisdictional under the USACE standards. SWCA did not observe any fill material placed into the streams during initial construction of the project. The project would be authorized under NWP 12 if permit conditions continue to be met.
3. If additional dredged or fill material is to be placed into any waters of the U.S., including wetlands, for the project, SWCA recommends that the USACE be contacted with a request to confirm the preliminary jurisdictional determinations provided in this report, and that a pre-construction notification be provided to the USACE, if necessary, to ensure compliance with their program.
4. No threatened or endangered species were observed during the field survey.

   The following threatened and endangered species are listed in McKenzie County: gray wolf, black-footed ferret, interior least tern, pallid sturgeon, piping plover and its critical habitat, Dakota skipper, rufa red knot, and northern long-eared bat; however, these species are not likely to be impacted by construction or operation of the proposed project.
5. Migratory birds and suitable nesting habitat were observed throughout the survey area.
6. No active raptor nests were observed within 0.5 mile of the project area. No bald or golden eagle nests were observed. No impacts to eagles are anticipated.

5.0 LITERATURE CITED

Armbruster, M.J. 1990. Characterization of habitat used by whooping cranes during migration. *Biological Report* 90(4):1–16.

Bramblett, R.G. 1996. Habitats and movements of pallid and shovelnose sturgeon in the Yellowstone and Missouri Rivers, Montana and North Dakota. Ph.D. dissertation, Montana State University, Bozeman.

Canadian Wildlife Service and U.S. Fish and Wildlife Service (USFWS). 2007. *International Recovery Plan for the Whooping Crane*. Ottawa: Recovery of Nationally Endangered Wildlife (RENEW), and Albuquerque: U.S. Fish and Wildlife Service.

Cochrane, J.F., and P. Delphey. 2002. *Status Assessment and Conservation Guidelines: Dakota Skipper,* Hesperia dacotae *(Skinner) (*Lepidoptera: Hesperiidae*), Iowa, Minnesota, North Dakota, South Dakota, Manitoba and Saskatchewan*. U.S. Fish and Wildlife Service, Minneapolis.

Dana, R. 1991. *Conservation Management of the Prairie Skippers* Hesperia dacotae *and* Hesperia ottoe. Station Bulletin 594-1991 (AD-SB-5511-S0), Minnesota Agricultural Experiment Station, University of Minnesota, St. Paul.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Determination Manual*. Technical Report Y-87-1. Vicksburg, Mississippi: U.S. Army Engineer Waterways Experiment Station.

Hagen, S.K., P.T. Isakson, and S.R. Dyke. 2005. *North Dakota Comprehensive Wildlife Conservation Strategy*. Bismarck: North Dakota Game and Fish Department.

Howe, M.A. 1987. Habitat use by migrating whooping cranes in the Aransas-Wood Buffalo corridor. In *Proceedings of the 1985 Crane Workshop*, edited by C. Lewis and J.W. Ziewitz, pp. 303–311. Grand Island, Nebraska: Platte River Whooping Crane Habitat Maintenance Trust and U.S. Fish and Wildlife Service.

———. 1989. *Migration of Radio-Marked Whooping Cranes from the Aransas-Wood Buffalo Population: Patterns of Habitat Use, Behavior, and Survival*. U.S. Fish and Wildlife Service Technical Report.

Jones, J., and J.R. Choate. 1978. Distribution of Two Species of Long-eared Bats of the Genus *Myotis* on the Northern Great Plains. *Prairie Naturalist* 10(2):49–52.

Kotliar, N.B., B.W. Baker, A.D. Whicker, and G. Plumb. 1999. A critical review of assumptions about the prairie dog as a keystone species. *Environmental Management* 24(2):177–192.

Licht, D.S., and S.H. Fritts. 1994. Gray Wolf (*Canis lupus*) Occurrences in the Dakotas. *American Midland Naturalist* 132:74–81.

Licht, D.S., and L.E. Huffman. 1996. Gray Wolf Status in North Dakota. *The Prairie Naturalist* 28(4):169–174.

McCabe, T.L. 1981. The Dakota skipper (*Hesperia dacotae* [Skinner]): Range and biology, with special reference to North Dakota. *Journal of the Lepidopterists' Society* 35(3):179–193.

National Oceanic and Atmospheric Administration. 2016. Williston and Minot, North Dakota, preliminary monthly climate data reports. Available at: http://w2.weather.gov/climate/index.php?wfo=bis. Accessed September 2, 2016.

Natural Resources Conservation Service (NRCS). 2013 Web Soil Survey. Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Available at: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed July 20, 2016.

North Dakota Game and Fish Department. 2015a. Bald eagle. Available at: https://gf.nd.gov/wildlife/fish-wildlife/id/birds/birds-of-prey/b-eagle. Accessed January 14, 2016.

———. 2015b. North Dakota bald eagle nest sites 2014 data. Received from S. Johnson (NDGF) February 19, 2015.

Root, B.G., M.R. Ryan, and P.M. Mayer. 1992. Piping Plover Survival in the Great Plains. *Journal of Field Ornithology* 63(1):10–15.

Royer, R., and G. Marrone. 1992. *Conversation Status of the Dakota Skipper* (Hesperia dacotae) *in North and South Dakota*. U.S. Fish and Wildlife Service, Denver, Colorado. As cited in 78 *Federal Register* 63573.

Royer, R.A., R.A. McKenney, and W.E. Newton. 2008. A characterization of non-biotic environmental features of prairies hosting the Dakota skipper (*Hesperia dacotae, Hesperiidae*) across its remaining U.S. range. *Journal of the Lepidopterists' Society* 62.1:1.

Royer, R.A., M.R. Royer, and E.A. Royer. 2014. *Dakota Skipper Field Survey and Habitat Assessment at Twelve North Dakota Sites during the 2014 Season*. Division of Science, Minot State University. October 1, 2014.

U.S. Army Corps of Engineers (USACE). 2010. *Regional Supplement to the Corps of Engineers Wetland Determination Manual: Great Plains Region Version 2.0*. Edited by J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-12. Vicksburg, Mississippi: U.S. Army Engineer Research and Development Center.

U.S. Department of Agriculture. 2006. *Soil Survey McKenzie County, North Dakota.* Available at: http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/north_dakota/ND053/0/McKenzie%20County.pdf. Accessed January 14, 2016.

U.S. Fish and Wildlife Service (USFWS). 1978. Reclassification of the gray wolf in the United States and Mexico, with determination of critical habitat in Michigan and Minnesota. *Federal Register* 43(47):9607–9615.

———. 1985a. Interior population of the least tern. *Federal Register* 50 FR 21784–21792. May 28, 1985.

———. 1985b. Endangered and threatened wildlife and plants: determination of endangered and threatened status for the piping plover. *Federal Register* 50(238):50726–50734.

———. 1988a. *Black-footed Ferret Recovery Plan*. Denver: U.S. Fish and Wildlife Service.

———. 1988b. *Great Lakes and Northern Great Plains Piping Plover Recovery Plan*. Twin Cities, Minnesota: U.S. Fish and Wildlife Service.

———. 1989. *Black-footed Ferret Survey Guidelines for Compliance with the Endangered Species Act*. Denver and Albuquerque: U.S. Fish and Wildlife Service.

———. 1990a. *Interior Population of the Least Tern Recovery Plan*. Twin Cities, Minnesota: U.S. Fish and Wildlife Service.

———. 1990b. Endangered and threatened wildlife and plants; Determination of endangered status for the pallid sturgeon. *Federal Register* 55(173):36641–36647.

———. 2002. Designation of critical habitat for the northern Great Plains breeding population of the piping plover; final rule. *Federal Register* 67(176):57637–57717.

———. 2007. *Pallid Sturgeon (*Scaphirhynchus albus*) 5-year Review Summary and Evaluation*. Billings, Montana: U.S. Fish and Wildlife Service, Pallid Sturgeon Recovery Coordinator.

———. 2011. Dakota skipper (*Hesperia dacotae*). North Dakota Field Office, Mountain Prairie Region. Available at: http://www.fws.gov/northdakotafieldoffice/endspecies/species/dakota_skipper.htm. Accessed October 22, 2014.

———. 2012a. National Wetlands Inventory: Wetlands Online Mapper. Available at: http://www.fws.gov/wetlands/Data/Mapper.html. Accessed January 7, 2016.

———. 2012b. Piping plover. Available at: http://www.fws.gov/mountain-prairie/species/birds/pipingplover. Accessed January 7, 2016.

———. 2013a. Gray wolf. Available at: http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A00D. Accessed January 7, 2016.

———. 2013b. Whooping crane. Available at: http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B003. Accessed January 7, 2016.

———. 2013c. Least tern (interior population). Available at: http://www.fws.gov/northdakotafieldoffice/endspecies/species/least_tern.htm. Accessed January 7, 2016.

———. 2013d. Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for the Rufa Red Knot (*Calidris canutus rufa*). *Federal Register* 78(189):60024–60098.

———. 2013e. Endangered and Threatened Wildlife and Plants; 12-month Finding on a Petition to List the Eastern Small-Footed Bat and the Northern Long-eared Bat as Endangered or Threatened Species; Listing the Northern Long-eared Bat as an Endangered Species; Proposed Rule. *Federal Register* 78(191):61046–61080.

———. 2013f. Black-footed ferret. Available at: http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A004. Accessed February 21, 2013.

———. 2014. *Dakota Skipper Conservation Guidelines*. January. Available at: http://www.fws.gov/midwest/endangered/insects/dask/pdf/DakotaSkipperS7GuidanceMarch2014AppA-DASKConservGuidelines2014Update.pdf. Accessed June 13, 2014.

———. 2015a. County occurrence of endangered, threatened, and candidate species and designated critical habitat in North Dakota. Available at: http://www.fws.gov/northdakotafieldoffice/SEtable.pdf. Accessed January 7, 2016.

———. 2015b. Endangered and Threatened Wildlife and Plants; Threatened Species Status for the Northern Long-Eared Bat with 4(d) Rule; Final Rule and Interim Rule. *Federal Register* 80(63):17974–18031.

———. 2015c. Northern Long-eared Bat Fact Sheet. Midwest Endangered Species. Available at: https://www.fws.gov/Midwest/Endangered/mammals/nleb/nlebFactSheet.html. Accessed November 2015.

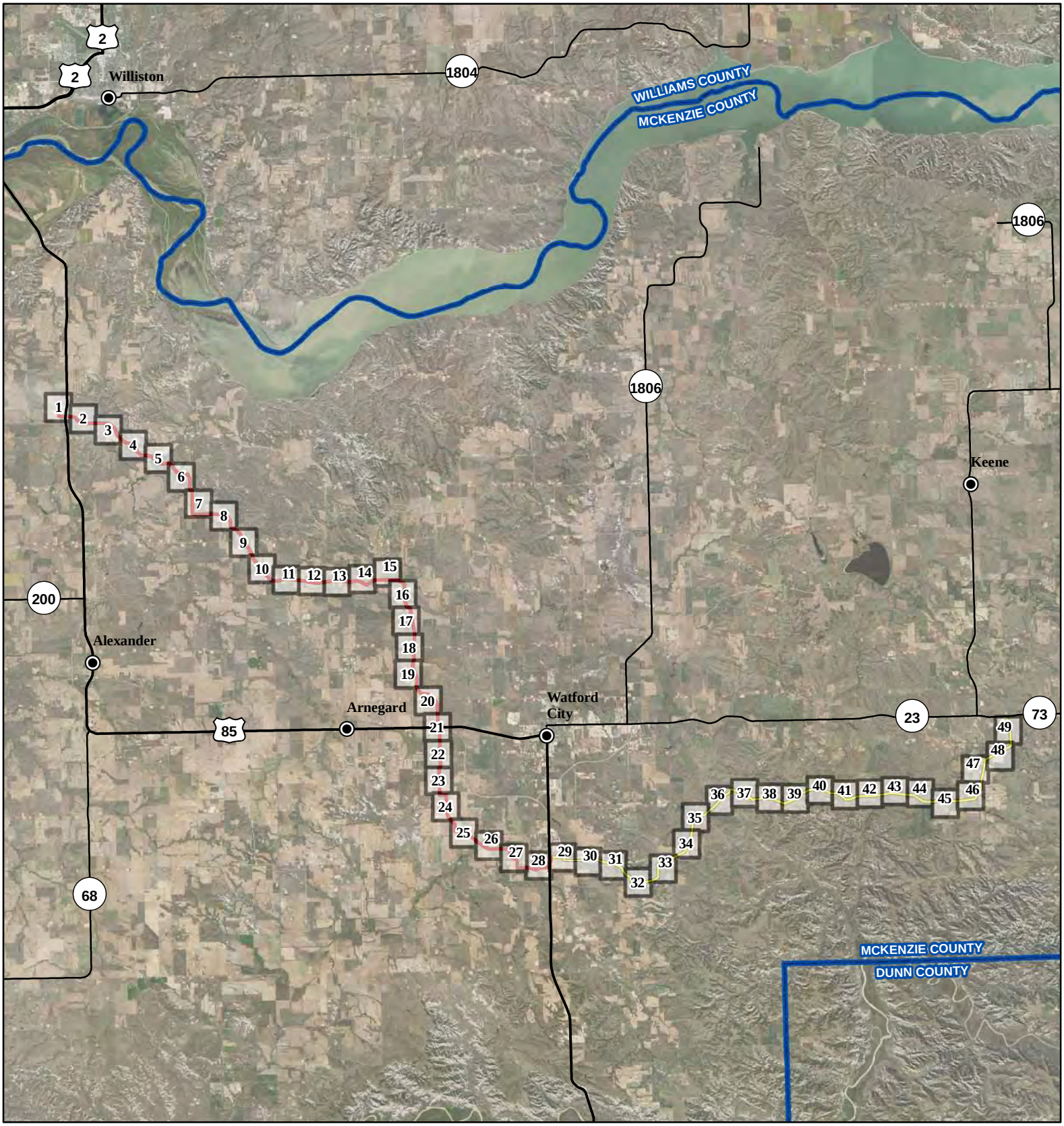
———. 2015d. *Dakota Skipper Guidance for Interagency Cooperation Under Section 7(a)(2) of the Endangered Species Act Version 1.0*. February 2015. Available at: http://www.fws.gov/midwest/Endangered/insects/dask/pdf/DakotaSkipperS7GuidanceFeb2015.pdf. Accessed July 23, 2015.

U.S. Geological Survey (USGS). 2011. *NHD Frequently Asked Questions.* Available at: http://nhd.usgs.gov/nhd_faq.html#q101. Accessed January 14, 2016.

———. 2014. Land Cover Trends Project. Available at: http://landcovertrends.usgs.gov/gp/eco43Report.html. Accessed July 15, 2016.

This page intentionally left blank.

APPENDIX A
Vicinity and Site Layout Maps



Johnsons Corner to Alexander

- City
- Smokey Trunkline
- Alexander Pipeline
- U.S. Highway
- State Highway
- County Boundary

SWCA®
ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Miles
0 5 10

Kilometers
0 10 20

Base Map: 2015 Aerial Imagery
Source: USDA/FSA -
Aerial Photography Field Office
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek West (1978)

Township/Range: T. 152N, R. 101W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek West (1978)

Township/Range: T. 152N, R. 101W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978),
Camp Creek West (1978)
Township/Range: T. 152N, R. 101W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

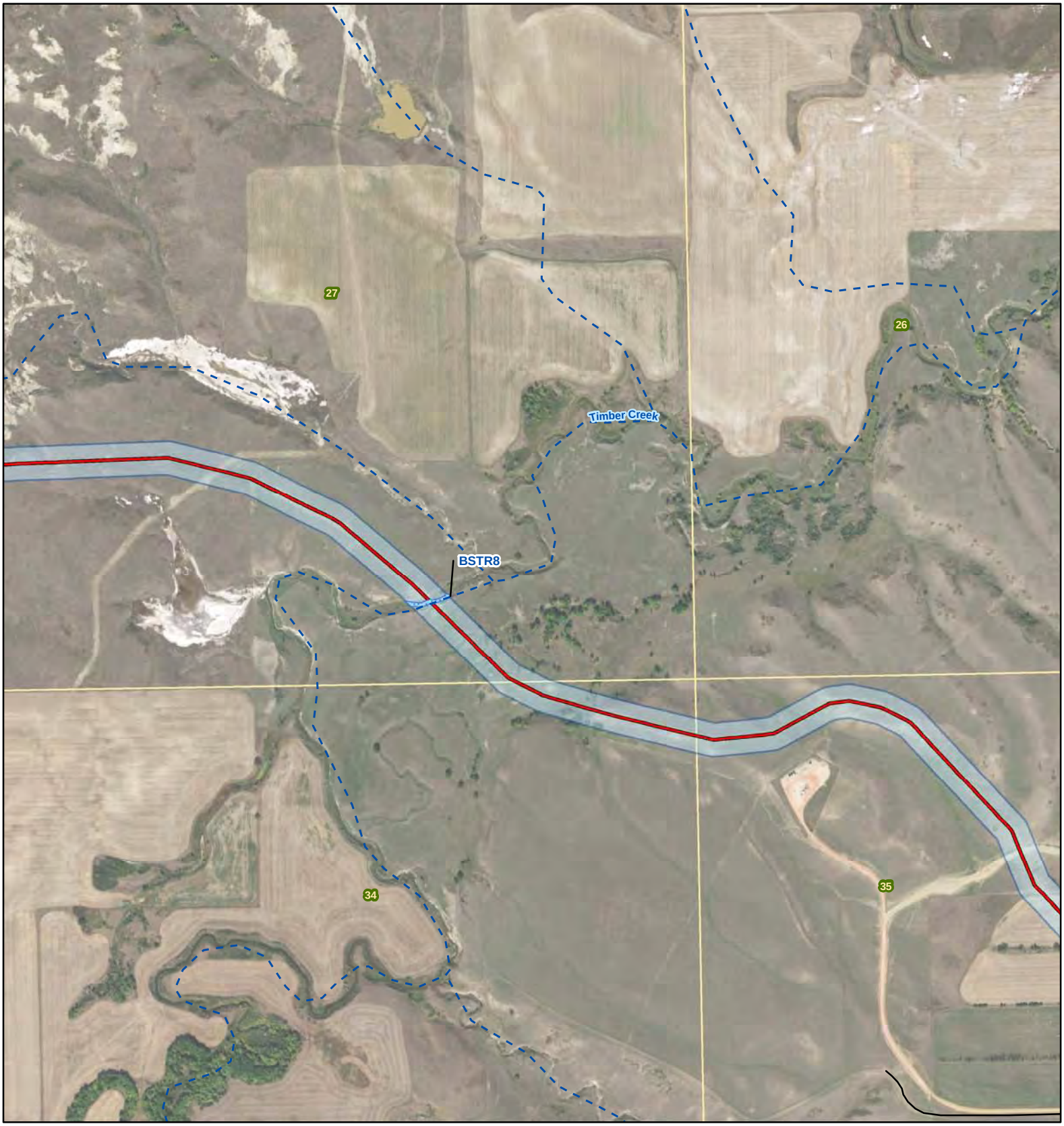
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 152N, R. 101W

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

N W E S



Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 152N, R. 101W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 151N, R. 101W &
T. 152N, R. 101W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 151N, R. 101W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 151N, R. 100W &
T. 151N, R. 101W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 151N, R. 100W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA®
ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978),
Camp Creek East (1978)
Township/Range: T. 151N, R. 100W

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

N
W E
S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 100W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 100W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 100W

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

N
W E
S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 100W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 99W &
T. 151N, R. 100W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Arnegard (1978),
Watford City NW (1978)
Township/Range: T. 151N, R. 99W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Arnegard (1978)

Township/Range: T. 151N, R. 99W

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

N
W E
S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Arnegard (1978)

Township/Range: T. 150N, R. 99W &
T. 151N, R. 99W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Arnegard (1978)

Township/Range: T. 150N, R. 99W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

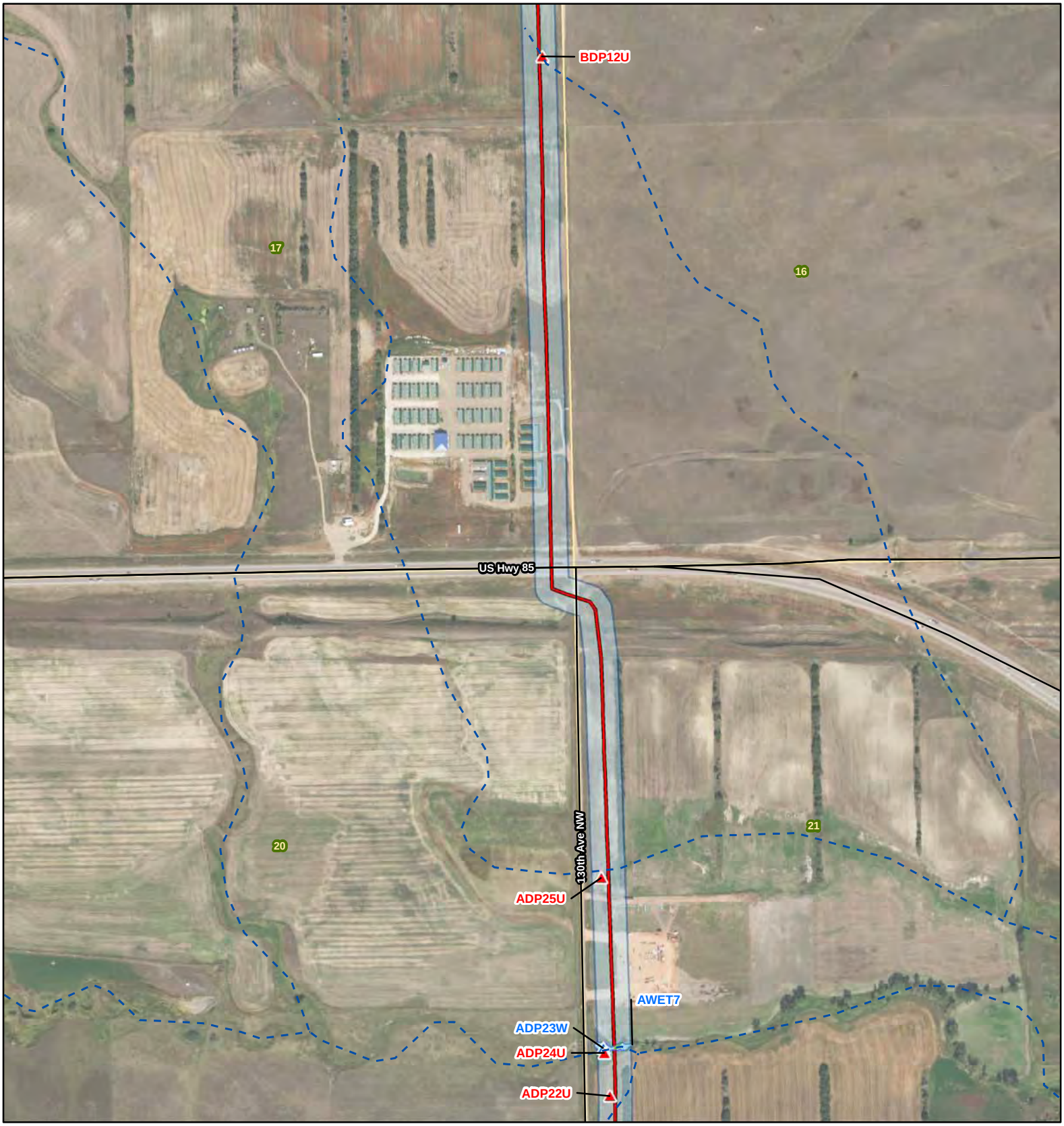
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978),
Arnegard (1978)
Township/Range: T. 150N, R. 99W

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

N W E S



Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978)

Township/Range: T. 150N, R. 99W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978)

Township/Range: T. 150N, R. 99W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978)

Township/Range: T. 150N, R. 99W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978)

Township/Range: T. 149N, R. 99W &
T. 150N, R. 99W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995),
Watford City (1978)
Township/Range: T. 149N, R. 99W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995)

Township/Range: T. 149N, R. 99W

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

N
W E
S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995)

Township/Range: T. 149N, R. 99W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995)

Township/Range: T. 149N, R. 98W &
T. 149N, R. 99W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995)

Township/Range: T. 149N, R. 98W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995),
Tepee Buttes (1995)
Township/Range: T. 149N, R. 98W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995)

Township/Range: T. 149N, R. 98W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995)

Township/Range: T. 149N, R. 98W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995)

Township/Range: T. 149N, R. 98W

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

N
W E
S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995)

Township/Range: T. 149N, R. 98W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer (1995),
Lone Butte NW (1995)
Township/Range: T. 149N, R. 98W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer (1995)

Township/Range: T. 150N, R. 97W &
T. 149N, R. 97W & T. 149N, R. 98W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995),
Schafer (1995)
Township/Range: T. 150N, R. 97W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 149N, R. 97W &
T. 150N, R. 97W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA®
ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 150N, R. 97W &
T. 149N, R. 97W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 150N, R. 97W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 150N, R. 97W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 150N, R. 96W &
T. 150N, R. 97W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995),
Schafer SE (1995)
Township/Range: T. 150N, R. 96W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 149N, R. 96W &
T. 150N, R. 96W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 149N, R. 96W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 150N, R. 96W &
T. 149N, R. 96W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

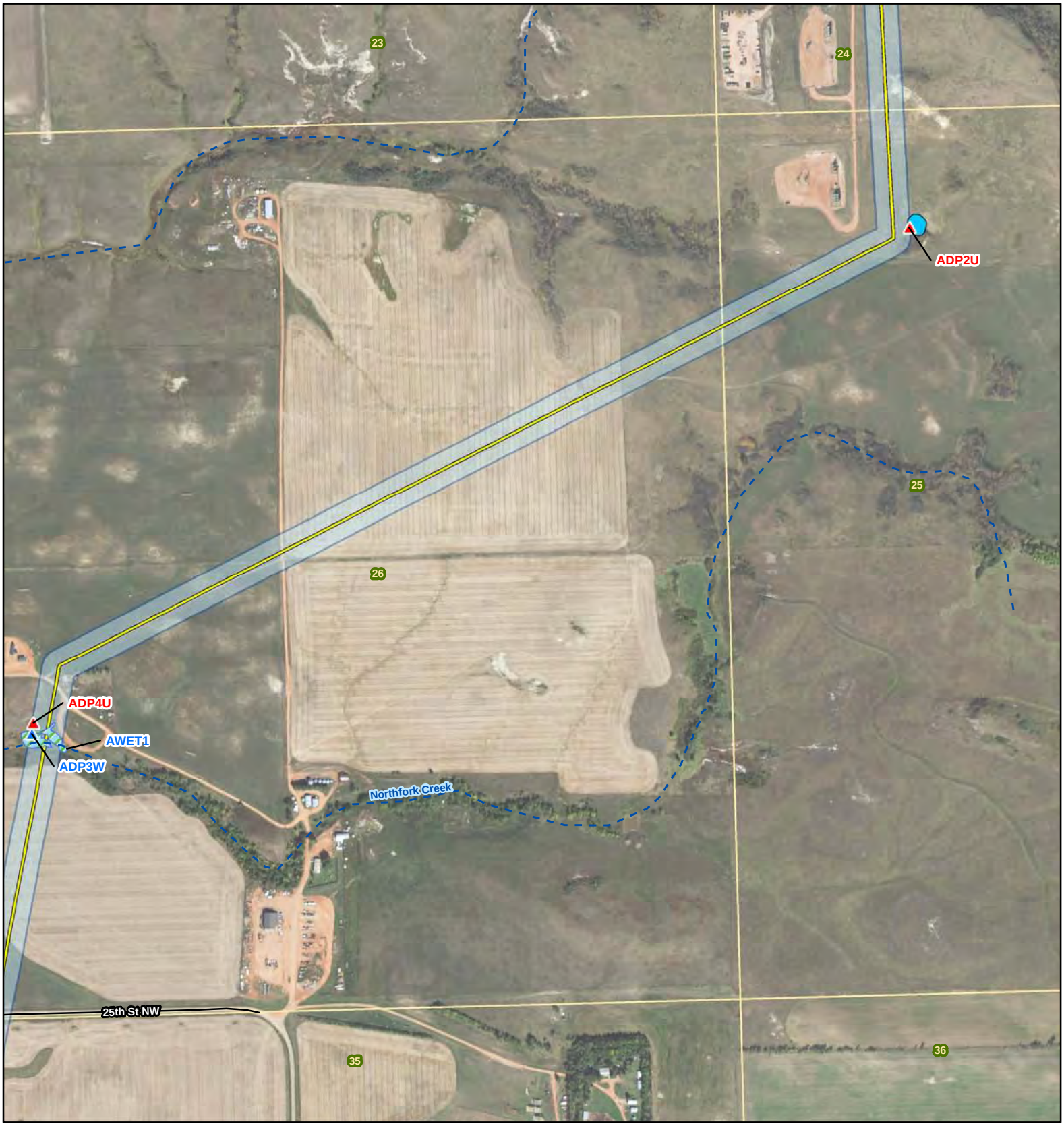
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 150N, R. 96W

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

N W E S



Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 150N, R. 96W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

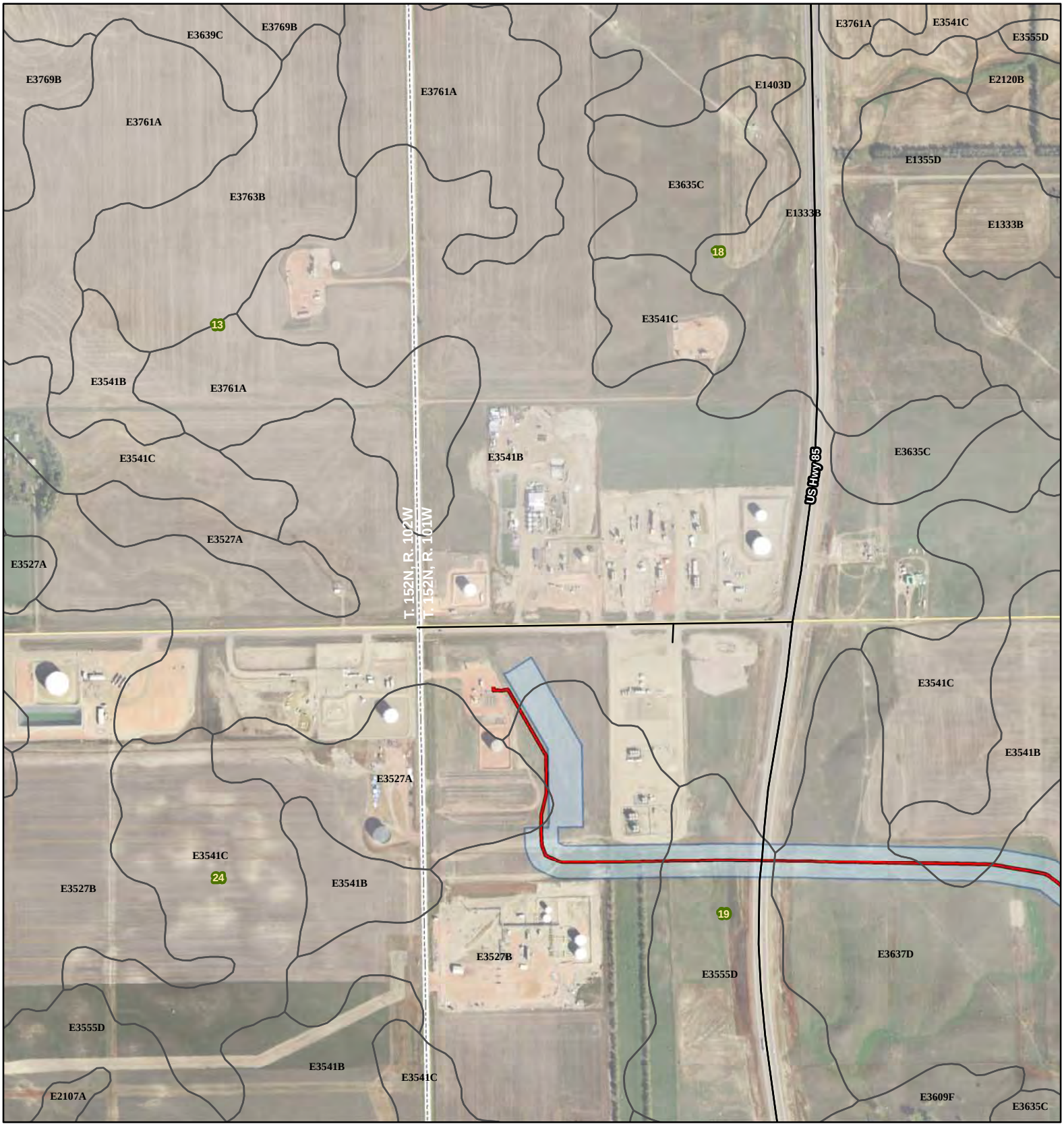
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 150N, R. 96W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

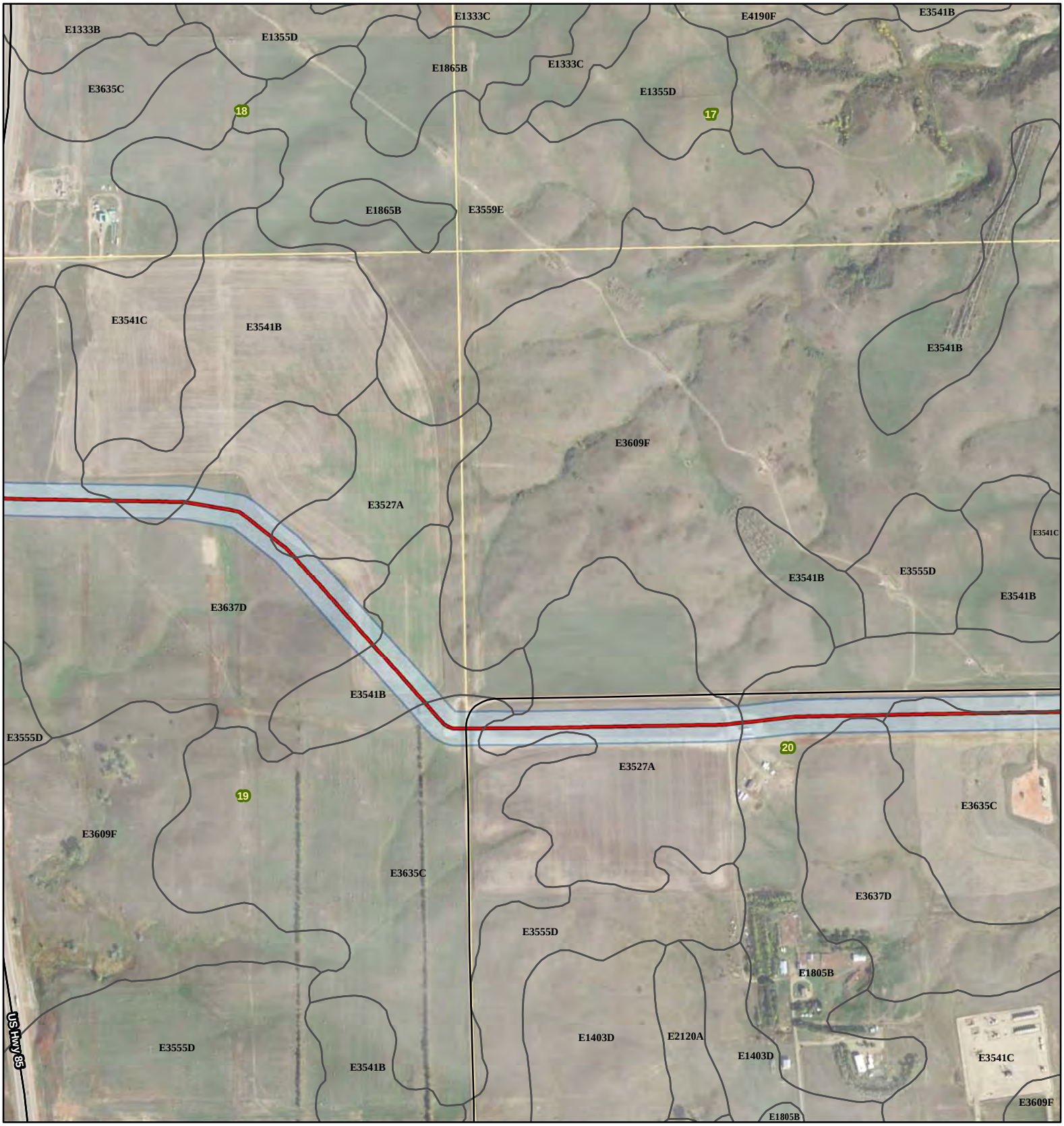
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek West (1978)

Township/Range: T. 152N, R. 101W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA®
ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek West (1978)

Township/Range: T. 152N, R. 101W

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

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

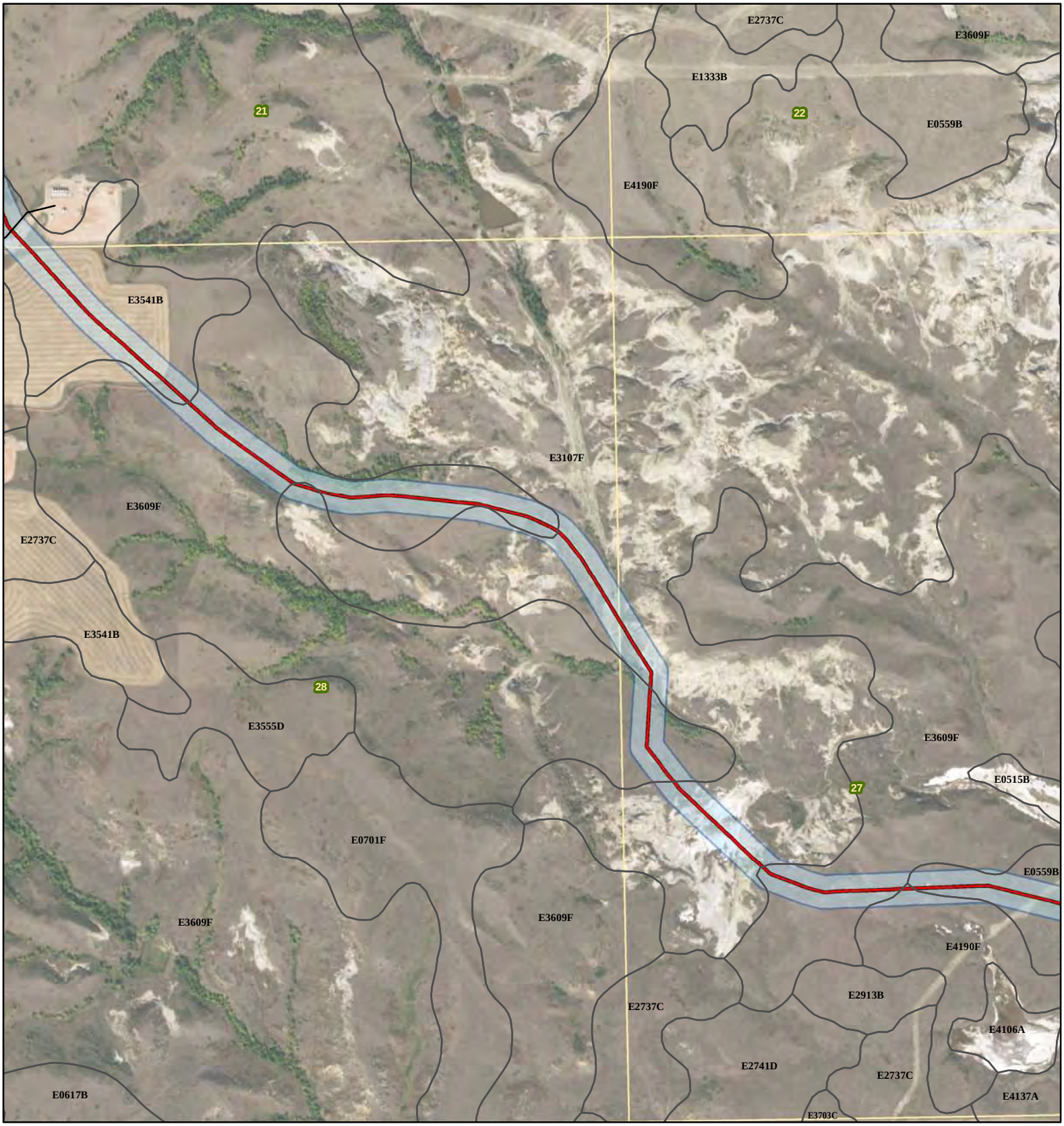
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978),
Camp Creek West (1978)
Township/Range: T. 152N, R. 101W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

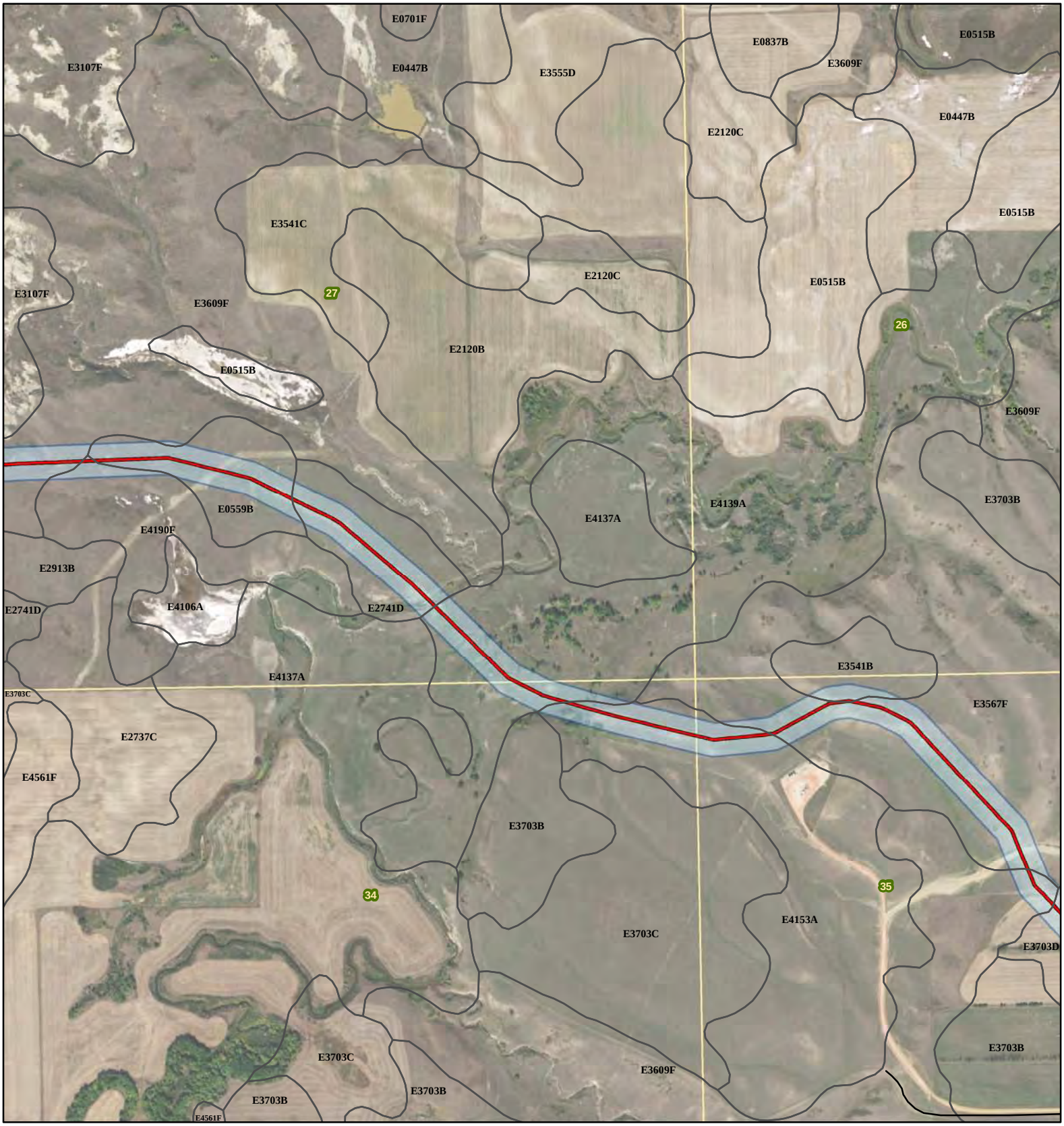
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 152N, R. 101W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

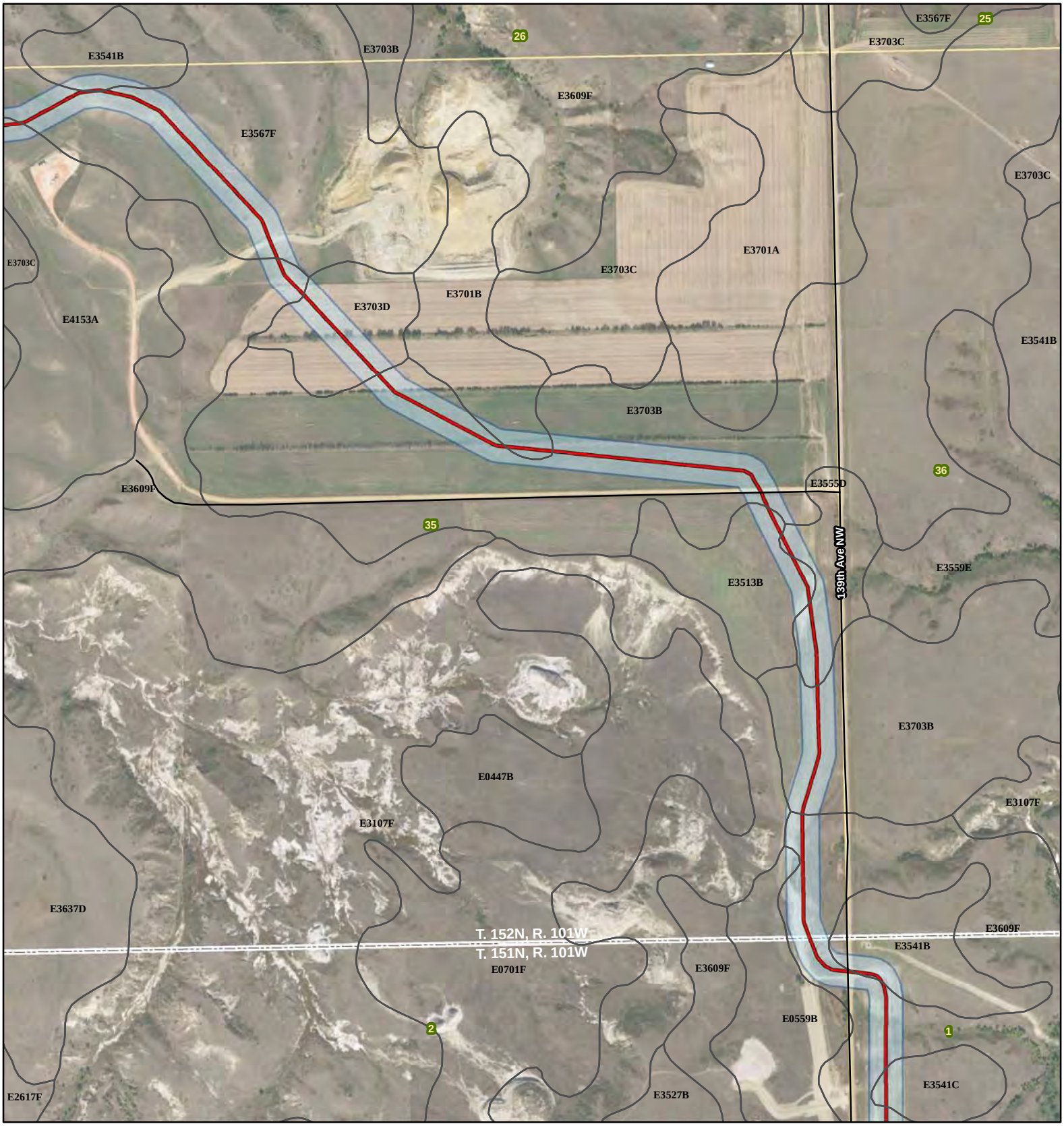
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 152N, R. 101W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

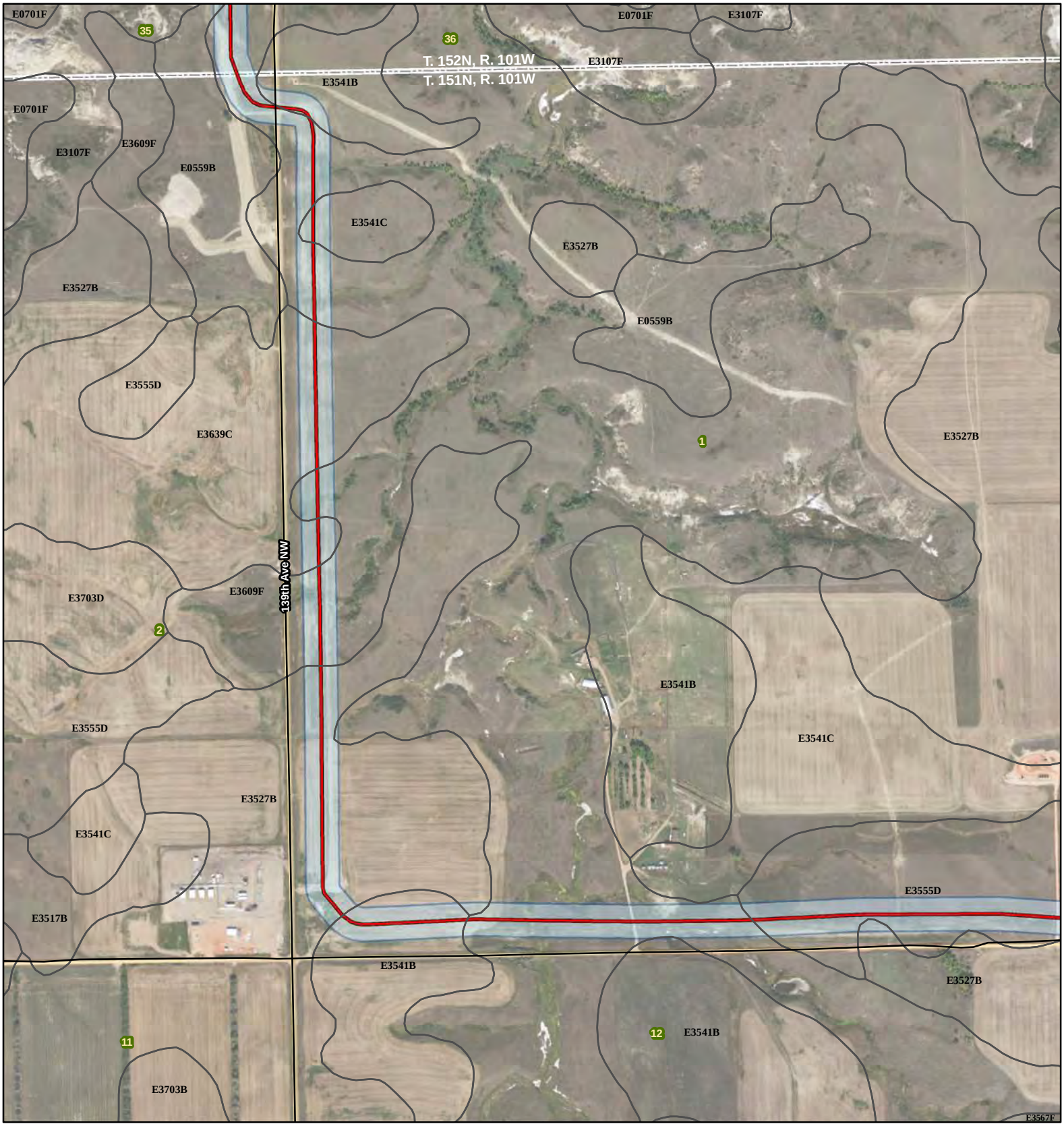
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 151N, R. 101W &
T. 152N, R. 101W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

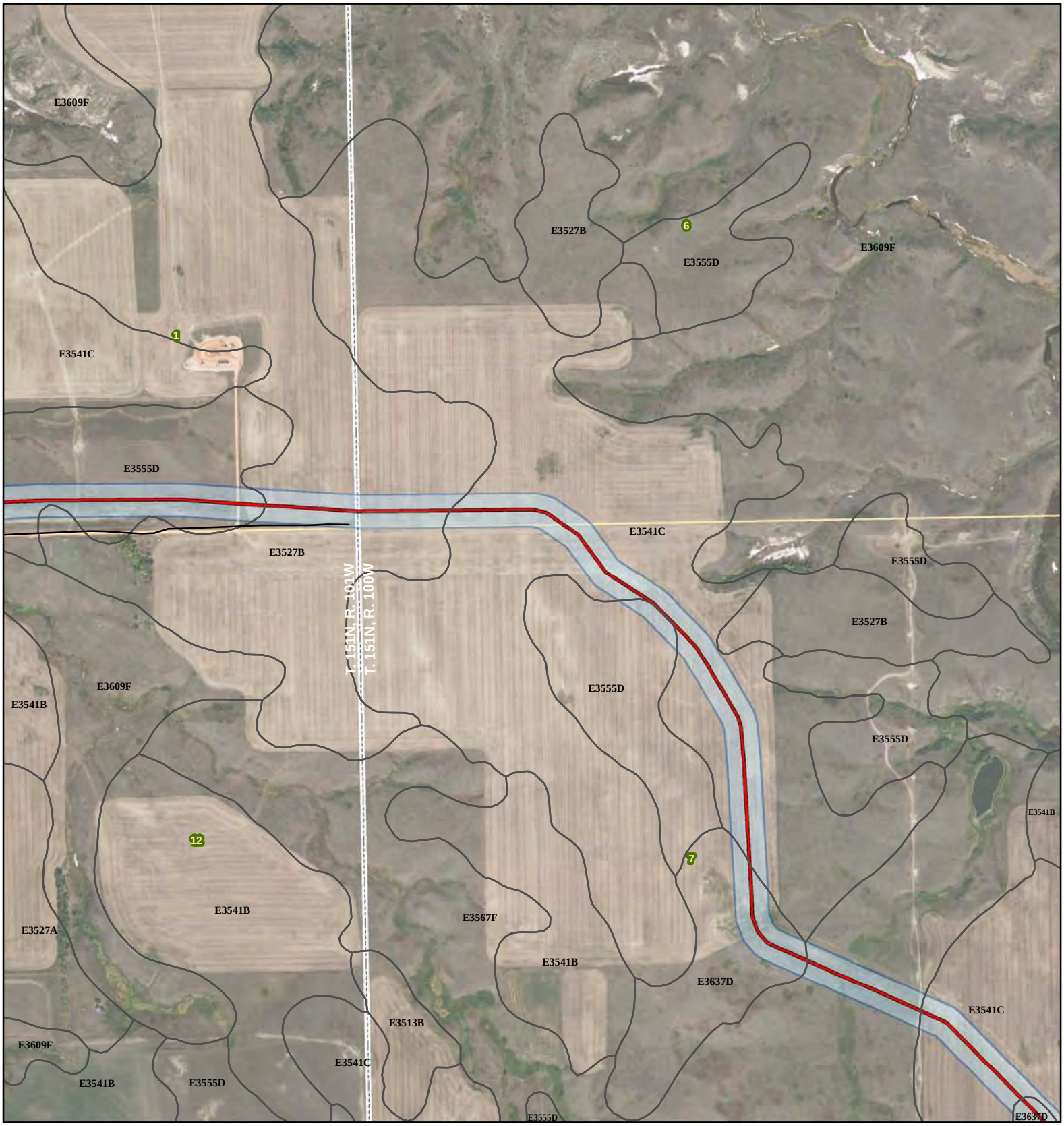
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 151N, R. 101W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

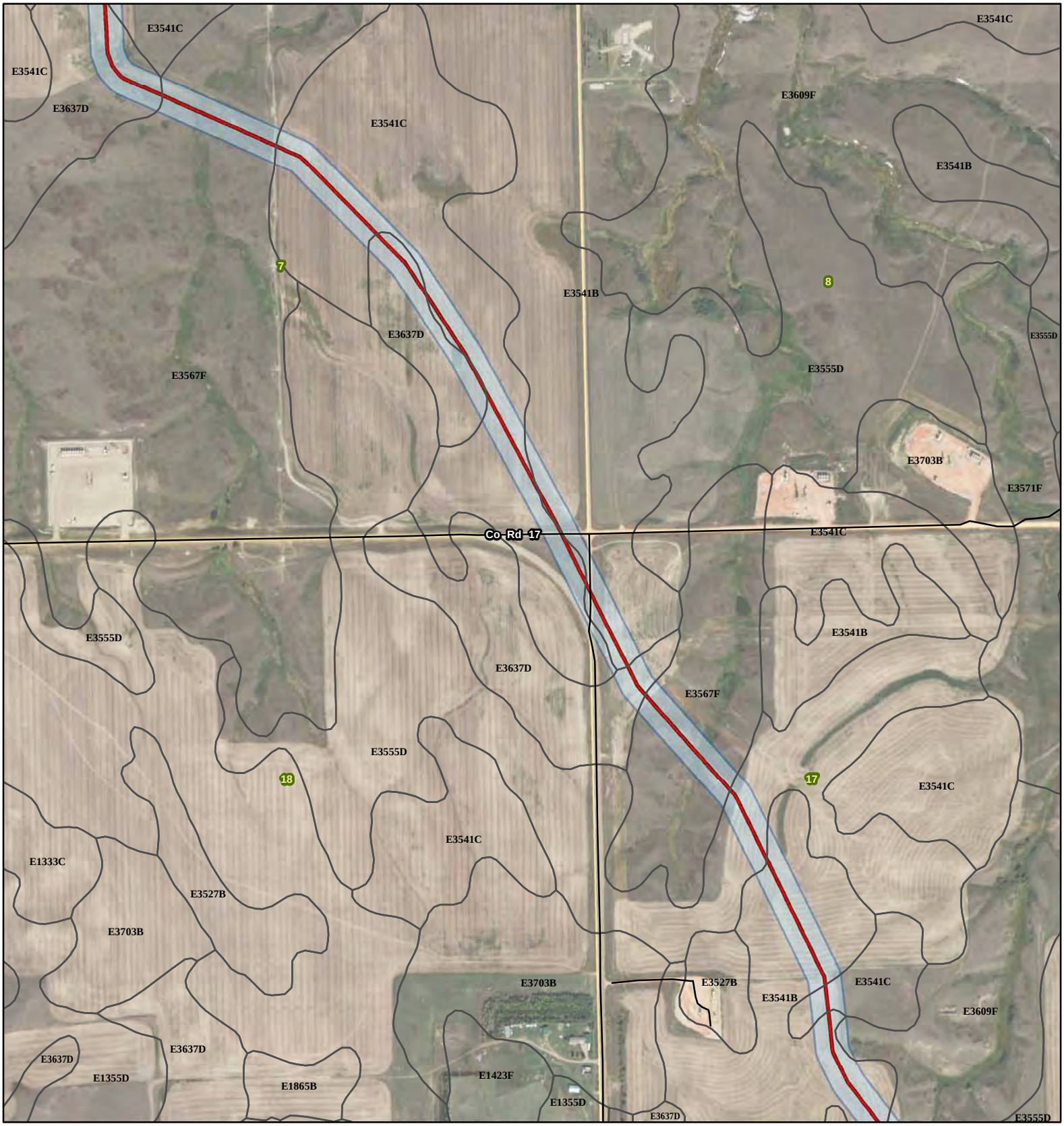
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 151N, R. 100W &
T. 151N, R. 101W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

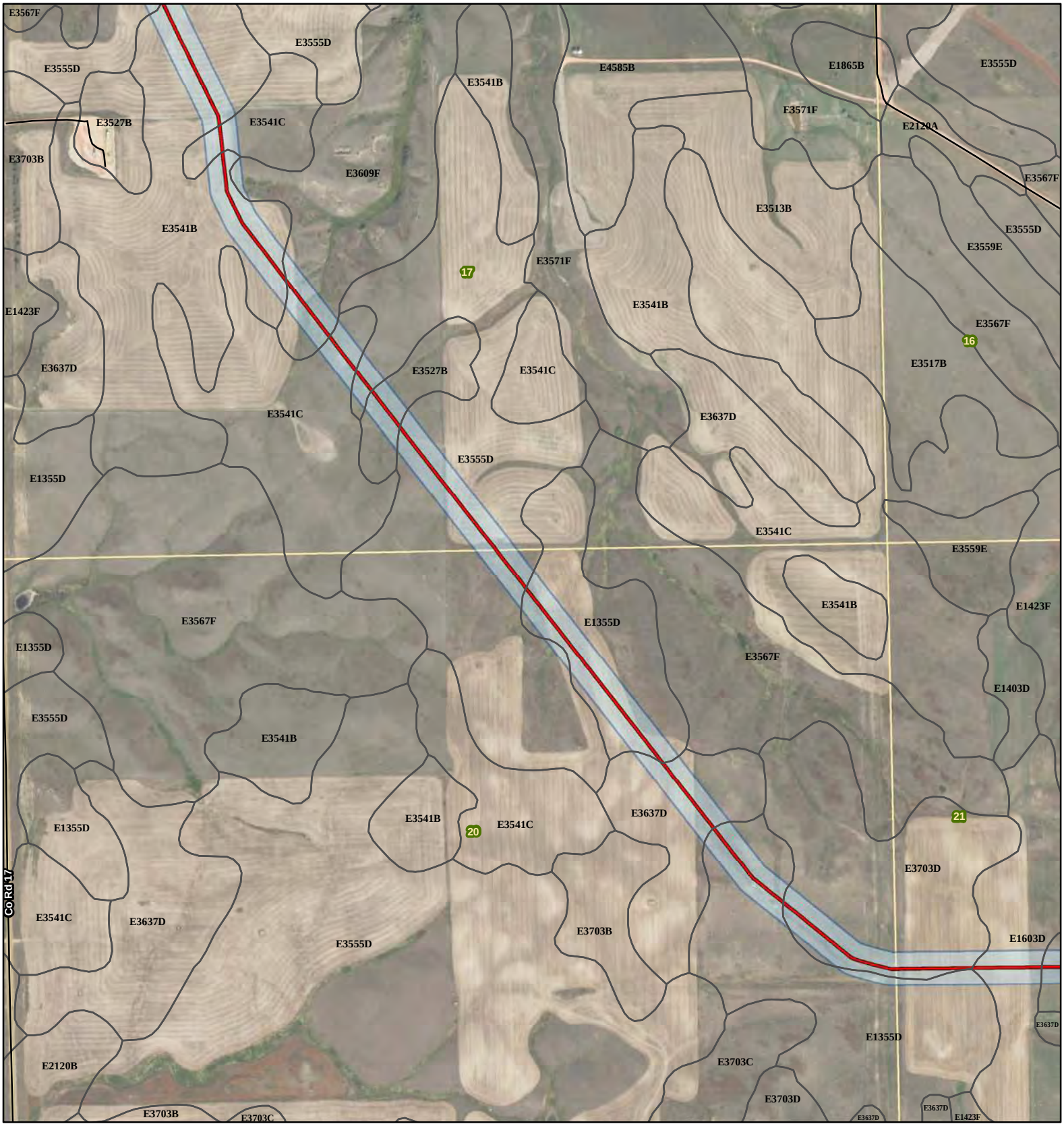
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 151N, R. 100W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

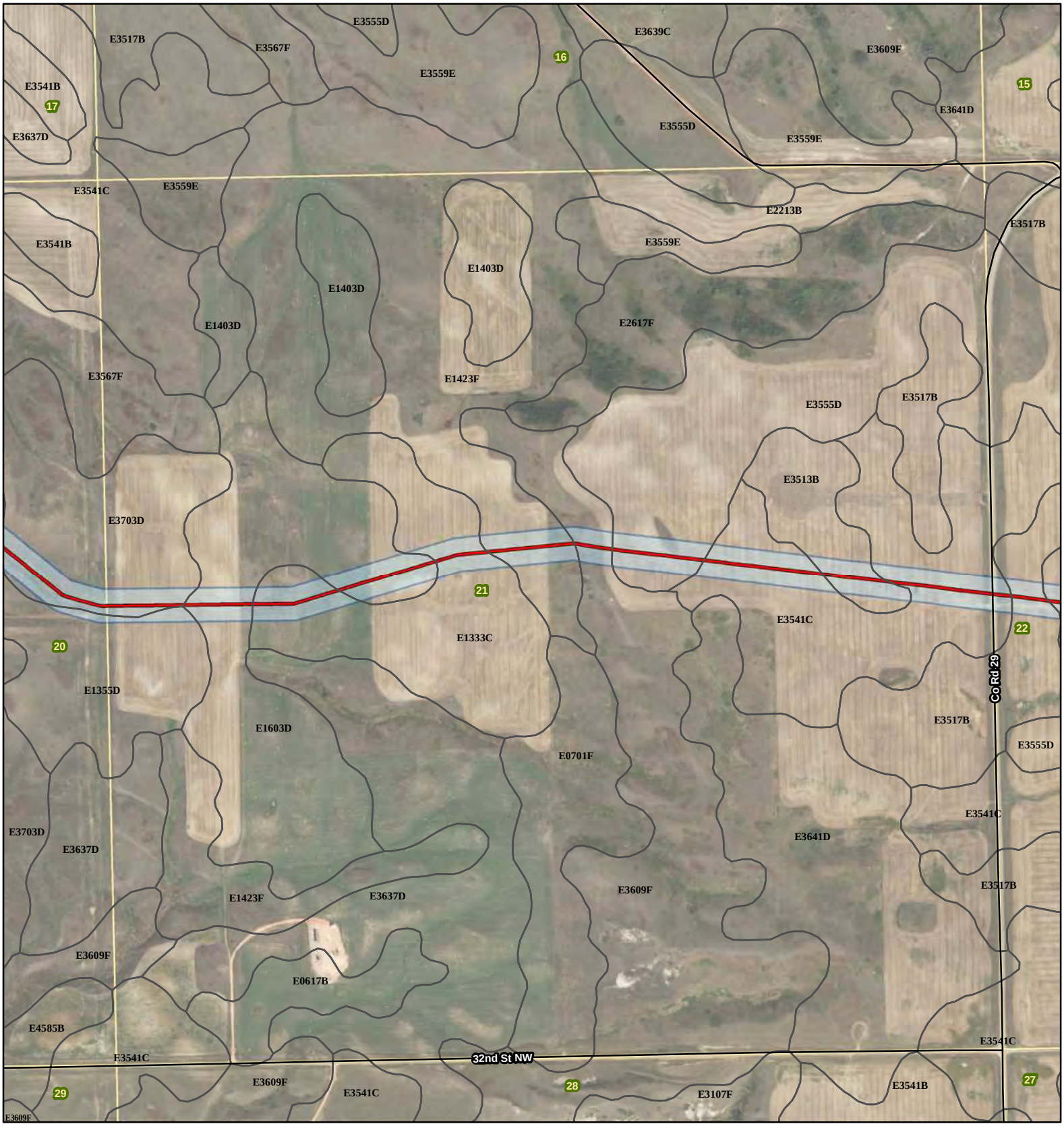
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978),
Camp Creek East (1978)
Township/Range: T. 151N, R. 100W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

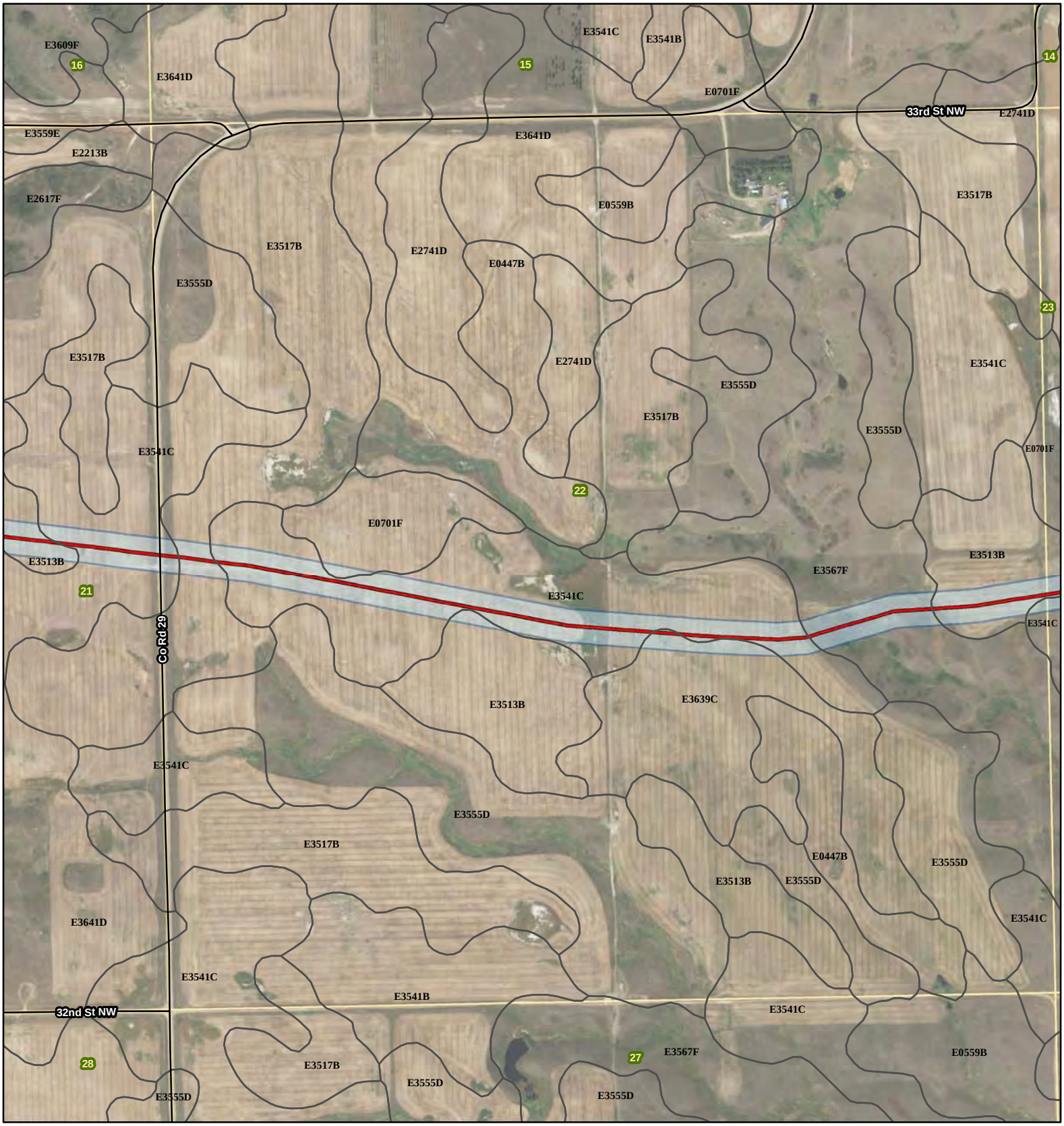
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 100W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

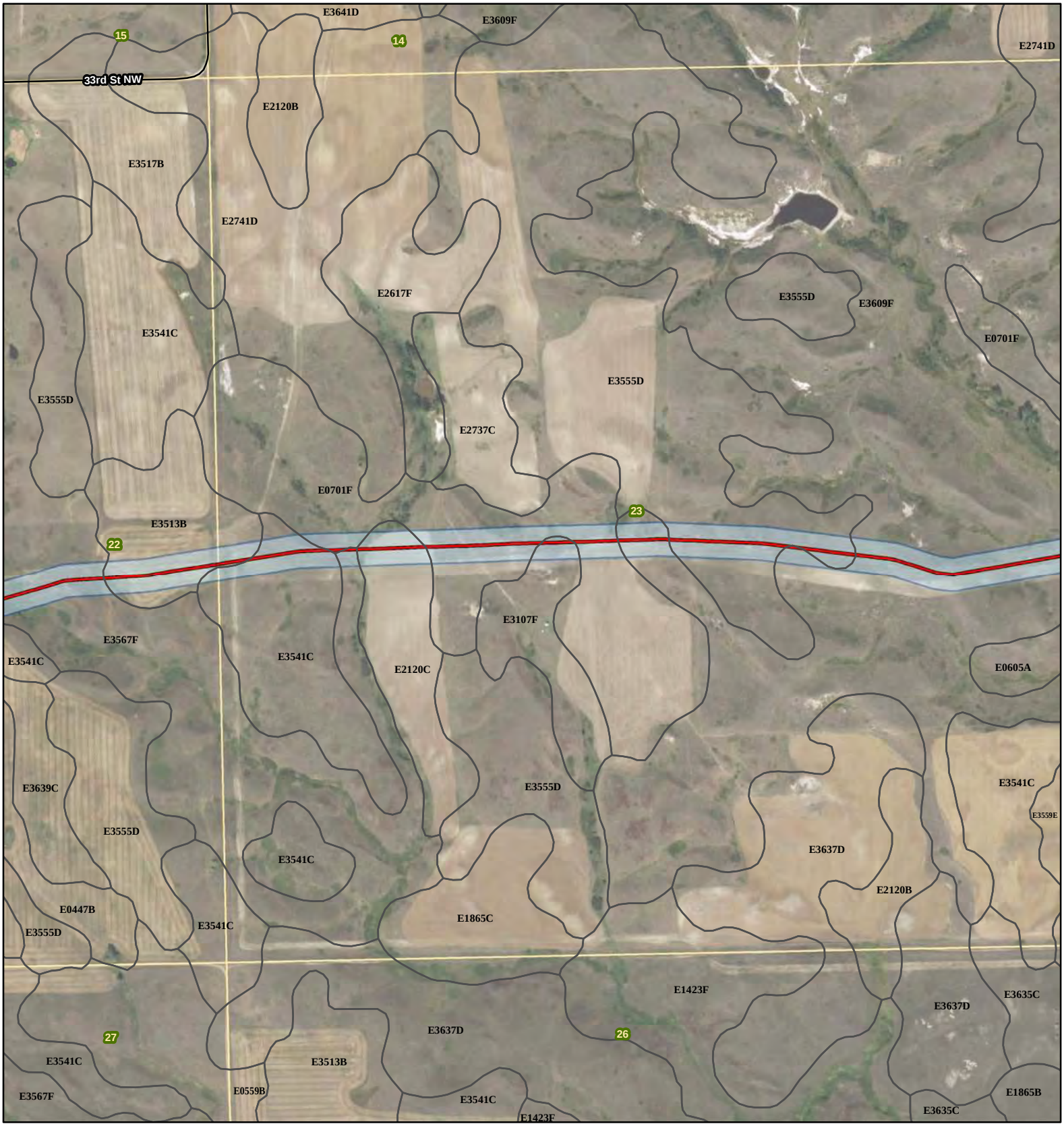
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 100W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

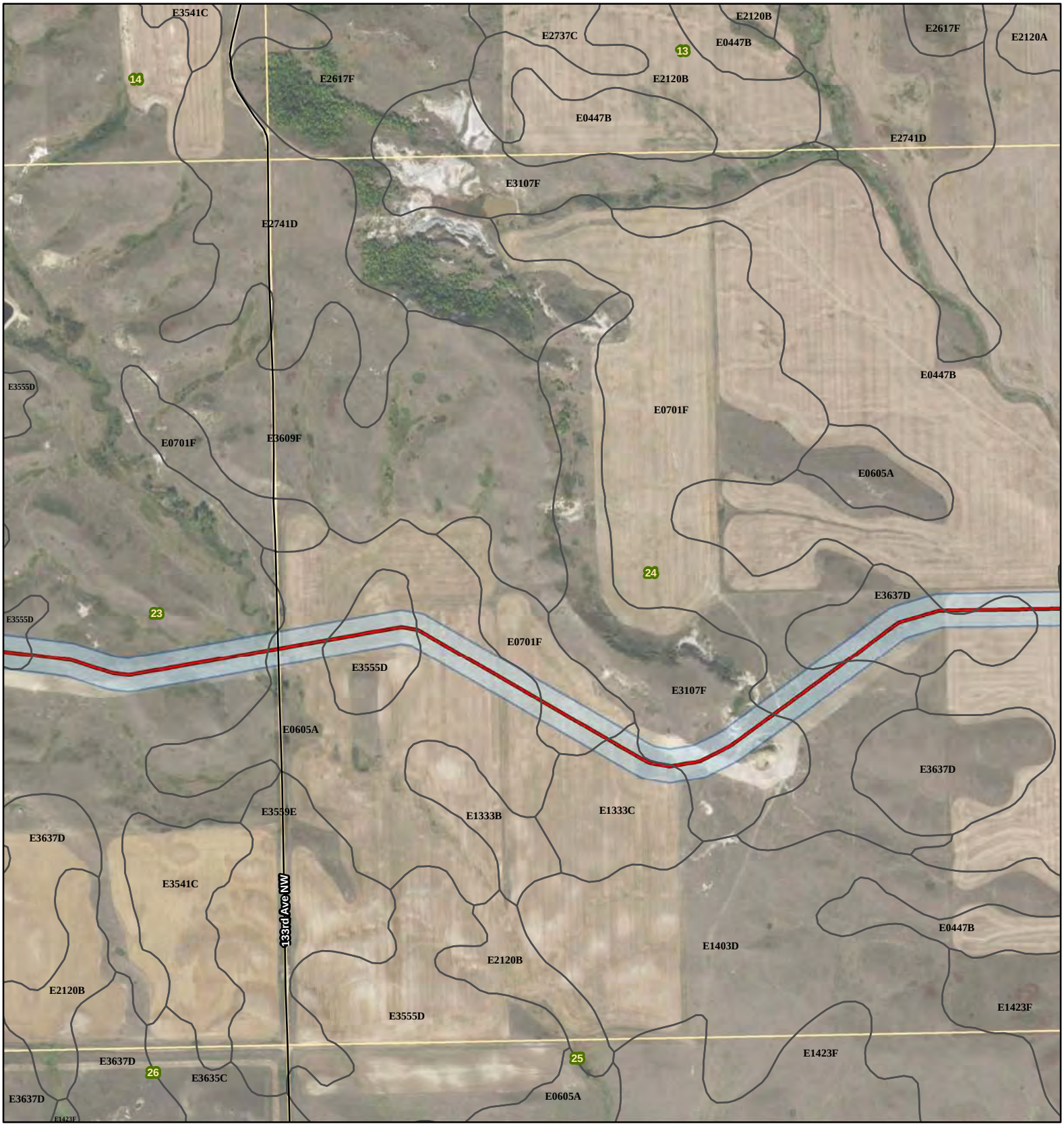
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 100W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 100W

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

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

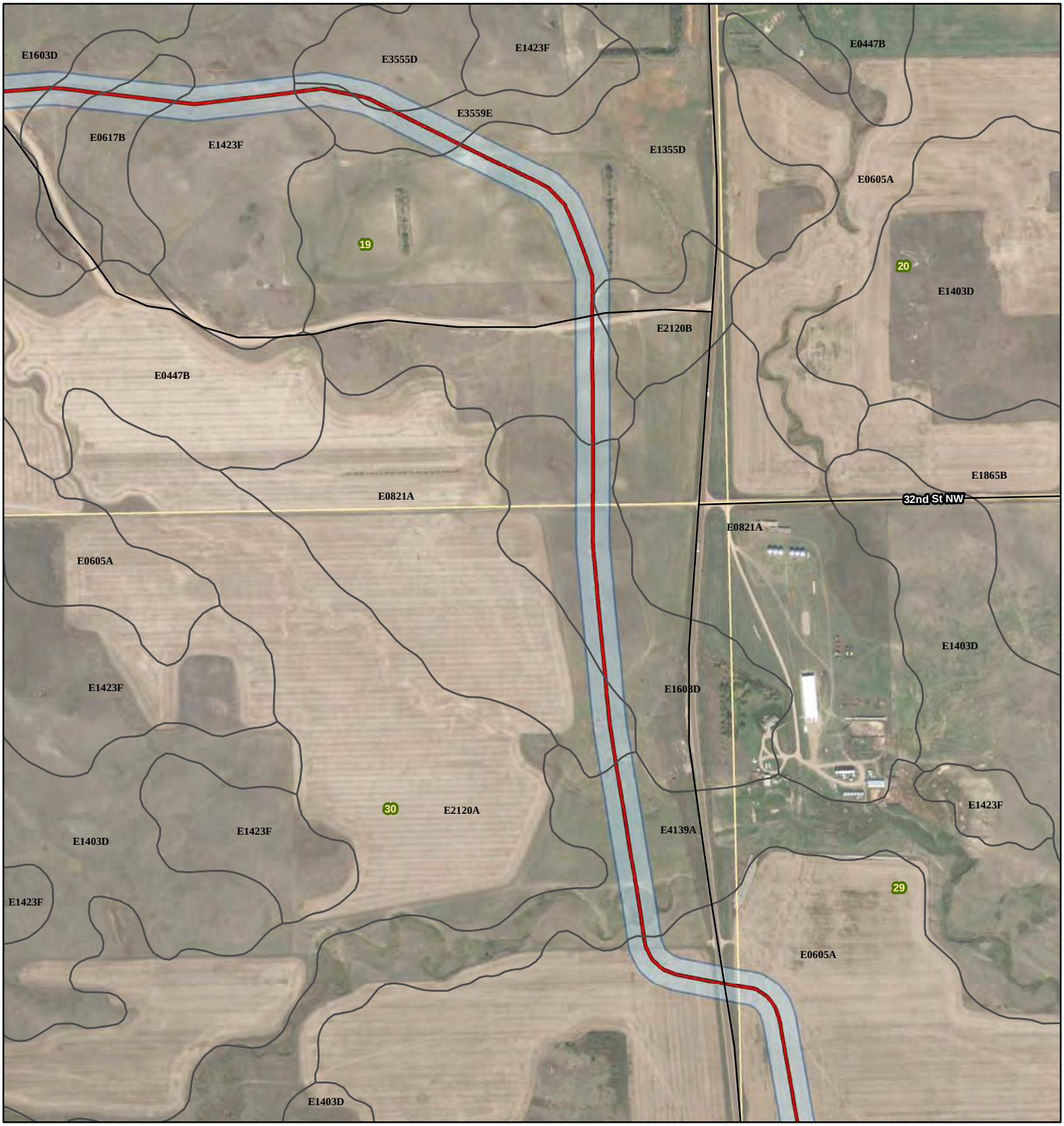
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 99W &
T. 151N, R. 100W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

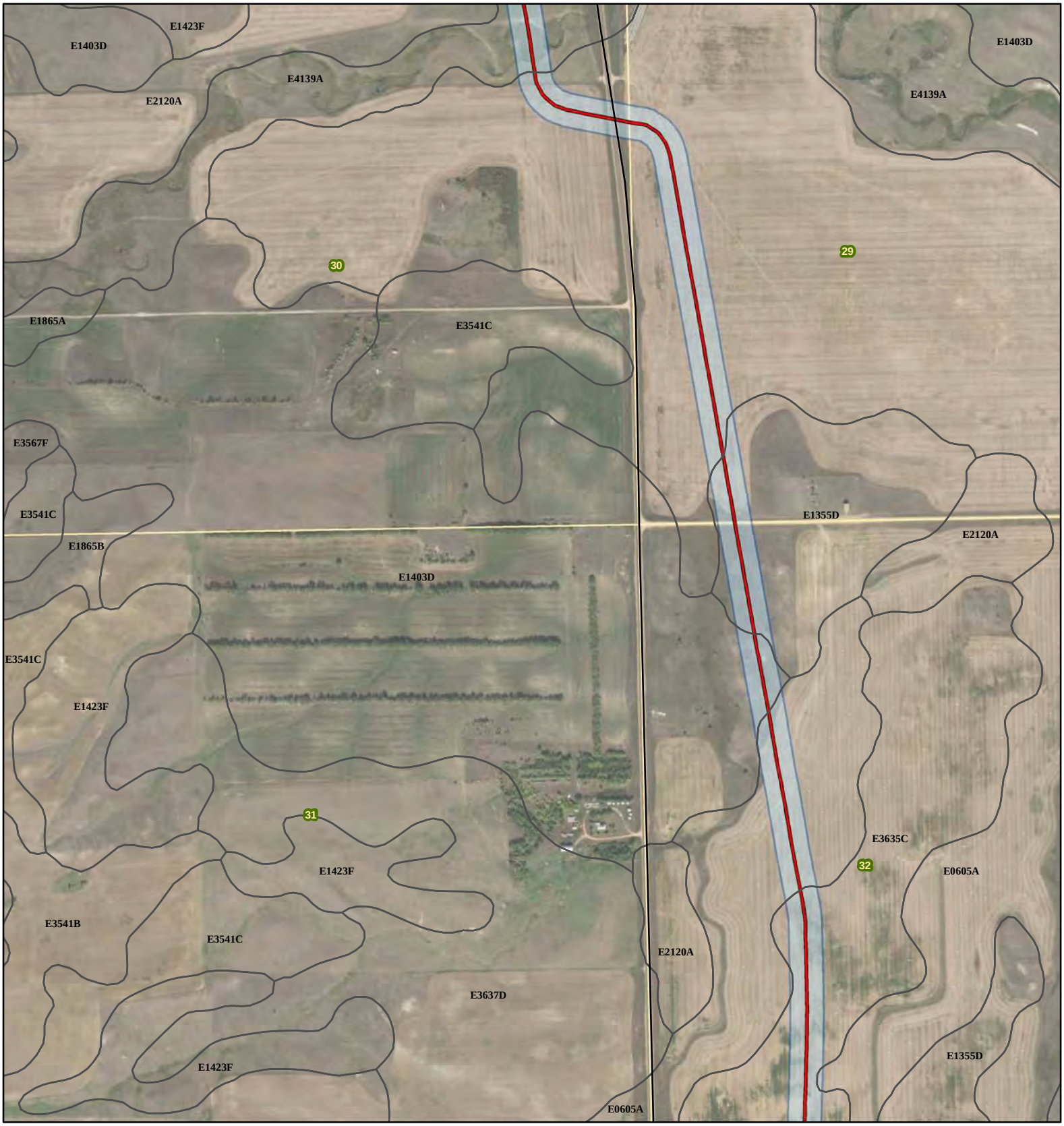
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Arnegard (1978),
Watford City NW (1978)
Township/Range: T. 151N, R. 99W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

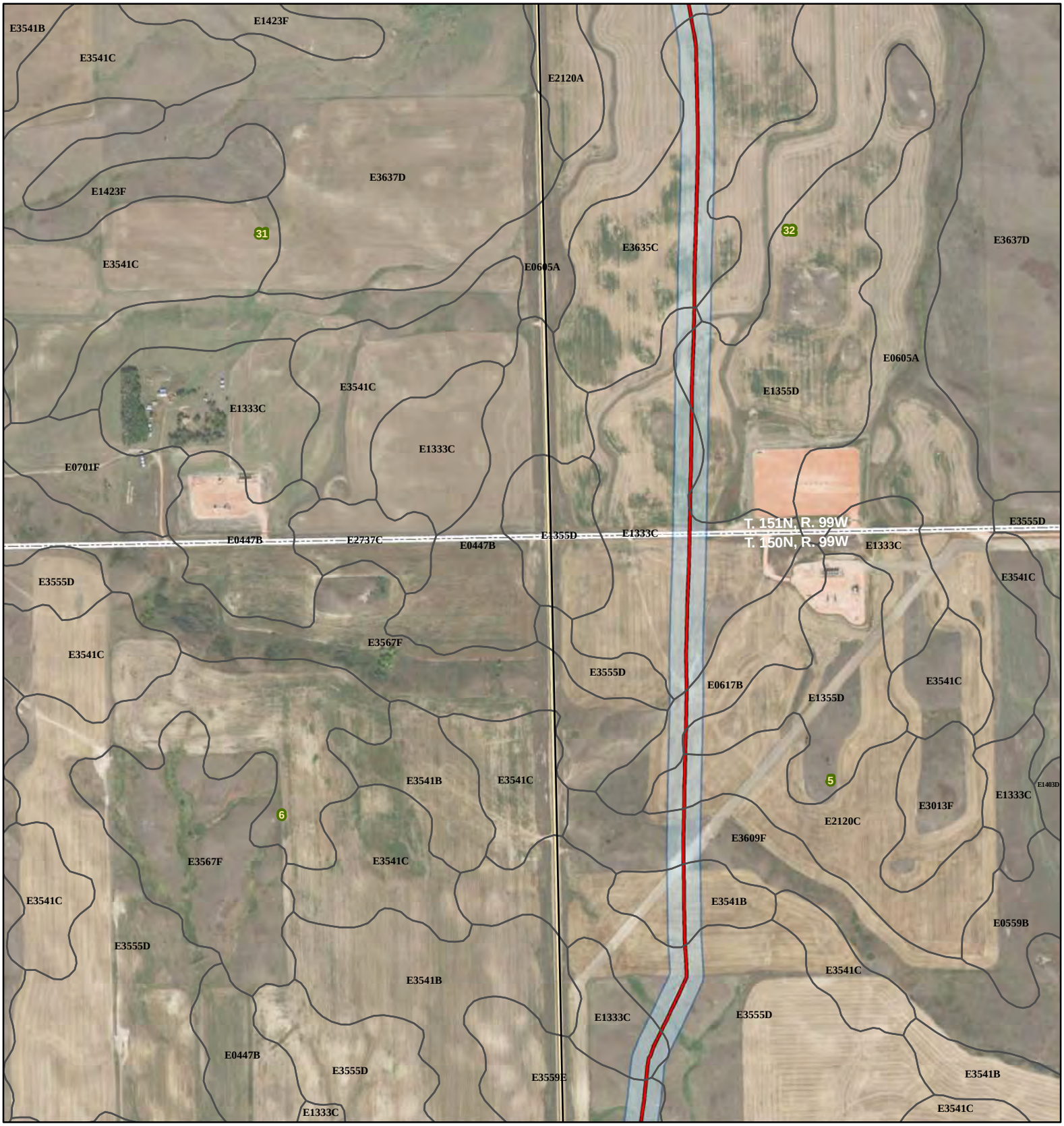
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Arnegard (1978)

Township/Range: T. 151N, R. 99W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

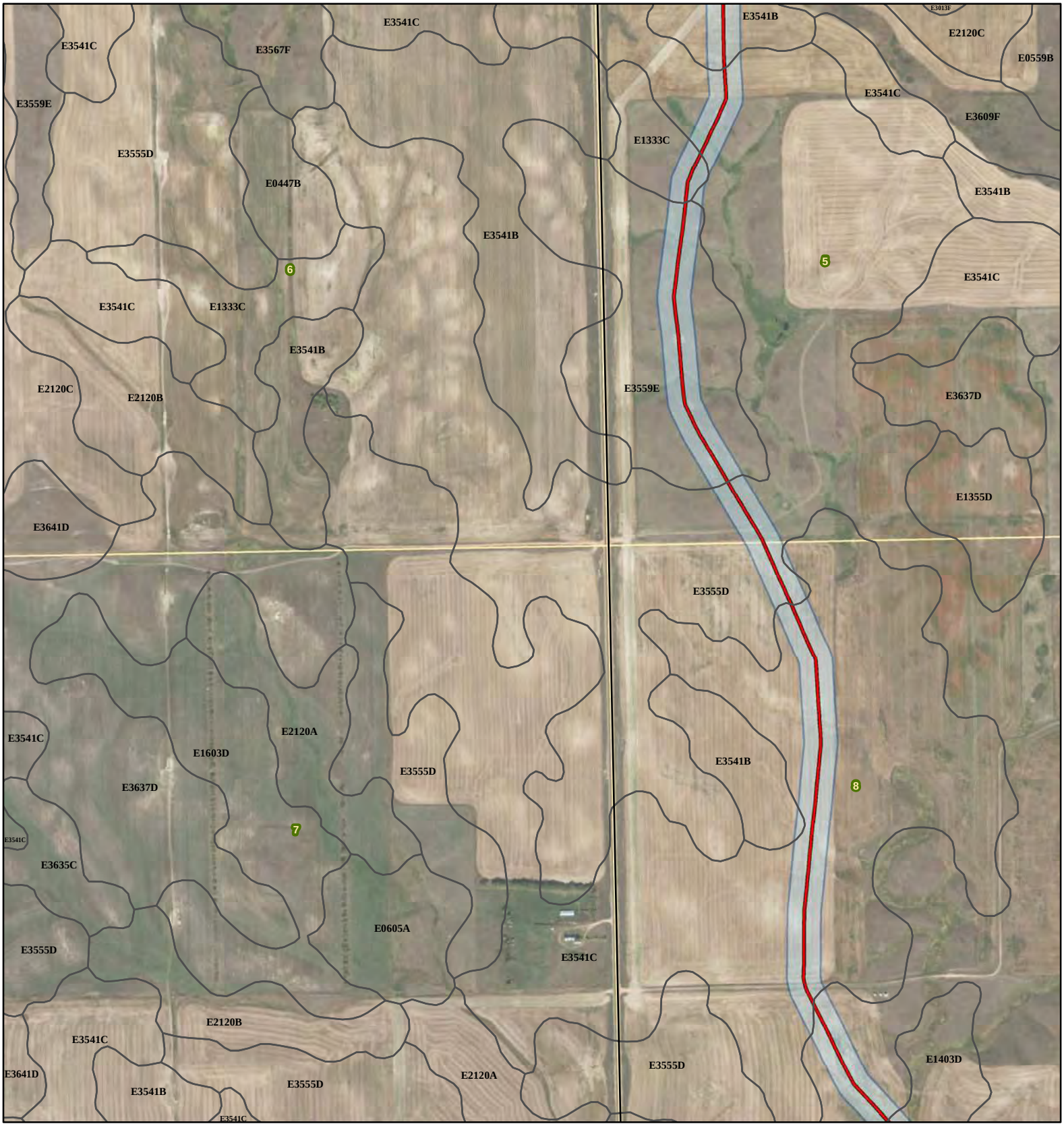
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Arnegard (1978)

Township/Range: T. 150N, R. 99W &
T. 151N, R. 99W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

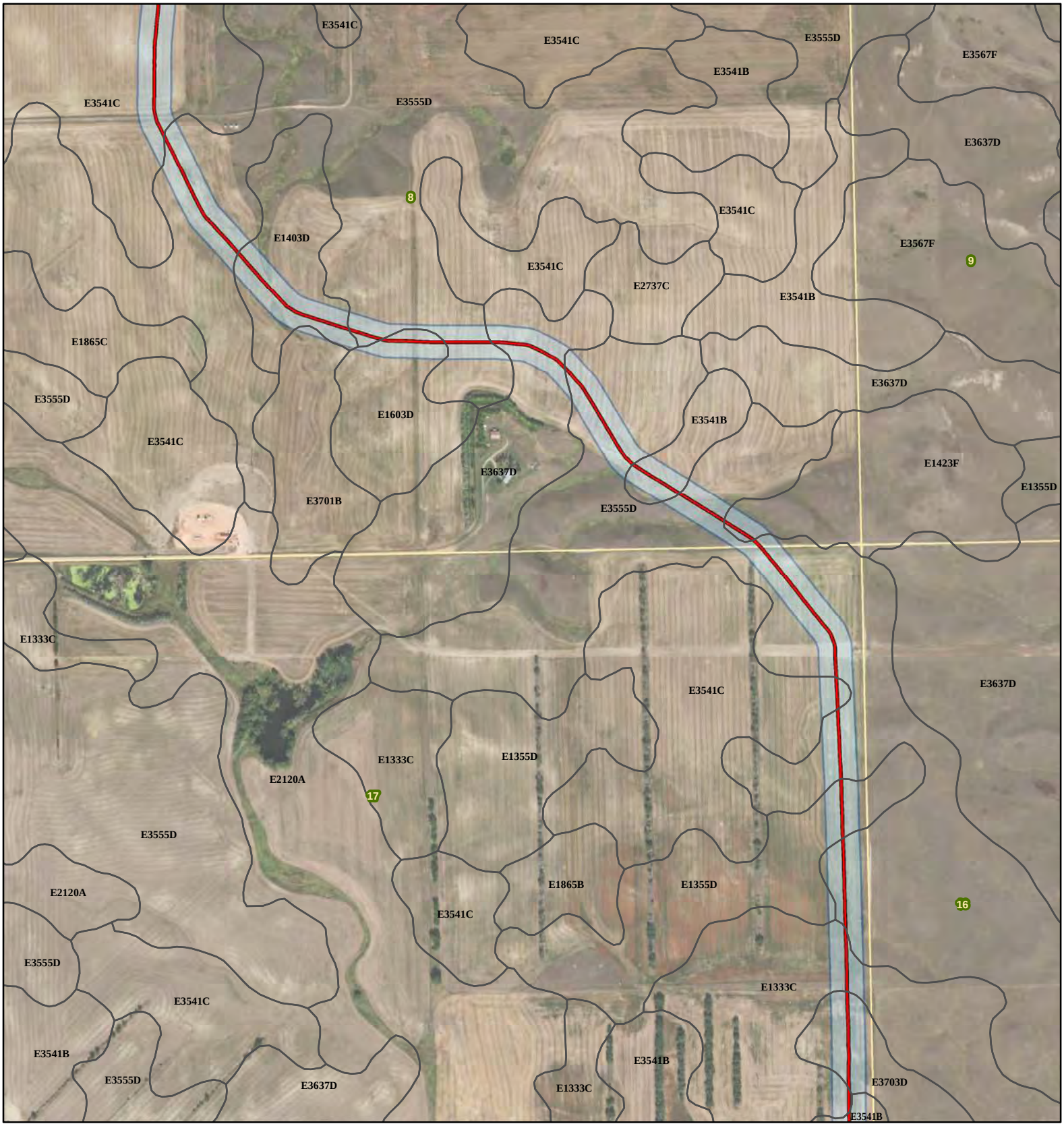
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Arnegard (1978)

Township/Range: T. 150N, R. 99W

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



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

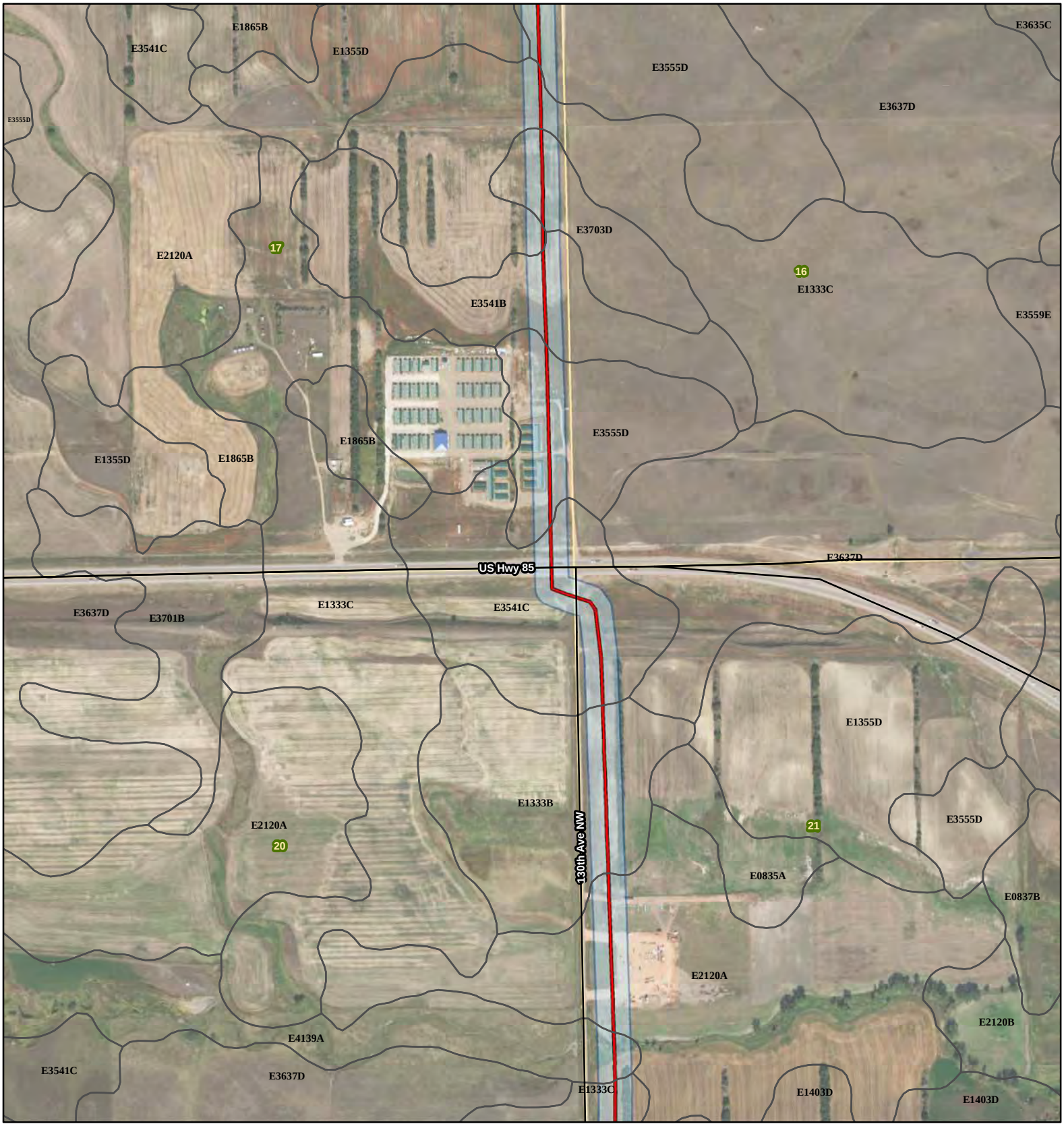
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978),
Arnegard (1978)
Township/Range: T. 150N, R. 99W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978)

Township/Range: T. 150N, R. 99W

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

N W E S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

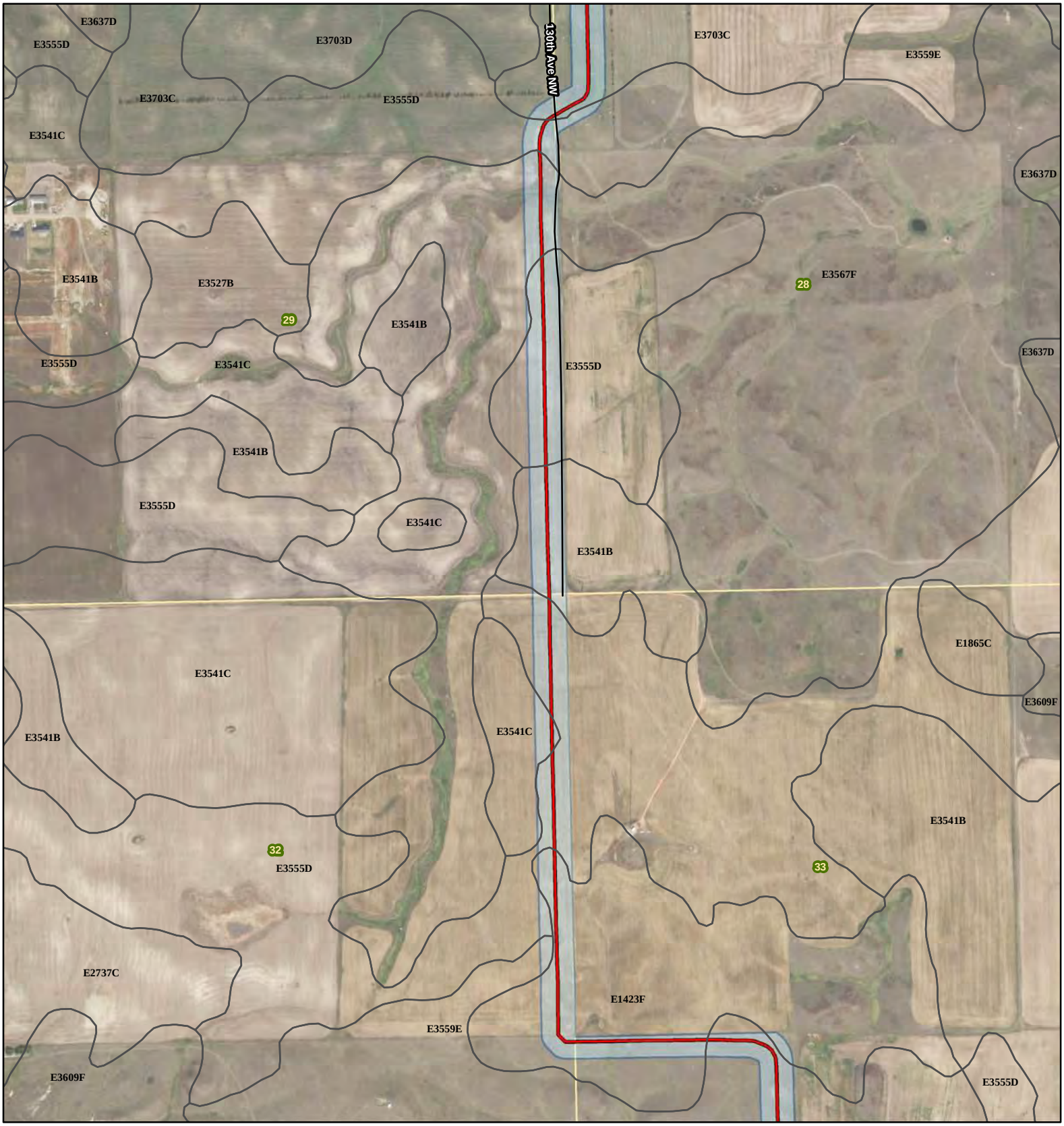
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978)

Township/Range: T. 150N, R. 99W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

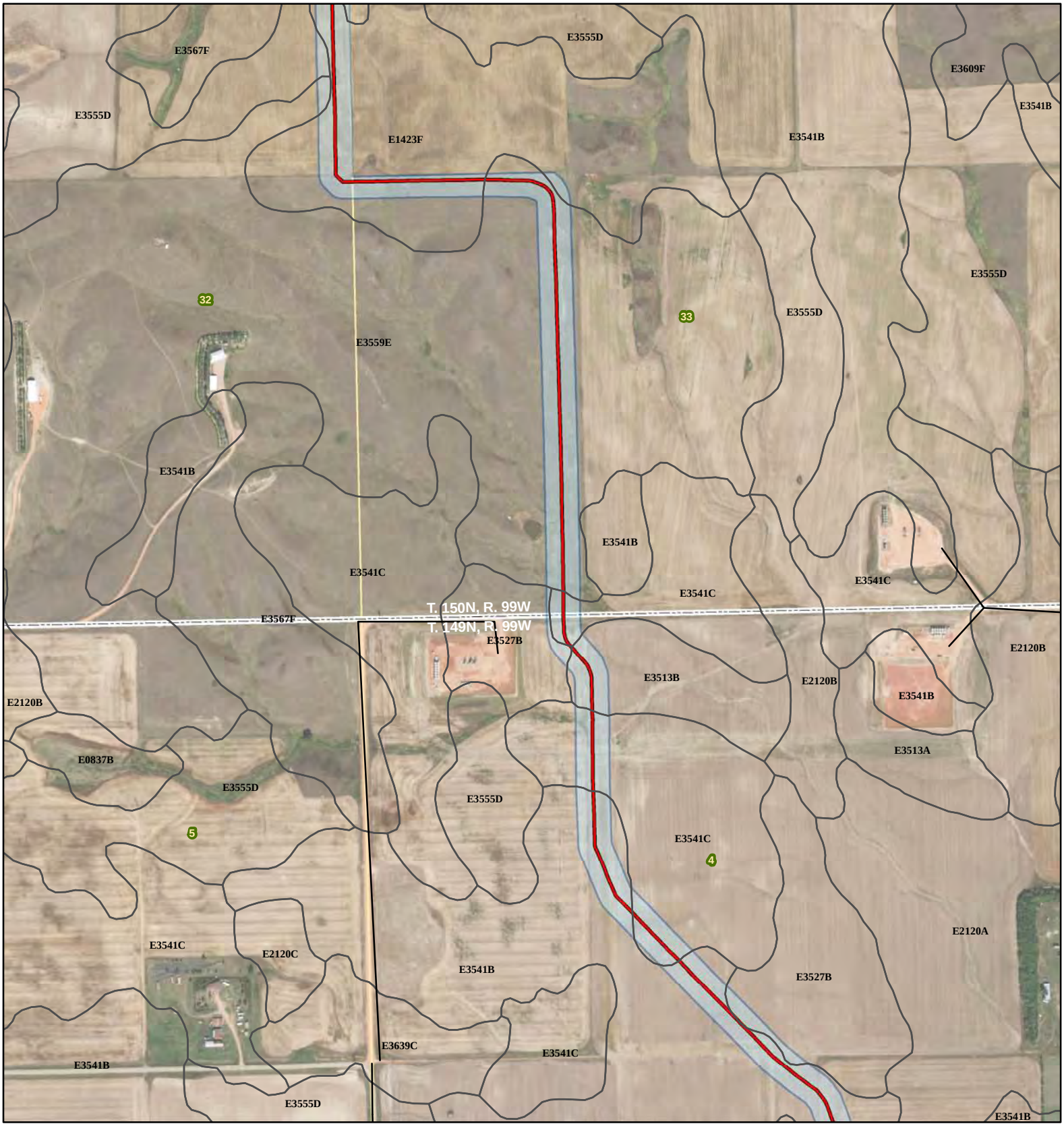
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978)

Township/Range: T. 150N, R. 99W

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



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA®
ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

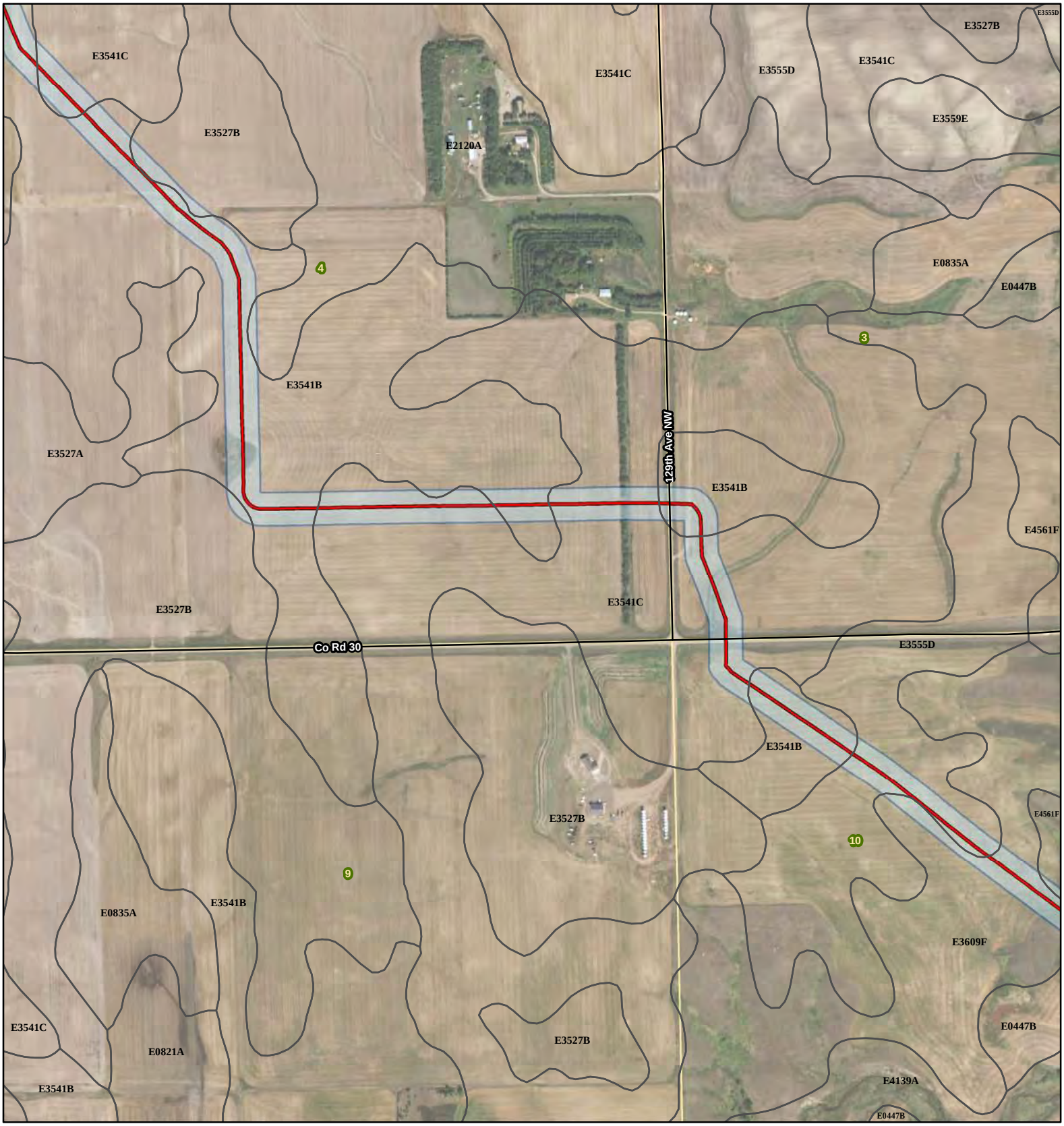
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978)

Township/Range: T. 149N, R. 99W &
T. 150N, R. 99W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995),
Watford City (1978)
Township/Range: T. 149N, R. 99W

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

N W E S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

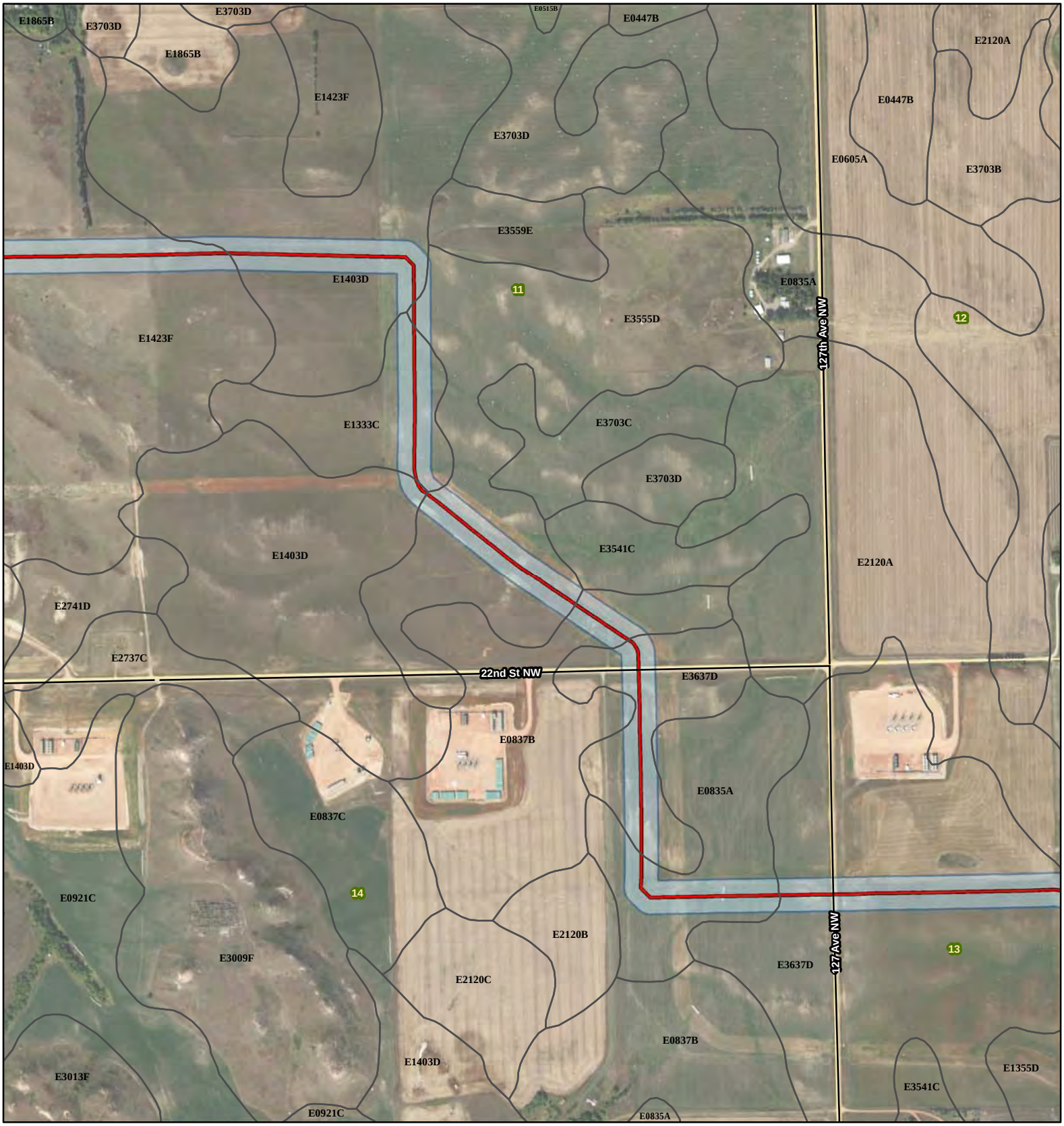
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995)

Township/Range: T. 149N, R. 99W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

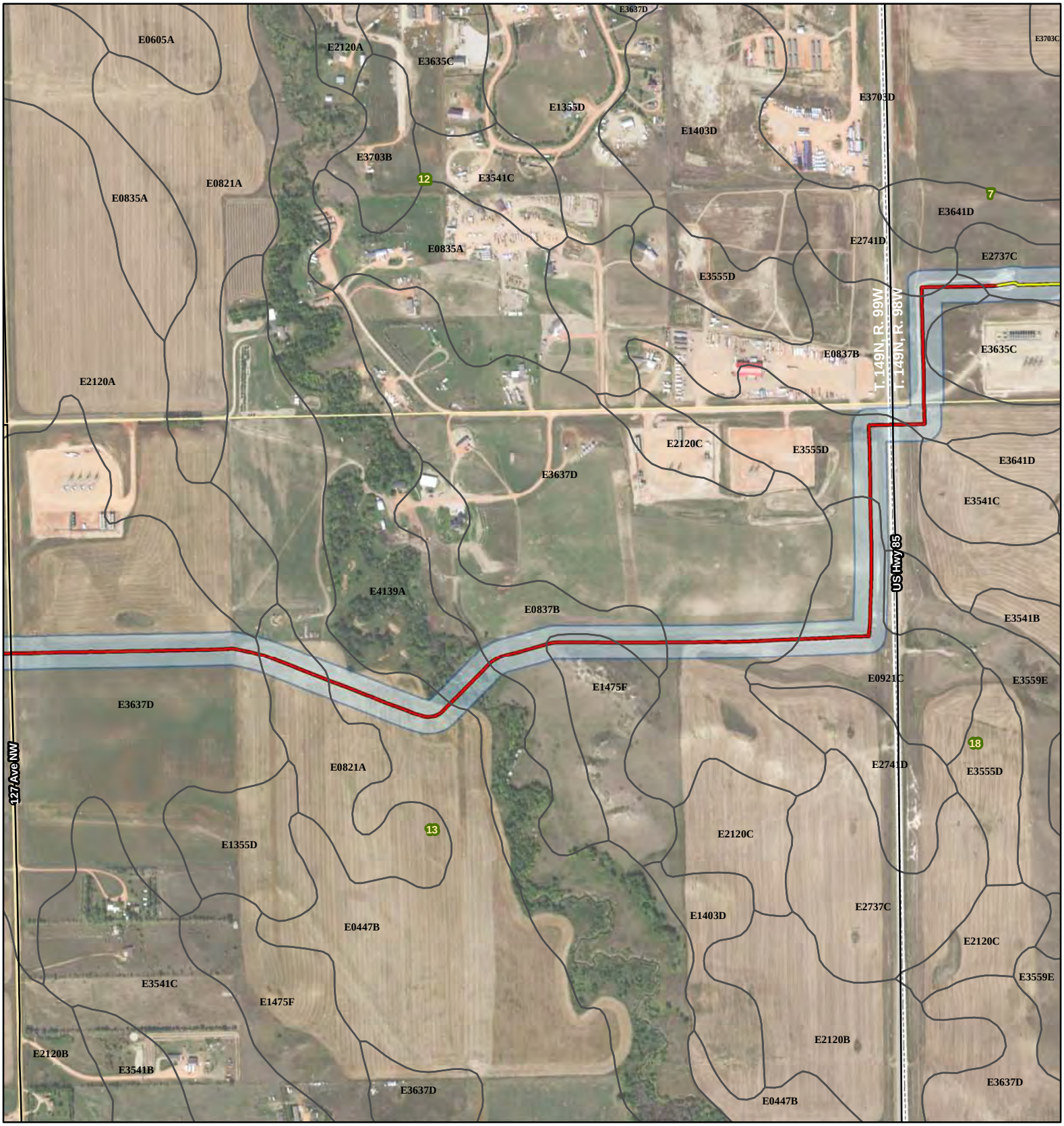
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995)

Township/Range: T. 149N, R. 99W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

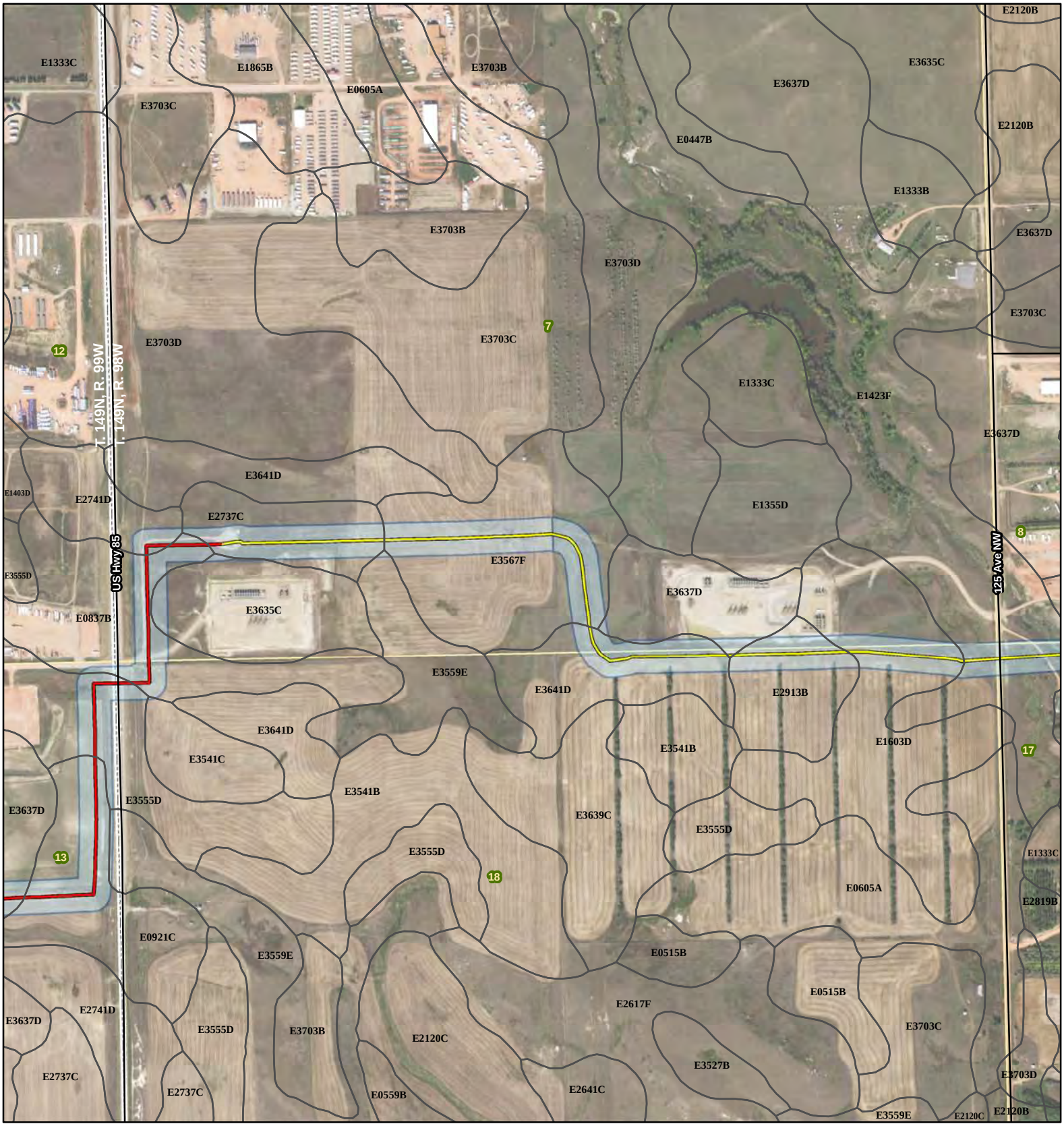
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995)

Township/Range: T. 149N, R. 98W &
T. 149N, R. 99W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

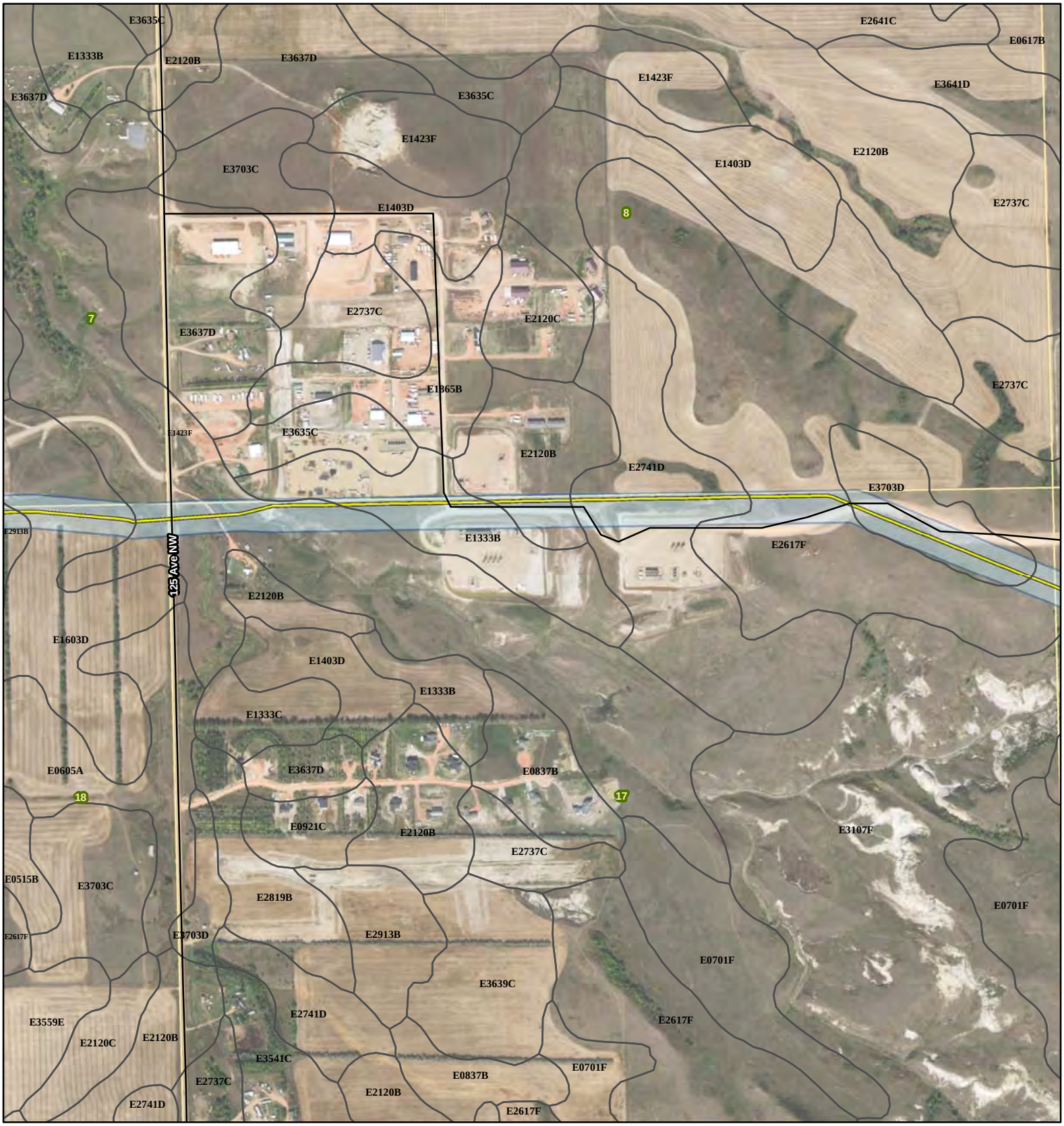
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995)

Township/Range: T. 149N, R. 98W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

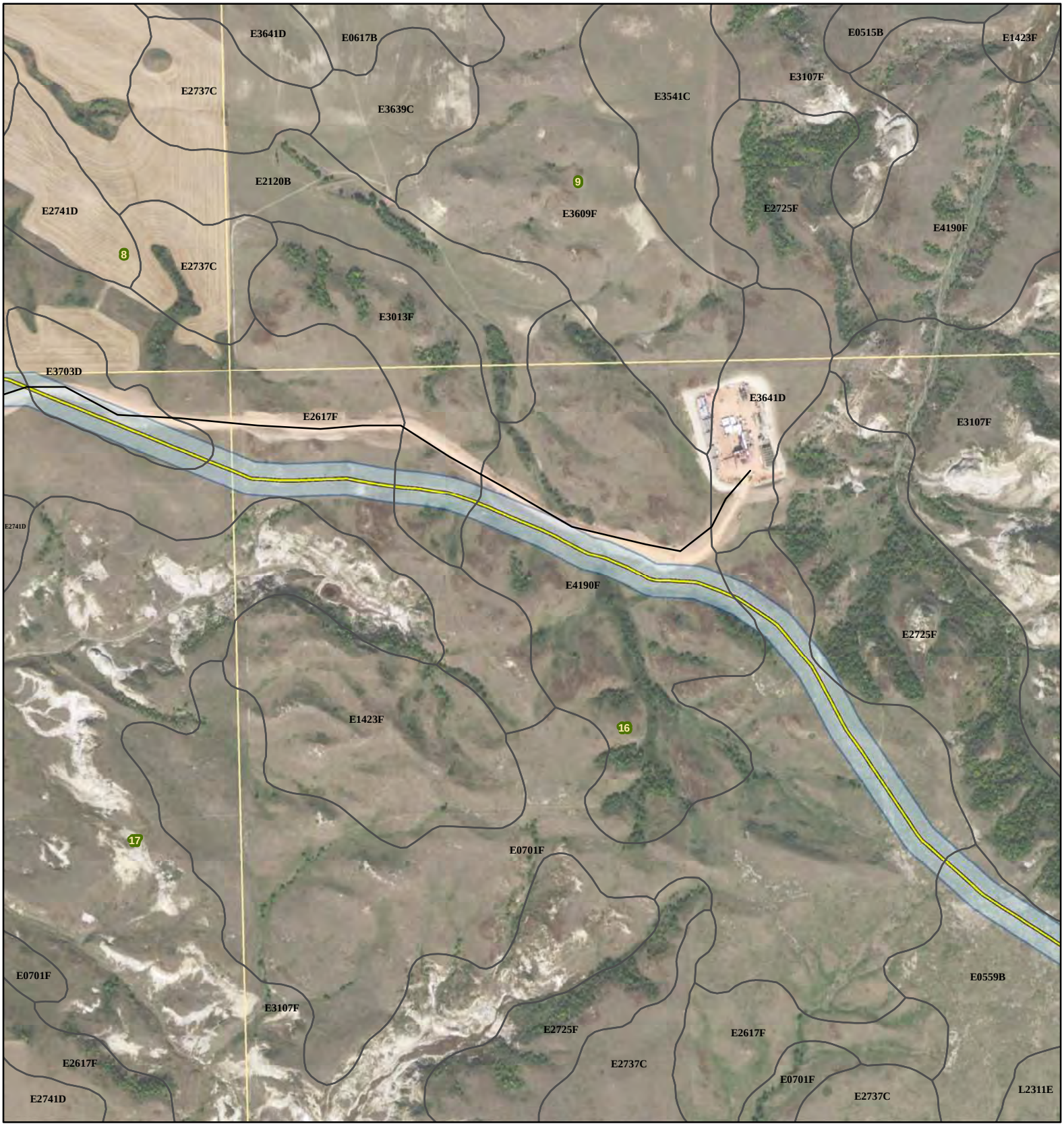
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995),
Tepee Buttes (1995)
Township/Range: T. 149N, R. 98W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

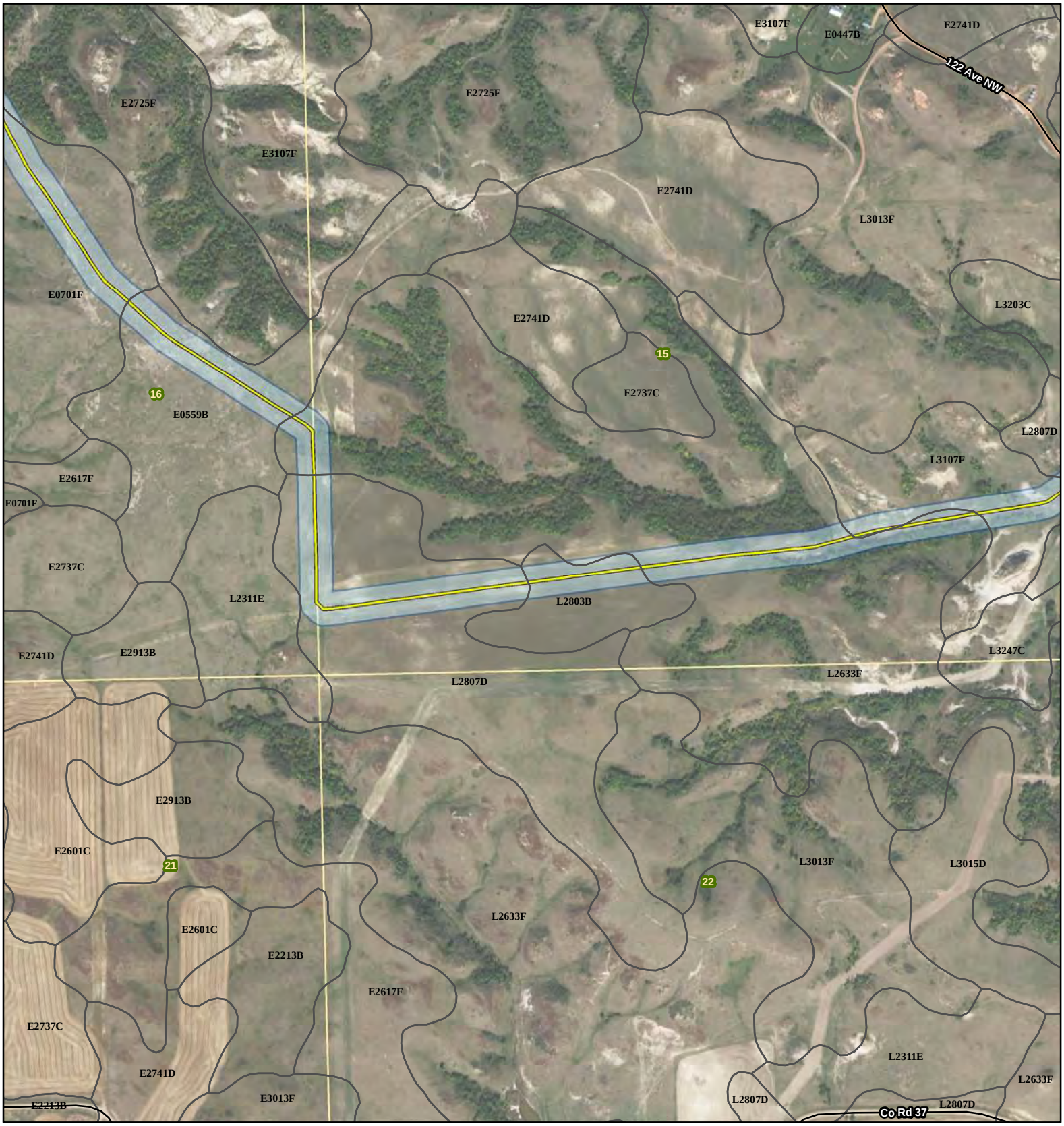
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995)

Township/Range: T. 149N, R. 98W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995)

Township/Range: T. 149N, R. 98W

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

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

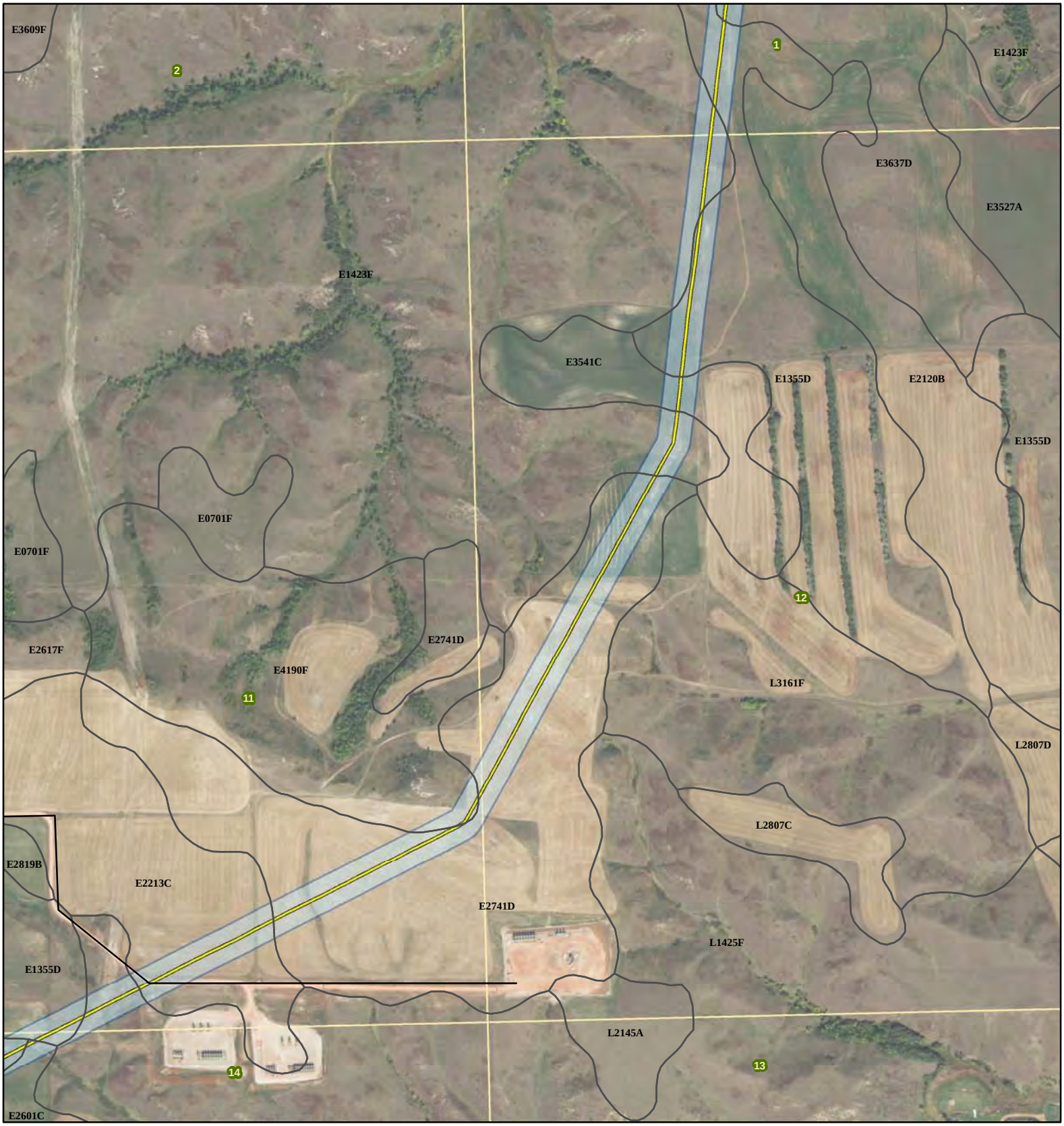
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995)

Township/Range: T. 149N, R. 98W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995)

Township/Range: T. 149N, R. 98W

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

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer (1995),
Lone Butte NW (1995)
Township/Range: T. 149N, R. 98W

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

N W E S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer (1995)

Township/Range: T. 150N, R. 97W &
T. 149N, R. 97W & T. 149N, R. 98W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995),
Schafer (1995)
Township/Range: T. 150N, R. 97W

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

N W E S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA®
ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 149N, R. 97W &
T. 150N, R. 97W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 150N, R. 97W &
T. 149N, R. 97W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 150N, R. 97W

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

N W E S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 150N, R. 97W

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

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 150N, R. 96W &
T. 150N, R. 97W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

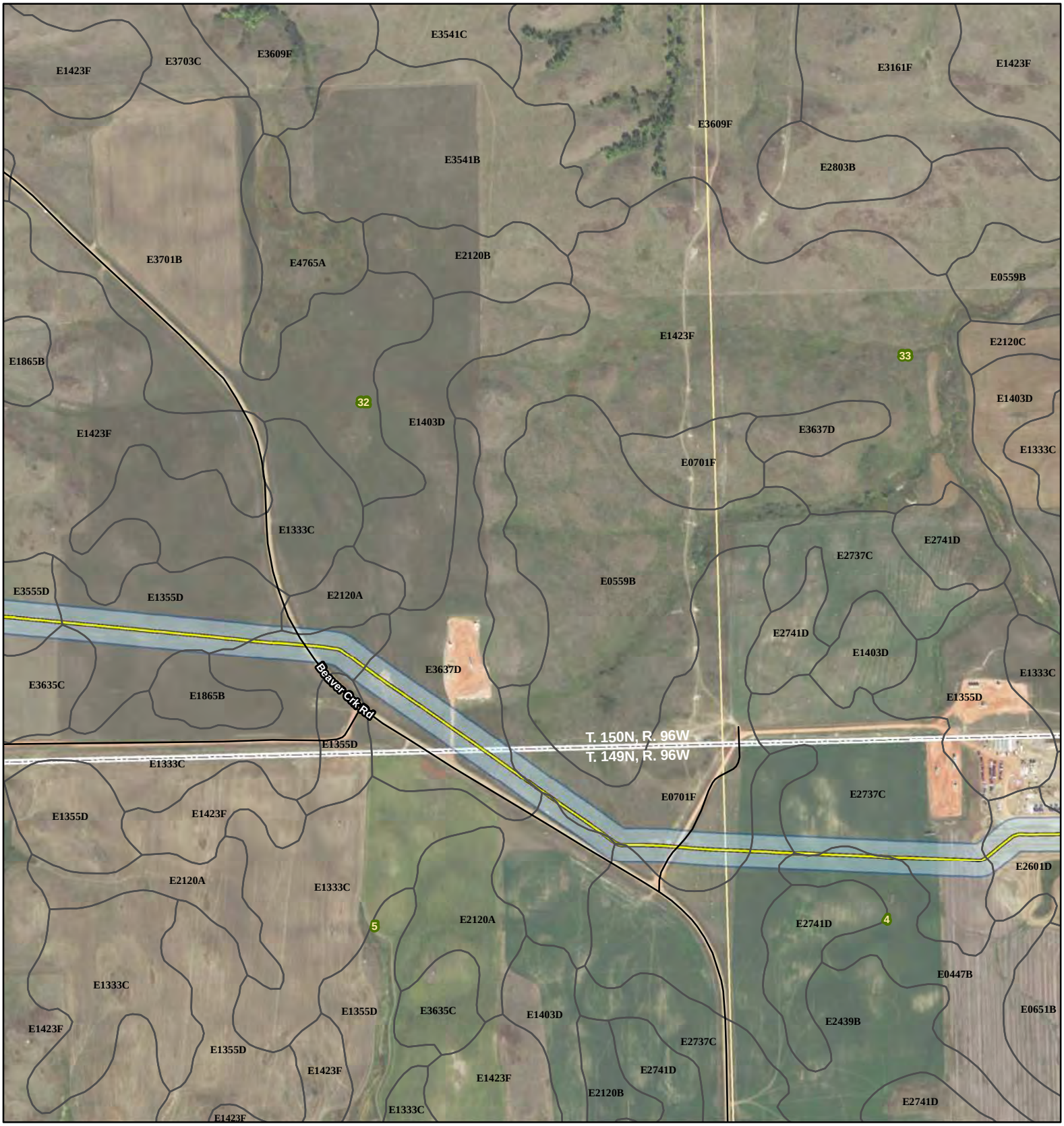
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995),
Schafer SE (1995)
Township/Range: T. 150N, R. 96W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 149N, R. 96W &
T. 150N, R. 96W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 149N, R. 96W

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

N W E S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

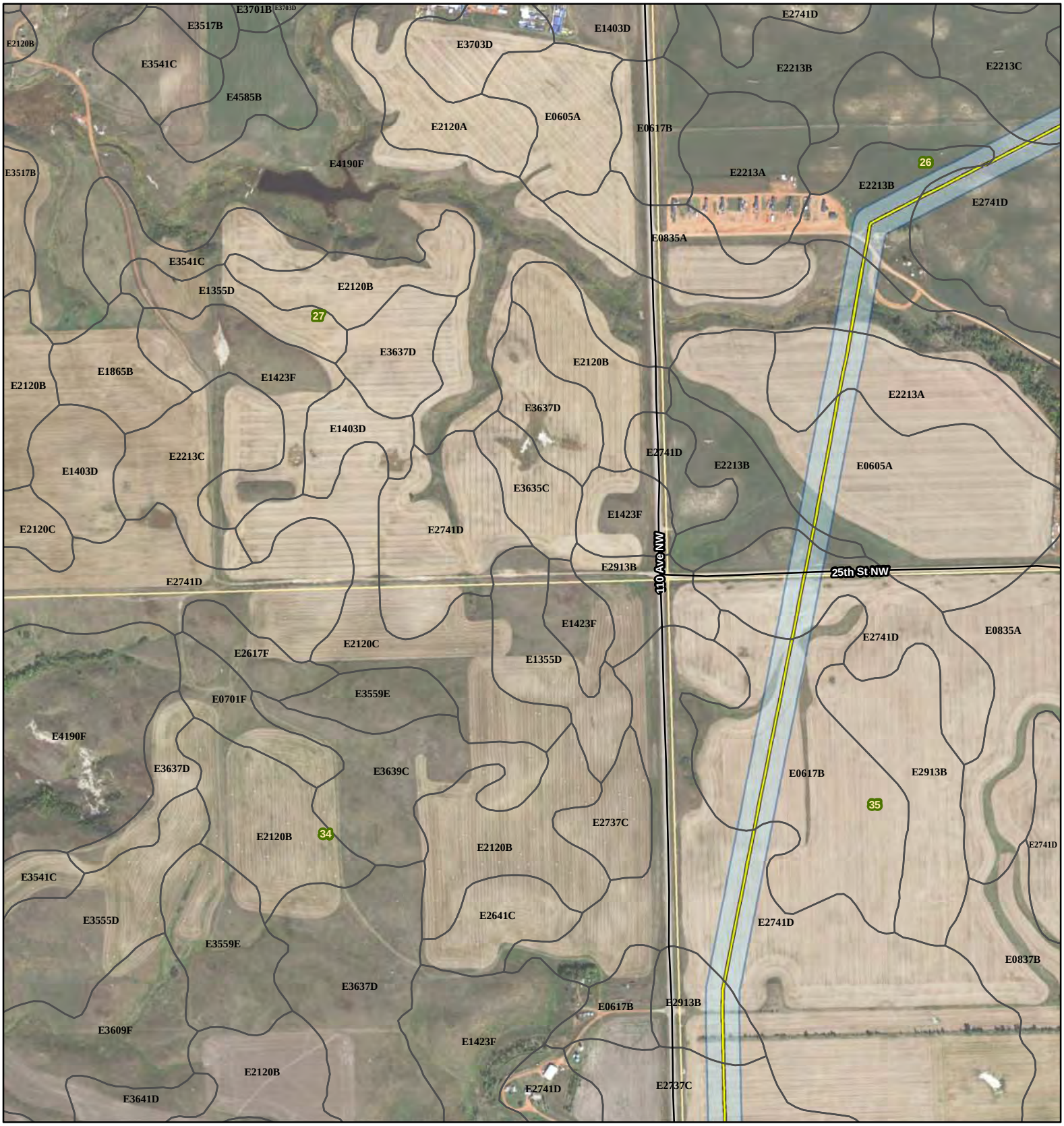
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 150N, R. 96W &
T. 149N, R. 96W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

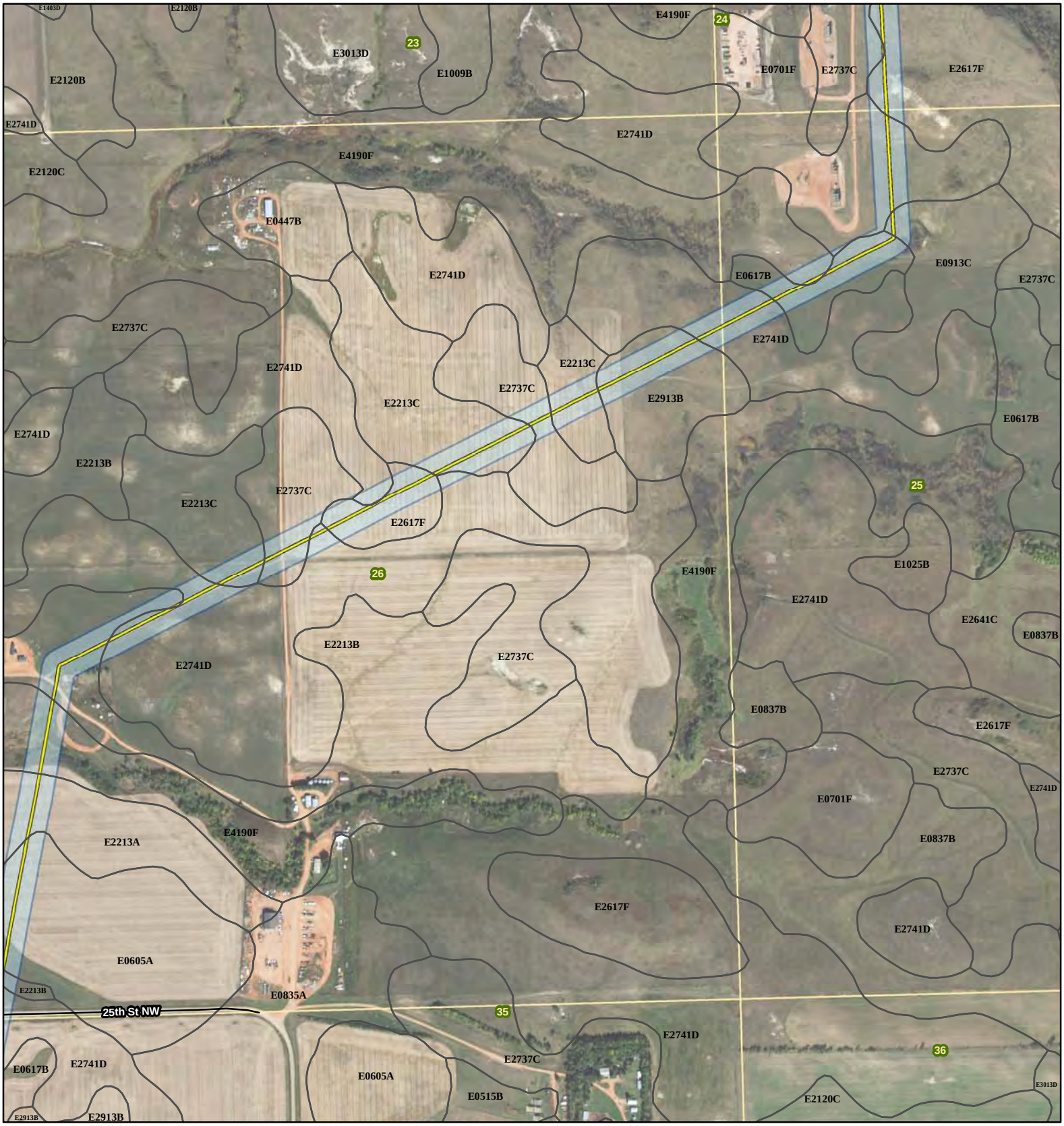
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 150N, R. 96W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 150N, R. 96W

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

N W E S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 150N, R. 96W

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

N W E S

APPENDIX B
Wetland Delineation Data Forms

APPENDIX C
Photographs of Project Area

Figure C1. AWET2 and ASTR1 facing west (photograph taken July 5, 2016).

Figure C2. AWET3 facing south (photograph taken July 5, 2016).

Figure C3. AWET4 facing south (photograph taken July 5, 2016).

Figure C4. BSTR1 and BWET1 facing west (photograph taken July 6, 2016).

Figure C5. Cherry Creek - BSTR4 facing southwest (photograph taken July 6, 2016).

Figure C6. Sevenmile Creek - BSTR5 facing north (photograph taken July 6, 2016).

Figure C7. Spring Creek - BSTR6 facing south (photograph taken July 6, 2016).

Figure C8. BDP6U facing east (photograph taken July 6, 2016).

Figure C9. ADP27U facing east (photograph taken July 7, 2016).

Figure C10. ADP22U facing west (photograph taken July 7, 2016).

Figure C11. Cherry Creek - BSTR7 facing south (photograph taken July 7, 2016).

Figure C12. Timber Creek - BSTR8 facing northeast (photograph taken July 7, 2016).

Figure C13. BSTR10 facing southeast (photograph taken July 8, 2016).

Figure C14. AWET10 facing northeast (photograph taken July 8, 2016).

Figure C15. AWV1 facing west (photograph taken July 6, 2016).

Figure C16. BWV2 facing northwest (photograph taken July 8, 2016).

Figure C17. Project area overview depicting general site conditions in the survey area, facing west (photo taken July 6, 2016).

Figure C18. Project area overview depicting general site conditions in the survey area, facing west (photo taken July 7, 2016).

APPENDIX E

STATE AND COUNTY PERMITS

September 22, 2011

Mr. Michael Greer
McKenzie County
PO Box 1221
Watford City, ND 58854-1221

Re: Saddle Butte Pipeline Utility Permit

Saddle Butte Pipeline, LLC with headquarters located in Durango, Colorado hereby respectfully makes a request to the McKenzie County, North Dakota, for authorization for the construction or laying of crude oil pipelines across public rights-of-way in McKenzie County. The proposed Project, called the Smokey Crude line, is a crude oil pipeline system consisting of approximately 32.5 miles of 8-inch steel crude oil pipeline in McKenzie County, North Dakota. The pipeline is in the design phase with the general locations shown on the attached map. Start of construction is anticipated in October 2011, but is dependent upon permitting, ROW acquisition, and other development activities. The construction completion date is currently anticipated for November 2011.

Enclosed is the McKenzie County Pipeline Permit application version 12/30/11 with an attached map that shows proposed route crossing. In regard to the Utility Permit application, item No. 5; it states that "Any crossing installed by trenching or plowing in may be no more than eight (8) inches in width." The proposed trench width for the Smokey pipeline will exceed eight (8) inches at all crossing locations. Saddle Butte will bore County paved roads and County roads treated with road stabilization materials as required by McKenzie County Utility Permit. Please confirm specific locations identified on permit application that will require bored crossings. Also, please advise if the County envisions or is planning road or section line improvements that would possibly impact the proposed pipeline.

If you have any questions or require additional information, please call Don Metzger at 701-258-1110 or email at don.metzger@bartwest.com. Please contact me if you have any questions or if you need to meet with a surveyor out in the field and/or a Bartlett & West representative.

Thank you for your time and attention to this matter.

Sincerely,

Don Metzger

File: 17249.001 Permit Applications

Copy

Permit #: SB0922110S - multi

CONSENT FOR UTILITY COMPANY
TO
CROSS A PUBLIC ROAD OR SECTION ROAD

Saddle Butte Pipeline, LLC (Company) of 858 Main Ave, Suite 301, Durango, CO 81301 (Address)

Hereinafter referred to as "Utility Company", having requested permission from McKenzie County, a political subdivision of the State of North Dakota, to cross an existing road or section line with a buried transmission facility designed to carry or conduct oil, gas, water, electricity, telephone or any other substance or service whatsoever, and McKenzie County having considered the request does grant consent to cross the following described existing road or section line, upon the terms and conditions herein stated:

(Please include County Route #'s as applicable**)**

Route See Exhibit A in Section(s) _____, Township _____ N, Range _____W

Route _____ in Section(s) _____, Township _____ N, Range _____W

Route _____ in Section(s) _____, Township _____ N, Range _____W

Route _____ in Section(s) _____, Township _____ N, Range _____W

Route _____ in Section(s) _____, Township _____ N, Range _____W

(Attach Maps and Construction Plans**)**

At a minimum, acceptable plans will include method of crossing existing roads or section lines and size and material used for the buried facility.

Consent to cross such existing road or section line is granted on these terms and conditions:

1. Utility Company must pay for all damage to the existing road caused by its activities, including but not limited to slumping in of trenches and collapse of pipe.
2. Utility Company is responsible for any and all claims of damage, personal injury, or bodily injury that might result from their activities in crossing any existing road or section line in McKenzie County. Furthermore, Utility Company agrees to indemnify and hold harmless any type of claim for damages of any nature whatsoever, whether valid or invalid, that is made against McKenzie County on account of the activities conducted by the Utility Company in crossing any existing road or section line.
3. When the Utility Company crosses an existing road or a section line, the Utility Company shall be responsible to pay for all costs of moving, relocating, or reconstructing the buried transmission facility should McKenzie County deem it necessary or advisable, in its sole

discretion, to repair or reconstruct existing roads or to build new roads on section lines or off section lines as allowed by North Dakota law. Should the Utility Company fail to take necessary steps to relocate or reconstruct its buried transmission facility, the County may take steps to have the same accomplished, and the Utility Company agrees to reimburse the County for all expenses incurred by McKenzie County in moving, relocating or reconstructing the buried transmission facility so the existing roads may be repaired or reconstructed, or new roads may be built on the section line or off the section line as allowed by North Dakota law.

4. The buried transmission facility to be installed by the Utility Company in crossing any existing road shall at a minimum comply with the following engineering standards:
   (a) County paved roads or County roads treated with road stabilization materials may **ONLY** be **BORED.**
   (b) All crossings of existing roads not trenched as in Section 5 below shall be bored to a depth of five (5) feet below original ground or ditch elevations.
   (c) Pipe shall be cased or heavy wall pipe used.
   (d) All parallel borings must be a minimum of thirty (30) feet from road centerline.
   (e) Vent pipes must be outside existing right-of-way lines or thirty-three (33) feet from road center, whichever is greater.
   (f) All disturbed ground within right-of-way must be rehabilitated by covering with black dirt and seeding with an approved mix.
   (g) If vent pipes are not used within the ten (10) feet of both sides of right-of-way, the transmission facility must have markers on the right-of-way line or thirty-three (33) foot line, whichever is greater, on both sides of the road.
   (h) The Utility Company's plan to bury a transmission facility filed with the County Engineer must show at a minimum, in plain view and cross sectional view, the location of the crossing from a section or quarter line; section, township and range the crossing is located in; the location of vent pipes, if any, in proximity to the crossing; and the angle of crossing.
   (i) The Utility Company's plan must be submitted to the Office of the County Engineer for review prior to consideration by the Board at least two (2) weeks prior to the commencement of the project.
5. Any crossing installed by trenching or plowing in may be no more than eight (8) inches in width. The Utility Company will apply surfacing materials and pack the site, returning it as close as possible to the original compaction. The Utility Company will be responsible for all such crossings for a period of three (3) years, repairing during those three (3) years any damages to the road resulting from their activity. Any crossing which cannot be accomplished with this method must be bored.
6. Utility Company must comply with all terms and conditions stated herein, with particular attention to the minimum engineering standards. Failure to comply with this **CONDITIONAL CONSENT** shall cause the consent to be rescinded and Utility Company must remove facility from right-of-way immediately or be responsible for the costs incurred by the County in removing the same. The County specifically reserves the right to remove the buried transmission facility from right-of-way for non-compliance and reimbursement will be made to the County by Utility Company for doing the same.

I, the undersigned, being an authorized agent of the Utility Company described in the above, do hereby agree on behalf of the Utility Company that all terms and conditions above will be complied with, and any assignment of this buried transmission facility described above shall include an assignment of this liability to comply with the terms and conditions as stated herein.

Dated this 22nd day of September 20 11.

Signature of Authorized Agent of Utility Company

(701) 258-1110

Telephone Number

County Auditor: Please return a copy of the signed permit to:

Saddle Butte Pipeline, LLC Attn: Christian Stoddard

Company or Agent Name

858 Main Ave, Suite 301

Mailing Address

Durango, CO 81301

City, State & Zip Code

FOR COUNTY USE:

Reviewed by _____, County Engineer on 10/4/11

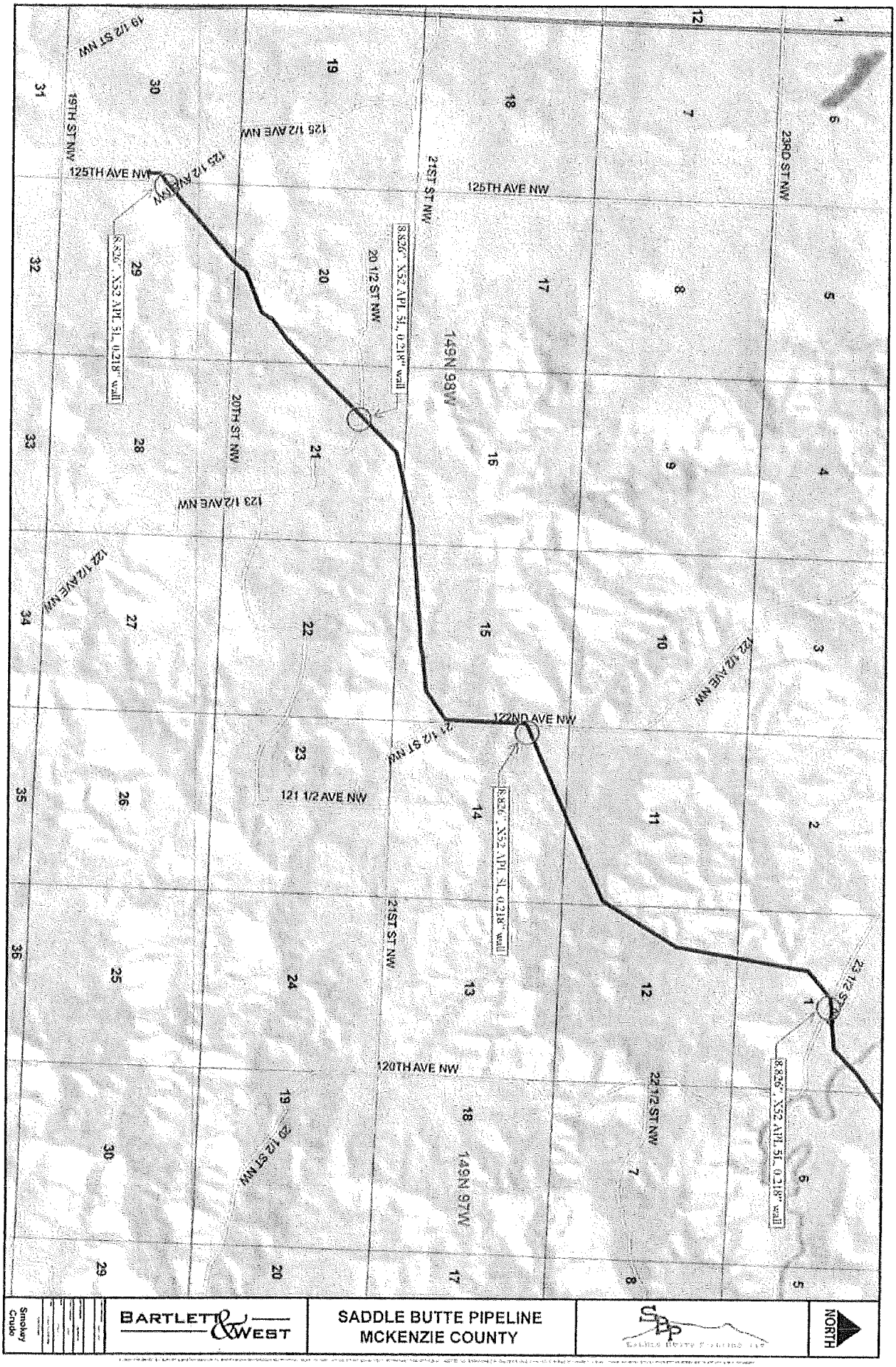
Permission granted by McKenzie County, a political subdivision of the State of North Dakota, for installation of the buried transmission facility proposed above under existing roads and section lines as stated above pursuant to the conditions and limitations stated this 4 day of OCT 20 11

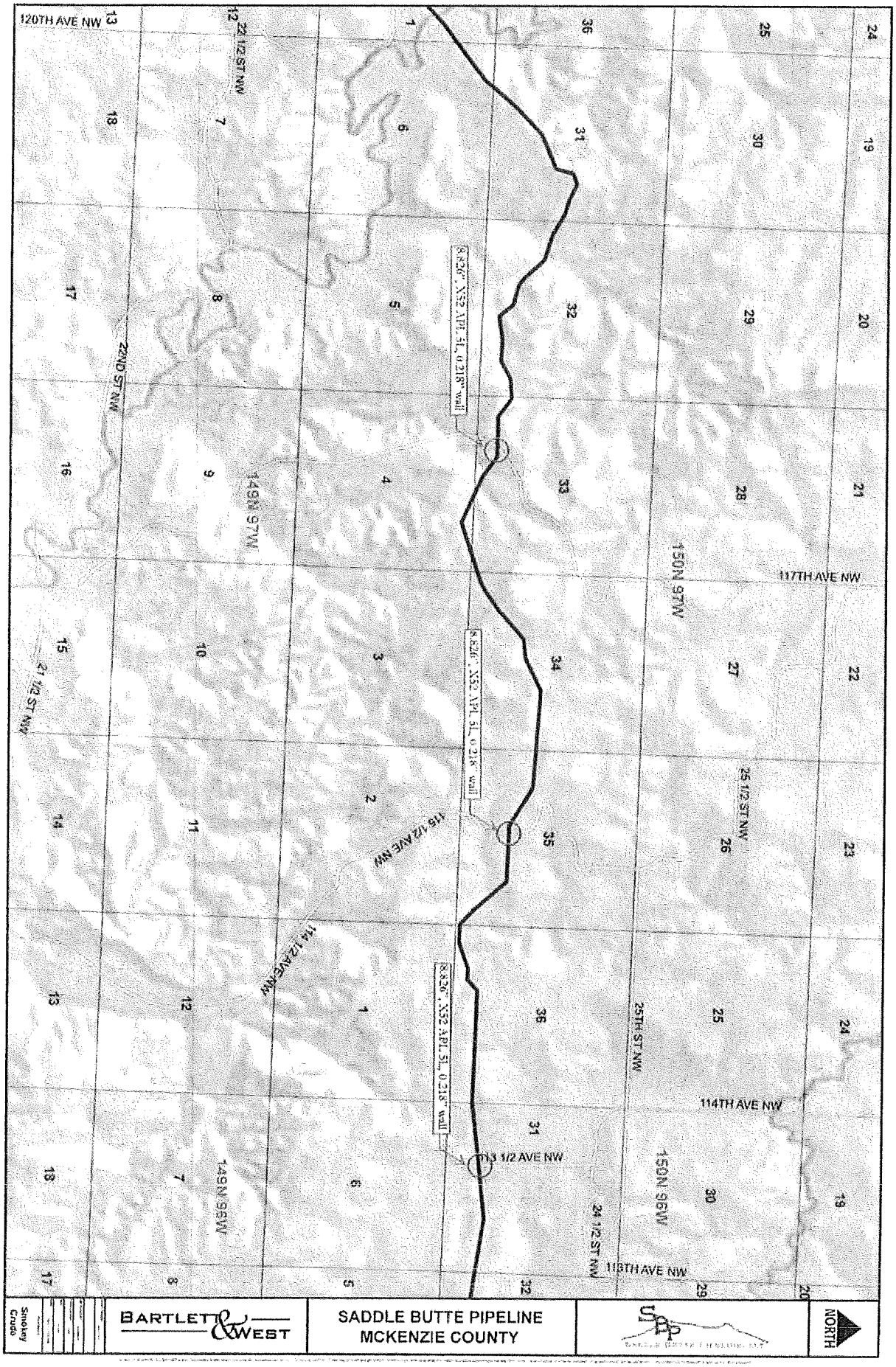
Chairman of the Board
McKenzie County Board of County Commissioners

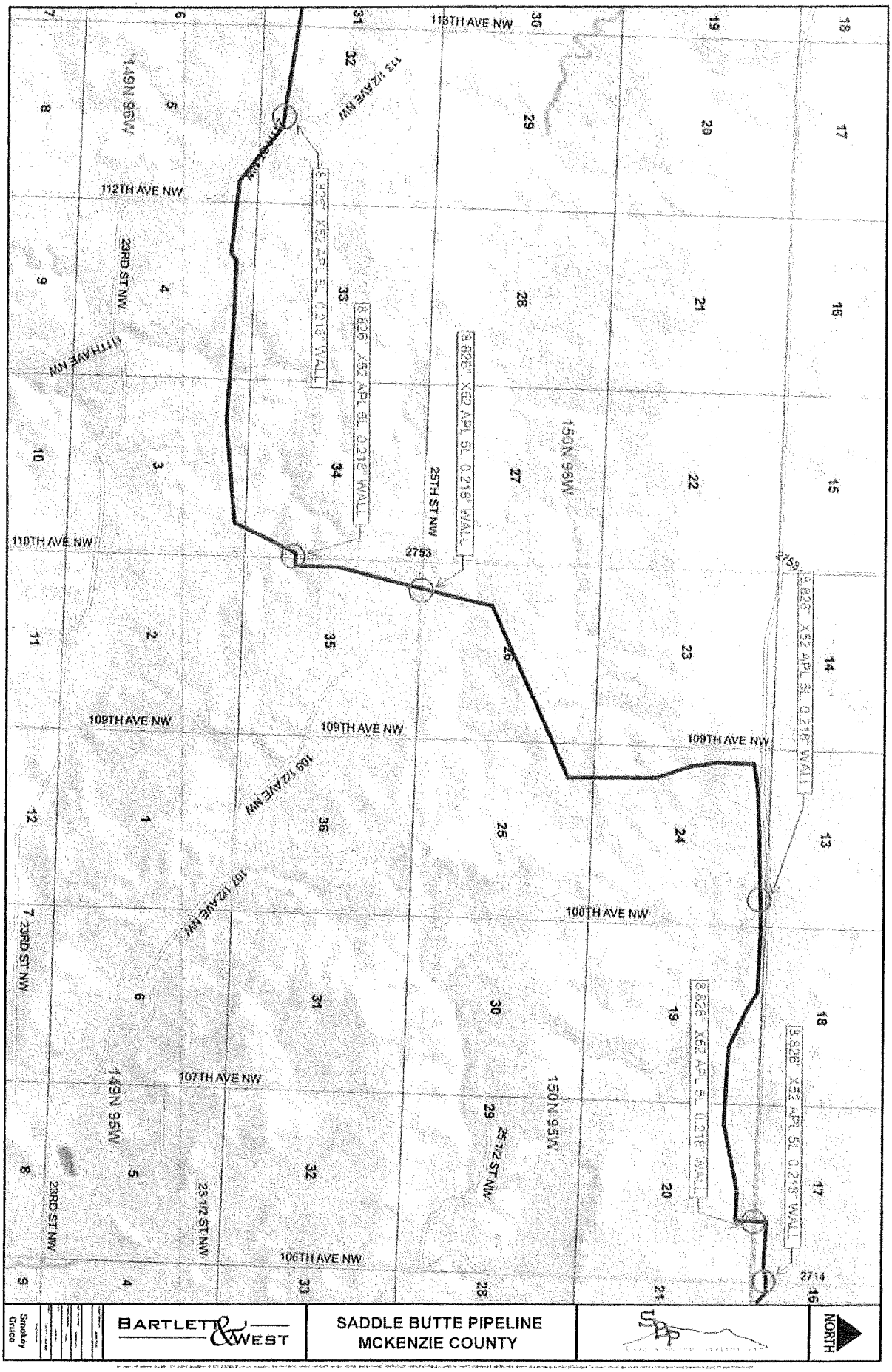
Exhibit A

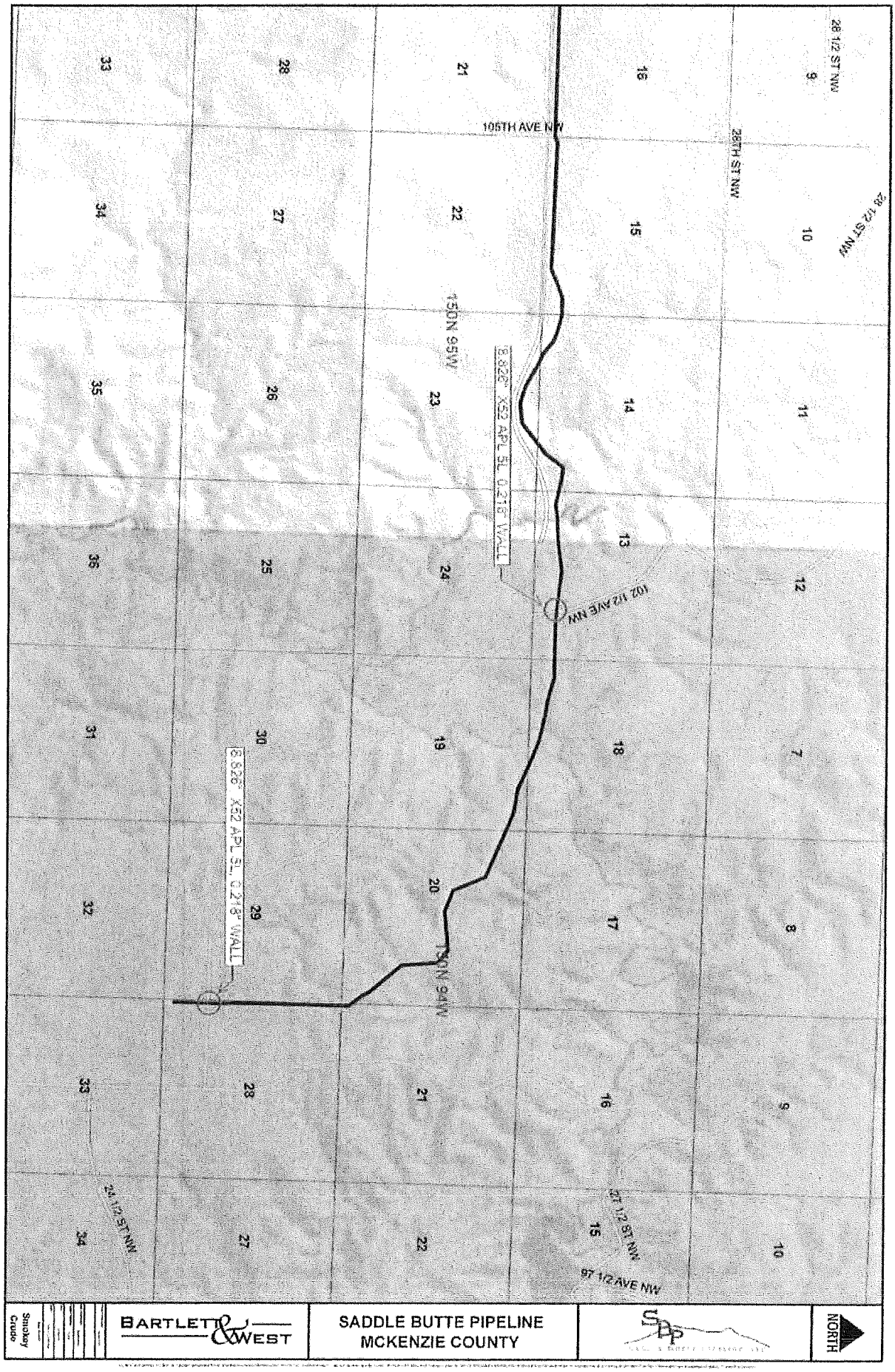
	ROUTE	SECTIONS	TOWNSHIP	RANGE
1	Start	30	149	98
2	125½ Ave NW	30/29	149	98
3	Section Line	29/20	149	98
5	Section Line	20/21	149	98
6	20½ St NW	21	149	98
7	Section Line	21/16	149	98
8	Section Line	16/15	149	98
9	Section Line	15/14	149	98
10	122nd Ave NW	15/14	149	98
11	Section Line	14/11	149	98
12	Section Line	11/12	149	98
13	Section Line	12/1	149	98
14	23½ St NW	1	149	98
15	Section Line	1/6	149	98/97
16	Section Line	6/31	149/150	97
17	Section Line	31/32	150	97
18	Section Line	32/33	150	97
19	117th Ave NW	33	150	97
20	Section Line	33/4	150/149	97
21	Section Line	4/33	149/150	97
22	Section Line	33/34	150	97
23	Section Line	34/35	150	97
24	Section Line	35/36	150	97
25	Section Line	36/31	150	97/96
26	113½ Ave NW	31	150	96
27	Section Line	31/32	150	96
28	113½ Ave NW	32	150	96
29	Section Line	32/5	150/149	96
30	Section Line	5/4	149	96
31	Section Line	4/3	149	96
32	Section Line	3/34	149/150	96
33	110th Ave NW	34/35	150	96
34	Section Line	34/35	150	96
35	25th St NW	35/26	150	96
36	Section Line	35/26	150	96
37	Section Line	26/25	150	96
38	Section Line	25/24	150	96

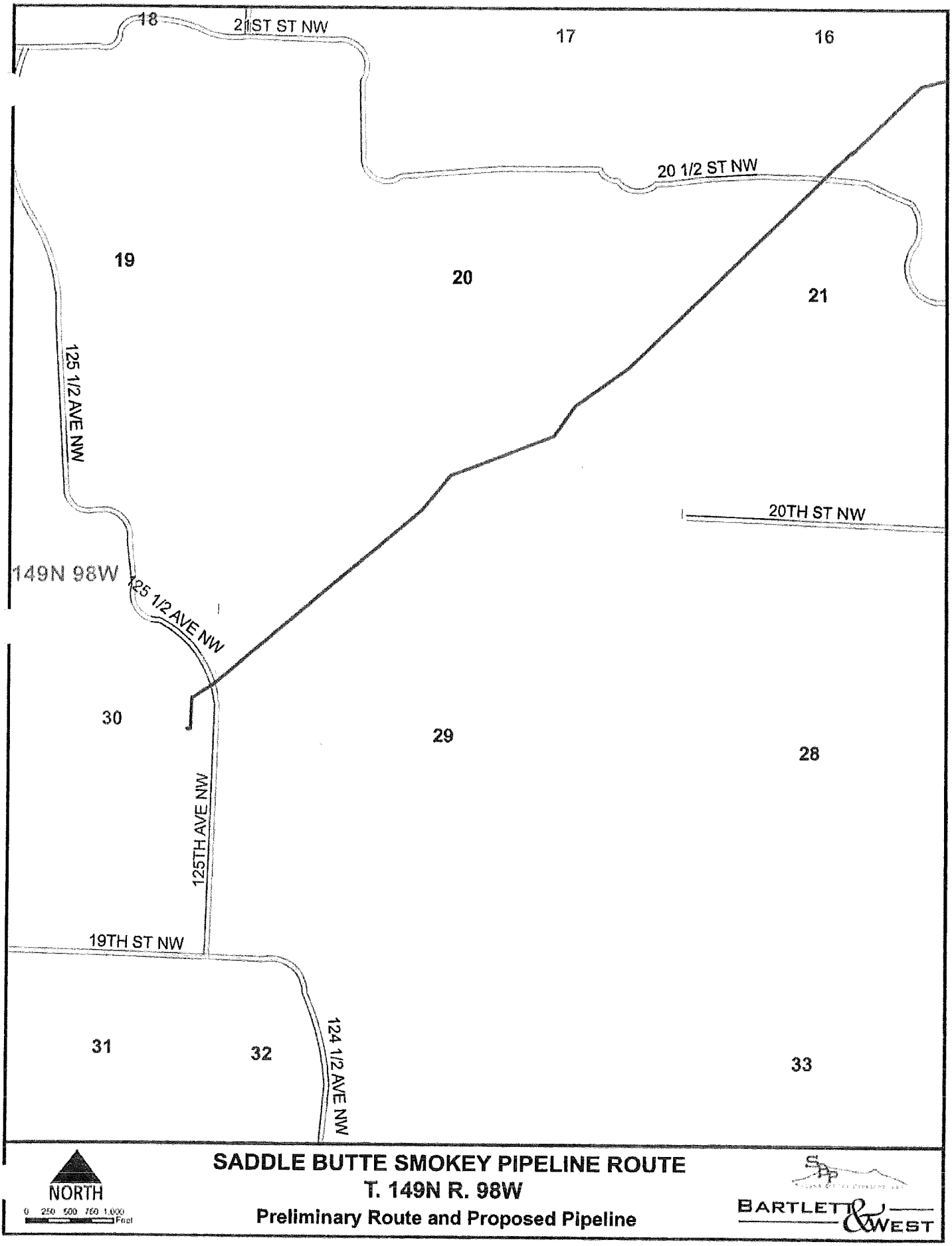
39	108th Ave NW	24	150	96
40	Section Line	24/19	150	96/95
41	Section Line	19/20	150	95
42	Section Line	20/17	150	95
43	Hwy 73	20/17	150	95
44	106th Ave NW	17/20	150	95
45	Section Line	17/16	150	95
46	Section Line	16/15	150	95
47	Section Line	15/14	150	95
48	Section Line	14/23	150	95
49	Section Line	23/14	150	95
50	Section Line	14/13	150	95
51	102½ Ave NW	13	150	95
52	Section Line	13/18	150	95/94
53	Section Line	18/19	150	94
53	Section Line	19/20	150	94
54	Section Line	20/21	150	94
55	Section Line	21/28	150	94
56	Hwy 73	28	150	94
57	End	28	150	94


125TH AVE NW
125 1/2 AVE NW
125 1/2 AVE NW
19TH ST NW
19 1/2 ST NW
21ST ST NW
20 1/2 ST NW
20TH ST NW
123 1/2AVE NW
122 1/2 AVE NW
122ND AVE NW
121 1/2 AVE NW
21 1/2 ST NW
23RD ST NW
122 1/2 AVE NW
23 1/2 ST
22 1/2 ST NW
120TH AVE NW
20 1/2 ST NW
149N 98W
149N 97W
8.826", X52 API 5L, 0.218" wall
8.826", X52 API 5L, 0.218" wall
8.826", X52 API 5L, 0.218" wall
8.826", X52 API 5L, 0.218" wall
Smoky Crude
BARTLETT & WEST
SADDLE BUTTE PIPELINE
MCKENZIE COUNTY
NORTH


120TH AVE NW
22 1/2 ST NW
22ND ST NW
149N 97W
21 1/2 ST NW
118 1/2 AVE NW
114 1/2 AVE NW
149N 96W
113 1/2 AVE NW
117TH AVE NW
150N 97W
25 1/2 ST NW
25TH ST NW
114TH AVE NW
150N 96W
24 1/2 ST NW
113TH AVE NW
8.626", X52 API 5L, 0.218" wall
8.626", X52 API 5L, 0.218" wall
8.626", X52 API 5L, 0.218" wall
Smokey Crude
BARTLETT & WEST
SADDLE BUTTE PIPELINE
MCKENZIE COUNTY
NORTH


SADDLE BUTTE PIPELINE
MCKENZIE COUNTY
BARTLETT & WEST
NORTH
Smokey Grade
8.626" X52 API 5L 0.218" WALL
2753
2714
112TH AVE NW
111TH AVE NW
110TH AVE NW
109TH AVE NW
108TH AVE NW
107TH AVE NW
106TH AVE NW
100TH AVE NW
113 1/2 AVE NW
108 1/2 AVE NW
107 1/2 AVE NW
23RD ST NW
23 1/2 ST NW
25TH ST NW
25 1/2 ST NW
149N 96W
150N 96W
149N 95W
150N 95W


28 1/2 ST NW
105TH AVE NW
28 1/2 ST NW
28TH ST NW
150N 95W
8.625" X52 API 5L 0.218" WALL
102 1/2 AVE NW
8.625" X52 API 5L 0.218" WALL
150N 94W
27 1/2 ST NW
97 1/2 AVE NW
28 1/2 ST NW
Smackey Coulee
BARTLETT & WEST
SADDLE BUTTE PIPELINE
MCKENZIE COUNTY
NORTH

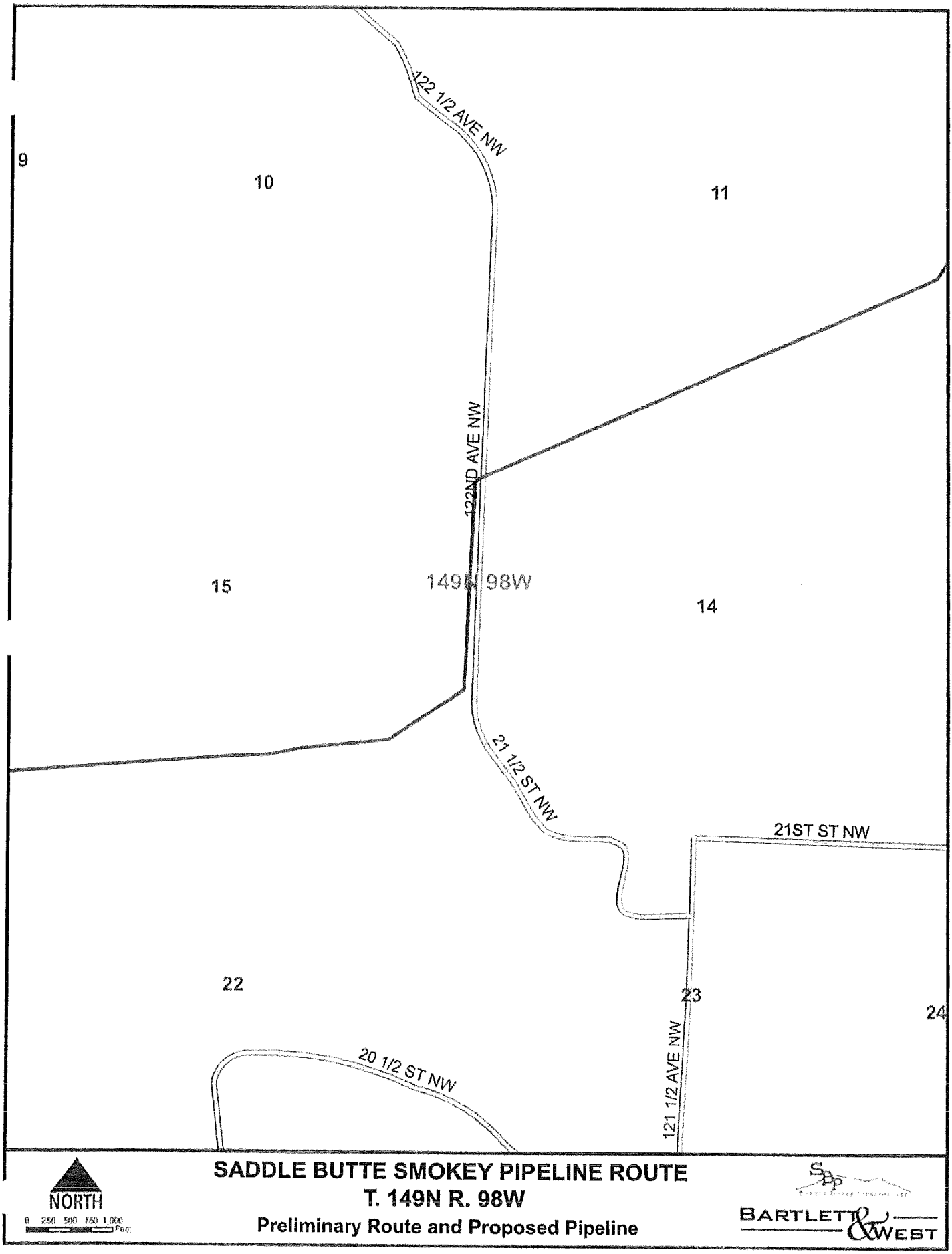


SADDLE BUTTE SMOKEY PIPELINE ROUTE

T. 149N R. 98W

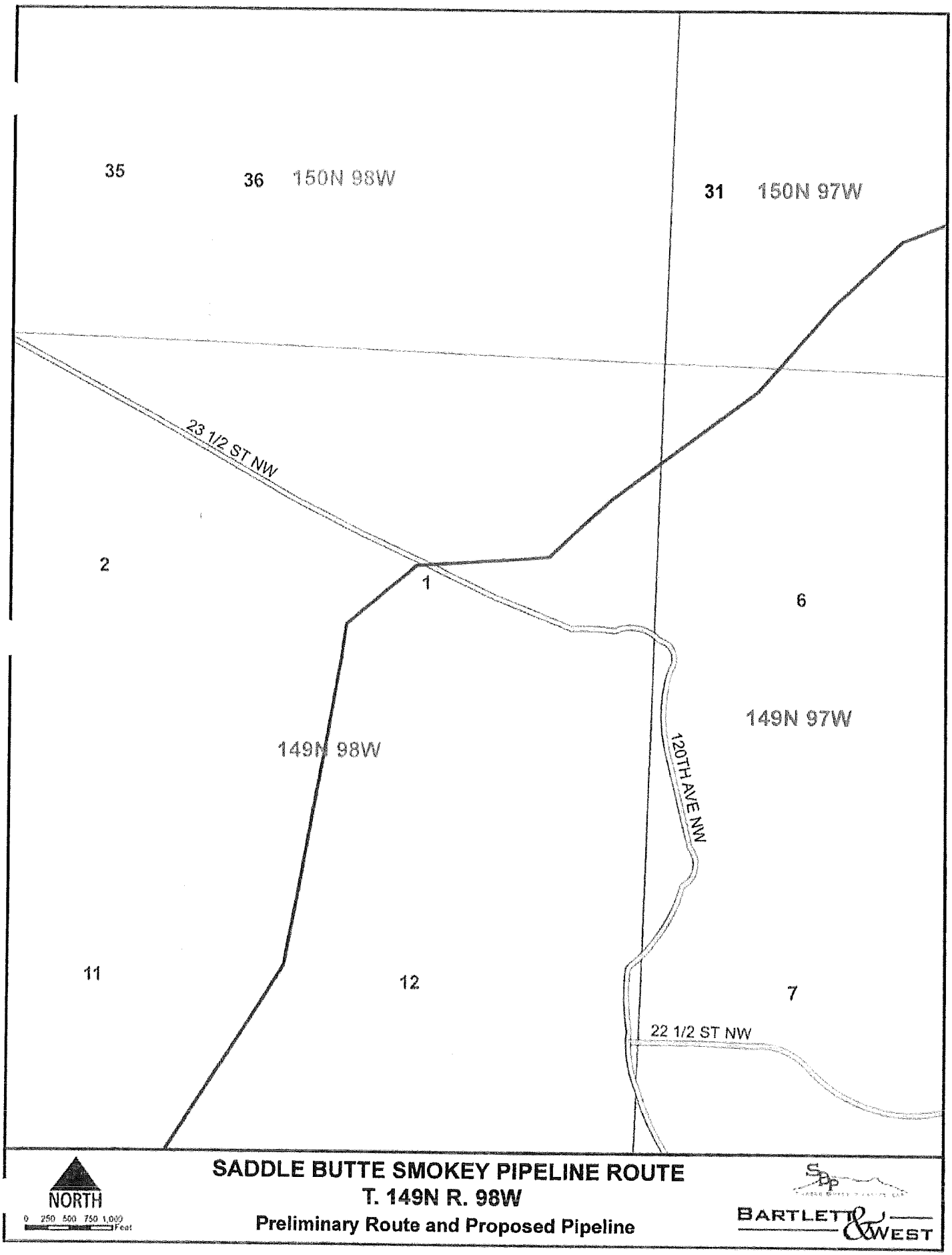
Preliminary Route and Proposed Pipeline

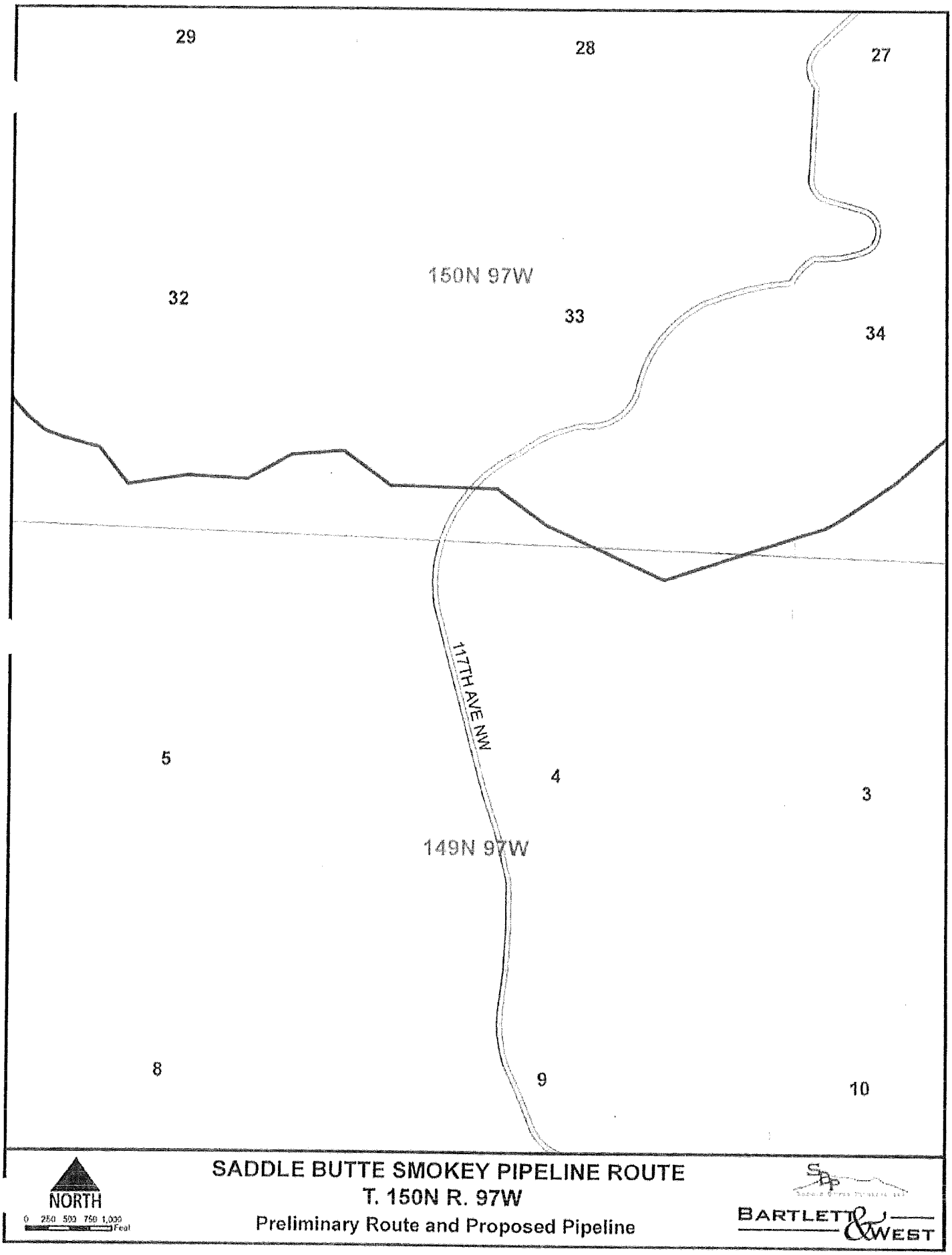
BARTLETT & WEST



SADDLE BUTTE SMOKEY PIPELINE ROUTE
T. 149N R. 98W
Preliminary Route and Proposed Pipeline

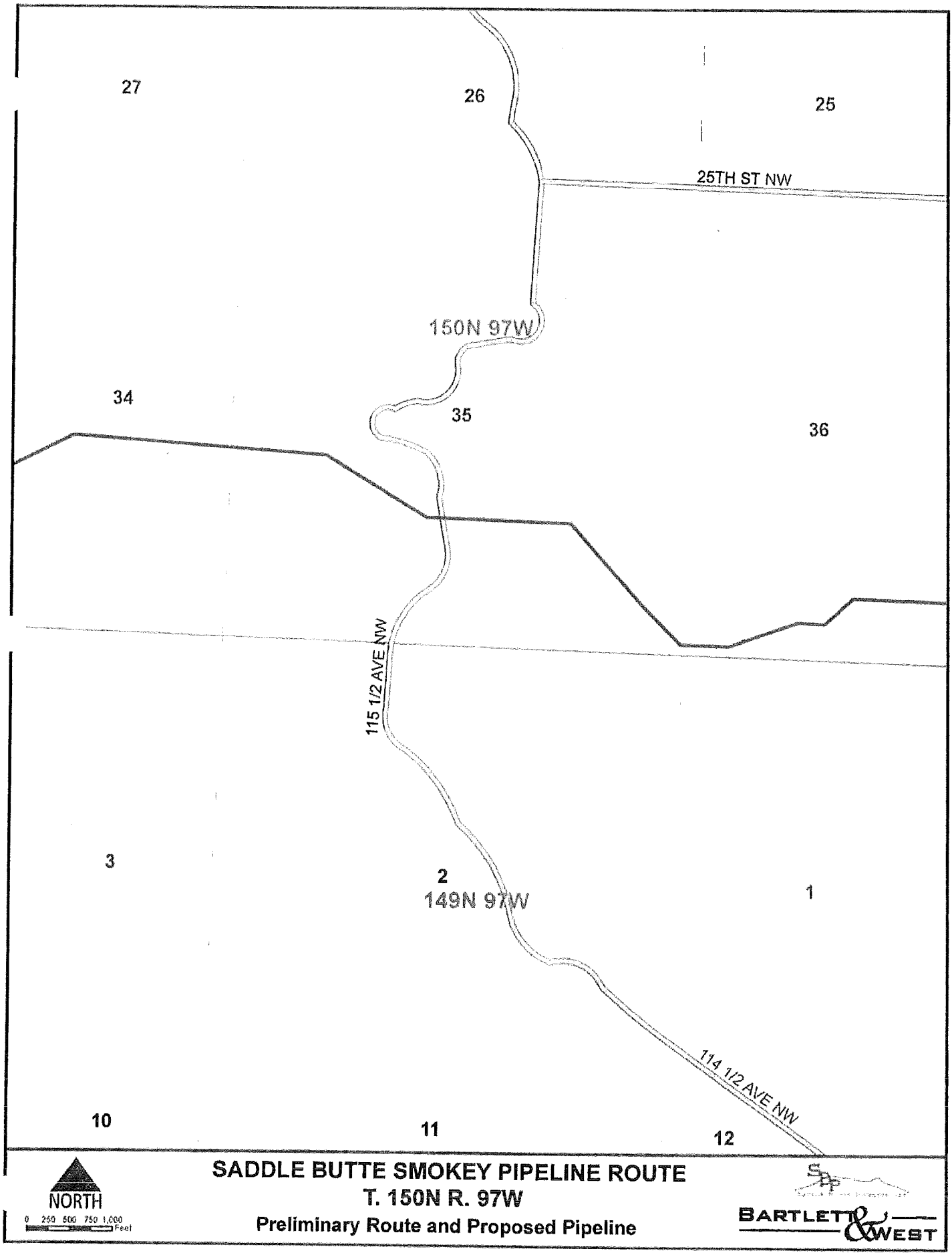
BARTLETT & WEST

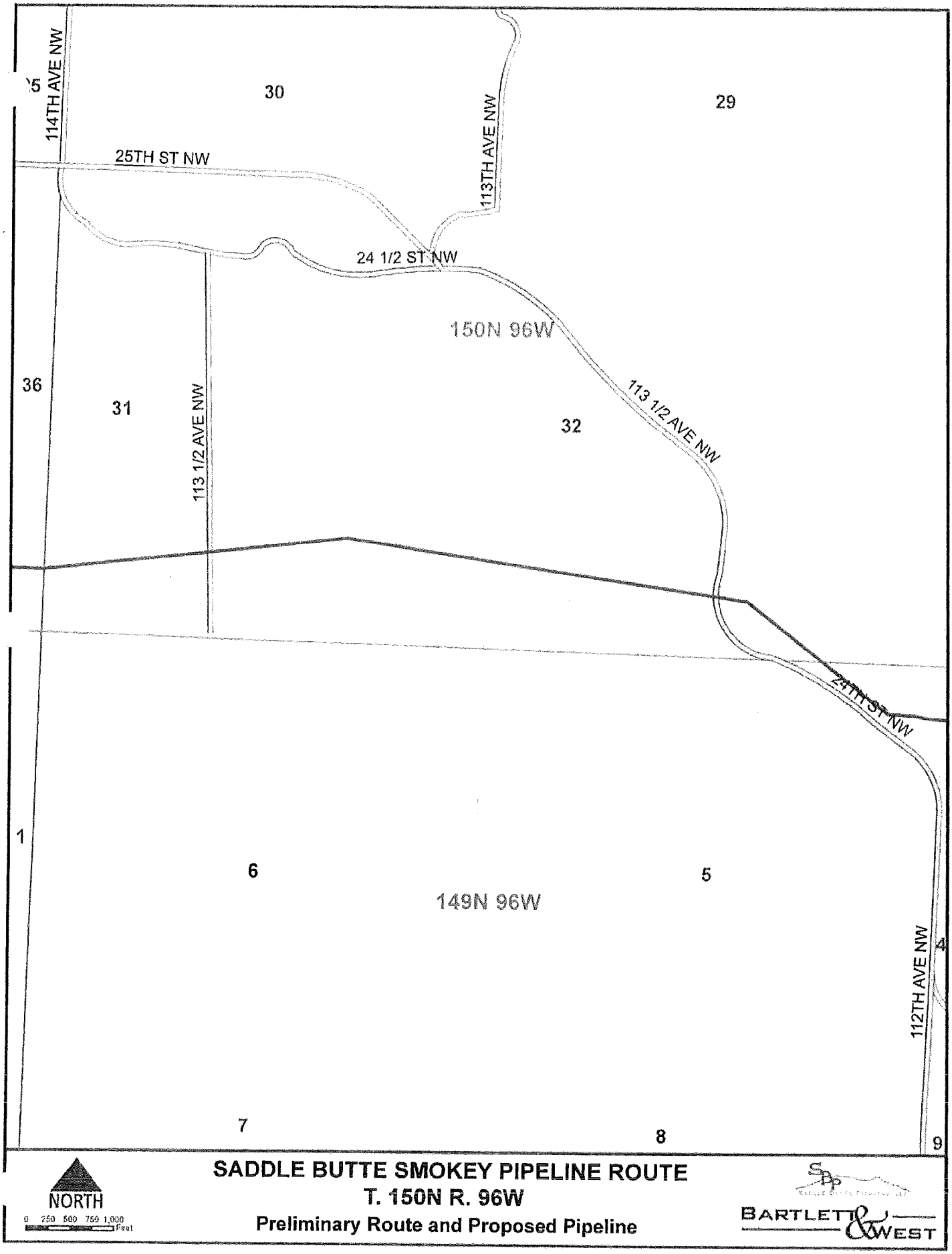

35
36
150N 98W
31
150N 97W
23 1/2 ST NW
2
1
6
149N 98W
149N 97W
120TH AVE NW
11
12
7
22 1/2 ST NW
NORTH
0 250 500 750 1,000 Feet
SADDLE BUTTE SMOKEY PIPELINE ROUTE
T. 149N R. 98W
Preliminary Route and Proposed Pipeline
SDP
BARTLETT & WEST

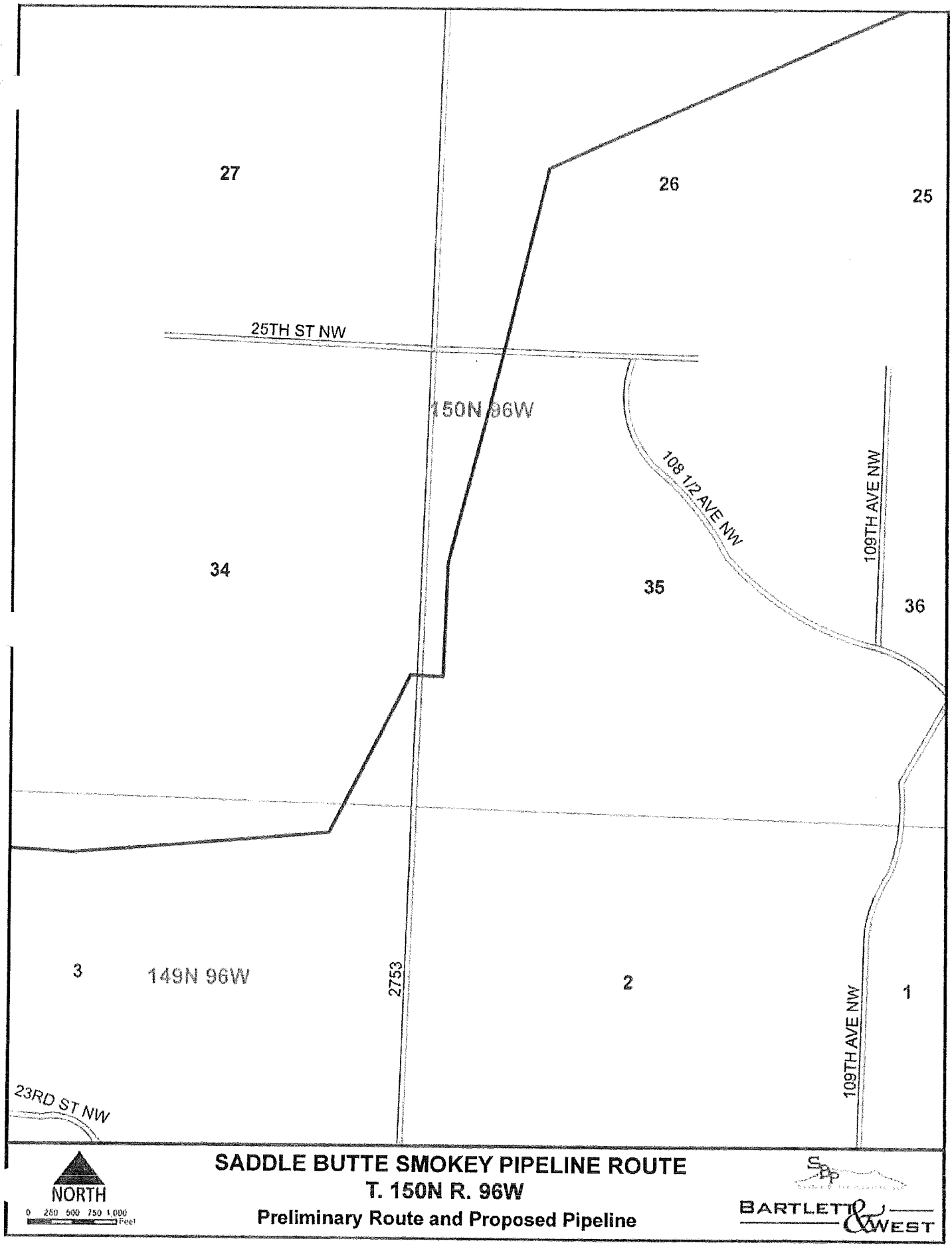


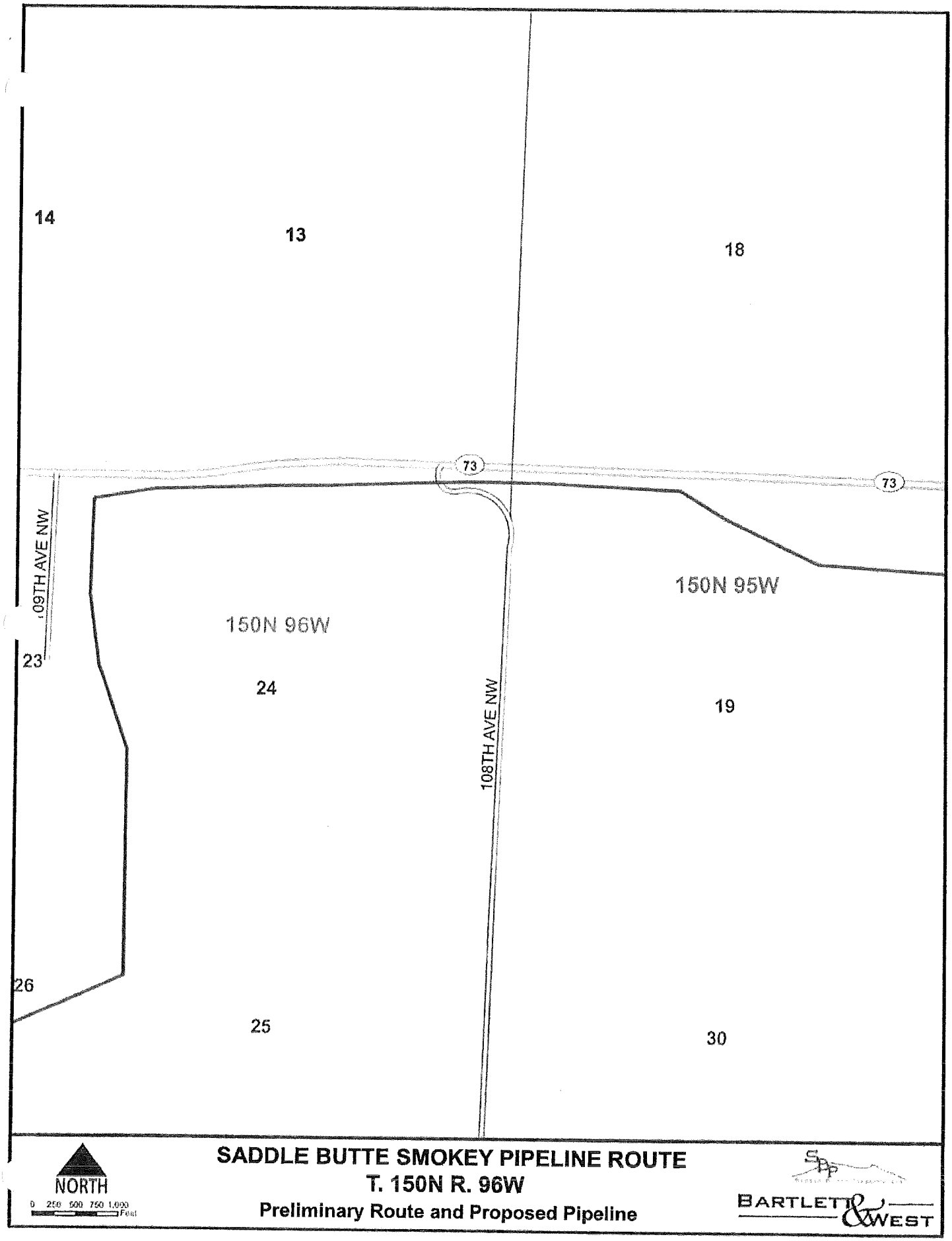
SADDLE BUTTE SMOKEY PIPELINE ROUTE
T. 150N R. 97W
Preliminary Route and Proposed Pipeline

BARTLETT & WEST


27
26
25
25TH ST NW
150N 97W
34
35
36
115 1/2 AVE NW
3
2
149N 97W
1
114 1/2 AVE NW
10
11
12
NORTH
0 250 500 750 1,000
Feet
SADDLE BUTTE SMOKEY PIPELINE ROUTE
T. 150N R. 97W
Preliminary Route and Proposed Pipeline
BARTLETT & WEST

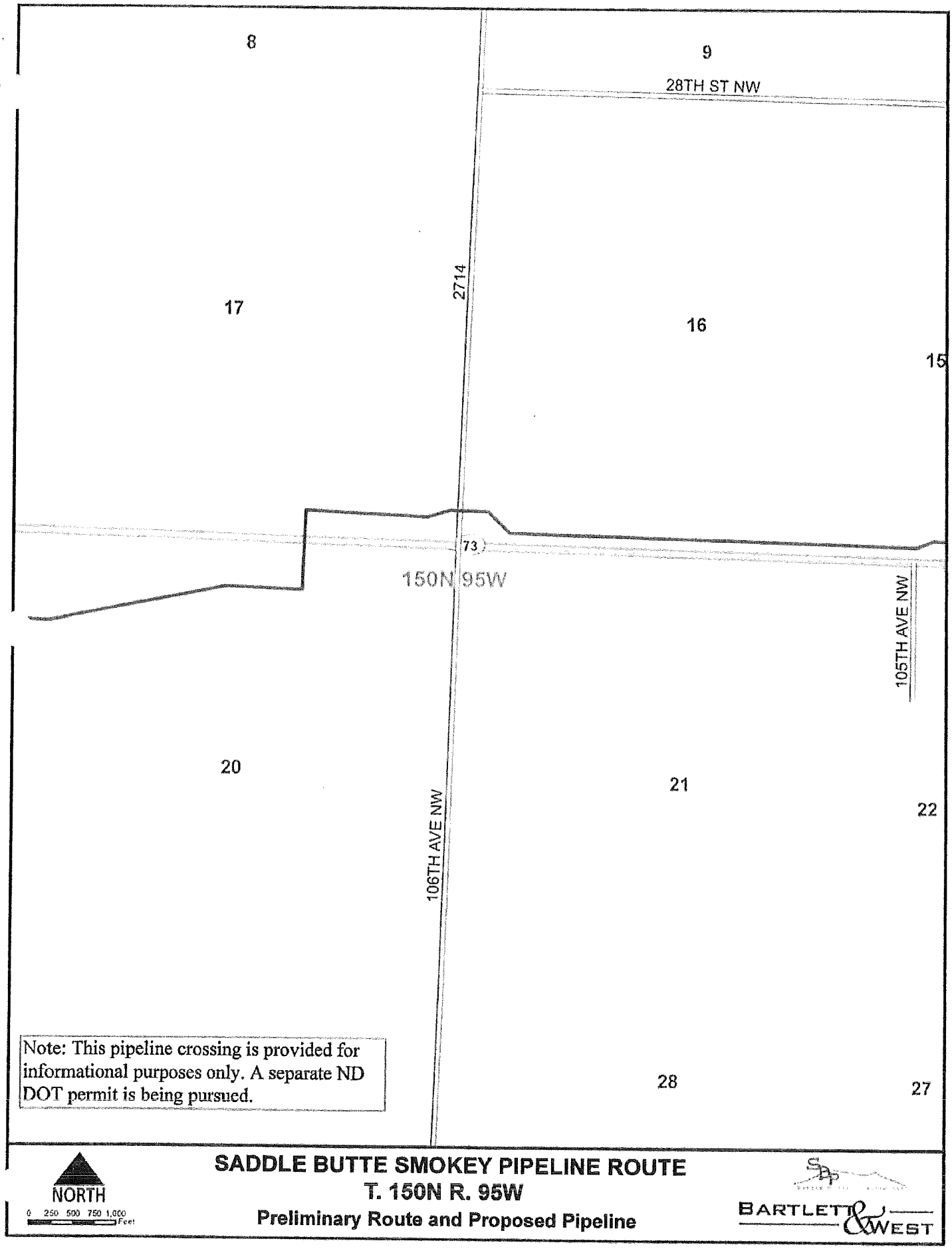

114TH AVE NW
30
29
25TH ST NW
113TH AVE NW
24 1/2 ST NW
150N 96W
36
31
32
113 1/2 AVE NW
113 1/2 AVE NW
24TH ST NW
1
6
5
149N 96W
112TH AVE NW
4
7
8
9
NORTH
0 250 500 750 1,000 Feet
SADDLE BUTTE SMOKEY PIPELINE ROUTE
T. 150N R. 96W
Preliminary Route and Proposed Pipeline
BARTLETT & WEST

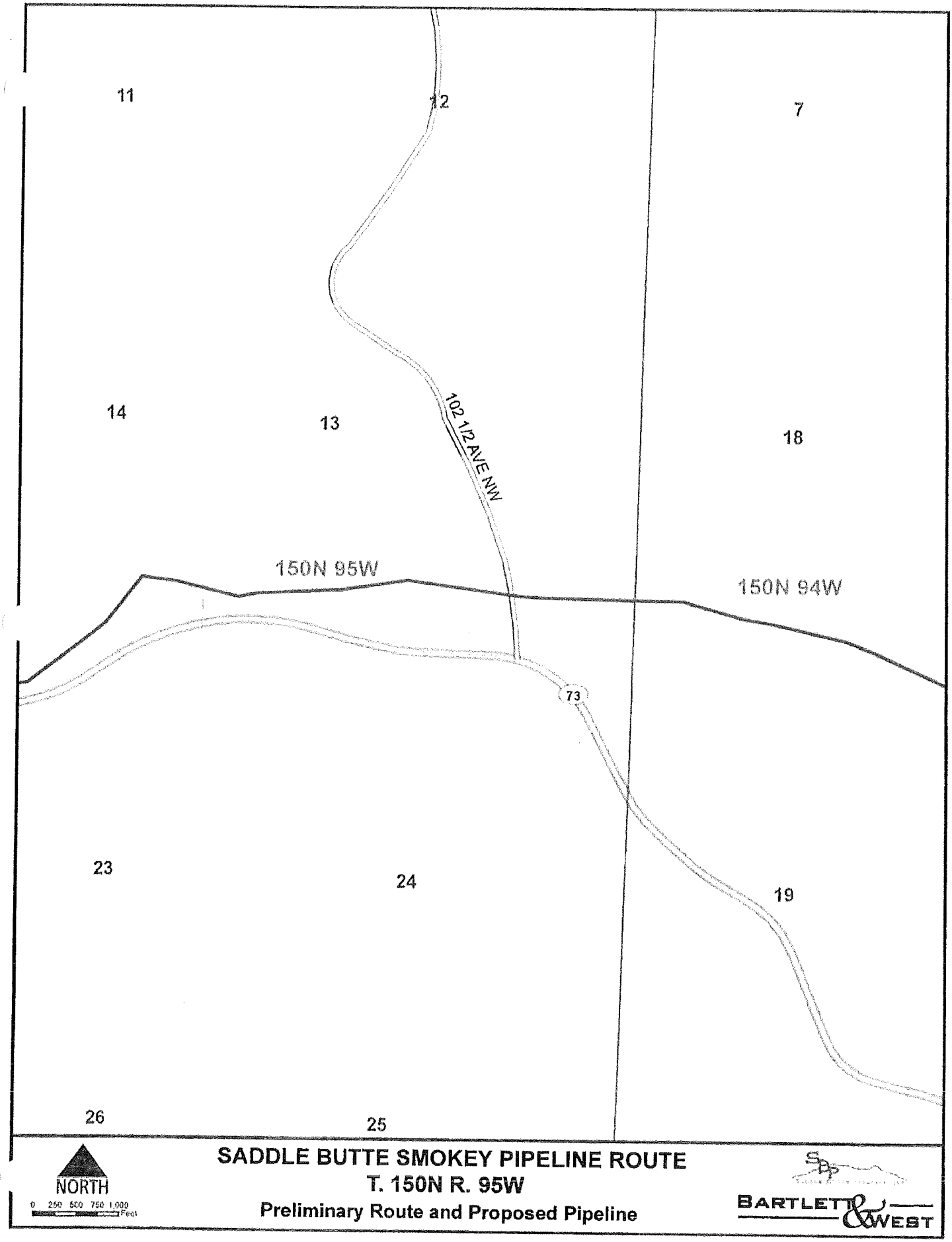

27
26
25
25TH ST NW
150N 96W
108 1/2 AVE NW
109TH AVE NW
34
35
36
3
149N 96W
2753
2
1
109TH AVE NW
23RD ST NW
NORTH
0 250 500 750 1,000
Feet
SADDLE BUTTE SMOKEY PIPELINE ROUTE
T. 150N R. 96W
Preliminary Route and Proposed Pipeline
SDPP
BARTLETT & WEST

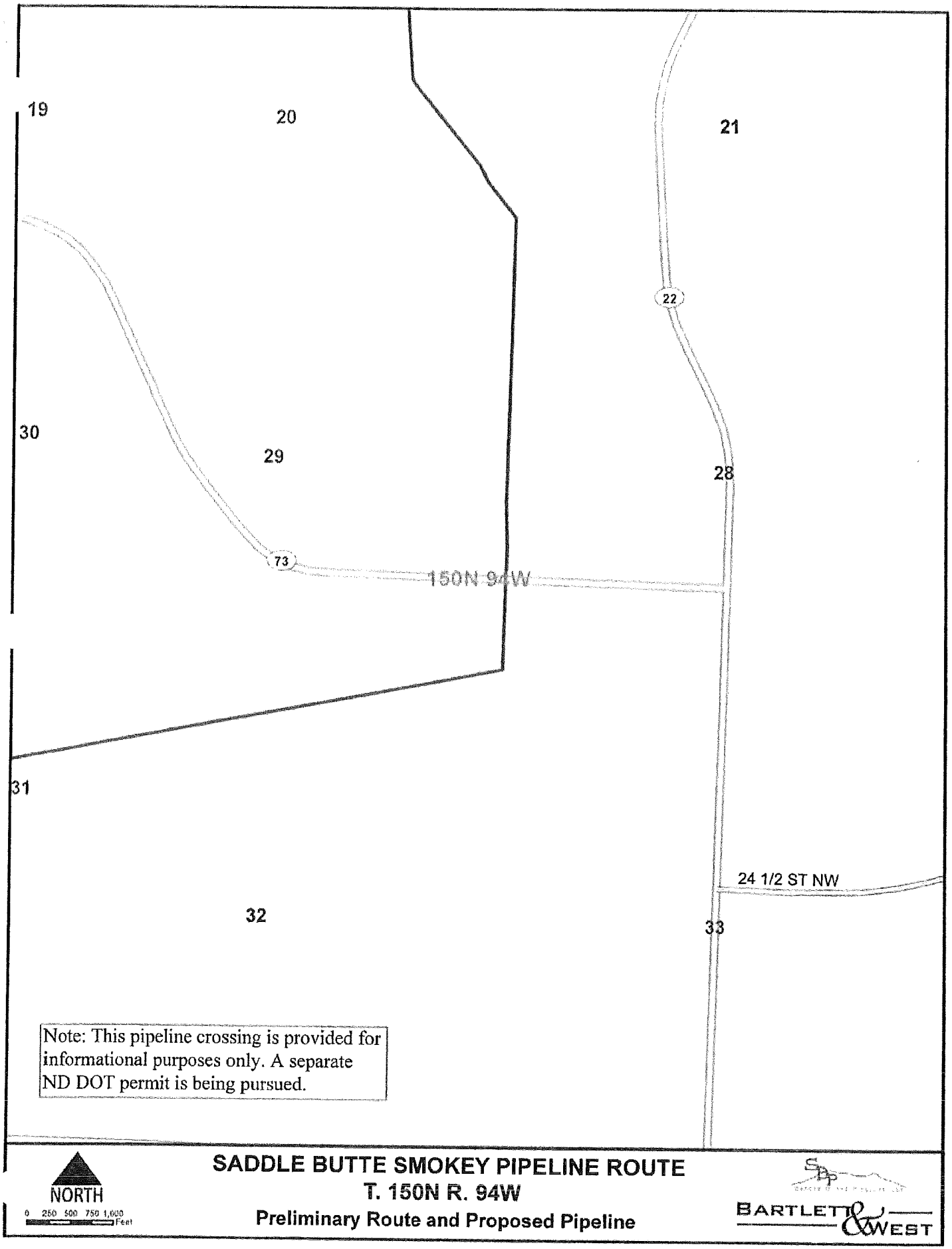


SADDLE BUTTE SMOKEY PIPELINE ROUTE
T. 150N R. 96W
Preliminary Route and Proposed Pipeline

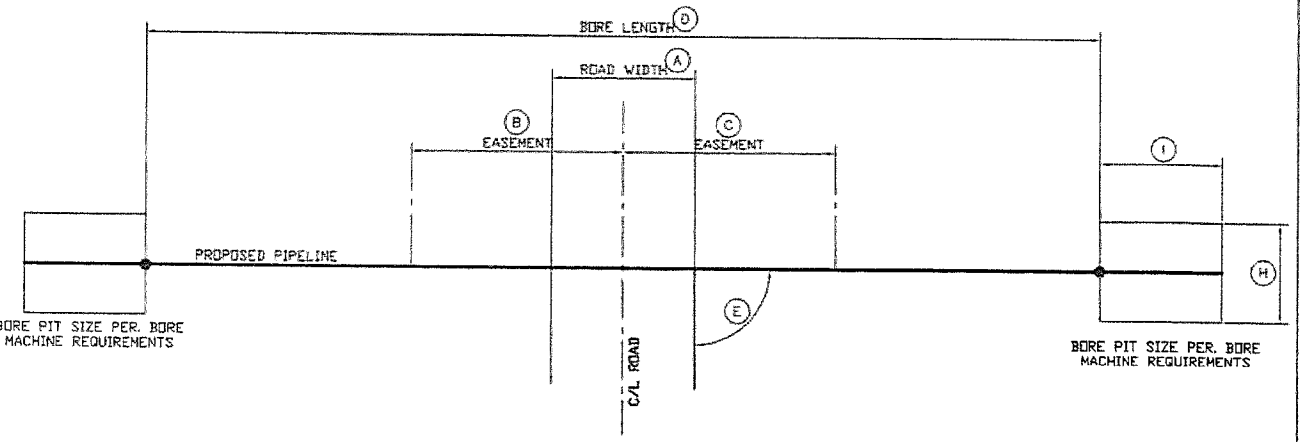
BARTLETT & WEST


8
9
28TH ST NW
2714
17
16
15
73
150N 95W
105TH AVE NW
20
21
22
106TH AVE NW
28
27
Note: This pipeline crossing is provided for informational purposes only. A separate ND DOT permit is being pursued.
NORTH
0 250 500 750 1,000 Feet
SADDLE BUTTE SMOKEY PIPELINE ROUTE
T. 150N R. 95W
Preliminary Route and Proposed Pipeline
BARTLETT & WEST

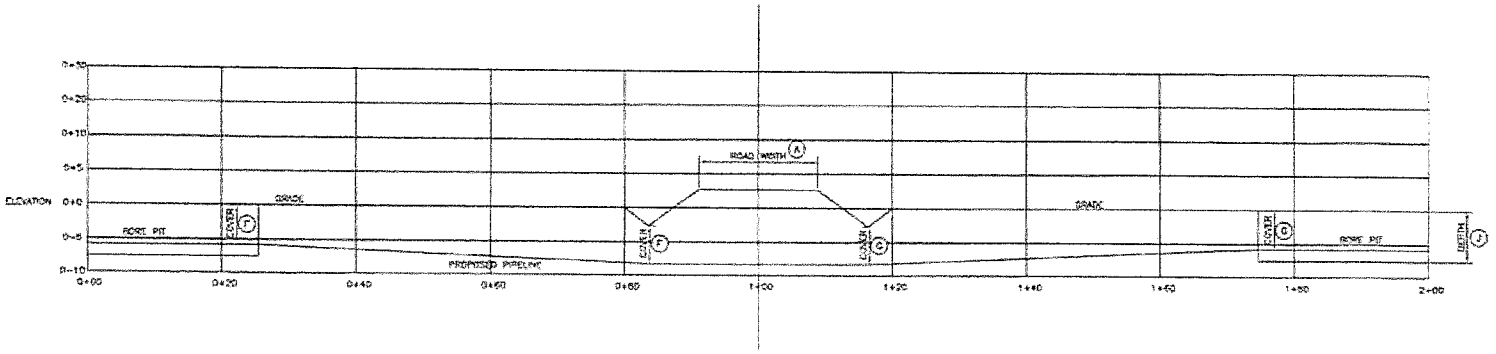

11
12
7
14
13
18
102 1/2 AVE NW
150N 95W
150N 94W
73
23
24
19
26
25
NORTH
0 250 500 750 1,000 Feet
SADDLE BUTTE SMOKEY PIPELINE ROUTE
T. 150N R. 95W
Preliminary Route and Proposed Pipeline
BARTLETT & WEST


19
20
21
22
30
29
28
73
150N 94W
31
24 1/2 ST NW
32
33
Note: This pipeline crossing is provided for informational purposes only. A separate ND DOT permit is being pursued.
NORTH
0 250 500 750 1,000 Feet
SADDLE BUTTE SMOKEY PIPELINE ROUTE
T. 150N R. 94W
Preliminary Route and Proposed Pipeline
BARTLETT & WEST

TYPICAL CROSSING DETAIL		
	DESCRIPTION	DIMENSION
A	ROAD WIDTH	26 Ft
B	EASEMENT R	33 Ft
C	EASEMENT L	33 Ft
D	BORE LENGTH	APROX. 200 ft
E	CROSSING ANGLE	90 deg
F	DEPTH OF COVER	6'-0" min
G	DEPTH OF COVER	6'-0" min
H	PIT WIDTH	25'-0"
I	PIT LENGTH	18'-0"
J	PIT DEPTH	7'-0"

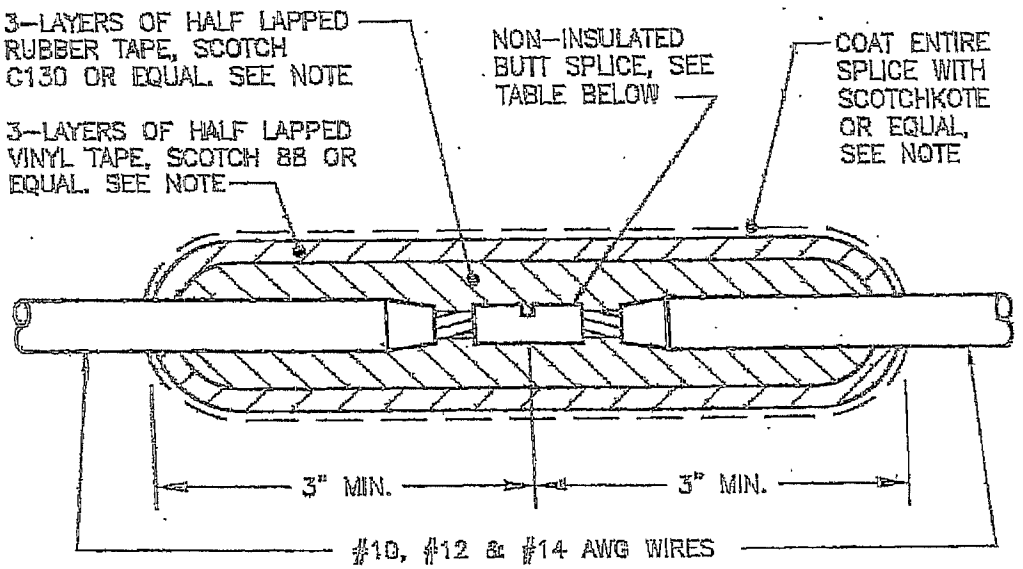


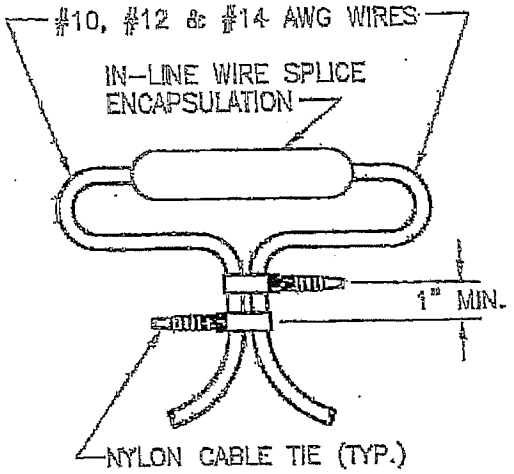
PLAN VIEW



SECTION VIEW

DESIGNED BY: MMP DRAWN BY: MMP CHECKED BY: MMP PROJECT MGR:	BARTLETT & WEST SERVICE THE BARTLETT & WEST WAY	TYPICAL PIPELINE CROSSING	PROJ. NO: CONST. PROJ. SCALE: DATE: DRAWING NO: SHEET NO:





WIRE SPLICE STRESS RELIEF

NOTE: ENSURE TIGHT ENCAPSULATION TO PREVENT MOISTURE INTRUSION.

NON–INSULATED BUTT SPLICES			
WIRE RANGE (AWG)	DIMENSIONS (INCHES)		IDEAL INDUSTRIES CAT. NO. (OR EQUAL)
	LENGTH	DIAMETER	
14	.591	.154	83–9011
12–10	.591	.213	83–9021

IN–LINE WIRE SPLICE (TYPICAL)

PRELIMINARY
AS OF 11-03-2010

NO.	DATE	BY	REVISION

corrpro®
An Insituform® Company
1380 Enterprise Drive
West Chester, PA 19380
Office: (610) 344-7002
www.corrpro.com

JOB No.	C40398
DRAWN BY	KK
DESIGNED BY	AM
DATE	11/03/2010
SCALE	NONE
SHEET	1 OF 1
DWG. No.	A4-7223

SADDLE BUTTE PIPELINE LLC

GRASSLANDS GATHERING PIPELINE PROJECT

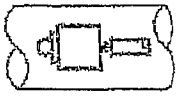
IN–LINE WIRE SPLICE

STEP 1. GRIND STRUCTURE CONNECTION AREA (3"x3") TO BARE SHINY WHITE METAL AND CLEAN.

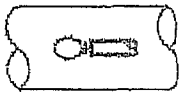
STEP 2A. FOR #8 AWG WIRE AND LARGER; STRIP INSULATION FROM WIRE.

STEP 2B. FOR #10 AWG WIRE AND SMALLER; STRIP INSULATION FROM WIRE & ATTACH SLEEVE

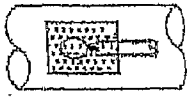
STEP 3. HOLD MOLD FIRMLY WITH OPENING AWAY FROM OPERATOR & IGNITE WITH FLINT GUN.



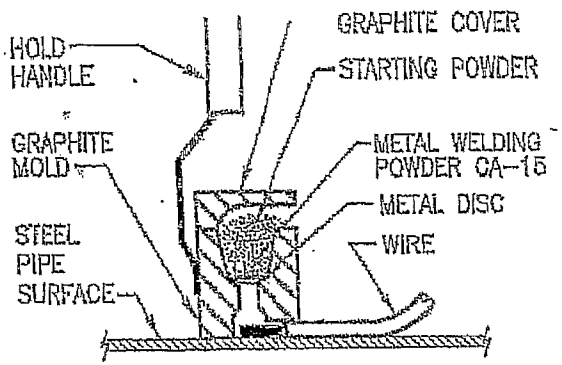
STEP 4. REMOVE SLAG FROM CONNECTION AND STEEL WELD FOR SOUNDNESS.



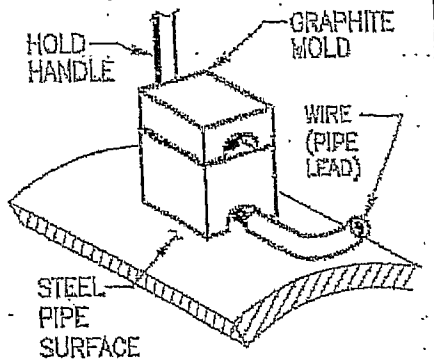
STEP 5. COVER CONNECTION AND EXPOSED STRUCTURE SURFACE WITH A HANDY-CAP™ IP

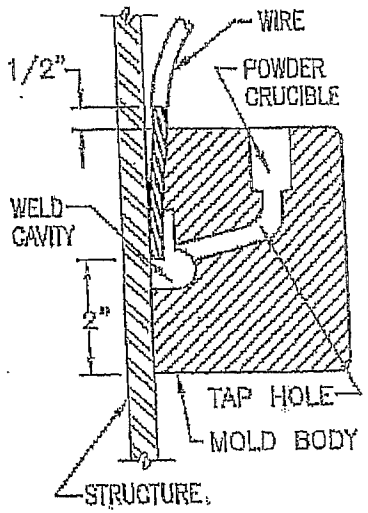


NOTE: PROCEDURE SHOWN ABOVE IS TO BE USED AS A GENERAL GUIDE ONLY. CONSULT MANUFACTURER'S LITERATURE FOR SPECIFIC INSTALLATION INSTRUCTIONS.

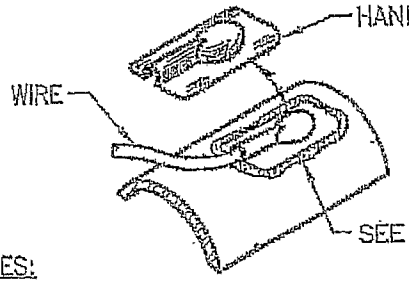


HORIZONTAL WELD





VERTICAL WELD



NOTES:

1. COAT CONNCTION WITH PRIMER BEFORE APPLYING WELD CAP.
2. INVERT WELD CAP AND APPLY TO CONNECTION.
3. COMPLETELY COAT ALL EXPOSED COPPER CONDUCTORS.
4. COVER WELD CAP AND EXPOSED AREA WITH POLY KEN YGILL TAPE.

HANDY-CAP® INSTALLATION

PRELIMINARY
AS OF 08-26-2010

TYPICAL HORIZONTAL & VERTICAL THERMITE WELD FOR #10 AWG WIRE & LARGER

NO.	DATE	BY	REVISION

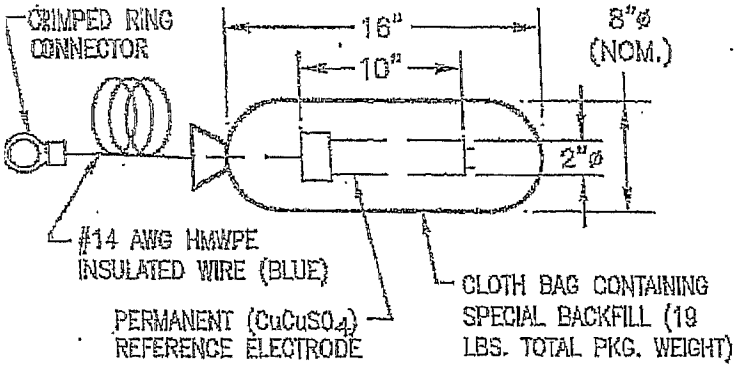
corrpro®
An Insituform® Company
1380 Enterprise Drive
West Chester, PA 19380
Office: (610) 344-7002
www.corrpro.com

JOB No.	C40398
DRAWN BY	MS
DESIGNED BY	AM
DATE	8/26/2010
SCALE	NONE
SHEET	5 OF 5
DWG. No.	A4-7204-5

SADDLE BUTTE PIPELINE LLC

GRASSLANDS GATHERING PIPELINE PROJECT

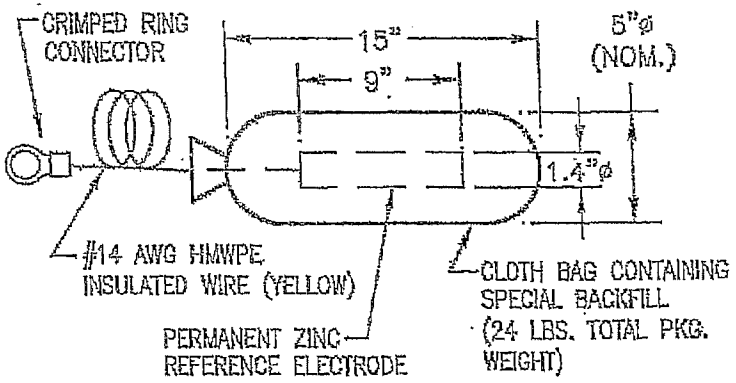
THERMIT WELDED WIRE CONNECTION



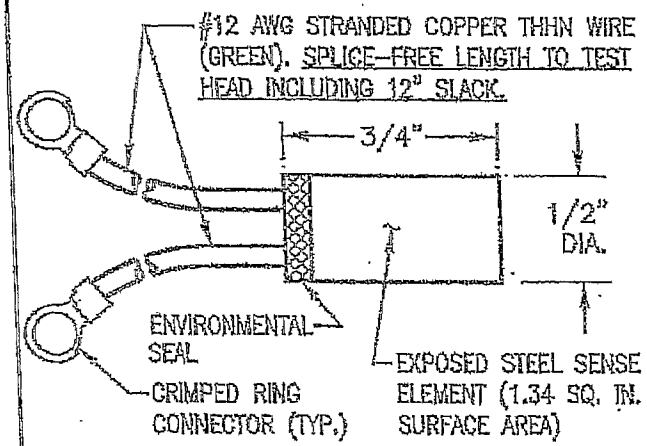
PERMANENT COPPER COPPER SULFATE REFERENCE ELECTRODE (FACTORY MANUFACTURED)

NOTES: (FOR REFERENCE ELECTRODES ONLY)

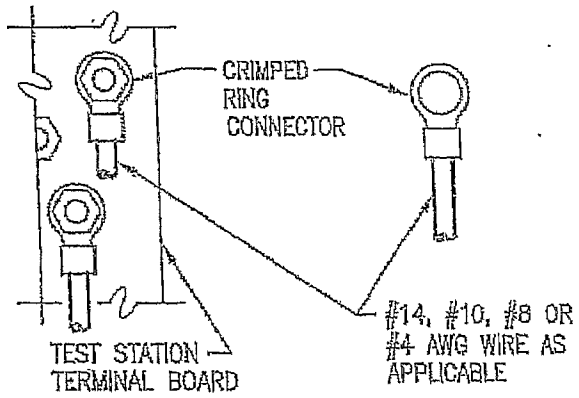
1. REMOVE ELECTRODE FROM PAPER OR PLASTIC BAG PRIOR TO INSTALLATION. DO NOT DAMAGE THE CLOTH BAG.
2. BEFORE BACKFILLING, WET REFERENCE ELECTRODE WITH APPROXIMATELY 2 GALLONS OF WATER.



PERMANENT ZINC REFERENCE ELECTRODE (FACTORY MANUFACTURED)



IR FREE STEEL COUPON (FACTORY MANUFACTURED)



TEST LEADS & ANODE HEADER AND RETURN LEADS AT TEST STATION TERMINAL BOARD

PRELIMINARY
AS OF 08-26-2010

NO.	DATE	BY	REVISION

corrpro®
An Instituform® Company
1380 Enterprise Drive
West Chester, PA 19380
Office: (610) 344-7002
www.corrpro.com

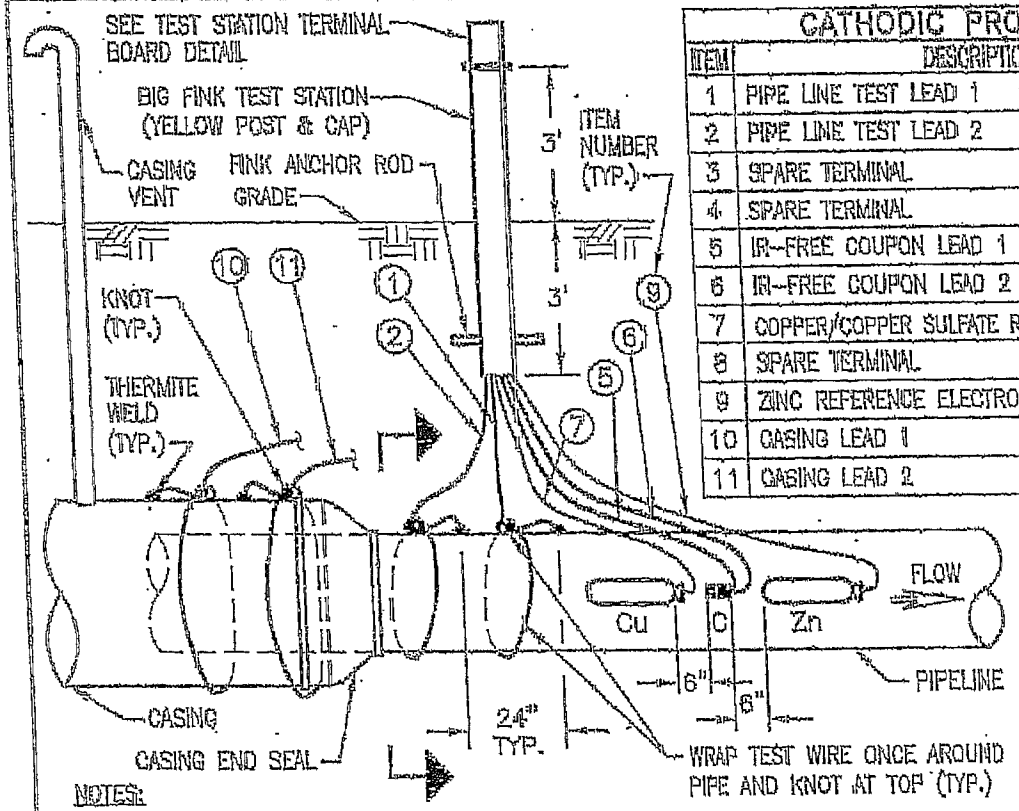
JOB No.	C40398
DRAWN BY	MS
DESIGNED BY	AM
DATE	8/26/2010
SCALE	NONE
SHEET	4 OF 5
DWG. No.	A4-7204-4

SADDLE BUTTE PIPELINE LLC

GRASSLANDS GATHERING PIPELINE PROJECT

COPPER COPPER SULFATE REFERENCE ELECTRODE
ZINC REFERENCE ELECTRODE
IR-FREE STEEL COUPON & TEST WIRES

FILE: [CORRPRO] G:\NORTHEAST REGION\ENGINEERING\DRAWINGS\CLIENTS\SADDLE BUTTE PIPELINE\G40396_OF DESIGN – DUAL PIPE & CASING_PRELIM\G40396_A7216-2_ID_TYPE 4_PRELIM 10-12-10.DWG [MODEL]

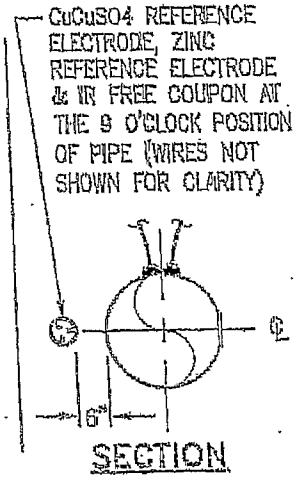


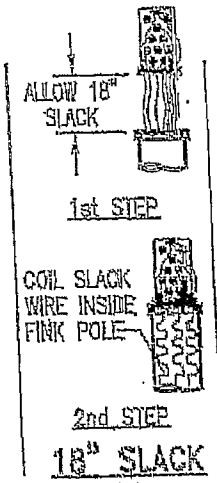
CATHODIC PROTECTION WIRE SCHEDULE & DESIGNATION

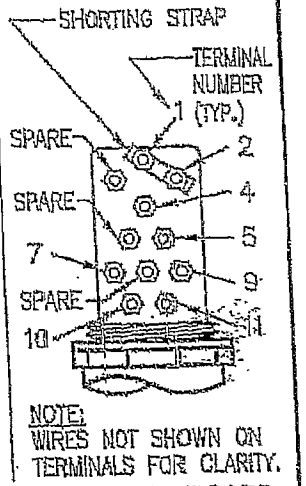
ITEM	DESCRIPTION	LEAD LABEL	# AWG	COLOR	INSULATION	TERMINAL
1	PIPE LINE TEST LEAD 1	TL–1	10	WHITE	THW OR THHN	2
2	PIPE LINE TEST LEAD 2	TL–2	10	BLACK	THW OR THHN	5
3	SPARE TERMINAL	NOT APPLICABLE				3
4	SPARE TERMINAL	NOT APPLICABLE				6
5	IR–FREE COUPON LEAD 1	C–1	12	GREEN	THHN	1
6	IR–FREE COUPON LEAD 2	C–2	12	GREEN	THHN	4
7	COPPER/COPPER SULFATE REFERENCE ELECTRODE LEAD	Cu	14	BLUE	HMWPE	7
8	SPARE TERMINAL	NOT APPLICABLE				8
9	ZINC REFERENCE ELECTRODE	Zn	14	YELLOW	HMWPE	9
10	CASING LEAD 1	TL–3	10	BROWN	THW OR THHN	10
11	CASING LEAD 2	TL–4	10	BROWN	THW OR THHN	11

NOTES:

1. WIRES 1 & 2 INSTALLED APPROXIMATELY ON CENTER LINE OF TEST STATION.
2. LOOP PIPE TEST WIRES AROUND PIPE TO SECURE WIRES PRIOR TO THERMITE WELDING.
3. ALLOW 18" SLACK WIRE INSIDE FINK TEST STATION POLE SO THAT WIRES CAN BE EXTENDED ABOVE TEST STATION TERMINAL BOARD. SEE DETAIL.







TEST STATION T4 – CASING TEST STATION INSTALLATION

NO.	DATE	BY	REVISION
			PRELIMINARY
			AS OF 10-25-2010

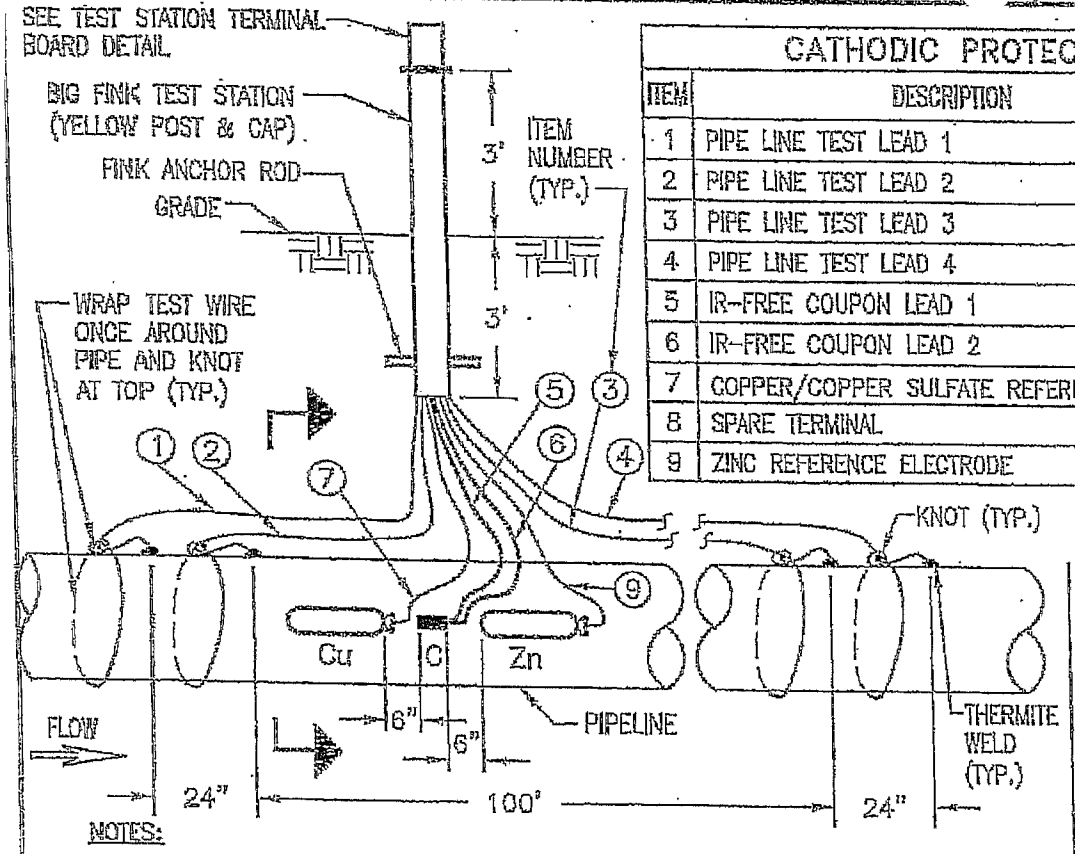
corrpro
An Intelliform® Company
1380 Enterprise Drive
West Chester, PA 19380
Office: (610) 344-7002
www.corrpro.com

JOB No.	C40396
DRAWN BY	KK
DESIGNED BY	AM
DATE	10/25/2010
SCALE	NONE
SHEET	2 OF 2
DWG. No.	A4-7216-2

SADDLE BUTTE PIPELINE LLC

GRASSLANDS GATHERING PIPELINE PROJECT

CASING TEST STATION TYPE 4

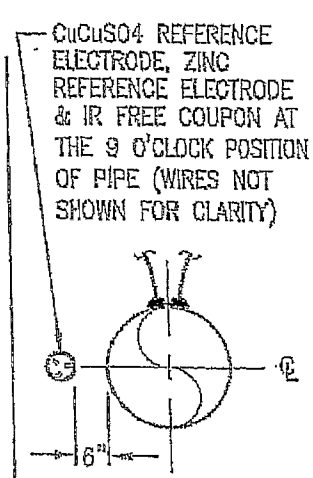


NOTES:

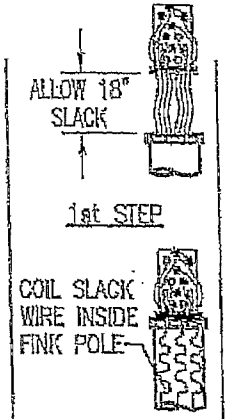
1. LOOP PIPE TEST WIRES AROUND PIPE TO SECURE WIRES PRIOR TO THERMITE WELDING.
2. ALLOW 18" SLACK WIRE INSIDE FINK TEST STATION POLE SO THAT WIRES CAN BE EXTENDED ABOVE TEST STATION TERMINAL BOARD. SEE DETAIL.

CATHODIC PROTECTION WIRE SCHEDULE & DESIGNATION

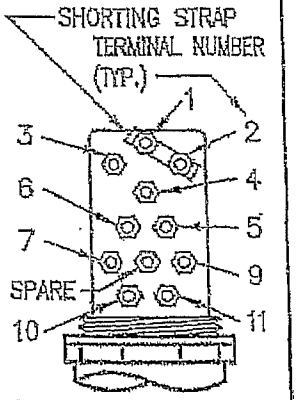
ITEM	DESCRIPTION	LEAD LABEL	# AWG	COLOR	INSULATION	TERMINAL
1	PIPE LINE TEST LEAD 1	TL-1	10	WHITE	THW OR THHN	2
2	PIPE LINE TEST LEAD 2	TL-2	10	BLACK	THW OR THHN	5
3	PIPE LINE TEST LEAD 3	TL-3	10	ORANGE	THW OR THHN	3
4	PIPE LINE TEST LEAD 4	TL-4	10	RED	THW OR THHN	6
5	IR-FREE COUPON LEAD 1	C-1	12	GREEN	THHN	1
6	IR-FREE COUPON LEAD 2	C-2	12	GREEN	THHN	4
7	COPPER/COPPER SULFATE REFERENCE ELECTRODE LEAD	Cu	14	BLUE	HMWPE	7
8	SPARE TERMINAL	NOT APPLICABLE				8
9	ZINC REFERENCE ELECTRODE	Zn	14	YELLOW	HMWPE	9



SECTION



18" SLACK WIRE



NOTE:
WIRES NOT SHOWN ON TERMINALS FOR CLARITY.

TERMINAL BOARD

PRELIMINARY
AS OF 08-26-2010

TEST STATION T3 - IR-DROP TEST STATION INSTALLATION

NO.	DATE	BY	REVISION

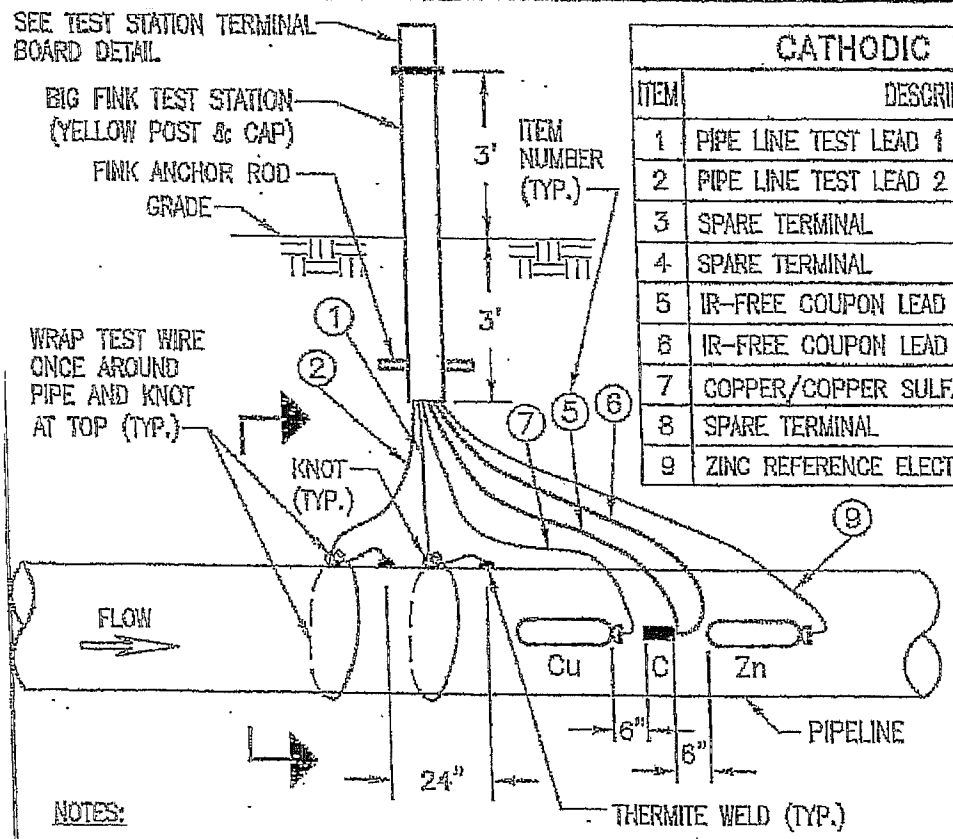
corrpro®
An Insituform® Company
1380 Enterprise Drive
West Chester, PA 19380
Office: (610) 344-7002
www.corrpro.com

JOB No.	C40398
DRAWN BY	MS
DESIGNED BY	AM
DATE	8/26/2010
SCALE	NONE
SHEET	3 OF 5
DWG. No.	A4-7204-3

SADDLE BUTTE PIPELINE LLC

GRASSLANDS GATHERING PIPELINE PROJECT

IR-DROP TEST STATION - TYPE 3

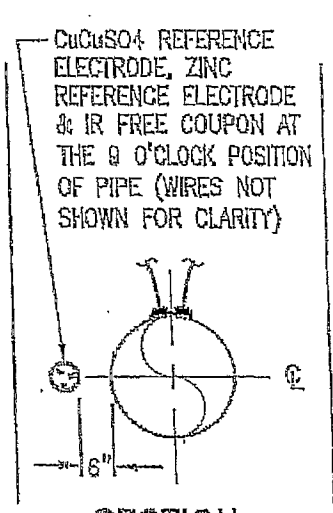


CATHODIC PROTECTION WIRE SCHEDULE & DESIGNATION

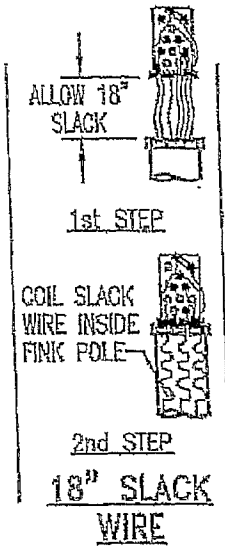
ITEM	DESCRIPTION	LEAD LABEL	# AWG	COLOR	INSULATION	TERMINAL
1	PIPE LINE TEST LEAD 1	TL-1	10	WHITE	THW OR THHN	2
2	PIPE LINE TEST LEAD 2	TL-2	10	BLACK	THW OR THHN	5
3	SPARE TERMINAL	NOT APPLICABLE				3
4	SPARE TERMINAL	NOT APPLICABLE				6
5	IR-FREE COUPON LEAD 1	C-1	12	GREEN	THHN	1
6	IR-FREE COUPON LEAD 2	C-2	12	GREEN	THHN	4
7	COPPER/COPPER SULFATE REFERENCE ELECTRODE LEAD	Cu	14	BLUE	HMWPE	7
8	SPARE TERMINAL	NOT APPLICABLE				8
9	ZINC REFERENCE ELECTRODE	Zn	14	YELLOW	HMWPE	9

NOTES:

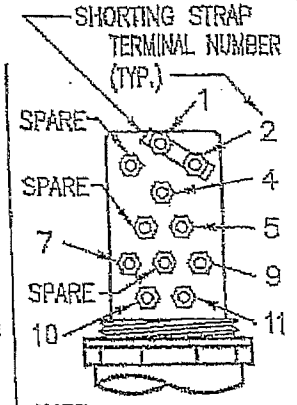
1. WIRES 1 & 2 INSTALLED APPROXIMATELY ON CENTER LINE OF TEST STATION.
2. LOOP PIPE TEST WIRES AROUND PIPE TO SECURE WIRES PRIOR TO THERMITE WELDING.
3. ALLOW 18" SLACK WIRE INSIDE FINK TEST STATION POLE SO THAT WIRES CAN BE EXTENDED ABOVE TEST STATION TERMINAL BOARD. SEE DETAIL.



SECTION



18" SLACK WIRE



NOTE: WIRES NOT SHOWN ON TERMINALS FOR CLARITY.

TERMINAL BOARD

PRELIMINARY
AS OF 08-26-2010

TEST STATION T2 - IR-DROP TEST STATION INSTALLATION

NO.	DATE	BY	REVISION

corrpro®
An Insituform® Company
1380 Enterprise Drive
West Chester, PA 19380
Office: (610) 344-7002
www.corrpro.com

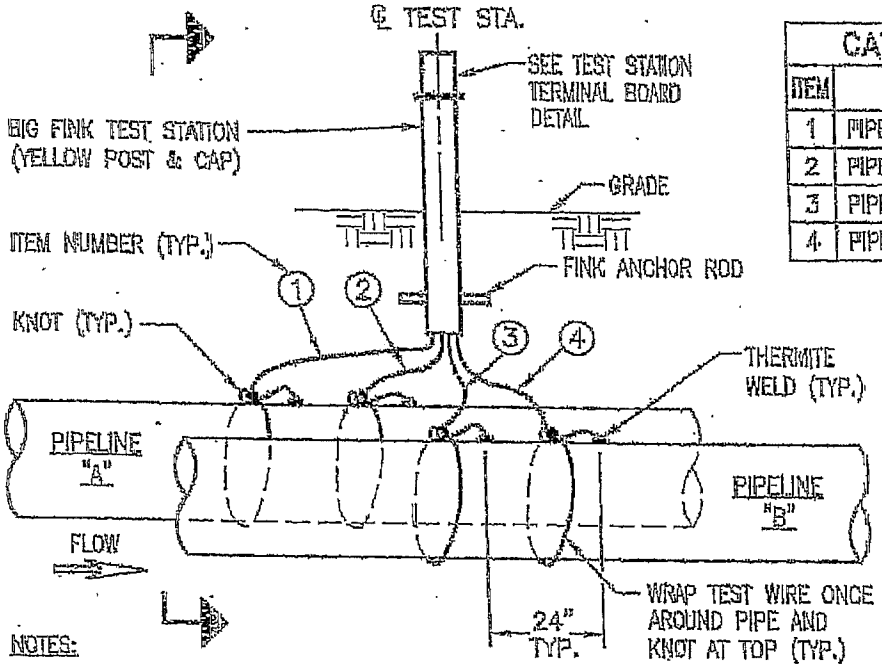
JOB No.	C40398
DRAWN BY	MS
DESIGNED BY	AM
DATE	8/26/2010
SCALE	NONE
SHEET	2 OF 5
DWG. No.	A4-7204-2

SADDLE BUTTE PIPELINE LLC

GRASSLANDS GATHERING PIPELINE PROJECT

TWO WIRE TEST STATION WITH ELECTRODES TYPE 2

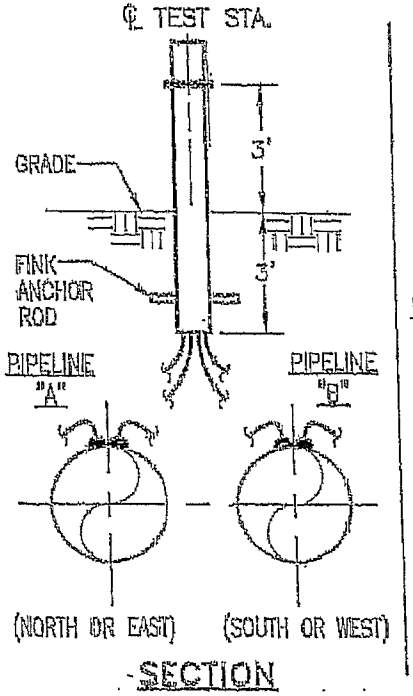
FILE: \\CORRPRO\ G:\NORTHEAST REGION\ENGINEERING\DRAWINGS\CLIENTS\SADDLE BUTTE PIPELINE\C40398_CP DESIGN – DUAL PIPE & CASING_PRELIM\C40398_A7216-1_IND_TYPE 1-A_PRELIM 10-12-10.DWG [MODEL]



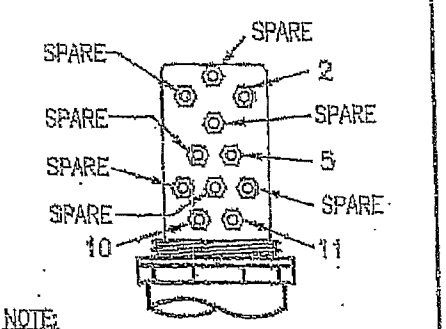
CATHODIC PROTECTION WIRE SCHEDULE & DESIGNATION						
ITEM	DESCRIPTION	LEAD LABEL	# AWG	COLOR	INSULATION	TERMINAL
1	PIPE LINE TEST LEAD 1	TL–1	10	WHITE	THW OR THHN	2
2	PIPE LINE TEST LEAD 2	TL–2	10	BLACK	THW OR THHN	5
3	PIPE LINE TEST LEAD 3 (1 KNOT)	TL–3	10	WHITE	THW OR THHN	10
4	PIPE LINE TEST LEAD 4 (1 KNOT)	TL–4	10	BLACK	THW OR THHN	11

NOTES:

1. WIRES 1 & 2 INSTALLED APPROXIMATELY ON CENTER LINE OF PIPELINE 'A' TOP SIDE. (NORTH OR EAST PIPELINE) – NO KNOTS IN TEST LEADS.
2.
3. WIRES 3 & 4 INSTALLED APPROXIMATELY ON CENTER LINE OF PIPELINE "B" TOP SIDE. (SOUTH OF WEST PIPELINE) – ONE KNOT IN EACH TEST LEAD.
4. LOOP PIPE TEST WIRES AROUND PIPE TO SECURE WIRES PRIOR TO THERMITE WELDING.
5. ALLOW 18" SLACK WIRE INSIDE FINK TEST STATION POLE SO THAT WIRES CAN BE EXTENDED ABOVE TEST STATION TERMINAL BOARD. SEE DETAIL.

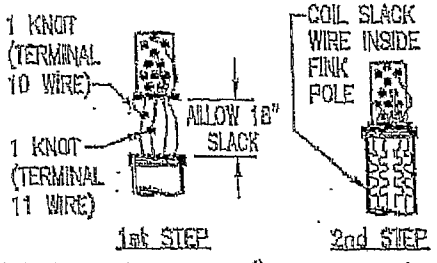


SECTION



NOTE:
WIRES NOT SHOWN ON TERMINALS FOR CLARITY.

TERMINAL BOARD



WIRE KNOTS & 18" SLACK WIRE

TEST STATION T1–A – DUAL PIPE IN–LINE TEST STATION INSTALLATION

NO.	DATE	BY	REVISION
			PRELIMINARY
			AS OF 10-25-2010

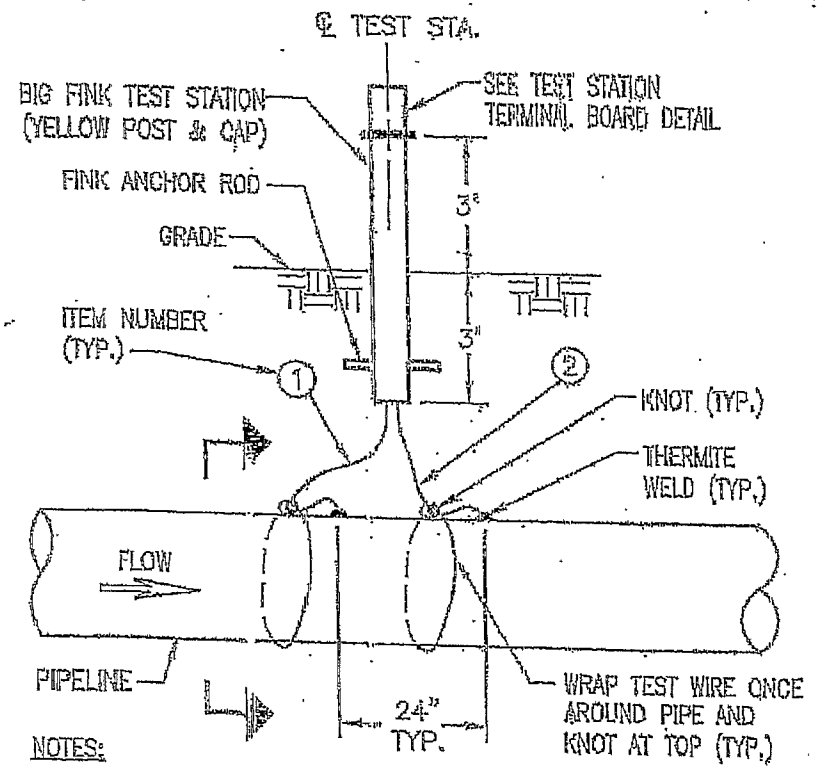
corrpro®
An Instituform® Company
1380 Enterprise Drive
West Chester, PA 19380
Office: (610) 344-7002
www.corrpro.com

JOB No.	C40398
DRAWN BY	KK
DESIGNED BY	AM
DATE	10/25/2010
SCALE	NONE
SHEET	1 OF 2
DWG. No.	A4–7216–1

SADDLE BUTTE PIPELINE LLC

GRASSLANDS GATHERING PIPELINE PROJECT

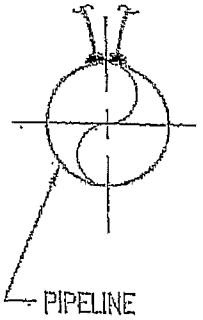
DUAL PIPE IN–LINE TEST STATION – TYPE 1–A



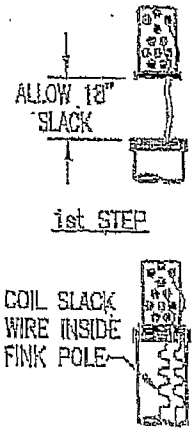
NOTES:

1. WIRES 1 & 2 INSTALLED APPROXIMATELY ON CENTER LINE OF TEST STATION.
2. LOOP PIPE TEST WIRES AROUND PIPE TO SECURE WIRES PRIOR TO THERMITE WELDING.
3. ALLOW 18" SLACK WIRE INSIDE FINK TEST STATION POLE SO THAT WIRES CAN BE EXTENDED ABOVE TEST STATION TERMINAL BOARD. SEE DETAIL.

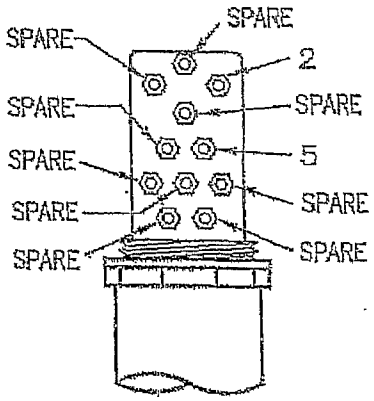
CATHODIC PROTECTION WIRE SCHEDULE & DESIGNATION						
ITEM	DESCRIPTION	LEAD LABEL	# AWG	COLOR	INSULATION	TERMINAL
1	PIPE LINE TEST LEAD 1	TL-1	10	WHITE	THW OR THHN	2
2	PIPE LINE TEST LEAD 2	TL-2	10	BLACK	THW OR THHN	5



SECTION



18" SLACK WIRE



NOTE:
WIRES NOT SHOWN ON TERMINALS FOR CLARITY.

TERMINAL BOARD

PRELIMINARY
AS OF 08-26-2010

TEST STATION T1 – TWO WIRE TEST STATION INSTALLATION

NO.	DATE	BY	REVISION

CORRPRO®
A InstaVorm® Company
1360 Enterprise Drive
West Chester, PA 19380
Office: (610) 344-7002
www.corrpro.com

JOB NO.	C40398
DRAWN BY	MS
DESIGNED BY	AM
DATE	8/26/2010
SCALE	NONE
SHEET	1 OF 5
DWG. NO.	A4-7204-1

SADDLE BUTTE PIPELINE LLC

GRASSLANDS GATHERING PIPELINE PROJECT

TWO WIRE TEST STATION – TYPE 1

Saddle Butte Assets, LLC
JULY 2012

Initiated	
Reviewed	
Entered	

Company **30**

Account	Dept	AFE	Phase	Task	Debit	Credit
11930	000				960.37	
14400	330					960.37

Material Transfer #1692

OK

DB

Copy

Permit #: SB090711CS

DB Multi Bore & Cut

CONSENT FOR UTILITY COMPANY
TO
CROSS A PUBLIC ROAD OR SECTION ROAD

Saddle Butte Pipeline, LLC (Company) of 858 Main Ave, Suite 301, Durango, CO 81301 (Address)

Hereinafter referred to as "Utility Company", having requested permission from McKenzie County, a political subdivision of the State of North Dakota, to cross an existing road or section line with a buried transmission facility designed to carry or conduct oil, gas, water, electricity, telephone or any other substance or service whatsoever, and McKenzie County having considered the request does grant consent to cross the following described existing road or section line, upon the terms and conditions herein stated:

(Please include County Route #'s as applicable**)**

Route See Exhibit A in Section(s) _____, Township _____ N, Range _____W

Route _____ in Section(s) _____, Township _____ N, Range _____W

Route _____ in Section(s) _____, Township _____ N, Range _____W

Route _____ in Section(s) _____, Township _____ N, Range _____W

Route _____ in Section(s) _____, Township _____ N, Range _____W

(Attach Maps and Construction Plans**)**

At a minimum, acceptable plans will include method of crossing existing roads or section lines and size and material used for the buried facility.

Consent to cross such existing road or section line is granted on these terms and conditions:

1. Utility Company must pay for all damage to the existing road caused by its activities, including but not limited to slumping in of trenches and collapse of pipe.
2. Utility Company is responsible for any and all claims of damage, personal injury, or bodily injury that might result from their activities in crossing any existing road or section line in McKenzie County. Furthermore, Utility Company agrees to indemnify and hold harmless any type of claim for damages of any nature whatsoever, whether valid or invalid, that is made against McKenzie County on account of the activities conducted by the Utility Company in crossing any existing road or section line.
3. When the Utility Company crosses an existing road or a section line, the Utility Company shall be responsible to pay for all costs of moving, relocating, or reconstructing the buried transmission facility should McKenzie County deem it necessary or advisable, in its sole

I, the undersigned, being an authorized agent of the Utility Company described in the above, do hereby agree on behalf of the Utility Company that all terms and conditions above will be complied with, and any assignment of this buried transmission facility described above shall include an assignment of this liability to comply with the terms and conditions as stated herein.

Dated this 7th day of September 20 11.

Signature of Authorized Agent of Utility Company

(701) 258-1110

Telephone Number

County Auditor: Please return a copy of the signed permit to:

Saddle Butte Pipeline, LLC Attn: Christian Stoddard

Company or Agent Name

858 Main Ave, Suite 301

Mailing Address

Durango, CO 81301

City, State & Zip Code

FOR COUNTY USE:

Reviewed by _____, County Engineer on 9/8/11

Permission granted by McKenzie County, a political subdivision of the State of North Dakota, for installation of the buried transmission facility proposed above under existing roads and section lines as stated above pursuant to the conditions and limitations stated this 8 day of Sept 20 11

Member ~~Chairman~~ of the Board

McKenzie County Board of County Commissioners

Exhibit A
McKenzie County
Utility Permit
Page 1 of 1

	ROUTE	SECTIONS	TOWNSHIP	RANGE	
1	Section Line	16/17	149	98	
2	125th Ave NW	17/18	149	98	BOC
3	Section Line	17/18	149	98	
4	~~Section Line~~ OK	18/19	149	98	~~Boc~~
5	21st St NW	18/19	149	98	Boc
6	125½ Ave NW	19	149	98	Boc
7	Section Line	19/30	149	98	
8	Section Line	29/30	149	98	
9	Section Line	28/29	149	98	
10	123½ Ave NW	28	149	98	Open
11	Section Line	27/28	149	98	
12	Section Line	27/22	149	98	
13	Section Line	22/27	149	98	

Ok
DB

New (Revised) Approach Saddle Butte Gas Plant Permit #: SB10191155

APPROACH PERMIT
PERMIT TO CONSTRUCT AN APPROACH TO A COUNTY MAINTAINED ROAD

Saddle Butte Pipeline, LLC of 858 Main Ave, Suite 301, Durango, CO 81301
(Company) (Address)

Hereinafter referred to as "Contractor", having requested permission from McKenzie County, a political subdivision of the State of North Dakota, to construct an approach to a County maintained road, and McKenzie County having considered the request does hereby grant consent to construct said approach upon the terms and conditions herein stated:

Route 125th Ave in Section(s) 30, Township 149 N, Range 98 W

(Attach Maps and Construction Plans)

1. The Contractor must pay for all damage to the existing road caused by his activities.
2. The Contractor is responsible for any and all claims of damage, personal injury that might result from their activities in McKenzie County. Furthermore, the Contractor agrees to indemnify and hold harmless McKenzie County for any and all claims of damage, either personal injury or property or any type of claim for damages of any nature whatsoever, whether valid or invalid, that is made against McKenzie County on account of the activities conducted by the Contractor.
3. The minimum road top width shall be 24 feet with adequate surfacing applied.
4. If required, a culvert sized adequately for a 25 year flood event shall be installed.
5. A clear sight stopping distance for the posted speed limit shall be used as a minimum clear sight distance.
6. If the approach will be used by the general public (as a section line road) a run off on the opposite side will be required. Signing will be required as shown in the current version of the "Manual of Uniform Traffic Control Devices". The installation and maintenance of the signs are the responsibility of the Contractor.
7. Any intersection that may constitute a hazard shall require dangerous intersection or other warning signs. These signs may be required after the construction of the approach if it proves to be a hazard to the public.
8. The approach shall be constructed with good workmanship so as to leave a neat appearing project.
9. Once completed the entire disturbed area with the exception of the road top shall be covered with black dirt and seeded with an approved seed mix.
10. Any disturbed area within the right-of-way shall be rehabilitated and seeded using an approved seed mix.
11. **Maps and construction plans shall be included with this application.**

The Contractor must comply with all terms and conditions stated herein, especially the minimum engineering standards. Failure to comply with this CONDITIONAL CONSENT shall cause the consent to be rescinded and the Contractor must remove the approach from the right-of-way immediately or be responsible for the costs incurred by the County in removing the same.

The County specifically reserves the right to remove the approach from right-of-way for non-compliance and reimbursement will be made to the County by the Contractor for doing the same.

I, the undersigned, being an authorized agent of the Contractor described in the above, do hereby agree on behalf of the Contractor that all terms and conditions above will be complied with, and any assignment of the approach described above shall include an assignment of this liability to comply with the terms and conditions as stated herein.

Dated this 19th day of October 20 11.

Signature of Authorized Agent of Utility Company

817/694-9632
Telephone Number

County Auditor: Please return a copy of the signed permit to:

Jesse Johnson (KLJ)
Company or Agent Name

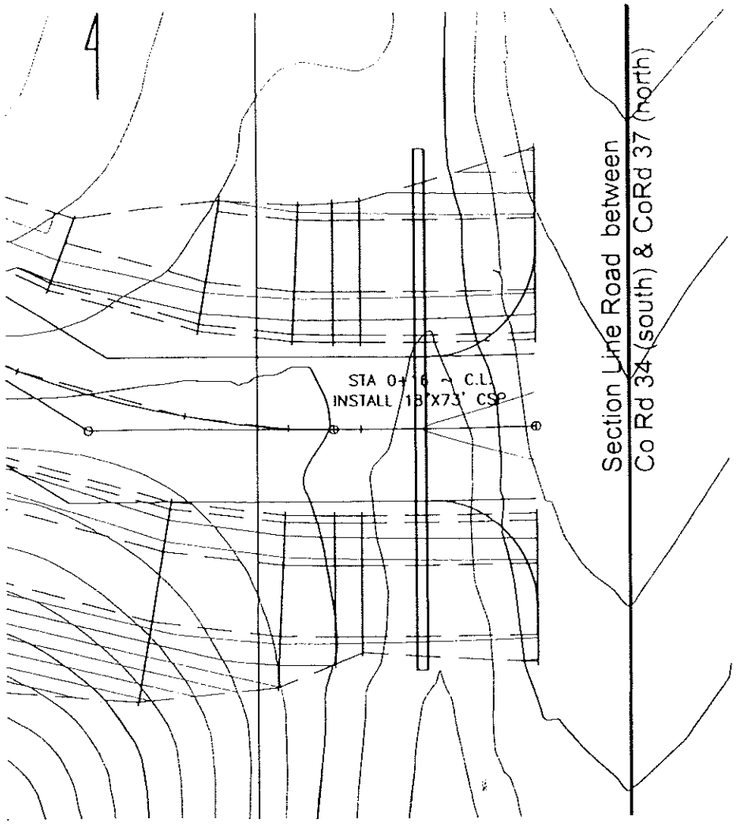
677 27th Ave East
Mailing Address

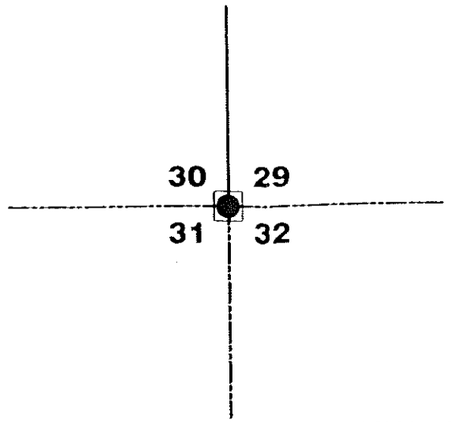
Dickinson ND, 58602
City, State & Zip Code

FOR COUNTY USE:
Reviewed by: _____, County Engineer on 11/8/11
Permission granted by McKenzie County, a political subdivision of the State of North Dakota, for installation of an approach of a County maintained road as stated above pursuant to the conditions and limitations stated this _____ day of _____ 20_____.

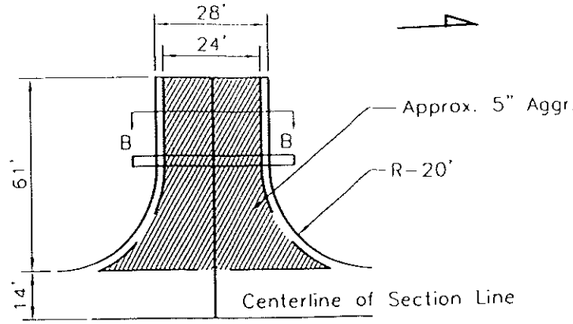
APPROVED
Roger Chinn
Chairman of the Board
12/06/11

_____
Chairman of the Board
McKenzie County Board of County Commissioners



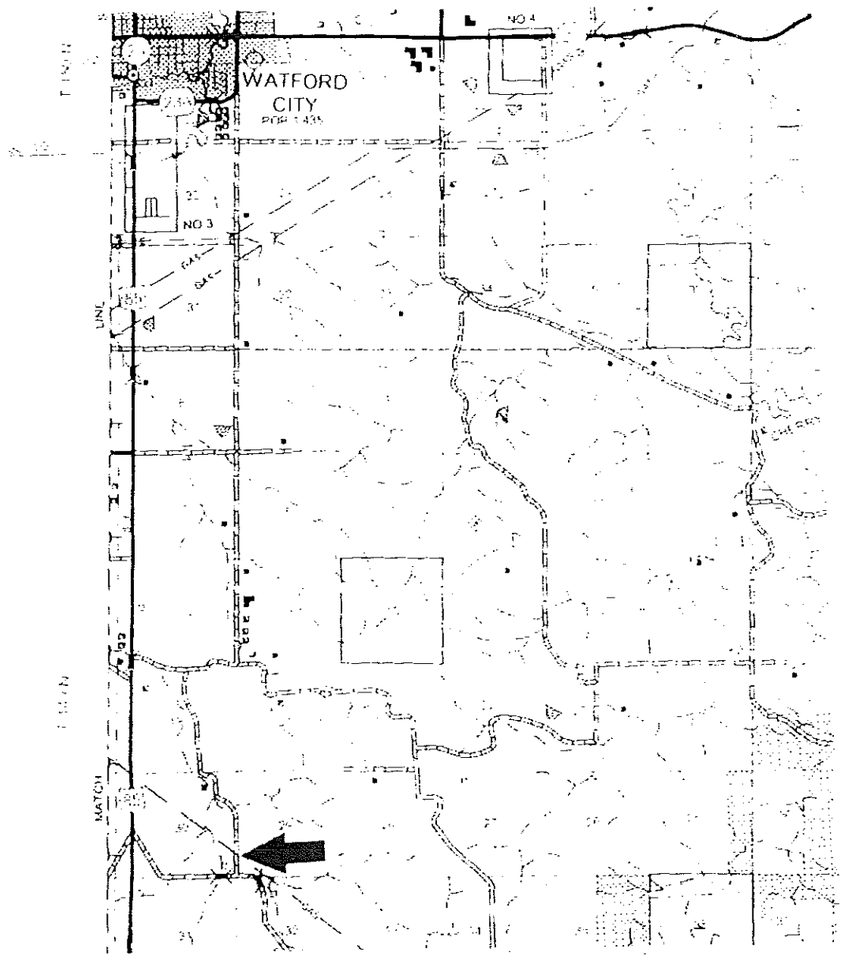


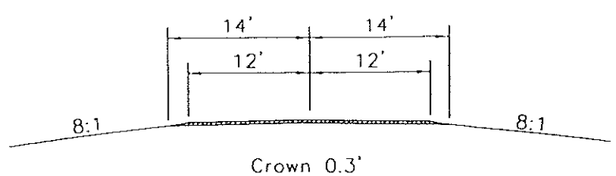
Approach is located Approx. 930' North of intersection in T149N, R98W



Section Line Drive Approach
Private Drive Approach

B=18"x 73' CMP
30' from CL of Section Line





Crown 0.3'

Reclamation is to conform to the McKenzie County Specifications
See Approach Permit Version 12/30/2010

County Engineer told us to specify that this is the correction approach to the old approach.

Signage and Runoff opposite side of the approach will be required.

Kadrmas Lee & Jackson
Engineers Surveyors Planners

COPYRIGHT © 2011
KADRMAS, LEE, & JACKSON, INC.
ALL RIGHTS RESERVED

SADDLE BUTTE PIPELINE

Approach Permit
Access Road
Section 30, T149N, R98W, 5th P.M.
McKinzie County, North Dakota

NORTH DAKOTA ONE CALL
"CALL BEFORE YOU DIG AND DIG SAFELY"
1-800-795-0555

Confidentiality Notice: The information contained on this plan is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited

SURVEY COMPLETED USING NAVD 88 DATUM
BASIS OF BEARING

Drawn By	JU
Checked By	???
Project No	3710353
Issued	10/18/11
Revised	REV. DATE
Field Book	???

JERREL S. KRIEG
REGISTERED
10/19/11
PROFESSIONAL
PE-4530
ENGINEER
NORTH DAKOTA

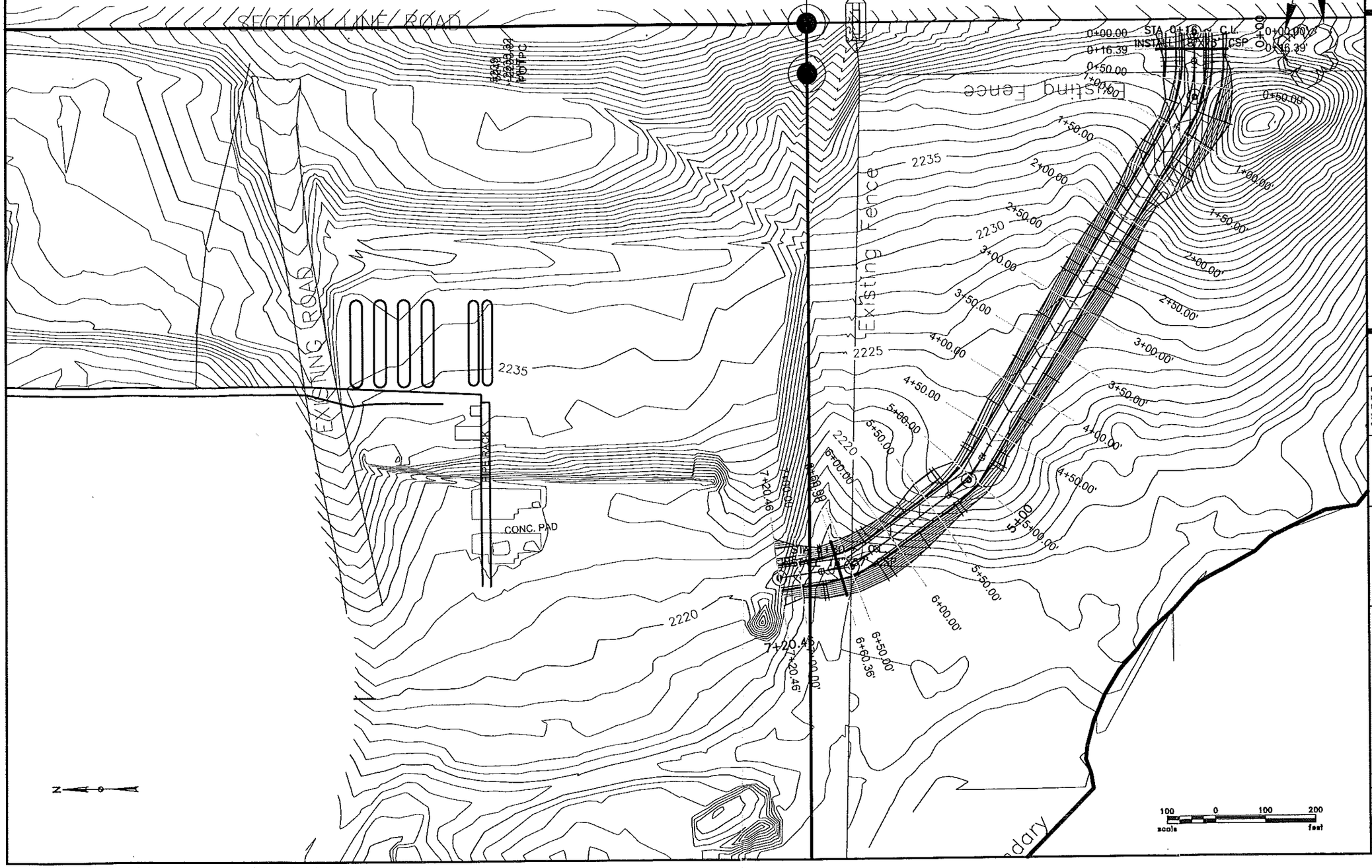
1
Approach Permit

SHEET NO. 1

Oct 18, 2011 - 12:51pm - J:\oilfield\Saddle Butte Pipeline\3710353\Cadd\3710353BAS04.dwg

		ADJUSTED:	
CUT	422.35 CU. YD.	CUT	422.35 CU. YD.
FILL	4569.74 CU.YD.	FILL	5940.66 CU.YD.
NET	(FILL) 4147.39 CU.YD	NET	(FILL) 5518.31 CU.YD.

ESTIMATED TOPSOIL REMOVAL 697 CU.YD..



Kadrmas Lee & Jackson
Engineers Surveyors Planners

COPYRIGHT © 2011
KADRMAS, LEE, & JACKSON, INC.
ALL RIGHTS RESERVED

SADDLE BUTTE PIPELINE

40 ACRE SITE SURVEY
Section 30, T149N, R98W, 5th P.M.
McKenzie County, North Dakota

NORTH DAKOTA ONE CALL
"CALL BEFORE YOU DIG AND DIG SAFELY"
1-800-795-0555

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

SURVEY COMPLETED USING NAVD 88 DATUM

BASIS OF BEARING:

Drawn By:	???
Checked By:	???
Project No.	???
Issued:	7/29/11
Revised:	REV. DATE
Field Book:	???

PRELIMINARY

ACCESS ROAD ADDITION

SHEET NO. 1

Aug 04, 2011 – 8:45am – J:\oilfield\Saddle Butte Pipeline\3710353\Cadd\3710353BAS04.dwg

Two of three approaches already complete. Double approach Completed should have had 3c culverts installed

Permit #: SB103111DM

APPROACH PERMIT

PERMIT TO CONSTRUCT AN APPROACH TO A COUNTY MAINTAINED ROAD

Saddle Butte Pipeline, LLC of 858 Main Ave., Suite 301, Durango, CO 81301

(Company) (Address)

Hereinafter referred to as "Contractor", having requested permission from McKenzie County, a political subdivision of the State of North Dakota, to construct an approach to a County maintained road, and McKenzie County having considered the request does hereby grant consent to construct said approach upon the terms and conditions herein stated:

Route 144th AVE in Section(s) NW1/4 S19, Township 152 N, Range 101 W

See Notes on Map

(Attach Maps and Construction Plans)

1. The Contractor must pay for all damage to the existing road caused by his activities.
2. The Contractor is responsible for any and all claims of damage, personal injury that might result from their activities in McKenzie County. Furthermore, the Contractor agrees to indemnify and hold harmless McKenzie County for any and all claims of damage, either personal injury or property or any type of claim for damages of any nature whatsoever, whether valid or invalid, that is made against McKenzie County on account of the activities conducted by the Contractor.
3. The minimum road top width shall be 24 feet with adequate surfacing applied.
4. If required, a culvert sized adequately for a 25 year flood event shall be installed.
5. A clear sight stopping distance for the posted speed limit shall be used as a minimum clear sight distance.
6. If the approach will be used by the general public (as a section line road) a run off on the opposite side will be required. Signing will be required as shown in the current version of the "Manual of Uniform Traffic Control Devices". The installation and maintenance of the signs are the responsibility of the Contractor.
7. Any intersection that may constitute a hazard shall require dangerous intersection or other warning signs. These signs may be required after the construction of the approach if it proves to be a hazard to the public.
8. The approach shall be constructed with good workmanship so as to leave a neat appearing project.
9. Once completed the entire disturbed area with the exception of the road top shall be covered with black dirt and seeded with an approved seed mix.
10. Any disturbed area within the right-of-way shall be rehabilitated and seeded using an approved seed mix.
11. **Maps and construction plans shall be included with this application.**

The Contractor must comply with all terms and conditions stated herein, especially the minimum gineering standards. Failure to comply with this CONDITIONAL CONSENT shall cause the consent to be rescinded and the Contractor must remove the approach from the right-of-way immediately or be responsible for the costs incurred by the County in removing the same.

The County specifically reserves the right to remove the approach from right-of-way for non-compliance and reimbursement will be made to the County by the Contractor for doing the same.

the undersigned, being an authorized agent of the Contractor described in the above, do hereby agree on behalf of the Contractor that all terms and conditions above will be complied with, and any assignment of the approach described above shall include an assignment of this liability to comply with the terms and conditions as stated herein.

Dated this 31st day of October 20 11 .

Signature of Authorized Agent of Utility Company

(701) 258-1110

Telephone Number

County Auditor: Please return a copy of the signed permit to:

Saddle Butte Pipeline, LLC ATT: Christian Stoddard

Company or Agent Name

858 Main Ave, Suite 301

Mailing Address

Durango, CO 81301

City, State & Zip Code

FOR COUNTY USE:

Reviewed by: _____, County Engineer on 12/5/11

Permission granted by McKenzie County, a political subdivision of the State of North Dakota, for installation of an approach of a County maintained road as stated above pursuant to the conditions and limitations stated this _____ day of __ __.

APPROVED
Roger Chinn
Chairman of the Board
12/06/11

_____

Chairman of the Board
McKenzie County Board of County Commissioners

PROPERY CORNER
N: 469' 4"
E: 840'

PROPERY CORNER
N: 98' 1"
E: 840'

PLANT NORTH

NOTE:
PLANT NORTH IS
2.364° EAST OF
TRUE NORTH.

1 inch = 40 ft

150.0'
(DISTANCE FROM
CENTERLINE OF ROAD
TO BE VERIFIED)

ENBRIDGE BRIGHAM CONNECTION

ENBRIDGE SADDLE BUTTE CONNECTION

Natural Gas Pipeline

Utility Marker Gas Blowdown

Utility Marker Fuel Bridger

Petroleum Pipeline

PL

INCOMING 8SP 8"

791'

648.2' (FENCE)

10.3' (FENCE)

10.3' (FENCE)

70.1' (FENCE)

RECEIVER TRAP

ENBRIDGE FLANGE
N: 989' 3"
E: 453' 1"

N: 922' 6"
E: 490'

N: 981' 8"
E: 441' 1"

N: 919' 8"
E: 417' 1"

PROPERY CORNER
N: 1161' 9"
E: 447' 10"

PROPERY CORNER
N: 1162' 9"
E: 100'

PROPERY CORNER
N: 100'
E: 100'

39th St NW

18" Culvert

Utility Marker Telephone

Guard Post

Electric Locker

FROM BRIGHAM

1050.1' (FENCE)

677.5' (FENCE)

740'

244'-10"

180'

74'-7"

50'

180'

35' 30' 50' 50' 30' 35'

15' 10' 15'

25'-8"

358'

305' (FENCE)

140'

110'

36'

26'

24'

14'

20'

55'-5"

60'

173'

E: 800.0'
E: 700.0'
E: 600.0'
E: 500.0'
E: 400.0'
E: 300.0'
E: 200.0'
E: 100.0'

REFERENCE DRAWINGS		REVISIONS					DRAWN BY	DATE
NUMBER	TITLE	NO.	DESCRIPTION	BY	CKD.	DATE	RJL	26SEP2011
							CHECKED BY	DATE
							LT	26SEP2011
							ENVR. APPD.	DATE
							PROJ. MGR. APPD.	DATE
		A		RJL	LT	10/5/2011		

Vanderpool Pipeline Engineers

CLIENT APPD. DATE

SADDLE BUTTE PIPELINE COMPANY

ALEXANDER TERMINAL
GENERAL PIPING LAYOUT

MCKENZIE COUNTY NORTH DAKOTA

SCALE	PROJECT NO.	DRAWING NUMBER	REV.
		ALEX-P-001	A

C:\Users\RJL\Desktop\Lundgren Projects\Vanderpool\Alexander Terminal\Working\AlexTerm Site Plan.dwg PIPING (2) Wed, 10/26/11 8:22 PM

Permit #: SB10271CS

CONSENT FOR UTILITY COMPANY
TO
CROSS A PUBLIC ROAD OR SECTION ROAD

Client P/U on 11/08 @ 3pm

Saddle Butte Pipeline, LLC of 858 Main Ave, Suite 301, Durango, CO 81301

(Company) (Address)

Hereinafter referred to as "Utility Company", having requested permission from McKenzie County, a political subdivision of the State of North Dakota, to cross an existing road or section line with a buried transmission facility designed to carry or conduct oil, gas, water, electricity, telephone or any other substance or service whatsoever, and McKenzie County having considered the request does grant consent to cross the following described existing road or section line, upon the terms and conditions herein stated:

NOTE: All improved county roads require a bore.

(Please include County Route #'s as applicable**)**

Route See Exhibit A in Section(s) _____, Township _____ N, Range _____W

Route _____ in Section(s) _____, Township _____ N, Range _____W

Route _____ in Section(s) _____, Township _____ N, Range _____W

Route _____ in Section(s) _____, Township _____ N, Range _____W

Route _____ in Section(s) _____, Township _____ N, Range _____W

Open Trench & Slick Bore

(Attach Maps and Construction Plans**)**

At a minimum, acceptable plans will include method of crossing existing roads or section lines and size and material used for the buried facility.

Consent to cross such existing road or section line is granted on these terms and conditions:

1. Utility Company must pay for all damage to the existing road caused by its activities, including but not limited to slumping in of trenches and collapse of pipe.
2. Utility Company is responsible for any and all claims of damage, personal injury, or bodily injury that might result from their activities in crossing any existing road or section line in McKenzie County. Furthermore, Utility Company agrees to indemnify and hold harmless any type of claim for damages of any nature whatsoever, whether valid or invalid, that is made against McKenzie County on account of the activities conducted by the Utility Company in crossing any existing road or section line.
3. When the Utility Company crosses an existing road or a section line, the Utility Company shall be responsible to pay for all costs of moving, relocating, or reconstructing the buried transmission facility should McKenzie County deem it necessary or advisable, in its sole

discretion, to repair or reconstruct existing roads or to build new roads on section lines or off section lines as allowed by North Dakota law. Should the Utility Company fail to take necessary steps to relocate or reconstruct its buried transmission facility, the County may take steps to have the same accomplished, and the Utility Company agrees to reimburse the County for all expenses incurred by McKenzie County in moving, relocating or reconstructing the buried transmission facility so the existing roads may be repaired or reconstructed, or new roads may be built on the section line or off the section line as allowed by North Dakota law.

4. The buried transmission facility to be installed by the Utility Company in crossing any existing road shall at a minimum comply with the following engineering standards:
   (a) County paved roads or County roads treated with road stabilization materials may **ONLY** be **BORED.**
   (b) All crossings of existing roads not trenched as in Section 5 below shall be bored to a depth of five (5) feet below original ground or ditch elevations.
   (c) Pipe shall be cased or heavy wall pipe used.
   (d) All parallel borings must be a minimum of thirty (30) feet from road centerline.
   (e) Vent pipes must be outside existing right-of-way lines or thirty-three (33) feet from road center, whichever is greater.
   (f) All disturbed ground within right-of-way must be rehabilitated by covering with black dirt and seeding with an approved mix.
   (g) If vent pipes are not used within the ten (10) feet of both sides of right-of-way, the transmission facility must have markers on the right-of-way line or thirty-three (33) foot line, whichever is greater, on both sides of the road.
   (h) The Utility Company's plan to bury a transmission facility filed with the County Engineer must show at a minimum, in plain view and cross sectional view, the location of the crossing from a section or quarter line; section, township and range the crossing is located in; the location of vent pipes, if any, in proximity to the crossing; and the angle of crossing.
   (i) The Utility Company's plan must be submitted to the Office of the County Engineer for review prior to consideration by the Board at least two (2) weeks prior to the commencement of the project.
5. Any crossing installed by trenching or plowing in may be no more than eight (8) inches in width. The Utility Company will apply surfacing materials and pack the site, returning it as close as possible to the original compaction. The Utility Company will be responsible for all such crossings for a period of three (3) years, repairing during those three (3) years any damages to the road resulting from their activity. Any crossing which cannot be accomplished with this method must be bored.
6. Utility Company must comply with all terms and conditions stated herein, with particular attention to the minimum engineering standards. Failure to comply with this **CONDITIONAL CONSENT** shall cause the consent to be rescinded and Utility Company must remove facility from right-of-way immediately or be responsible for the costs incurred by the County in removing the same. The County specifically reserves the right to remove the buried transmission facility from right-of-way for non-compliance and reimbursement will be made to the County by Utility Company for doing the same.

I, the undersigned, being an authorized agent of the Utility Company described in the above, do hereby agree on behalf of the Utility Company that all terms and conditions above will be complied with, and any assignment of this buried transmission facility described above shall include an assignment of this liability to comply with the terms and conditions as stated herein.

Dated this 27th day of October 20 11 .

Julie Hamed

Signature of Authorized Agent of Utility Company

(701) 258-1110

Telephone Number

County Auditor: Please return a copy of the signed permit to:

Saddle Butte Pipeline, LLC Attn: Christian Stoddard

Company or Agent Name

858 Main Ave, Suite 301

Mailing Address

Durango, CO 81301

City, State & Zip Code

FOR COUNTY USE:

Reviewed by _____, County Engineer on 11/8/11

Permission granted by McKenzie County, a political subdivision of the State of North Dakota, for installation of the buried transmission facility proposed above under existing roads and section lines as stated above pursuant to the conditions and limitations stated this 8th day of November 20 11

_____

Chairman of the Board

McKenzie County Board of County Commissioners

Exhibit A

	ROUTE	SECTIONS	TOWNSHIP	RANGE	Crossing Method
1	Start	19	152	101	--
2	Hwy 85	19	152	101	Bore
3	Section Line	19/20	152	101	Trench
4	143rd Ave NW	19/20	152	101	Bore
5	Section Line	20/21	152	101	Trench
6	Section Line	21/28	152	101	Trench
7	Section Line	28/27	152	101	Trench
8	Section Line	27/34	152	101	Trench
9	Section Line	34/35	152	101	Trench
10	36 ½ St NW	35	152	101	Bore
11	Section Line	35/2	152/151	101	Trench
12	139th Ave NW	2/1	151	101	Bore
13	Section Line	2/1	151	101	Trench
14	Section Line	1/6	151	101/100	Trench
15	Section Line	6/7	151	100	Trench
16	~~35th St NW~~ S L	6/7	151	100	~~Bore~~ Trench
17	~~Section Line~~	~~7/18~~	~~151~~	~~100~~	~~Trench~~
18	34th St NW	18	151	100	Bore
19	Section Line	18/17	151	100	Trench
20	137th Ave NW	18/17	151	100	Bore
21	Section Line	17/20	151	100	Trench
22	Section Line	20/21	151	100	Trench
23	~~Section Line~~	~~21/22~~	~~151~~	~~100~~	~~Trench~~
24	135th St NW	21/22	151	100	Bore
25	Section Line	22/23	151	100	Trench
26	133rd Ave NW	23/24	151	100	Bore
27	Section Line	23/24	151	100	Trench
28	Section Line	24/19	151	100/99	Trench
29	~~32nd St NW~~	~~19/30~~	~~151~~	~~99~~	~~Bore~~ Trench
30	Section Line	19/30	151	99	Trench
31	131st Ave NW	30/29	151	99	Bore
32	Section Line	30/29	151	99	Trench
33	Section Line	29/32	151	99	Trench
34	31st St NW	29/32	151	99	Bore
35	Section Line	32/5	151/150	99	Trench
36	~~30th St NW~~	~~32/5~~	~~151/150~~	~~99~~	~~Bore~~

37	Section Line	5/8	150	99	Trench	✓
38	Section Line	8/17	150	99	Trench	✓
39	28th St NW	8/17	150	99	Bore	✓
40	US Hwy 85	17/20	150	99	Bore	State
41	Section Line	17/20	150	99	Trench	✓
42	Section Line	20/21	150	99	Trench	✓
43	130th Ave NW	20/21	150	99	Bore	Bore
44	Section Line	21/28	150	99	Trench	✓
45	26th St NW	21/28	150	99	Bore	Bore
46	130th Ave NW	28/29	150	99	Bore	✓
47	Section Line	28/29	150	99	Trench	✓
48	25th St NW	29/32	150	99	Bore	Bore
49	Section Line	29/32	150	99	Trench	✓
50	Section Line	32/5	150/149	99	Trench	✓
51	Section Line	5/4	149	99	Trench	✓
52	23 ½st NW	4	149	99	Bore	Bore
53	Section Line	4/3	149	99	Trench	✓
54	129th Ave NW	4/3	149	99	Bore	Bore
55	Section Line	3/10	149	99	Trench	✓
56	23rd St NW	3/10	149	99	Bore	Bore
57	Section Line	10/11	149	99	Trench	✓
58	128th Ave NW	10/11	149	99	Bore	Bore
59	Section Line	11/12	149	99	Trench	✓
60	127th Ave NW	11/12	149	99	Bore	Bore
61	End	12	149	99	--	

October 27, 2011

Mr. Michael Greer
McKenzie County
PO Box 1221
Watford City, ND 58854-1221

Re: Saddle Butte Pipeline Utility Permit

Saddle Butte Pipeline, LLC with headquarters located in Durango, Colorado hereby respectfully makes a request to McKenzie County, North Dakota, for authorization for the construction or laying of crude oil pipelines across public rights-of-way in McKenzie County. The proposed Project, called the Alexander Line, is a crude oil pipeline system consisting of approximately 34 miles of 8-inch steel crude oil pipeline in McKenzie County, North Dakota. The pipeline is in the design phase with the general locations shown on the attached map. Start of construction is anticipated in November 2011, but is dependent upon permitting, ROW acquisition, and other development activities. The construction completion date is currently anticipated for November 2011.

Enclosed is the McKenzie County Pipeline Permit application version 12/30/11 with an attached map that shows proposed route crossing. In regard to the Utility Permit application, item No. 5; it states that "Any crossing installed by trenching or plowing in may be no more than eight (8) inches in width." The proposed trench width for the Alexander pipeline will exceed eight (8) inches at all crossing locations. Saddle Butte will bore County paved roads and County roads treated with road stabilization materials as required by McKenzie County Utility Permit. Saddle Butte respectfully requests that a "slick bore" be used on these crossing instead of the casing bore. Please confirm specific locations identified on permit application that will require bored crossings and what type of crossing is permitted. Also, please advise if the County envisions or is planning road or section line improvements that would possibly impact the proposed pipeline.

If you have any questions or require additional information, please call Don Metzger at 701-258-1110 or email at don.metzger@bartwest.com. Please contact me if you have any questions or if you need to meet with a surveyor and/or Bartlett & West representative out in the field.

Thank you for your time and attention to this matter.

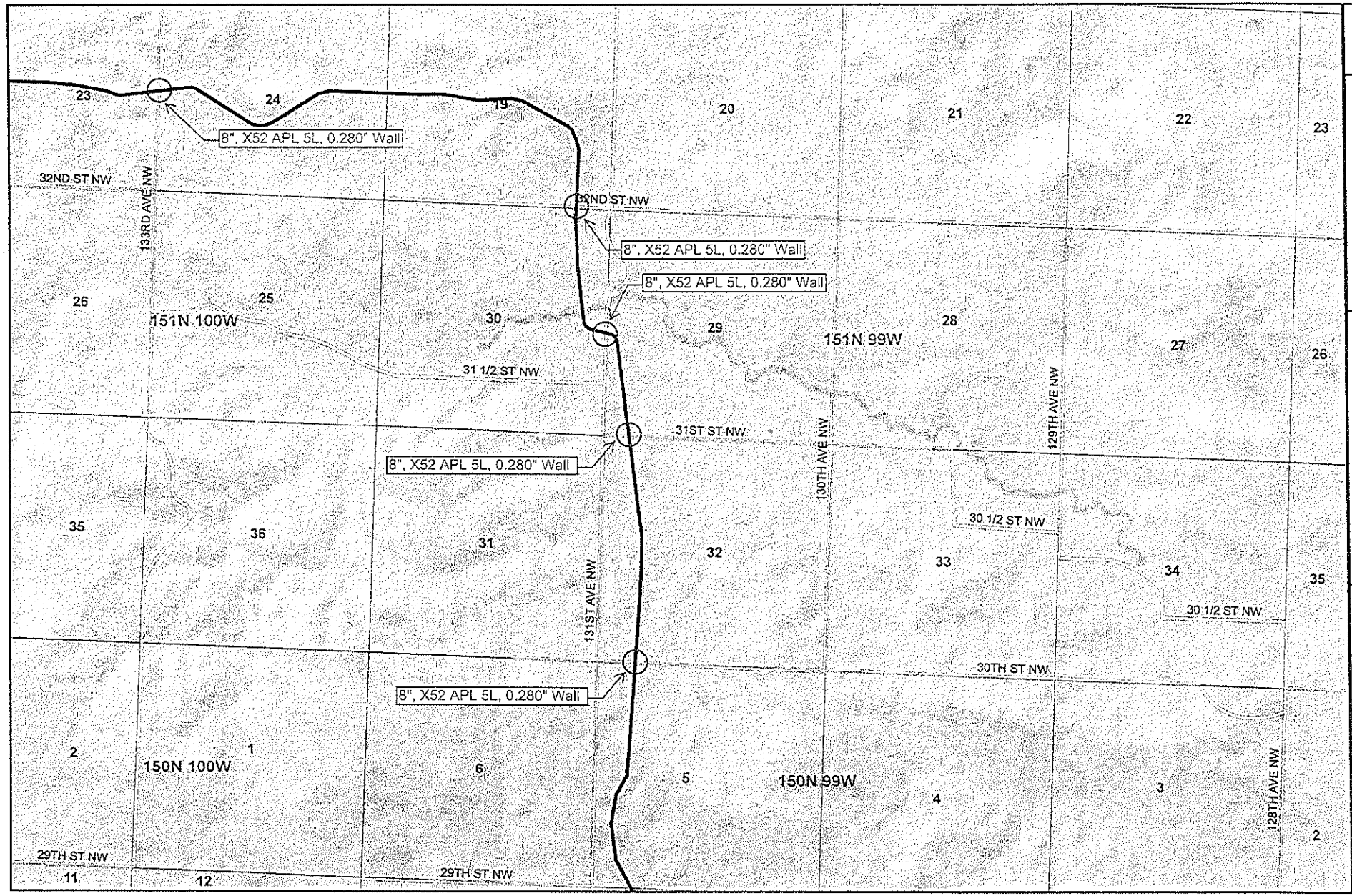
Sincerely,

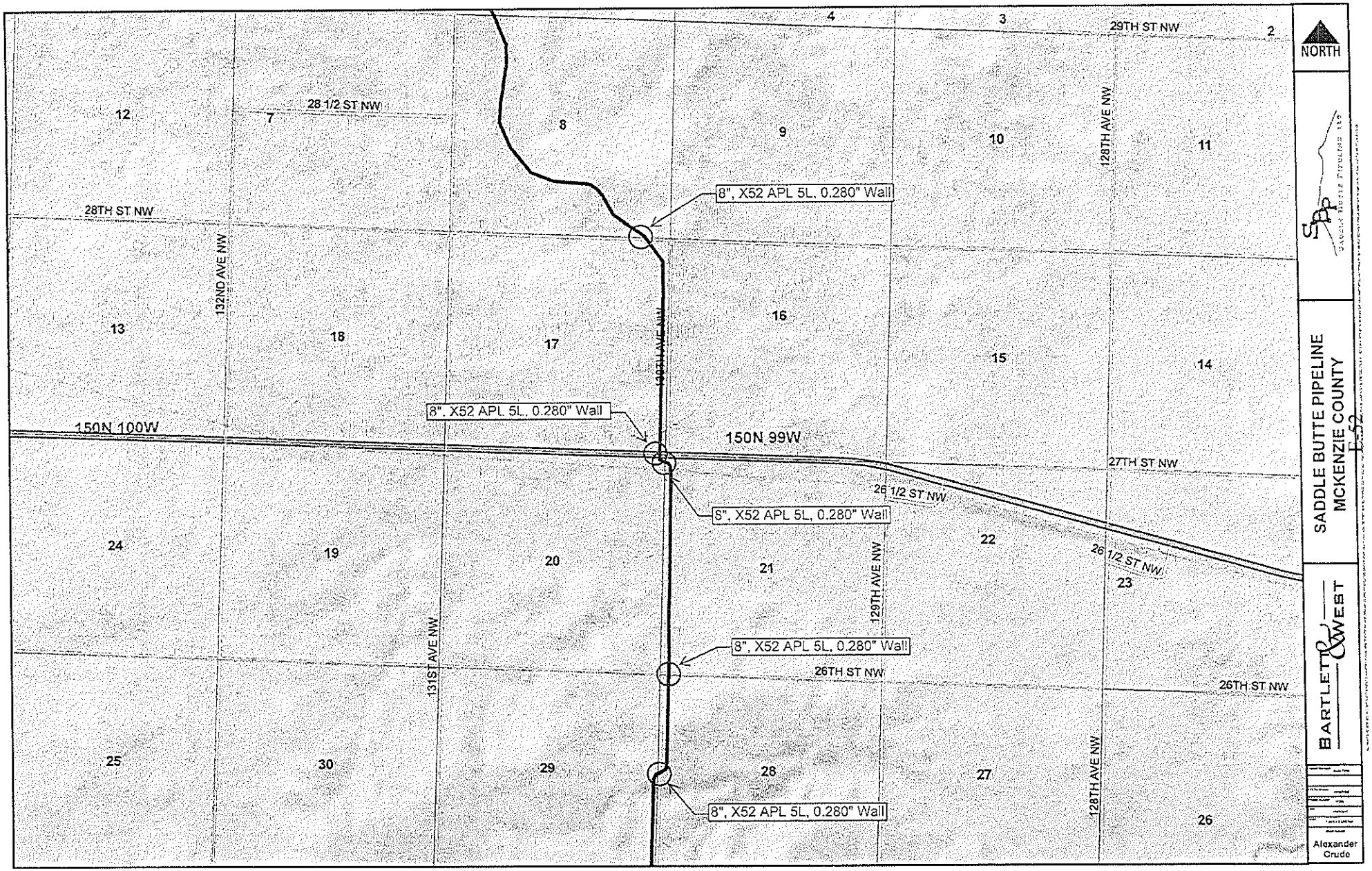
Don Metzger

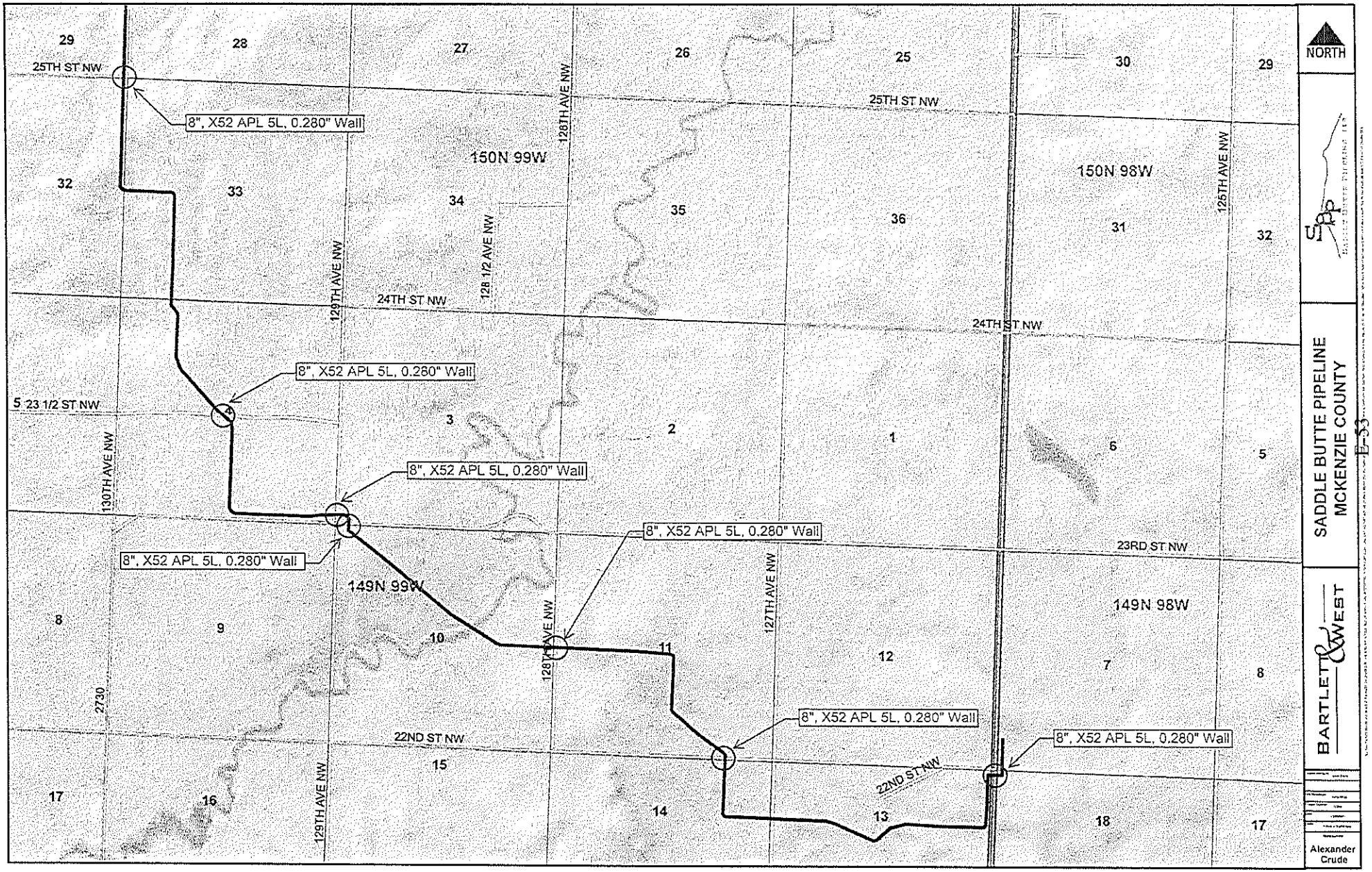
File: 17249.001 Permit Applications

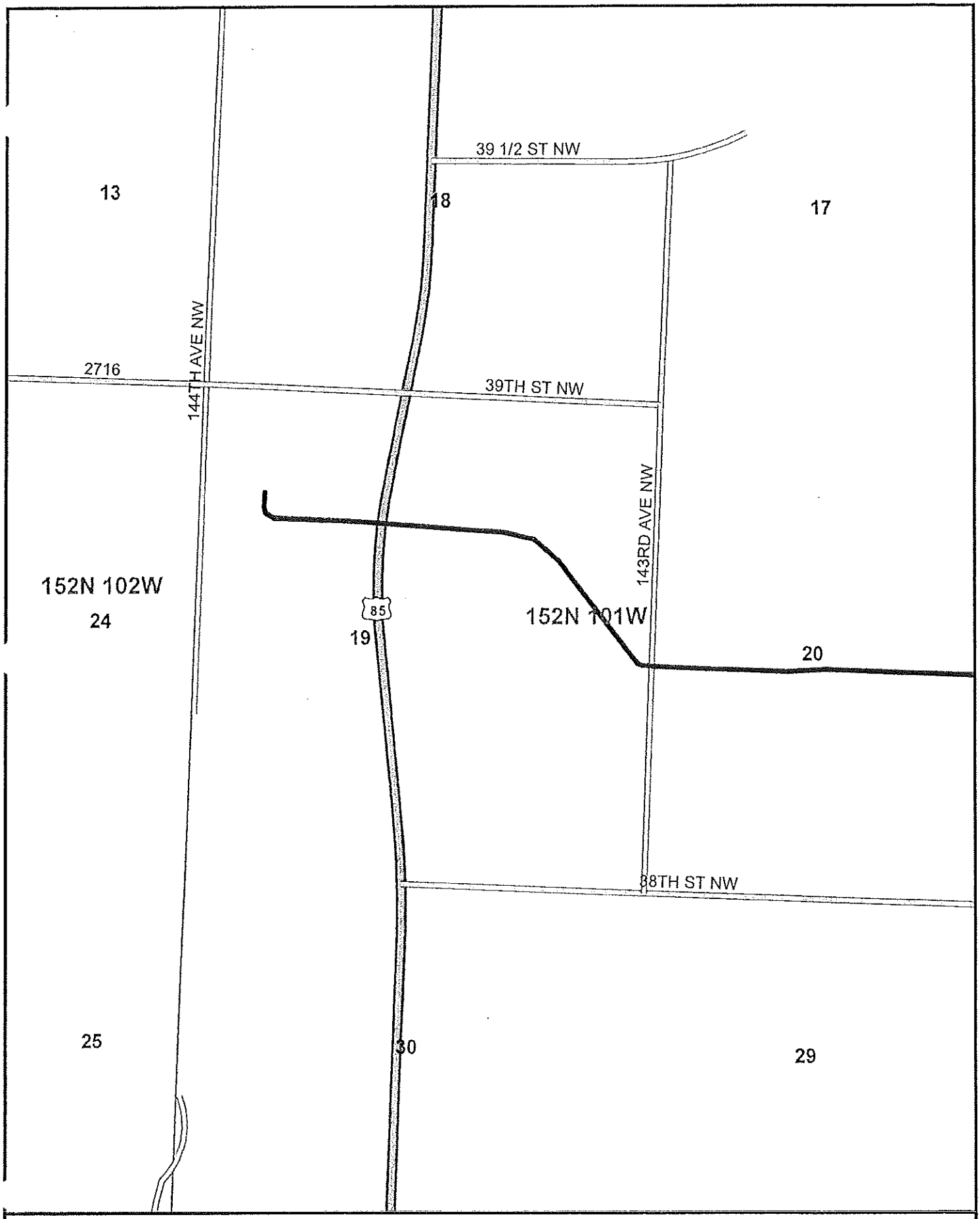
144TH AVE NW
37TH ST NW
39TH ST NW
38TH ST NW
36TH ST NW
141ST AVE NW
140 1/2 AVE NW
139TH AVE NW
387TH ST NW
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
151N 101W
152N 101W
Alexander Crude
BARTLETT & WEST
SADDLE BUTTE PIPELINE
MCKENZIE COUNTY
NORTH

NORTH
SADDLE BUTTE PIPELINE
MCKENZIE COUNTY
BARTLETT & WEST
Alexander Crude
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
136 1/2 AVE NW
35TH ST NW
34TH ST NW
33 1/2 ST NW
33RD ST NW
32ND ST NW
134TH AVE NW
137TH AVE NW
139TH AVE NW
137TH ST NW
151N 101W
151N 100W
2729


8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
32ND ST NW
32ND ST NW
133RD AVE NW
151N 100W
151N 99W
31 1/2 ST NW
31ST ST NW
130TH AVE NW
129TH AVE NW
30 1/2 ST NW
30 1/2 ST NW
131ST AVE NW
30TH ST NW
150N 100W
150N 99W
128TH AVE NW
29TH ST NW
29TH ST NW
23
24
19
20
21
22
23
26
25
30
29
28
27
26
35
36
31
32
33
34
35
2
1
6
5
4
3
2
11
12
NORTH
SADDLE BUTTE PIPELINE
MCKENZIE COUNTY
BARTLETT & WEST
Alexander Crude


NORTH
29TH ST NW
28 1/2 ST NW
28TH ST NW
132ND AVE NW
131ST AVE NW
130TH AVE NW
129TH AVE NW
128TH AVE NW
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
150N 100W
150N 99W
27TH ST NW
26 1/2 ST NW
26 1/2 ST NW
26TH ST NW
26TH ST NW
SADDLE BUTTE PIPELINE
MCKENZIE COUNTY
BARTLETT & WEST
Alexander Crude


NORTH
SADDLE BUTTE PIPELINE
MCKENZIE COUNTY
BARTLETT & WEST
Alexander Crude
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
150N 99W
150N 98W
149N 99W
149N 98W
25TH ST NW
24TH ST NW
23 1/2 ST NW
23RD ST NW
22ND ST NW
129TH AVE NW
128 1/2 AVE NW
128TH AVE NW
127TH AVE NW
125TH AVE NW
130TH AVE NW
2730



NORTH

0 250 500 750 1,000 Feet

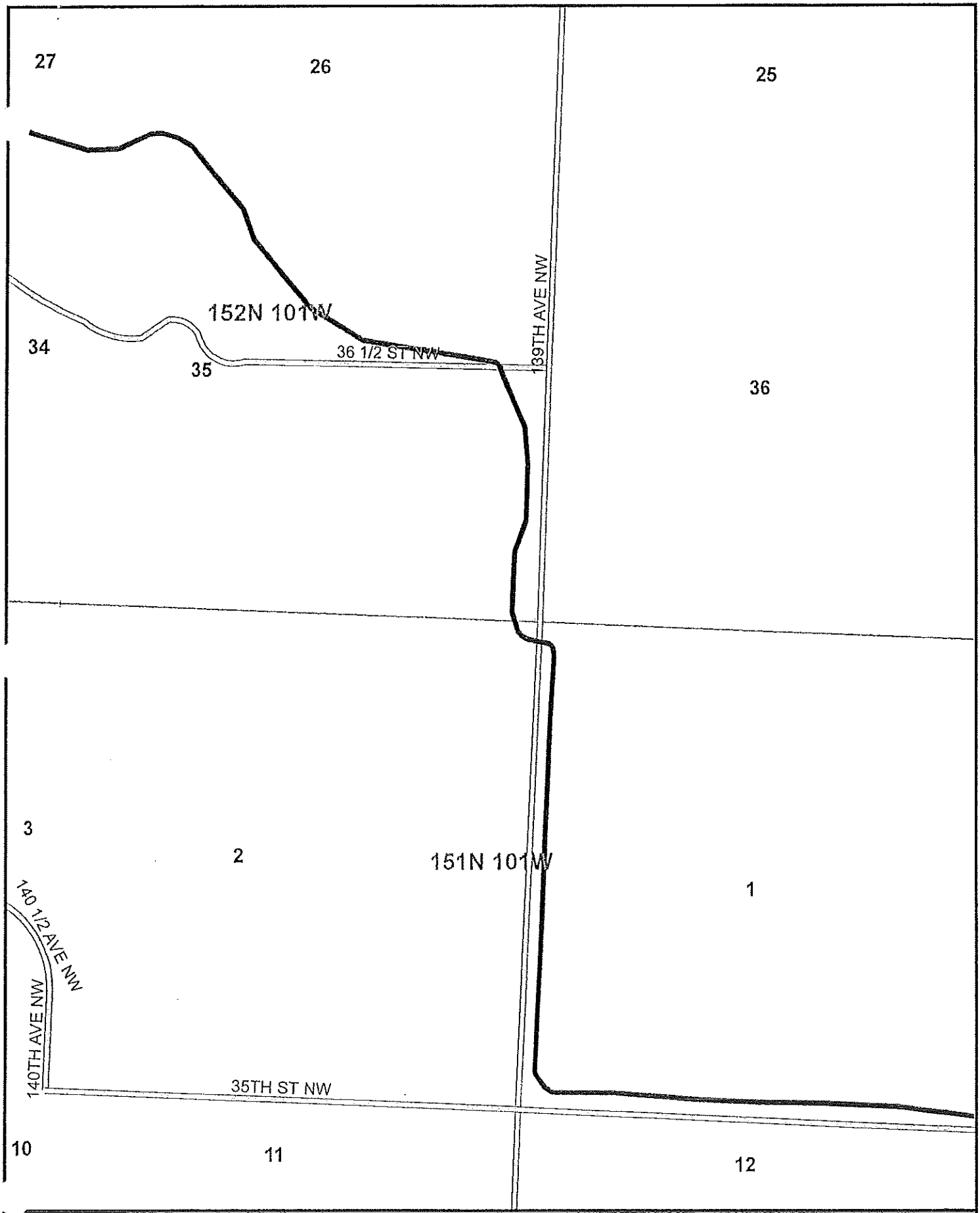
SADDLE BUTTE ALEXANDER PIPELINE ROUTE

T. 152N R. 101W

Preliminary Route and Proposed Pipeline

SPP Saddle Butter Pipeline, LLC

BARTLETT & WEST

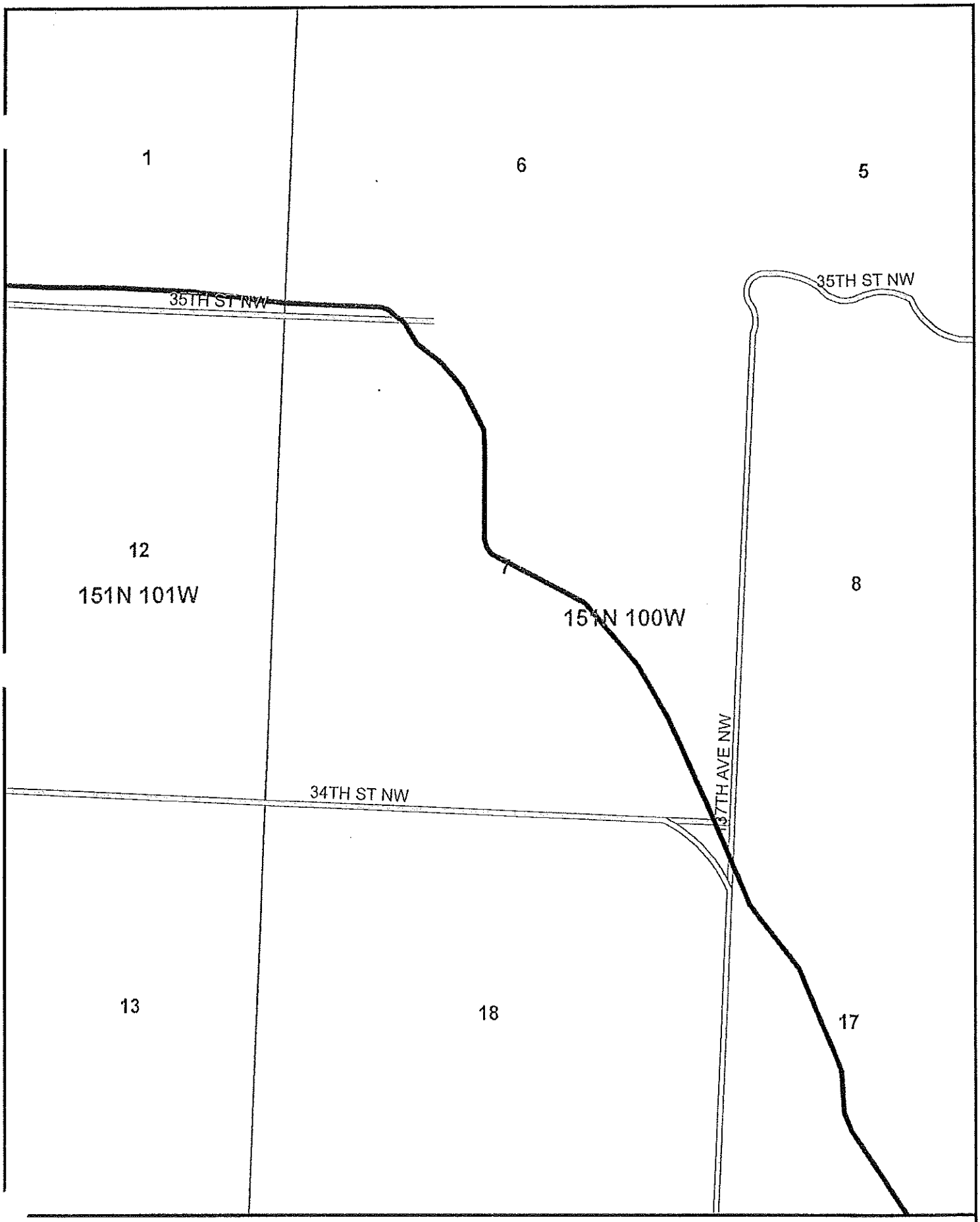


SADDLE BUTTE ALEXANDER PIPELINE ROUTE

T. 151N R. 101W

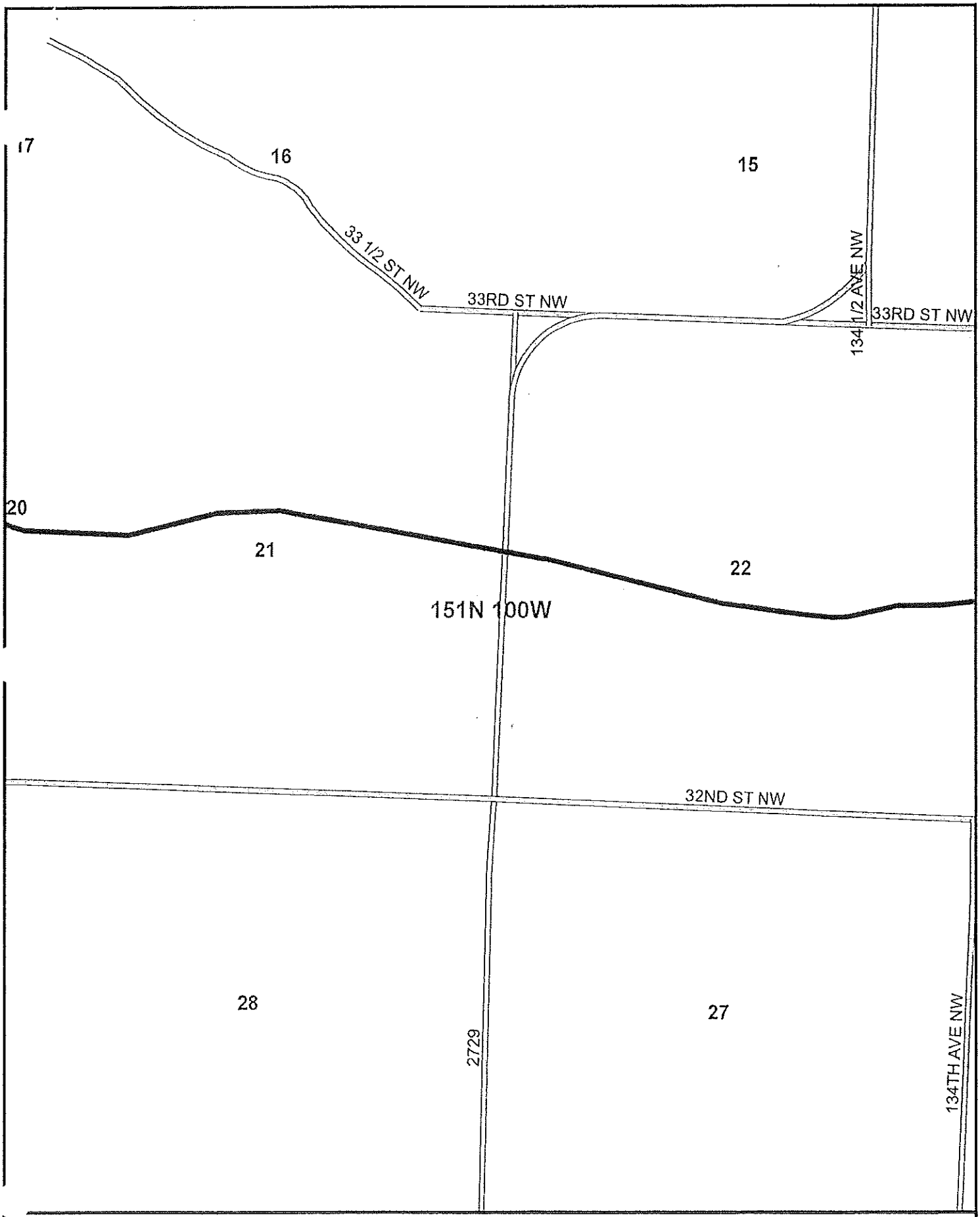
Preliminary Route and Proposed Pipeline

BARTLETT & WEST



SADDLE BUTTE ALEXANDER PIPELINE ROUTE
T. 151N R. 100W
Preliminary Route and Proposed Pipeline

BARTLETT & WEST

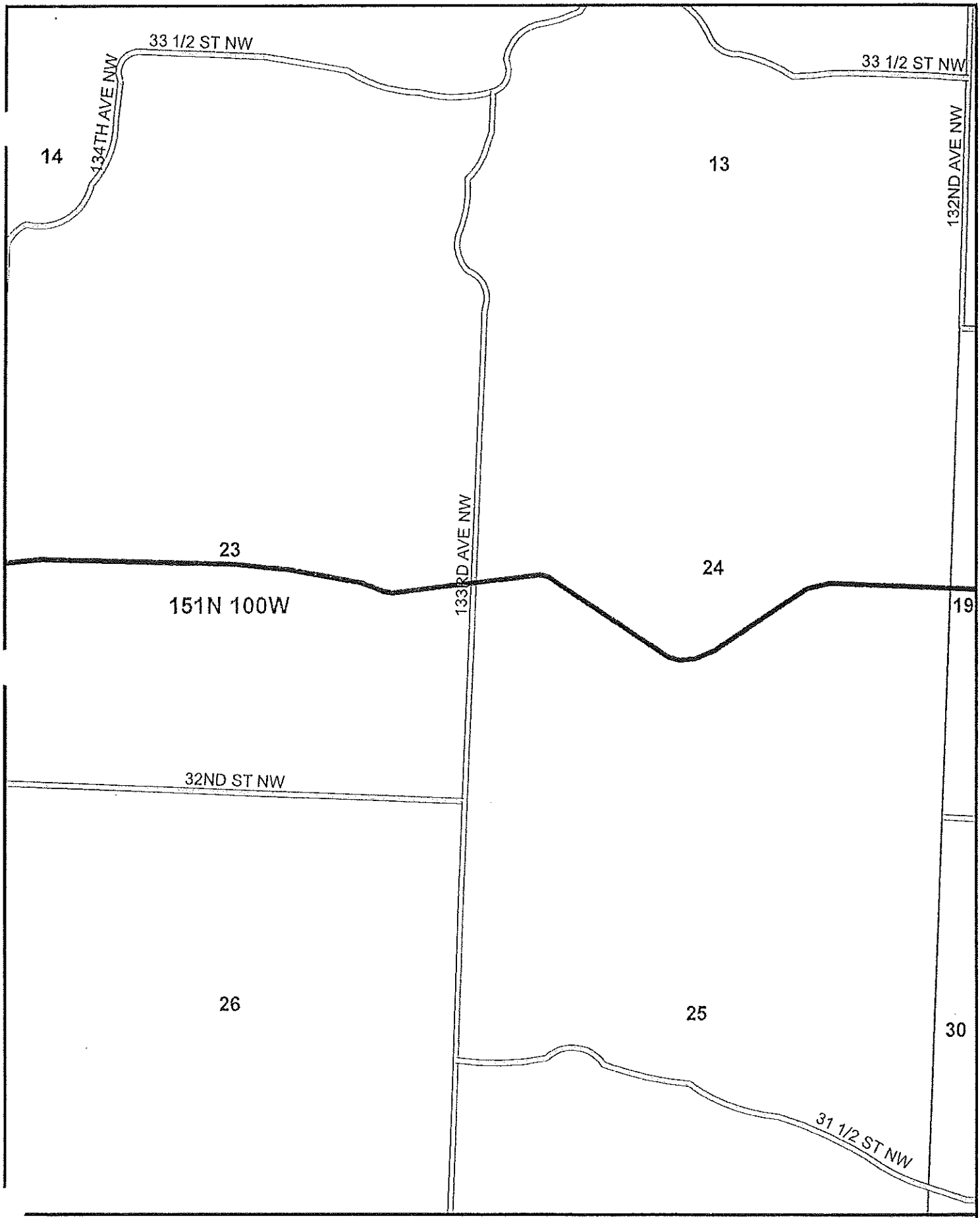


SADDLE BUTTE ALEXANDER PIPELINE ROUTE

T. 151N R. 100W

Preliminary Route and Proposed Pipeline

BARTLETT & WEST



SADDLE BUTTE ALEXANDER PIPELINE ROUTE

T. 151N R. 100W

Preliminary Route and Proposed Pipeline

BARTLETT & WEST

NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

November 23, 2011

Cole Dougherty
Saddle Butte Pipeline LLC
1504 6th Ave NE
Watford City, ND 58854

Re: NDPDES Permit No. NDG070298

We have received your "Application for Permit to Discharge - NDPDES Industrial-Short Form C" and have granted authority to discharge under the General Permit for Temporary Dewatering/Hydrostatic Testing Permit No. NDG070000. Your facility has been assigned permit no. **NDG070298.** This permit has been issued by the North Dakota Department of Health (NDDoH) with the understanding that all other applicable permits and permissions have been obtained for the start of the following project. The application indicates that the discharge(s) will consist of municipal water from Watford city for the hydrostatic testing of a new 8 inch steel pipeline:

Discharge Point	Volume (Gallons)	Location	
001H	≈ 149,000	8 Inch Pipeline	T150N, R97W, Section 34; McKenzie County

All discharge points shall be inspected daily. On a daily basis record the total volume of discharge and make a visual inspection for Oil and Grease. Analytical parameters for pH and Total Suspended Solids (TSS) shall be tested for this project. The parameter of Oil and/or Grease is waived unless sheen is observed in the discharge; if observed then collect a sample for Total Petroleum Hydrocarbon (TPH). The department shall be contacted on all findings of Oil and Grease. All discharges made directly to a surface water body or wetland shall be inspected closely so as to minimize any turbidity issues. Best Management Practices (BMPs) must be used to minimize the impact of the discharge.

ADDITIVES: No additives were reviewed for this project.

Enclosed are Discharge Monitoring Report (DMR) forms for your use. If someone else is responsible for the submittal of the DMRs, please forward this letter and the enclosed forms to them. The reports cover three months; the dates and location have been filled out. If no discharge occurs during the reporting period, check "No" in section one. The reports must be post-marked by the last day of the month following the end of each reporting period. All original DMR forms should be sent to NDDoH and a copy should be kept for your files. **EPA no longer requires a copy of the DMR form.**

If any other testing is conducted during this project, copies of the results of any such test should be forwarded to the Department. **Should you wish to no longer be covered under this permit, you must submit a written request to terminate and cite the reasons for termination.** Coverage shall be maintained until a written notification to release has been issued to the permittee by NDDoH. Should you have any questions about your permit or how to complete the DMRs, please contact me at (701) 328-5234.

Sincerely,

Marty Haroldson
Environmental Scientist
Division of Water Quality

Enc.
Cc: EPA

North Dakota Department of Transportation

Francis G. Ziegler, P.E.
Director

Jack Dalrymple
Governor

November 8, 2011

Saddle Butte Pipeline, LLC
858 Main Ave., Suite 301
Durango, CO 81301
%Bartlett & West, Inc

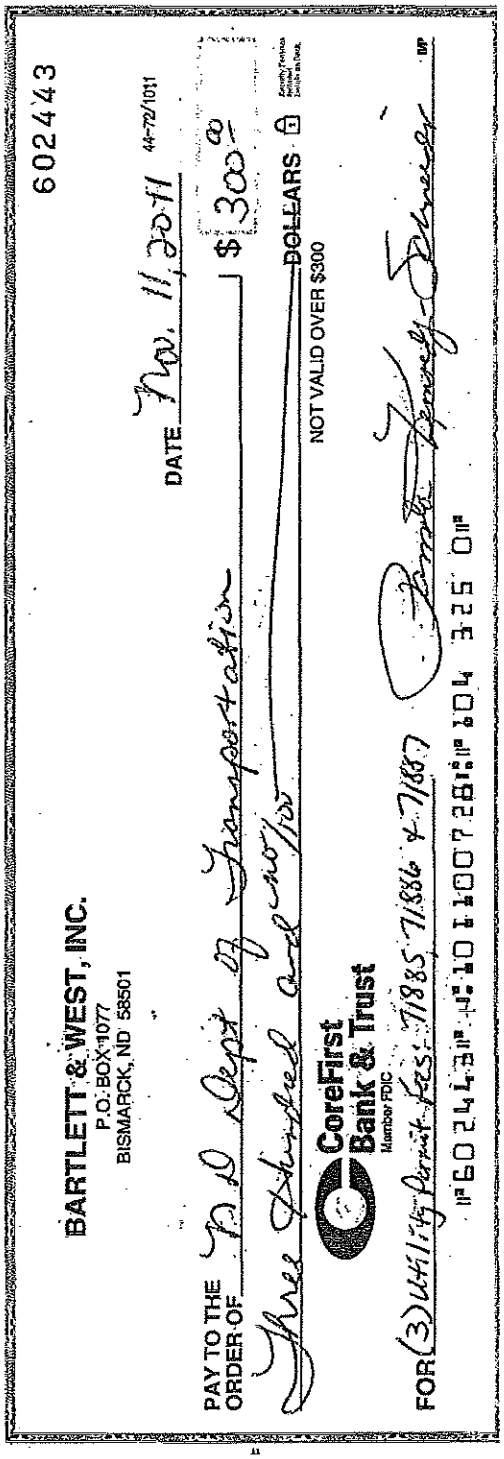
RE: UTILITY PERMITS

Permit fee for Utility Permit:

71885 is $100 ($100/crossing)
71886 is $100
71887 is $100
Total $300

Thanks,

Walter A. Peterson, Williston District Engineer
North Dakota Department of Transportation
PO Box 698, Williston, ND 58801
w-701.774.2710
wpeterso@nd.gov


602443
BARTLETT & WEST, INC.
P.O. BOX 1077
BISMARCK, ND 58501
DATE Nov. 11, 2011
44-72/1011
$ 300.00
DOLLARS
NOT VALID OVER $300
PAY TO THE ORDER OF ND Dept of Transportation
Three Hundred and no/100
CoreFirst Bank & Trust
Member FDIC
FOR (3) 71885, 71886 & 71887 Permit Fees
⑈602443⑈ ⑆104225011⑆ 104 3225 0⑈

UTILITY OCCUPANCY APPLICATION AND PERMIT

North Dakota Department of Transportation, Design Division
SFN 7995 (Rev. 04-2011)

Document Number 71885	(FOR STATE USE ONLY)	Permit Number 7-85-171.2735

APPLICANT INFORMATION

Owner of Facility	City	State	Zip Code
Saddle Butte Pipeline, LLC	Durango	CO	81301
Mailing Address			**Telephone Number**
858 Main Ave, Suite 301			(970) 375-3150
Owner's Agent	**City**	**State**	**Zip Code** / **Telephone Number**
Bartlett & West, Inc	Bismarck	ND	58503 / (701) 258-1110
Owner's Contractor	**City**	**State**	**Telephone Number**

LOCATION NO. 1 (FOR STATE USE ONLY) Begin Ref. Point 171.2735 End Ref. Point _____

Highway No. 85 ☐ Along or ☒ Across Lanes of traffic ☒ 2 ☐ 4

Direction ☒ N ☐ S ☐ E ☐ W Begin 1444 feet from reference marker 171

Direction ☒ N ☐ S ☐ E ☐ W End 1444 feet from reference marker 171

☒ N ☐ S ☐ E ☐ W from city of Alexander or _____ miles from junction highway _____

TYPE OF FACILITY (Complete appropriate spaces only.)

Description of Proposed Facility

Oil Pipeline crossing Hwy 85

Size of Facility	Number of Cables	Length of Down Guys
D = 8"		
Pipeline Pressure	**Size of Casing**	**Length of Casing**
1440 psi max		
Location of Pole(s)	**Location of Appurtenances**	**Location - Others**

TERMS AND CONDITIONS: Installation and maintenance of said facilities on highway right of way shall be subject to the North Dakota Department of Transportation's (NDDOT's) *"A Policy for Accommodation of Utilities on State Highway Right of Way"*, current edition, and the following terms and conditions, attached hereto and made a part hereof.

(A) Installation/maintenance of said facilities shall be done in a manner satisfactory to the NDDOT district engineer.

(B) Owner shall notify the NDDOT district engineer forty-eight (48) hours prior to installing, maintaining, relocating, or removing said facilities. All disturbed areas shall be restored to their original condition in a manner satisfactory to the NDDOT district engineer.

(C) The owner shall be required to wear an ANSI/ISEA 107-2004 Class II height visibility garment while within the highway right-of-way as per the requirements of 23 CFR 634.

(D) Owner shall repair or replace highway structures and appurtenances, and any existing facilities located on, over, or under highway right of way,which may be damaged as a result of the installation and maintenance of said facilities on highway right of way.

(E) The Risk Management Appendix, attached, is hereby incorporated and made a part of this agreement.

(F) Owner shall promptly remove said facilities from highway right of way, or shall relocate or adjust said facilities, at its sole cost and expense when requested to do so by NDDOT.

(G) NDDOT specifically reserves the right to revoke, or change the terms and conditions of, this Permit with or without cause and upon notice to the Owner.

Continued page 2

(H) The Owner, for him or herself, his or her personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree that (1) no person, on the grounds of race, color, national origin, sex, age, disability/handicap, or income status**, shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land and the furnishing of services thereon, no person, on the grounds of race, color, national origin, sex, age, disability/handicap, or income status**, shall be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination, (3) that the Owner shall use the premises in compliance with all other requirements imposed by or pursuant to Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted Programs of the Department of Transportation - Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations may be amended.

That in the event of breach of any of the above nondiscrimination covenants, the NDDOT shall have the right to terminate this Permit and to re-enter and repossess said land and the facilities thereon and hold the same as if said Permit had never been made or issued.

**The Act governs race, color, and national origin. Related Nondiscrimination Authorities govern sex, 23 U.S.C. 324; age, 42 U.S.C. 6101; disability/handicap, 29 U.S.C. 790; and low income, E.O. 12898.

(I) The installation shall be completed on or before November 30, 20 11

11/3/2011
DATE

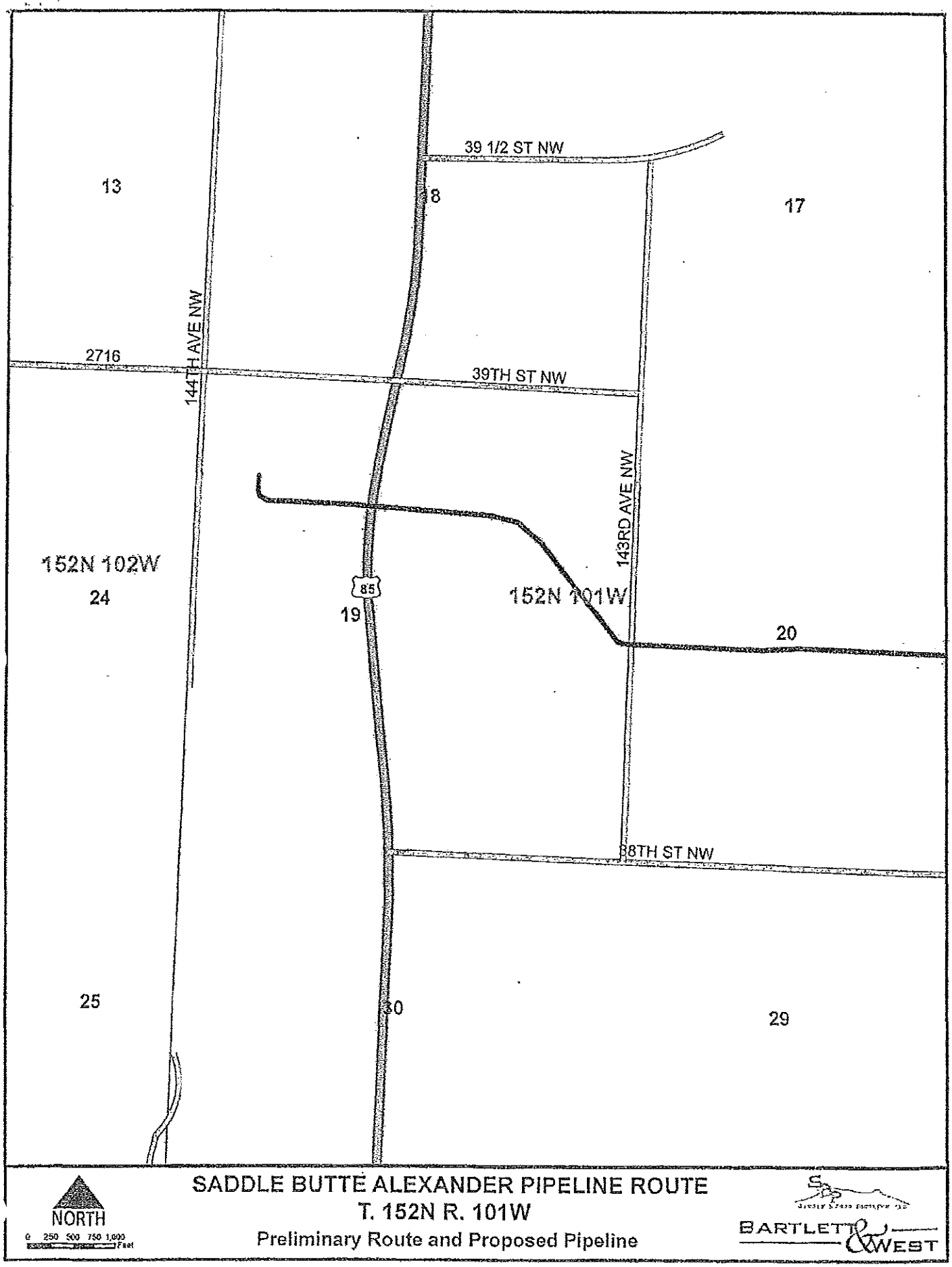
OWNER'S SIGNATURE

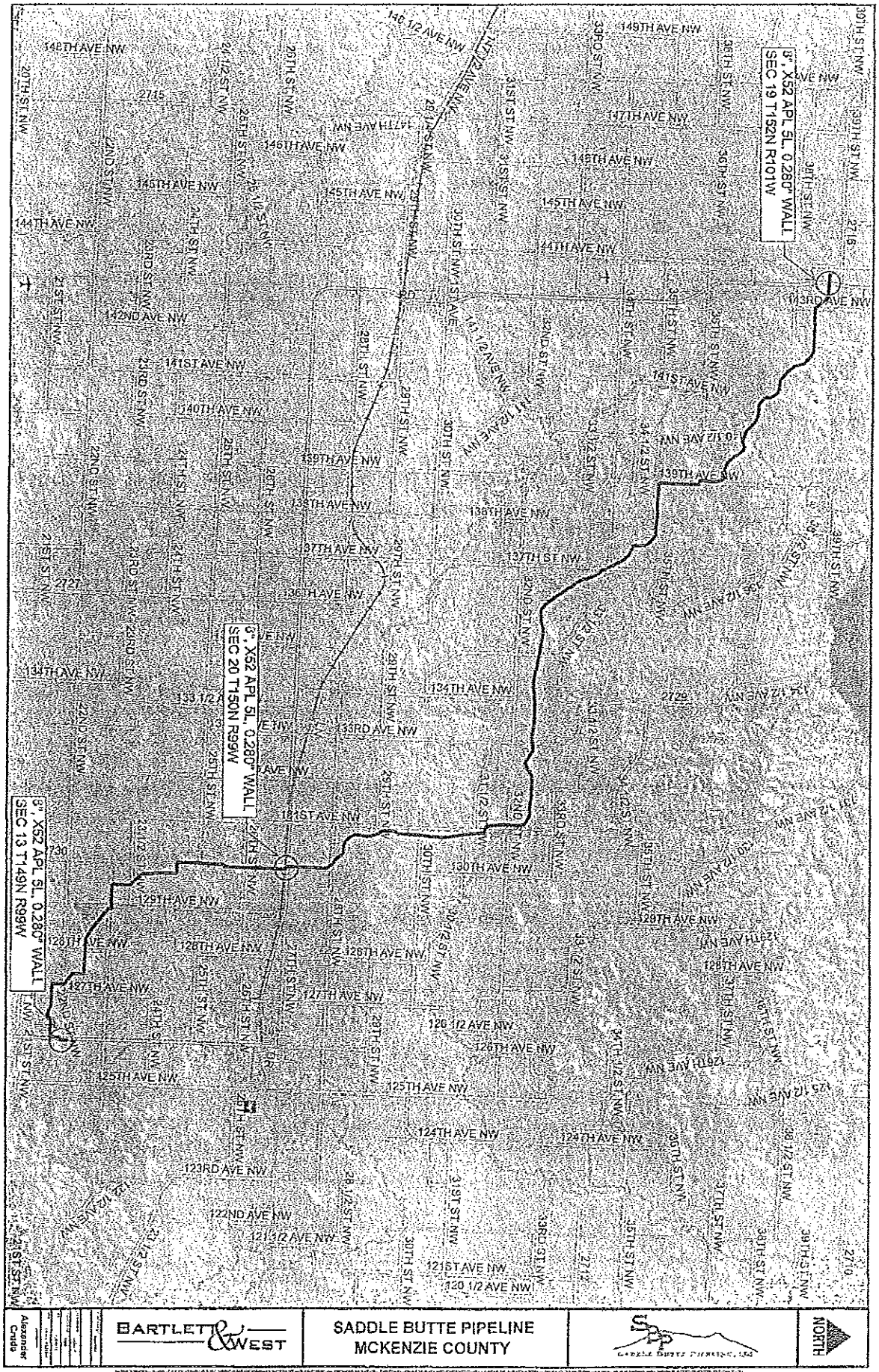
The Owner is hereby granted permission to install and maintain the facilities applied for, as shown on the plans attached hereto and made a part hereof.
Approved by NDDOT this 8 day of NOV, 20 11.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

Walter A. Peterson
DISTRICT ENGINEER (TYPE OR PRINT)

SIGNATURE


39 1/2 ST NW
13
18
17
144TH AVE NW
2716
39TH ST NW
143RD AVE NW
152N 102W
24
85
19
152N 101W
20
38TH ST NW
25
30
29
NORTH
0 250 500 750 1,000
Feet
SADDLE BUTTE ALEXANDER PIPELINE ROUTE
T. 152N R. 101W
Preliminary Route and Proposed Pipeline
BARTLETT & WEST


8", X52 APL 5L, 0.280" WALL
SEC 19 T152N R101W
8", X52 APL 5L, 0.280" WALL
SEC 20 T150N R99W
8", X52 APL 5L, 0.280" WALL
SEC 13 T149N R99W
BARTLETT & WEST
SADDLE BUTTE PIPELINE
MCKENZIE COUNTY
NORTH

UTILITY OCCUPANCY APPLICATION AND PERMIT

North Dakota Department of Transportation, Design Division
SFN 7995 (Rev. 04-2011)

Document Number 71886	(FOR STATE USE ONLY)	Permit Number 7-85-146.3551

APPLICANT INFORMATION

Owner of Facility	City	State	Zip Code
Saddle Butte Pipeline, LLC	Durango	CO	81301
Mailing Address			**Telephone Number**
858 Main Ave, Suite 301			(970) 375-3150
Owner's Agent	**City**	**State** / **Zip Code**	**Telephone Number**
Bartlett & West, Inc	Bismarck	ND 58503	(701) 258-1110
Owner's Contractor	**City**	**State**	**Telephone Number**

LOCATION NO. 1 (FOR STATE USE ONLY) Begin Ref. Point 146.3551 End Ref. Point _____

Highway No. 85 ☐ Along or ☒ Across Lanes of traffic ☒ 2 ☐ 4

Direction ☐ N ☐ S ☐ E ☒ W Begin 1875 feet from reference marker 146

Direction ☐ N ☐ S ☐ E ☒ W End 1875 feet from reference marker 146

☐ N ☐ S ☐ E ☒ W from city of Watford City or _____ miles from junction highway _____

TYPE OF FACILITY (Complete appropriate spaces only.)

Description of Proposed Facility
Oil Pipeline crossing Hwy 85

Size of Facility	Number of Cables	Length of Down Guys
D = 8"		
Pipeline Pressure	**Size of Casing**	**Length of Casing**
1440 psi max		
Location of Pole(s)	**Location of Appurtenances**	**Location - Others**

TERMS AND CONDITIONS: Installation and maintenance of said facilities on highway right of way shall be subject to the North Dakota Department of Transportation's (NDDOT's) *"A Policy for Accommodation of Utilities on State Highway Right of Way"*, current edition, and the following terms and conditions, attached hereto and made a part hereof.

(A) Installation/maintenance of said facilities shall be done in a manner satisfactory to the NDDOT district engineer,

(B) Owner shall notify the NDDOT district engineer forty-eight (48) hours prior to installing, maintaining, relocating, or removing said facilities. All disturbed areas shall be restored to their original condition in a manner satisfactory to the NDDOT district engineer.

(C) The owner shall be required to wear an ANSI/ISEA 107-2004 Class II height visibility garment while within the highway right-of-way as per the requirements of 23 CFR 634.

(D) Owner shall repair or replace highway structures and appurtenances, and any existing facilities located on, over, or under highway right of way,which may be damaged as a result of the installation and maintenance of said facilities on highway right of way.

(E) The Risk Management Appendix, attached, is hereby incorporated and made a part of this agreement.

(F) Owner shall promptly remove said facilities from highway right of way, or shall relocate or adjust said facilities, at its sole cost and expense when requested to do so by NDDOT.

(G) NDDOT specifically reserves the right to revoke, or change the terms and conditions of, this Permit with or without cause and upon notice to the Owner.

Continued page 2

(H) The Owner, for him or herself, his or her personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree that (1) no person, on the grounds of race, color, national origin, sex, age, disability/handicap, or income status**, shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land and the furnishing of services thereon, no person, on the grounds of race, color, national origin, sex, age, disability/handicap, or income status**, shall be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination, (3) that the Owner shall use the premises in compliance with all other requirements imposed by or pursuant to Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted Programs of the Department of Transportation - Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations may be amended.

That in the event of breach of any of the above nondiscrimination covenants, the NDDOT shall have the right to terminate this Permit and to re-enter and repossess said land and the facilities thereon and hold the same as if said Permit had never been made or issued.

**The Act governs race, color, and national origin. Related Nondiscrimination Authorities govern sex, 23 U.S.C. 324; age, 42 U.S.C. 6101; disability/handicap, 29 U.S.C. 790; and low income, E.O. 12898.

(I) The installation shall be completed on or before November 30, 20 11

11/3/2011
DATE

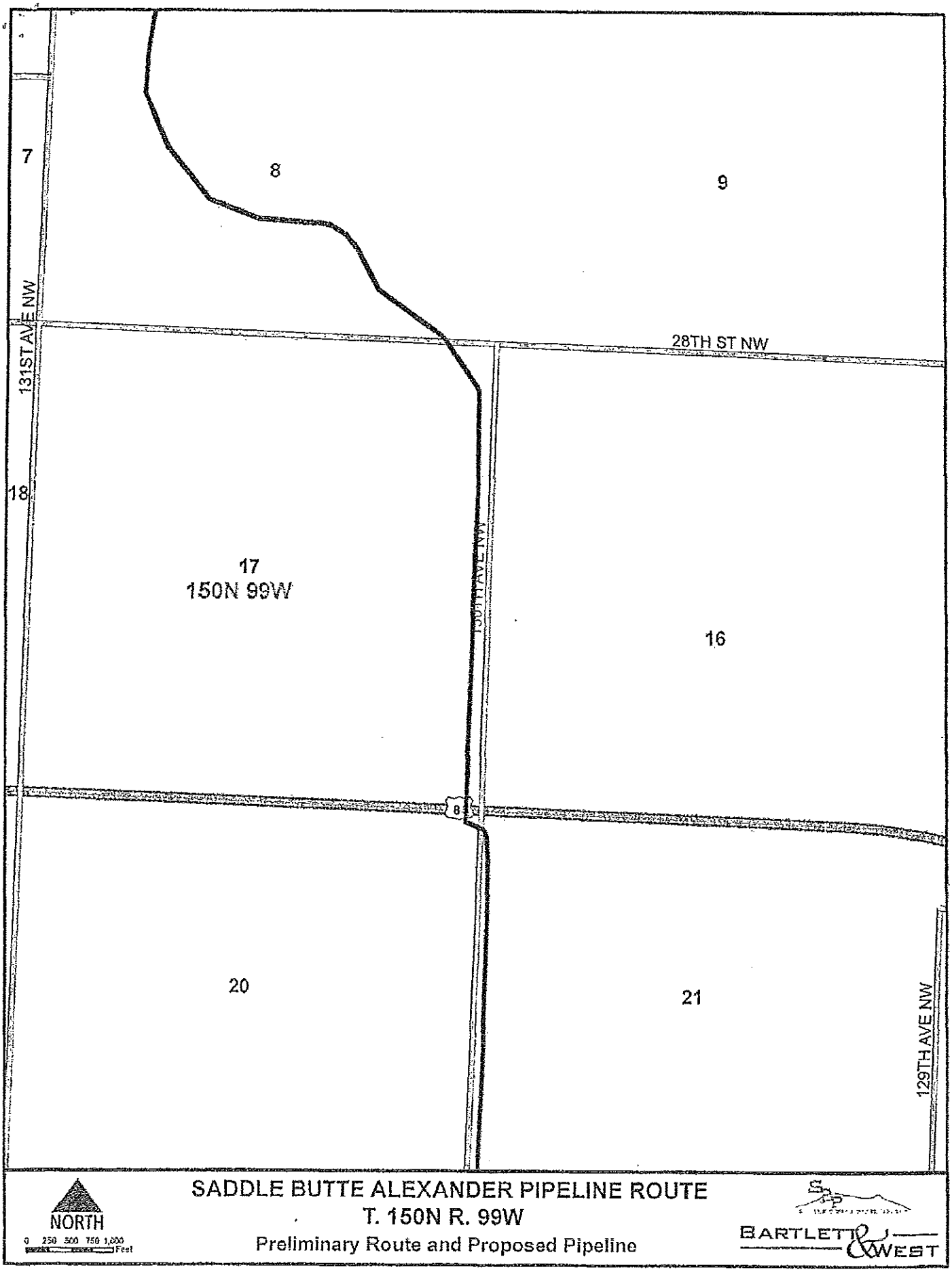
OWNER'S SIGNATURE

The Owner is hereby granted permission to install and maintain the facilities applied for, as shown on the plans attached hereto and made a part hereof.
Approved by NDDOT this 8 day of NOV, 20 11.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

Walter A. Peterson
DISTRICT ENGINEER (TYPE OR PRINT)

SIGNATURE


7
8
9
131ST AVE NW
28TH ST NW
18
17
150N 99W
SUTTON AVE NW
16
8
20
21
129TH AVE NW
NORTH
0 250 500 750 1,000
Feet
SADDLE BUTTE ALEXANDER PIPELINE ROUTE
T. 150N R. 99W
Preliminary Route and Proposed Pipeline
BARTLETT & WEST

UTILITY OCCUPANCY APPLICATION AND PERMIT

North Dakota Department of Transportation, Design Division
SFN 7995 (Rev. 04-2011)

Document Number 71887	(FOR STATE USE ONLY)	Permit Number 7-85-137.6144

APPLICANT INFORMATION

Owner of Facility	City	State	Zip Code
Saddle Butte Pipeline, LLC	Durango	CO	81301
Mailing Address			**Telephone Number**
858 Main Ave, Suite 301			(970) 375-3150
Owner's Agent	**City**	**State**	**Zip Code** / **Telephone Number**
Bartlett & West, Inc	Bismarck	ND	58503 / (701) 258-1110
Owner's Contractor	**City**	**State**	**Telephone Number**

LOCATION NO. 1 (FOR STATE USE ONLY) Begin Ref. Point 137.6144 End Ref. Point

Highway No. 85 ☐ Along or ☒ Across Lanes of traffic ☒ 2 ☐ 4

Direction ☐ N ☒ S ☐ E ☐ W Begin 2036 feet from reference marker 138

Direction ☐ N ☒ S ☐ E ☐ W End 2036 feet from reference marker 138

☐ N ☒ S ☐ E ☐ W from city of Watford City or _____ miles from junction highway _____

TYPE OF FACILITY (Complete appropriate spaces only.)

Description of Proposed Facility
Oil Pipeline crossing Hwy 85

Size of Facility	Number of Cables	Length of Down Guys
D = 8"		
Pipeline Pressure	**Size of Casing**	**Length of Casing**
1440 psi max		
Location of Pole(s)	**Location of Appurtenances**	**Location - Others**

TERMS AND CONDITIONS: Installation and maintenance of said facilities on highway right of way shall be subject to the North Dakota Department of Transportation's (NDDOT's) "*A Policy for Accommodation of Utilities on State Highway Right of Way*", current edition, and the following terms and conditions, attached hereto and made a part hereof.

(A) Installation/maintenance of said facilities shall be done in a manner satisfactory to the NDDOT district engineer,

(B) Owner shall notify the NDDOT district engineer forty-eight (48) hours prior to installing, maintaining, relocating, or removing said facilities. All disturbed areas shall be restored to their original condition in a manner satisfactory to the NDDOT district engineer.

(C) The owner shall be required to wear an ANSI/ISEA 107-2004 Class II height visibility garment while within the highway right-of-way as per the requirements of 23 CFR 634.

(D) Owner shall repair or replace highway structures and appurtenances, and any existing facilities located on, over, or under highway right of way,which may be damaged as a result of the installation and maintenance of said facilities on highway right of way.

(E) The Risk Management Appendix, attached, is hereby incorporated and made a part of this agreement.

(F) Owner shall promptly remove said facilities from highway right of way, or shall relocate or adjust said facilities, at its sole cost and expense when requested to do so by NDDOT.

(G) NDDOT specifically reserves the right to revoke, or change the terms and conditions of, this Permit with or without cause and upon notice to the Owner.

Continued page 2

(H) The Owner, for him or herself, his or her personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree that (1) no person, on the grounds of race, color, national origin, sex, age, disability/handicap, or income status**, shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land and the furnishing of services thereon, no person, on the grounds of race, color, national origin, sex, age, disability/handicap, or income status**, shall be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination, (3) that the Owner shall use the premises in compliance with all other requirements imposed by or pursuant to Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted Programs of the Department of Transportation - Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations may be amended.

That in the event of breach of any of the above nondiscrimination covenants, the NDDOT shall have the right to terminate this Permit and to re-enter and repossess said land and the facilities thereon and hold the same as if said Permit had never been made or issued.

**The Act governs race, color, and national origin. Related Nondiscrimination Authorities govern sex, 23 U.S.C. 324; age, 42 U.S.C. 6101; disability/handicap, 29 U.S.C. 790; and low income, E.O. 12898.

(I) The installation shall be completed on or before November 30, 20 11

11/3/2011
DATE

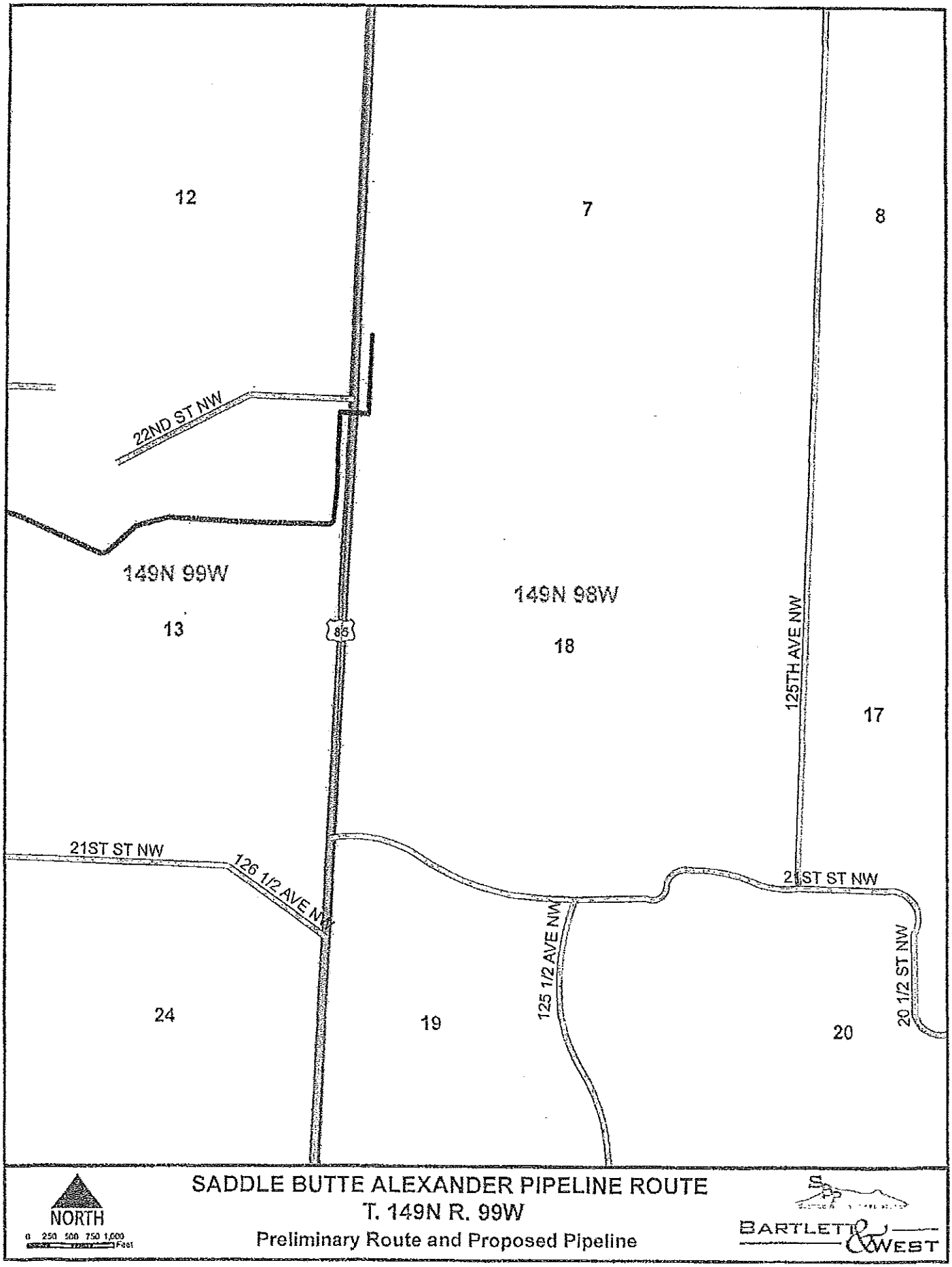
OWNER'S SIGNATURE

The Owner is hereby granted permission to install and maintain the facilities applied for, as shown on the plans attached hereto and made a part hereof.
Approved by NDDOT this 8 day of NOV, 20 11.

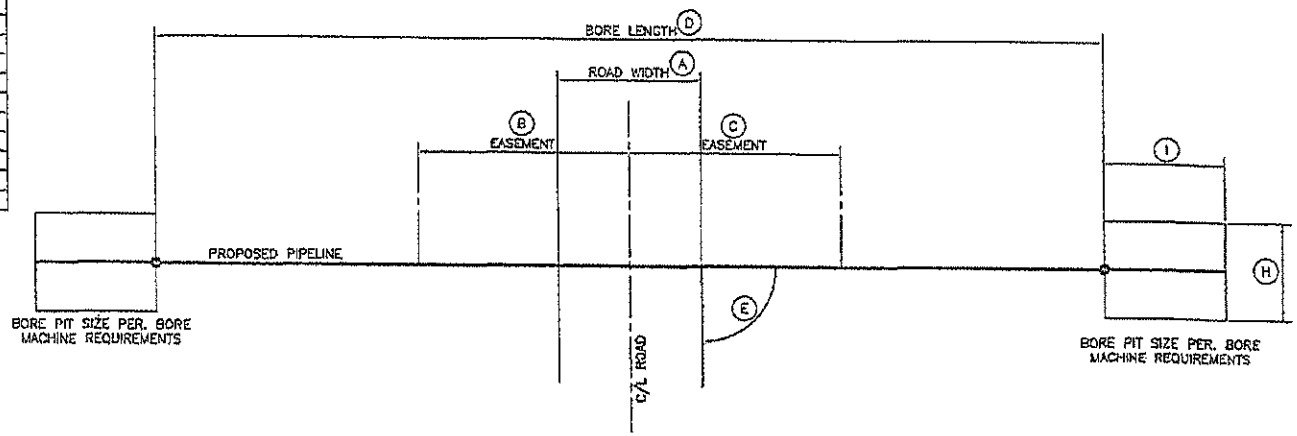
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

WALTER A. PETERSEN
DISTRICT ENGINEER (TYPE OR PRINT)

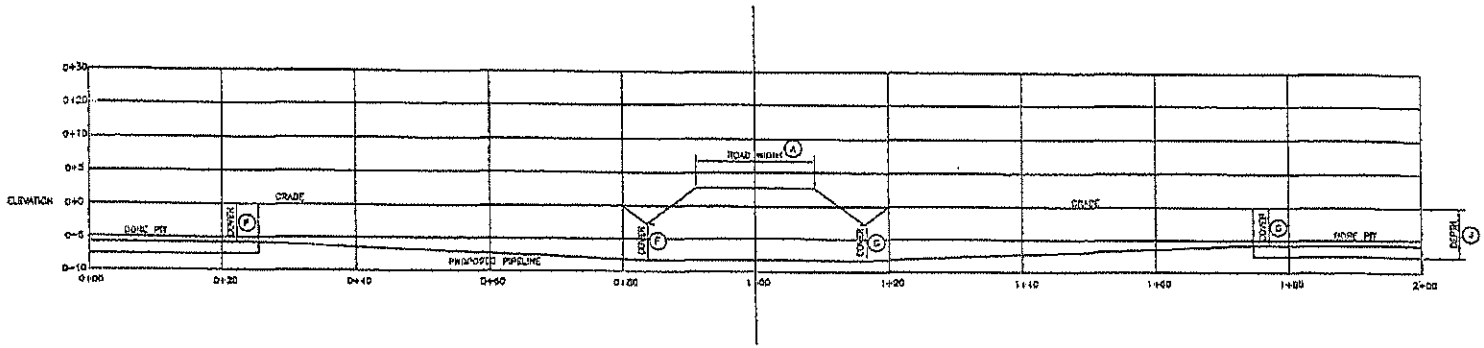
SIGNATURE


12
7
8
22ND ST NW
149N 99W
13
85
149N 98W
18
125TH AVE NW
17
21ST ST NW
126 1/2 AVE NW
21ST ST NW
125 1/2 AVE NW
20 1/2 ST NW
24
19
20
NORTH
0 250 500 750 1,000 Feet
SADDLE BUTTE ALEXANDER PIPELINE ROUTE
T. 149N R. 99W
Preliminary Route and Proposed Pipeline
BARTLETT & WEST

TYPICAL CROSSING DETAIL		
	DESCRIPTION	DIMENSION
A	ROAD WIDTH	30 ft
B	EASEMENT R	100 Ft
C	EASEMENT L	100 Ft
D	BORE LENGTH	APROX. 300 ft
E	CROSSING ANGLE	90 deg
F	DEPTH OF COVER	6'-0" min
G	DEPTH OF COVER	6'-0" min
H	PIT WIDTH	25'-0"
I	PIT LENGTH	17'-0"
J	PIT DEPTH	7'-0"



PLAN VIEW



SECTION VIEW

BARTLETT & WEST

TYPICAL PIPELINE CROSSING

Permit #: SB10271CS

CONSENT FOR UTILITY COMPANY
TO
CROSS A PUBLIC ROAD OR SECTION ROAD

Saddle Butte Pipeline, LLC (Company) of 858 Main Ave, Suite 301, Durango, CO 81301 (Address)

Hereinafter referred to as "Utility Company", having requested permission from McKenzie County, a political subdivision of the State of North Dakota, to cross an existing road or section line with a buried transmission facility designed to carry or conduct oil, gas, water, electricity, telephone or any other substance or service whatsoever, and McKenzie County having considered the request does grant consent to cross the following described existing road or section line, upon the terms and conditions herein stated:

NOTE: All improved county roads require a bore.

(Please include County Route #'s as applicable**)**

Route See Exhibit A in Section(s) _____, Township _____ N, Range _____ W

Route _____ in Section(s) _____, Township _____ N, Range _____ W

Route _____ in Section(s) _____, Township _____ N, Range _____ W

Route _____ in Section(s) _____, Township _____ N, Range _____ W

Route _____ in Section(s) _____, Township _____ N, Range _____ W

Open Trench & Slick Bore

(Attach Maps and Construction Plans**)**

At a minimum, acceptable plans will include method of crossing existing roads or section lines and size and material used for the buried facility.

Consent to cross such existing road or section line is granted on these terms and conditions:

1. Utility Company must pay for all damage to the existing road caused by its activities, including but not limited to slumping in of trenches and collapse of pipe.
2. Utility Company is responsible for any and all claims of damage, personal injury, or bodily injury that might result from their activities in crossing any existing road or section line in McKenzie County. Furthermore, Utility Company agrees to indemnify and hold harmless any type of claim for damages of any nature whatsoever, whether valid or invalid, that is made against McKenzie County on account of the activities conducted by the Utility Company in crossing any existing road or section line.
3. When the Utility Company crosses an existing road or a section line, the Utility Company shall be responsible to pay for all costs of moving, relocating, or reconstructing the buried transmission facility should McKenzie County deem it necessary or advisable, in its sole

discretion, to repair or reconstruct existing roads or to build new roads on section lines or off section lines as allowed by North Dakota law. Should the Utility Company fail to take necessary steps to relocate or reconstruct its buried transmission facility, the County may take steps to have the same accomplished, and the Utility Company agrees to reimburse the County for all expenses incurred by McKenzie County in moving, relocating or reconstructing the buried transmission facility so the existing roads may be repaired or reconstructed, or new roads may be built on the section line or off the section line as allowed by North Dakota law.

4. The buried transmission facility to be installed by the Utility Company in crossing any existing road shall at a minimum comply with the following engineering standards:
   (a) County paved roads or County roads treated with road stabilization materials may **ONLY** be **BORED.**
   (b) All crossings of existing roads not trenched as in Section 5 below shall be bored to a depth of five (5) feet below original ground or ditch elevations.
   (c) Pipe shall be cased or heavy wall pipe used.
   (d) All parallel borings must be a minimum of thirty (30) feet from road centerline.
   (e) Vent pipes must be outside existing right-of-way lines or thirty-three (33) feet from road center, whichever is greater.
   (f) All disturbed ground within right-of-way must be rehabilitated by covering with black dirt and seeding with an approved mix.
   (g) If vent pipes are not used within the ten (10) feet of both sides of right-of-way, the transmission facility must have markers on the right-of-way line or thirty-three (33) foot line, whichever is greater, on both sides of the road.
   (h) The Utility Company's plan to bury a transmission facility filed with the County Engineer must show at a minimum, in plain view and cross sectional view, the location of the crossing from a section or quarter line; section, township and range the crossing is located in; the location of vent pipes, if any, in proximity to the crossing; and the angle of crossing.
   (i) The Utility Company's plan must be submitted to the Office of the County Engineer for review prior to consideration by the Board at least two (2) weeks prior to the commencement of the project.
5. Any crossing installed by trenching or plowing in may be no more than eight (8) inches in width. The Utility Company will apply surfacing materials and pack the site, returning it as close as possible to the original compaction. The Utility Company will be responsible for all such crossings for a period of three (3) years, repairing during those three (3) years any damages to the road resulting from their activity. Any crossing which cannot be accomplished with this method must be bored.
6. Utility Company must comply with all terms and conditions stated herein, with particular attention to the minimum engineering standards. Failure to comply with this **CONDITIONAL CONSENT** shall cause the consent to be rescinded and Utility Company must remove facility from right-of-way immediately or be responsible for the costs incurred by the County in removing the same. The County specifically reserves the right to remove the buried transmission facility from right-of-way for non-compliance and reimbursement will be made to the County by Utility Company for doing the same.

I, the undersigned, being an authorized agent of the Utility Company described in the above, do hereby agree on behalf of the Utility Company that all terms and conditions above will be complied with, and any assignment of this buried transmission facility described above shall include an assignment of this liability to comply with the terms and conditions as stated herein.

Dated this 27th day of October 20 11.

Julie Hamer

Signature of Authorized Agent of Utility Company

(701) 258-1110

Telephone Number

County Auditor: Please return a copy of the signed permit to:

Saddle Butte Pipeline, LLC Attn: Christian Stoddard

Company or Agent Name

858 Main Ave, Suite 301

Mailing Address

Durango, CO 81301

City, State & Zip Code

FOR COUNTY USE:

Reviewed by _____, County Engineer on 11/8/11

Permission granted by McKenzie County, a political subdivision of the State of North Dakota, for installation of the buried transmission facility proposed above under existing roads and section lines as stated above pursuant to the conditions and limitations stated this 8th day of November 20 11

_____

Chairman of the Board

McKenzie County Board of County Commissioners

Exhibit A

	ROUTE	SECTIONS	TOWNSHIP	RANGE	Crossing Method
1	Start	19	152	101	--
2	Hwy 85	19	152	101	Bore
3	Section Line	19/20	152	101	Trench
4	143rd Ave NW	19/20	152	101	Bore
5	Section Line	20/21	152	101	Trench
6	Section Line	21/28	152	101	Trench
7	Section Line	28/27	152	101	Trench
8	Section Line	27/34	152	101	Trench
9	Section Line	34/35	152	101	Trench
10	36 ½ St NW	35	152	101	Bore
11	Section Line	35/2	152/151	101	Trench
12	139th Ave NW	2/1	151	101	Bore
13	Section Line	2/1	151	101	Trench
14	Section Line	1/6	151	101/100	Trench
15	Section Line	6/7	151	100	Trench
16	~~35th St NW~~ S L	6/7	151	100	~~Bore~~ Trench
17	~~Section Line~~	~~7/18~~	~~151~~	~~100~~	~~Trench~~
18	34th St NW	18	151	100	Bore
19	Section Line	18/17	151	100	Trench
20	137th Ave NW	18/17	151	100	Bore
21	Section Line	17/20	151	100	Trench
22	Section Line	20/21	151	100	Trench
23	~~Section Line~~	~~21/22~~	~~151~~	~~100~~	~~Trench~~
24	135th St NW	21/22	151	100	Bore
25	Section Line	22/23	151	100	Trench
26	133rd Ave NW	23/24	151	100	Bore
27	Section Line	23/24	151	100	Trench
28	Section Line	24/19	151	100/99	Trench
29	~~32nd St NW~~	~~19/30~~	~~151~~	~~99~~	~~Bore~~ Trench
30	Section Line	19/30	151	99	Trench
31	131st Ave NW	30/29	151	99	Bore
32	Section Line	30/29	151	99	Trench
33	Section Line	29/32	151	99	Trench
34	31st St NW	29/32	151	99	Bore
35	Section Line	32/5	151/150	99	Trench
36	~~30th St NW~~	~~32/5~~	~~151/150~~	~~99~~	~~Bore~~

37	Section Line	5/8	150	99	Trench
38	Section Line	8/17	150	99	Trench
39	28th St NW	8/17	150	99	Bore
40	US Hwy 85	17/20	150	99	Bore
41	Section Line	17/20	150	99	Trench
42	Section Line	20/21	150	99	Trench
43	130th Ave NW	20/21	150	99	Bore
44	Section Line	21/28	150	99	Trench
45	26th St NW	21/28	150	99	Bore
46	130th Ave NW	28/29	150	99	Bore
47	Section Line	28/29	150	99	Trench
48	25th St NW	29/32	150	99	Bore
49	Section Line	29/32	150	99	Trench
50	Section Line	32/5	150/149	99	Trench
51	Section Line	5/4	149	99	Trench
52	23 ½st NW	4	149	99	Bore
53	Section Line	4/3	149	99	Trench
54	129th Ave NW	4/3	149	99	Bore
55	Section Line	3/10	149	99	Trench
56	23rd St NW	3/10	149	99	Bore
57	Section Line	10/11	149	99	Trench
58	128th Ave NW	10/11	149	99	Bore
59	Section Line	11/12	149	99	Trench
60	127th Ave NW	11/12	149	99	Bore
61	End	12	149	99	--

October 27, 2011

Mr. Michael Greer
McKenzie County
PO Box 1221
Watford City, ND 58854-1221

Re: Saddle Butte Pipeline Utility Permit

Saddle Butte Pipeline, LLC with headquarters located in Durango, Colorado hereby respectfully makes a request to McKenzie County, North Dakota, for authorization for the construction or laying of crude oil pipelines across public rights-of-way in McKenzie County. The proposed Project, called the Alexander Line, is a crude oil pipeline system consisting of approximately 34 miles of 8-inch steel crude oil pipeline in McKenzie County, North Dakota. The pipeline is in the design phase with the general locations shown on the attached map. Start of construction is anticipated in November 2011, but is dependent upon permitting, ROW acquisition, and other development activities. The construction completion date is currently anticipated for November 2011.

Enclosed is the McKenzie County Pipeline Permit application version 12/30/11 with an attached map that shows proposed route crossing. In regard to the Utility Permit application, item No. 5; it states that "Any crossing installed by trenching or plowing in may be no more than eight (8) inches in width." The proposed trench width for the Alexander pipeline will exceed eight (8) inches at all crossing locations. Saddle Butte will bore County paved roads and County roads treated with road stabilization materials as required by McKenzie County Utility Permit. Saddle Butte respectfully requests that a "slick bore" be used on these crossing instead of the casing bore. Please confirm specific locations identified on permit application that will require bored crossings and what type of crossing is permitted. Also, please advise if the County envisions or is planning road or section line improvements that would possibly impact the proposed pipeline.

If you have any questions or require additional information, please call Don Metzger at 701-258-1110 or email at don.metzger@bartwest.com. Please contact me if you have any questions or if you need to meet with a surveyor and/or Bartlett & West representative out in the field.

Thank you for your time and attention to this matter.

Sincerely,

Julie Howell

Don Metzger

File: 17249.001 Permit Applications

Permit #: _____

CONSENT FOR UTILITY COMPANY
TO
CROSS A PUBLIC ROAD OR SECTION ROAD

Saddle Butte Pipeline, LLC of 858 Main Ave, Suite 301, Durango, CO 81301
(Company) (Address)

Hereinafter referred to as "Utility Company", having requested permission from McKenzie County, a political subdivision of the State of North Dakota, to cross an existing road or section line with a buried transmission facility designed to carry or conduct oil, gas, water, electricity, telephone or any other substance or service whatsoever, and McKenzie County having considered the request does grant consent to cross the following described existing road or section line, upon the terms and conditions herein stated:

(Please include County Route #'s as applicable**)**

Route See Exhibit A in Section(s) _____, Township _____ N, Range _____W

Route _____ in Section(s) _____, Township _____ N, Range _____W

Route _____ in Section(s) _____, Township _____ N, Range _____W

Route _____ in Section(s) _____, Township _____ N, Range _____W

Route _____ in Section(s) _____, Township _____ N, Range _____W

(Attach Maps and Construction Plans**)**

At a minimum, acceptable plans will include method of crossing existing roads or section lines and size and material used for the buried facility.

Consent to cross such existing road or section line is granted on these terms and conditions:

1. Utility Company must pay for all damage to the existing road caused by its activities, including but not limited to slumping in of trenches and collapse of pipe.
2. Utility Company is responsible for any and all claims of damage, personal injury, or bodily injury that might result from their activities in crossing any existing road or section line in McKenzie County. Furthermore, Utility Company agrees to indemnify and hold harmless any type of claim for damages of any nature whatsoever, whether valid or invalid, that is made against McKenzie County on account of the activities conducted by the Utility Company in crossing any existing road or section line.
3. When the Utility Company crosses an existing road or a section line, the Utility Company shall be responsible to pay for all costs of moving, relocating, or reconstructing the buried transmission facility should McKenzie County deem it necessary or advisable, in its sole

discretion, to repair or reconstruct existing roads or to build new roads on section lines or off section lines as allowed by North Dakota law. Should the Utility Company fail to take necessary steps to relocate or reconstruct its buried transmission facility, the County may take steps to have the same accomplished, and the Utility Company agrees to reimburse the County for all expenses incurred by McKenzie County in moving, relocating or reconstructing the buried transmission facility so the existing roads may be repaired or reconstructed, or new roads may be built on the section line or off the section line as allowed by North Dakota law.

4. The buried transmission facility to be installed by the Utility Company in crossing any existing road shall at a minimum comply with the following engineering standards:
    (a) County paved roads or County roads treated with road stabilization materials may **ONLY** be **BORED.**
    (b) All crossings of existing roads not trenched as in Section 5 below shall be bored to a depth of five (5) feet below original ground or ditch elevations.
    (c) Pipe shall be cased or heavy wall pipe used.
    (d) All parallel borings must be a minimum of thirty (30) feet from road centerline.
    (e) Vent pipes must be outside existing right-of-way lines or thirty-three (33) feet from road center, whichever is greater.
    (f) All disturbed ground within right-of-way must be rehabilitated by covering with black dirt and seeding with an approved mix.
    (g) If vent pipes are not used within the ten (10) feet of both sides of right-of-way, the transmission facility must have markers on the right-of-way line or thirty-three (33) foot line, whichever is greater, on both sides of the road.
    (h) The Utility Company's plan to bury a transmission facility filed with the County Engineer must show at a minimum, in plain view and cross sectional view, the location of the crossing from a section or quarter line; section, township and range the crossing is located in; the location of vent pipes, if any, in proximity to the crossing; and the angle of crossing.
    (i) The Utility Company's plan must be submitted to the Office of the County Engineer for review prior to consideration by the Board at least two (2) weeks prior to the commencement of the project.
5. Any crossing installed by trenching or plowing in may be no more than eight (8) inches in width. The Utility Company will apply surfacing materials and pack the site, returning it as close as possible to the original compaction. The Utility Company will be responsible for all such crossings for a period of three (3) years, repairing during those three (3) years any damages to the road resulting from their activity. Any crossing which cannot be accomplished with this method must be bored.
6. Utility Company must comply with all terms and conditions stated herein, with particular attention to the minimum engineering standards. Failure to comply with this **CONDITIONAL CONSENT** shall cause the consent to be rescinded and Utility Company must remove facility from right-of-way immediately or be responsible for the costs incurred by the County in removing the same. The County specifically reserves the right to remove the buried transmission facility from right-of-way for non-compliance and reimbursement will be made to the County by Utility Company for doing the same.

I, the undersigned, being an authorized agent of the Utility Company described in the above, do hereby agree on behalf of the Utility Company that all terms and conditions above will be complied with, and any assignment of this buried transmission facility described above shall include an assignment of this liability to comply with the terms and conditions as stated herein.

Dated this 27th day of October 20 11 .

Julie Ahmed

Signature of Authorized Agent of Utility Company

(701) 258-1110

Telephone Number

County Auditor: Please return a copy of the signed permit to:

Saddle Butte Pipeline, LLC Attn: Christian Stoddard

Company or Agent Name

858 Main Ave, Suite 301

Mailing Address

Durango, CO 81301

City, State & Zip Code

FOR COUNTY USE:

Reviewed by _____ , County Engineer on _____

Permission granted by McKenzie County, a political subdivision of the State of North Dakota, for installation of the buried transmission facility proposed above under existing roads and section lines as stated above pursuant to the conditions and limitations stated this _____ day of _____ 20 _____

_____

Chairman of the Board
McKenzie County Board of County Commissioners

Exhibit A

	ROUTE	SECTIONS	TOWNSHIP	RANGE	Crossing Method
1	Start	19	152	101	--
2	Hwy 85	19	152	101	Bore
3	Section Line	19/20	152	101	Trench
4	143rd Ave NW	19/20	152	101	Bore
5	Section Line	20/21	152	101	Trench
6	Section Line	21/28	152	101	Trench
7	Section Line	28/27	152	101	Trench
8	Section Line	27/34	152	101	Trench
9	Section Line	34/35	152	101	Trench
10	36 ½ St NW	35	152	101	Bore
11	Section Line	35/2	152/151	101	Trench
12	139th Ave NW	2/1	151	101	Bore
13	Section Line	2/1	151	101	Trench
14	Section Line	1/6	151	101/100	Trench
15	Section Line	6/7	151	100	Trench
16	35th St NW	6/7	151	100	Bore
17	Section Line	7/18	151	100	Trench
18	34th St NW	18	151	100	Bore
19	Section Line	18/17	151	100	Trench
20	137th Ave NW	18/17	151	100	Bore
21	Section Line	17/20	151	100	Trench
22	Section Line	20/21	151	100	Trench
23	Section Line	21/22	151	100	Trench
24	135th St NW	21/22	151	100	Bore
25	Section Line	22/23	151	100	Trench
26	133rd Ave NW	23/24	151	100	Bore
27	Section Line	23/24	151	100	Trench
28	Section Line	24/19	151	100/99	Trench
29	32nd St NW	19/30	151	99	Bore
30	Section Line	19/30	151	99	Trench
31	131st Ave NW	30/29	151	99	Bore
32	Section Line	30/29	151	99	Trench
33	Section Line	29/32	151	99	Trench
34	31st St NW	29/32	151	99	Bore
35	Section Line	32/5	151/150	99	Trench
36	30th St NW	32/5	151/150	99	Bore

37	Section Line	5/8	150	99	Trench
38	Section Line	8/17	150	99	Trench
39	28th St NW	8/17	150	99	Bore
40	US Hwy 85	17/20	150	99	Bore
41	Section Line	17/20	150	99	Trench
42	Section Line	20/21	150	99	Trench
43	130th Ave NW	20/21	150	99	Bore
44	Section Line	21/28	150	99	Trench
45	26th St NW	21/28	150	99	Bore
46	130th Ave NW	28/29	150	99	Bore
47	Section Line	28/29	150	99	Trench
48	25th St NW	29/32	150	99	Bore
49	Section Line	29/32	150	99	Trench
50	Section Line	32/5	150/149	99	Trench
51	Section Line	5/4	149	99	Trench
52	23 ½st NW	4	149	99	Bore
53	Section Line	4/3	149	99	Trench
54	129th Ave NW	4/3	149	99	Bore
55	Section Line	3/10	149	99	Trench
56	23rd St NW	3/10	149	99	Bore
57	Section Line	10/11	149	99	Trench
58	128th Ave NW	10/11	149	99	Bore
59	Section Line	11/12	149	99	Trench
60	127th Ave NW	11/12	149	99	Bore
61	End	12	149	99	--

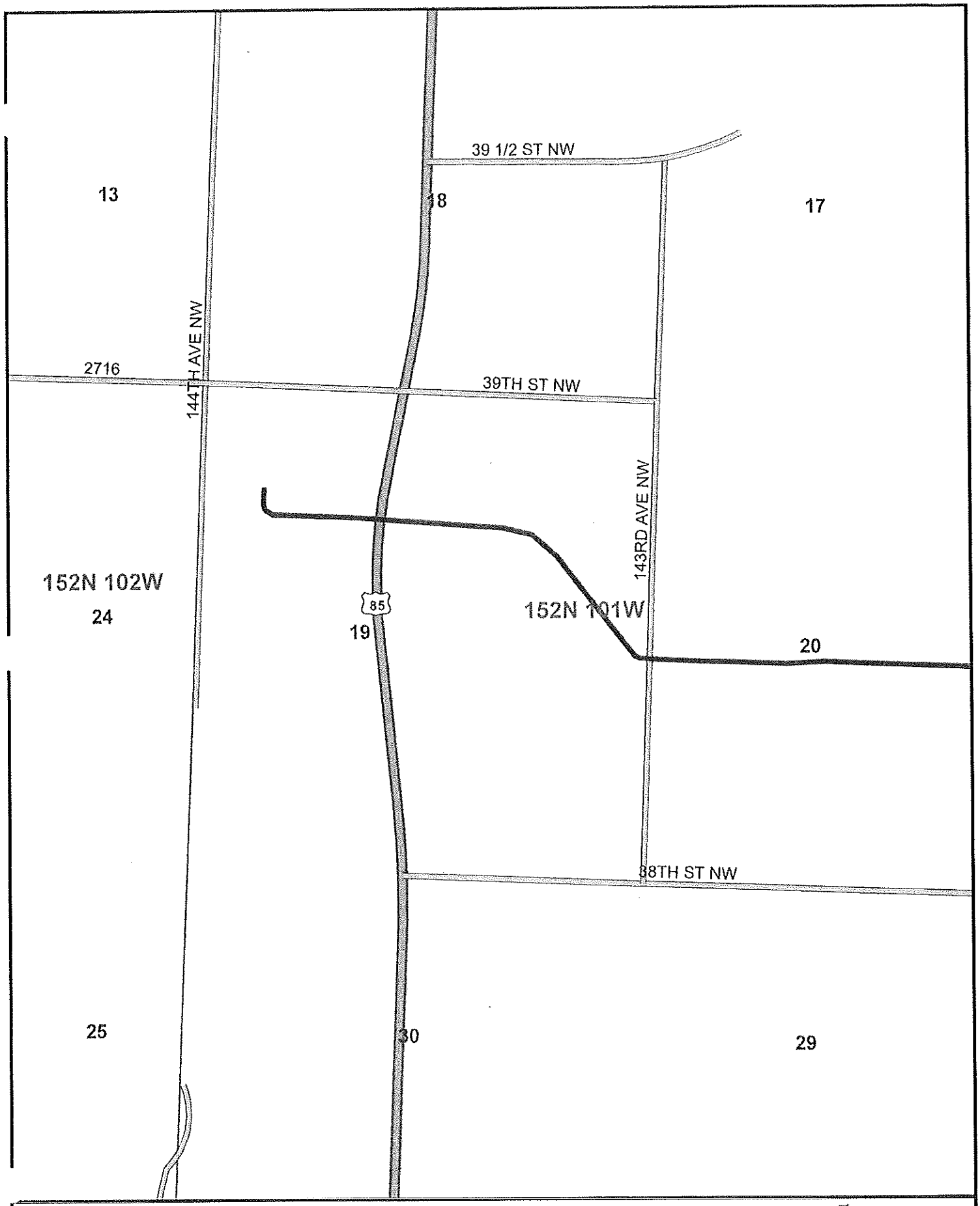
NORTH
SADDLE BUTTE PIPELINE
MCKENZIE COUNTY
BARTLETT & WEST
Alexander Crude
8" X52 APL 5L, 0.280" Wall
8" X52 APL 5L, 0.280" Wall
8" X52 APL 5L, 0.280" Wall
139TH AVE NW
140 1/2 AVE NW
141ST AVE NW
142ND AVE NW
143RD AVE NW
144TH AVE NW
36TH ST NW
37TH ST NW
38TH ST NW
152N 101W
151N 101W

NORTH
SADDLE BUTTE PIPELINE
MCKENZIE COUNTY
BARTLETT & WEST
Alexander Crude
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
130 1/2 AVE NW
35TH ST NW
34TH ST NW
33 1/2 ST NW
33RD ST NW
137TH AVE NW
137TH ST NW
139TH AVE NW
32ND ST NW
151N 101W
151N 100W
2729

NORTH
SADDLE BUTTE PIPELINE
MCKENZIE COUNTY
BARTLETT & WEST
Alexander Crude
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
151N 100W
150N 100W
150N 99W
151N 99W
32ND ST NW
31 1/2 ST NW
31ST ST NW
30TH ST NW
30 1/2 ST NW
29TH ST NW
133RD AVE NW
131ST AVE NW
130TH AVE NW
129TH AVE NW
128TH AVE NW

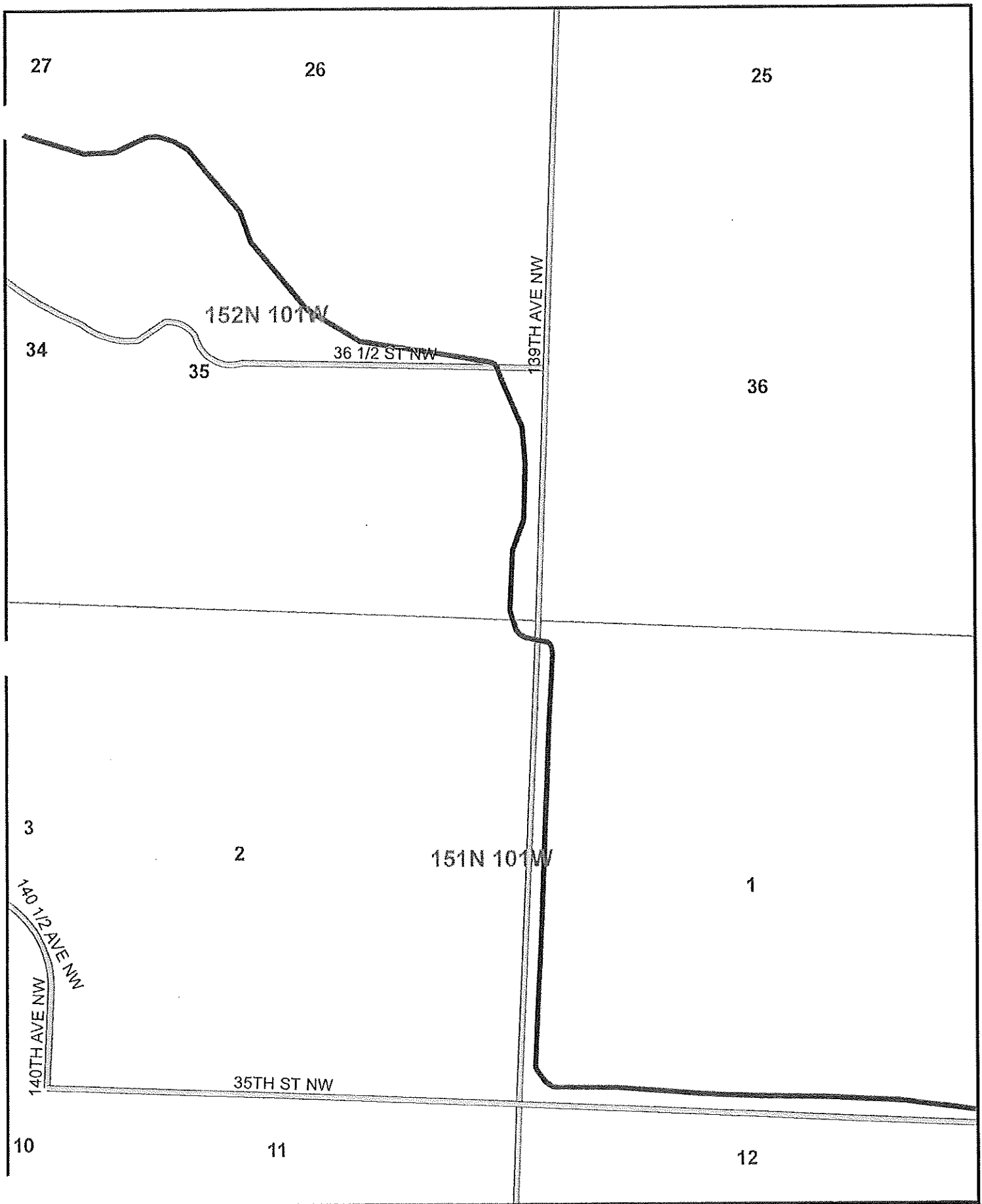
NORTH
SADDLE BUTTE PIPELINE
MCKENZIE COUNTY
BARTLETT & WEST
Alexander Crude
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
150N 99W
150N 100W
129TH AVE NW
128TH AVE NW
131ST AVE NW
132ND AVE NW
29TH ST NW
28TH ST NW
28 1/2 ST NW
27TH ST NW
26 1/2 ST NW
26TH ST NW

NORTH
SADDLE BUTTE PIPELINE
MCKENZIE COUNTY
BARTLETT & WEST
Alexander Crude
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
8", X52 APL 5L, 0.280" Wall
125TH AVE NW
127TH AVE NW
128TH AVE NW
129TH AVE NW
130TH AVE NW
24TH ST NW
25TH ST NW
23RD ST NW
22ND ST NW
23 1/2 ST NW
128 1/2 AVE NW
150N 98W
149N 98W
150N 99W
149N 99W
2730



SADDLE BUTTE ALEXANDER PIPELINE ROUTE
T. 152N R. 101W
Preliminary Route and Proposed Pipeline

BARTLETT & WEST

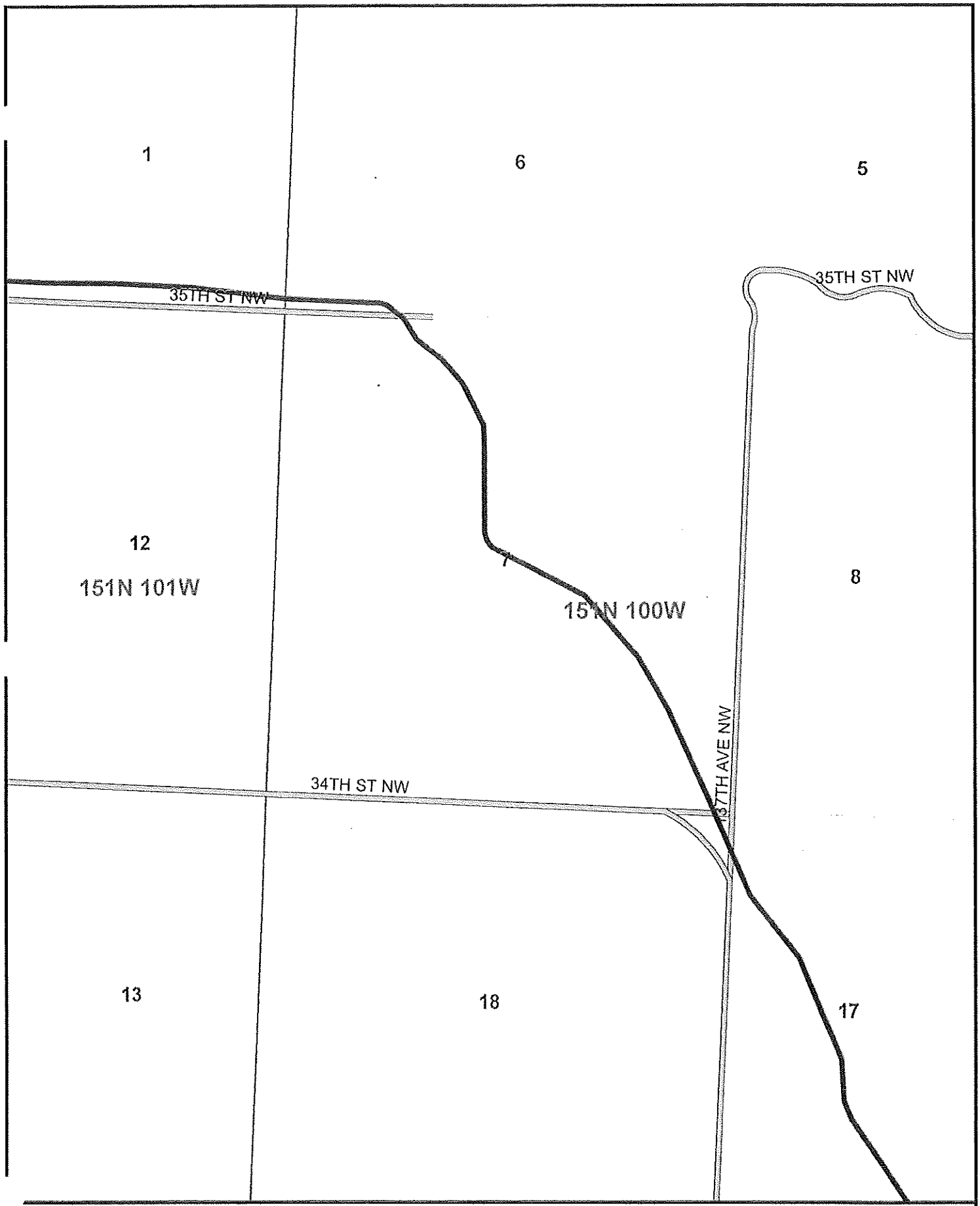


SADDLE BUTTE ALEXANDER PIPELINE ROUTE

T. 151N R. 101W

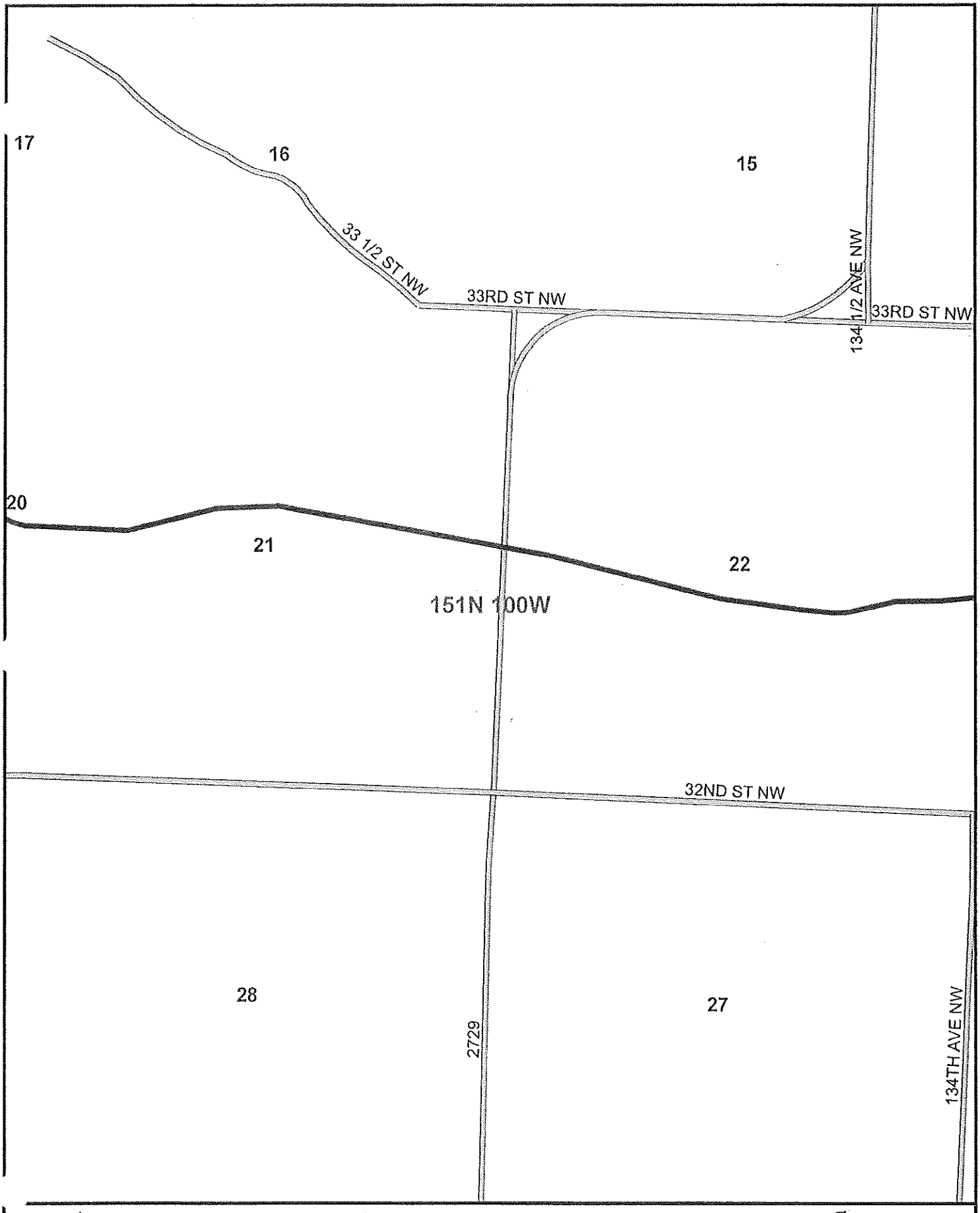
Preliminary Route and Proposed Pipeline

BARTLETT & WEST



SADDLE BUTTE ALEXANDER PIPELINE ROUTE
T. 151N R. 100W
Preliminary Route and Proposed Pipeline

BARTLETT & WEST



NORTH

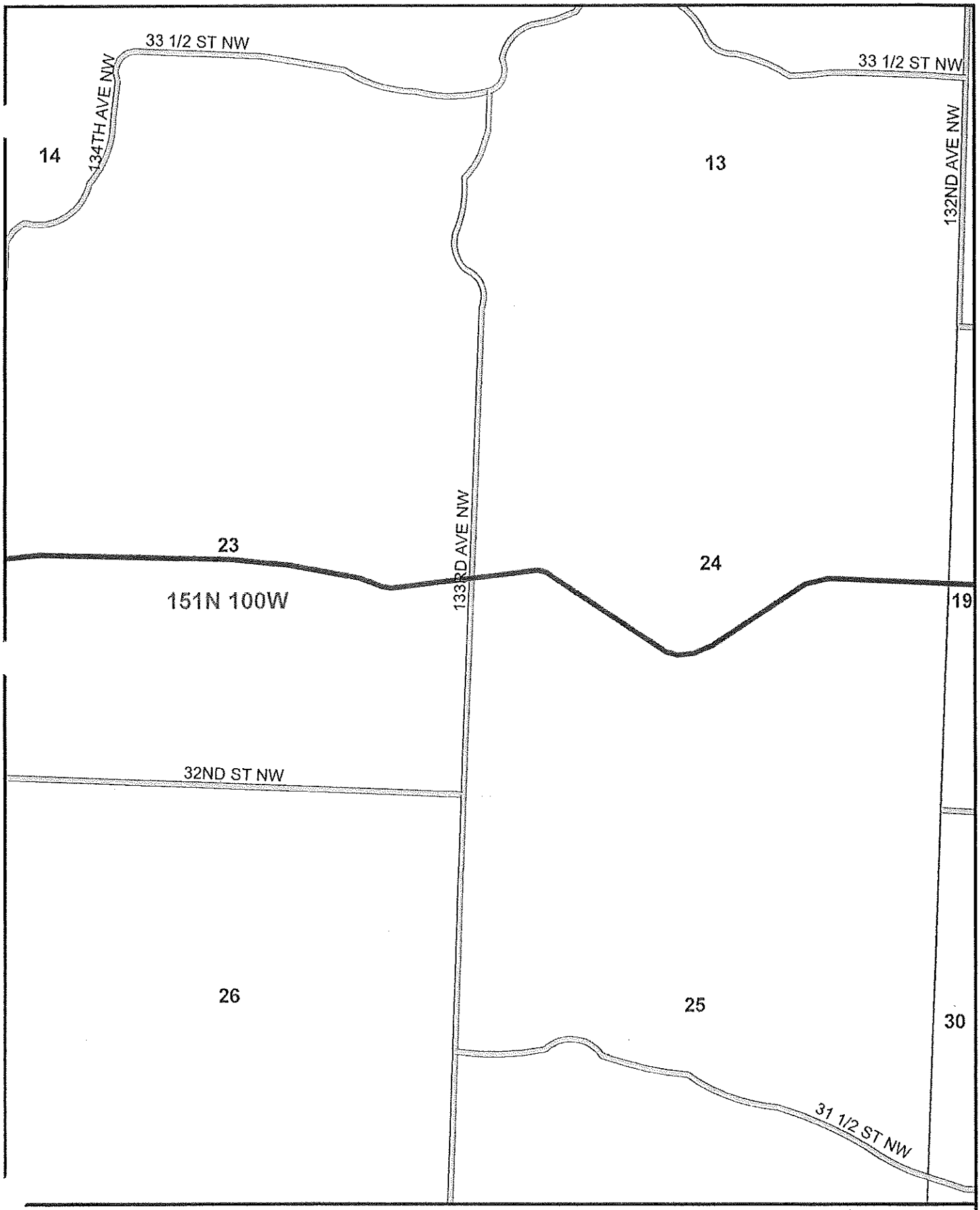
0 250 500 750 1,000 Feet

SADDLE BUTTE ALEXANDER PIPELINE ROUTE

T. 151N R. 100W

Preliminary Route and Proposed Pipeline

BARTLETT & WEST



SADDLE BUTTE ALEXANDER PIPELINE ROUTE

T. 151N R. 100W

Preliminary Route and Proposed Pipeline

BARTLETT & WEST

NORTH

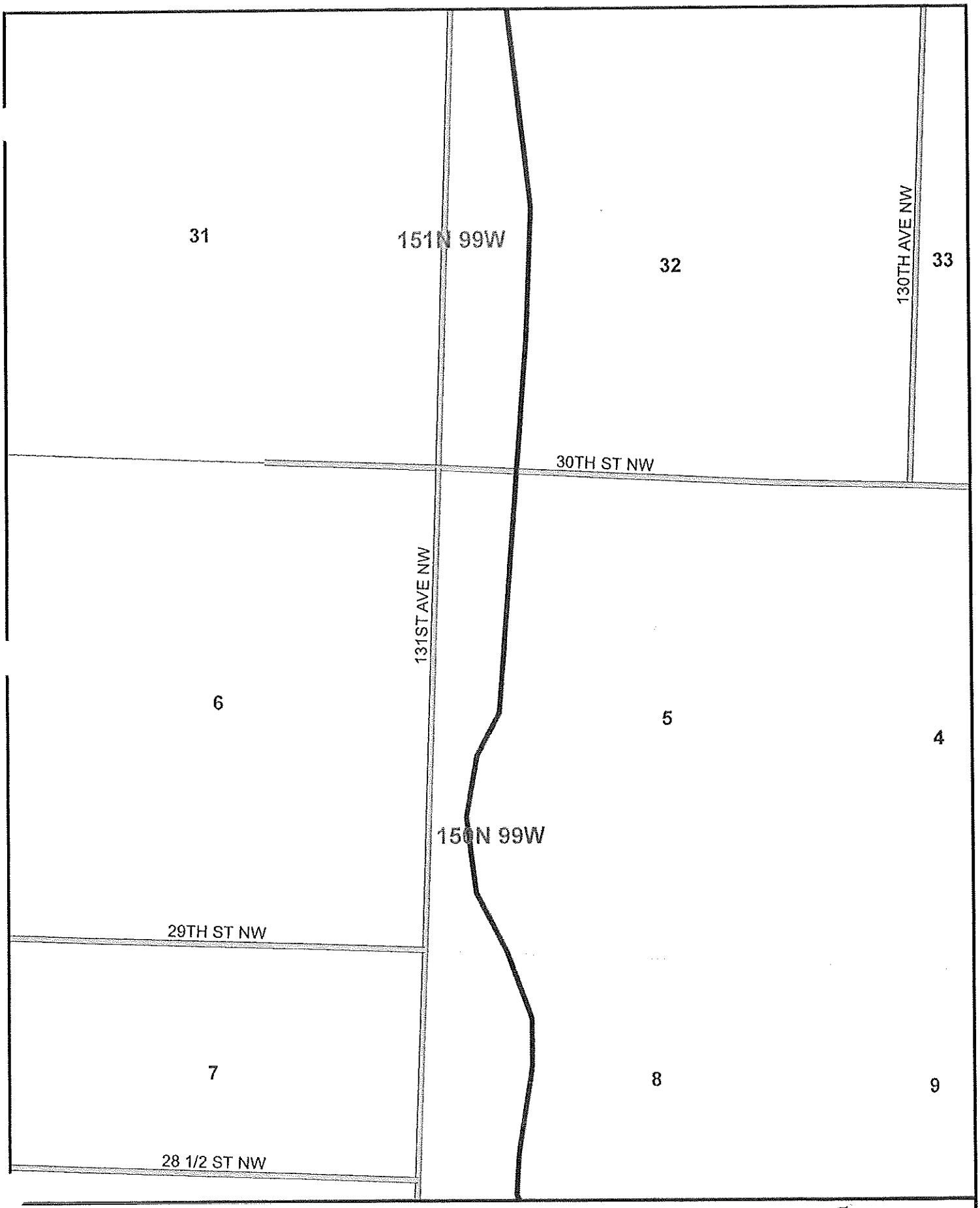
0 250 500 750 1,000 Feet

SADDLE BUTTE ALEXANDER PIPELINE ROUTE

T. 151N R. 99W

Preliminary Route and Proposed Pipeline

BARTLETT & WEST

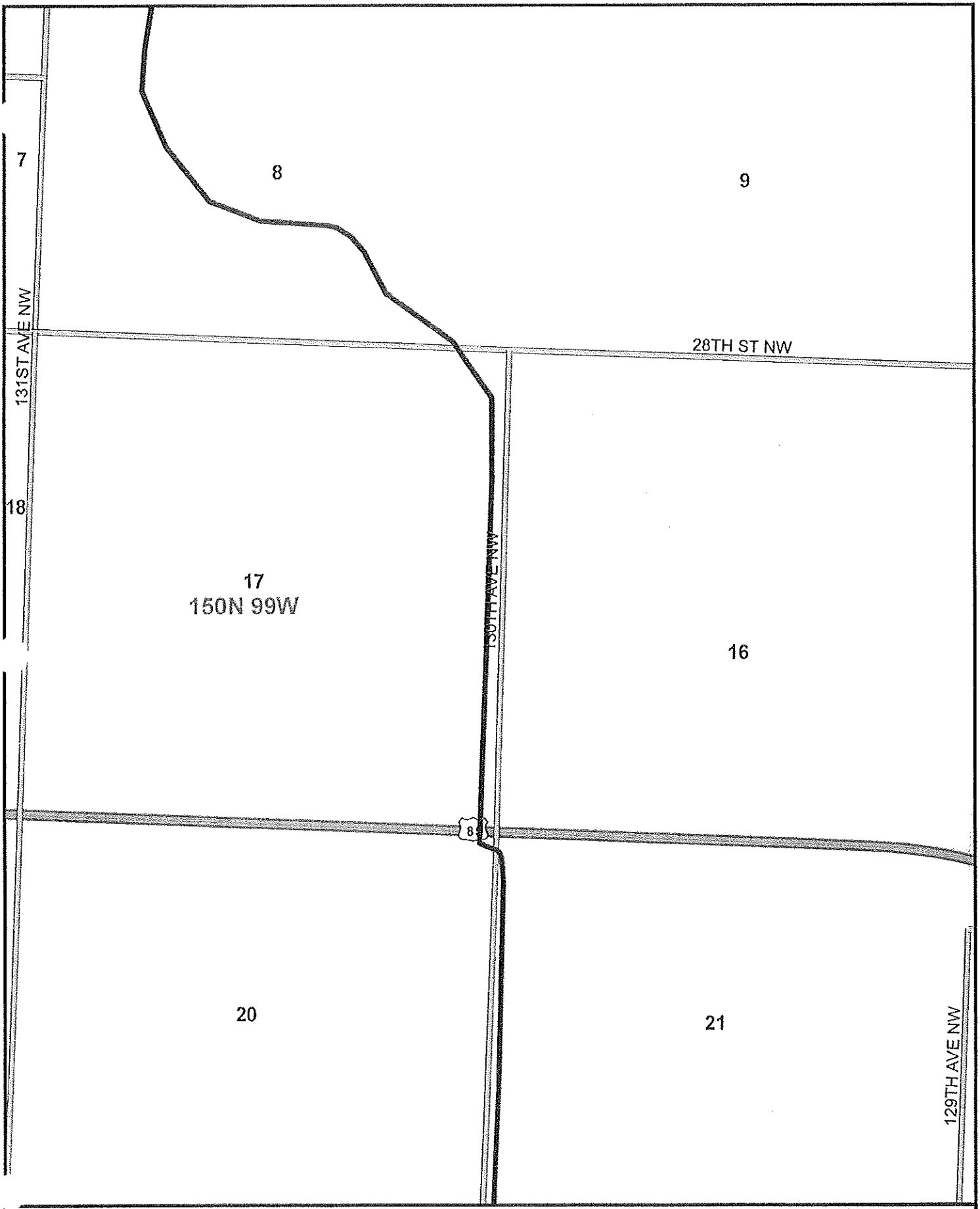


SADDLE BUTTE ALEXANDER PIPELINE ROUTE

T. 151N R. 99W

Preliminary Route and Proposed Pipeline

BARTLETT & WEST



NORTH

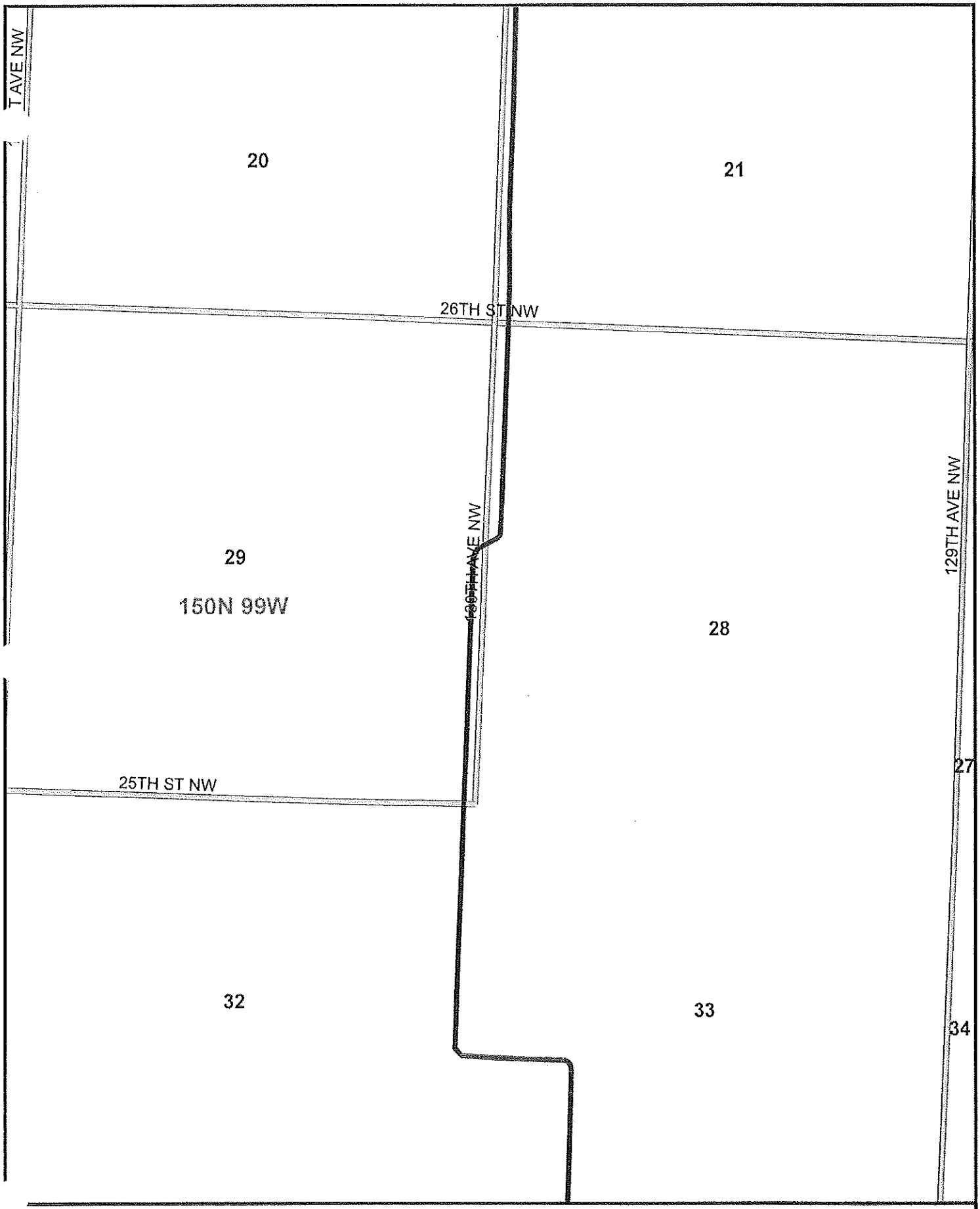
0 250 500 750 1,000 Feet

SADDLE BUTTE ALEXANDER PIPELINE ROUTE

T. 150N R. 99W

Preliminary Route and Proposed Pipeline

BARTLETT & WEST

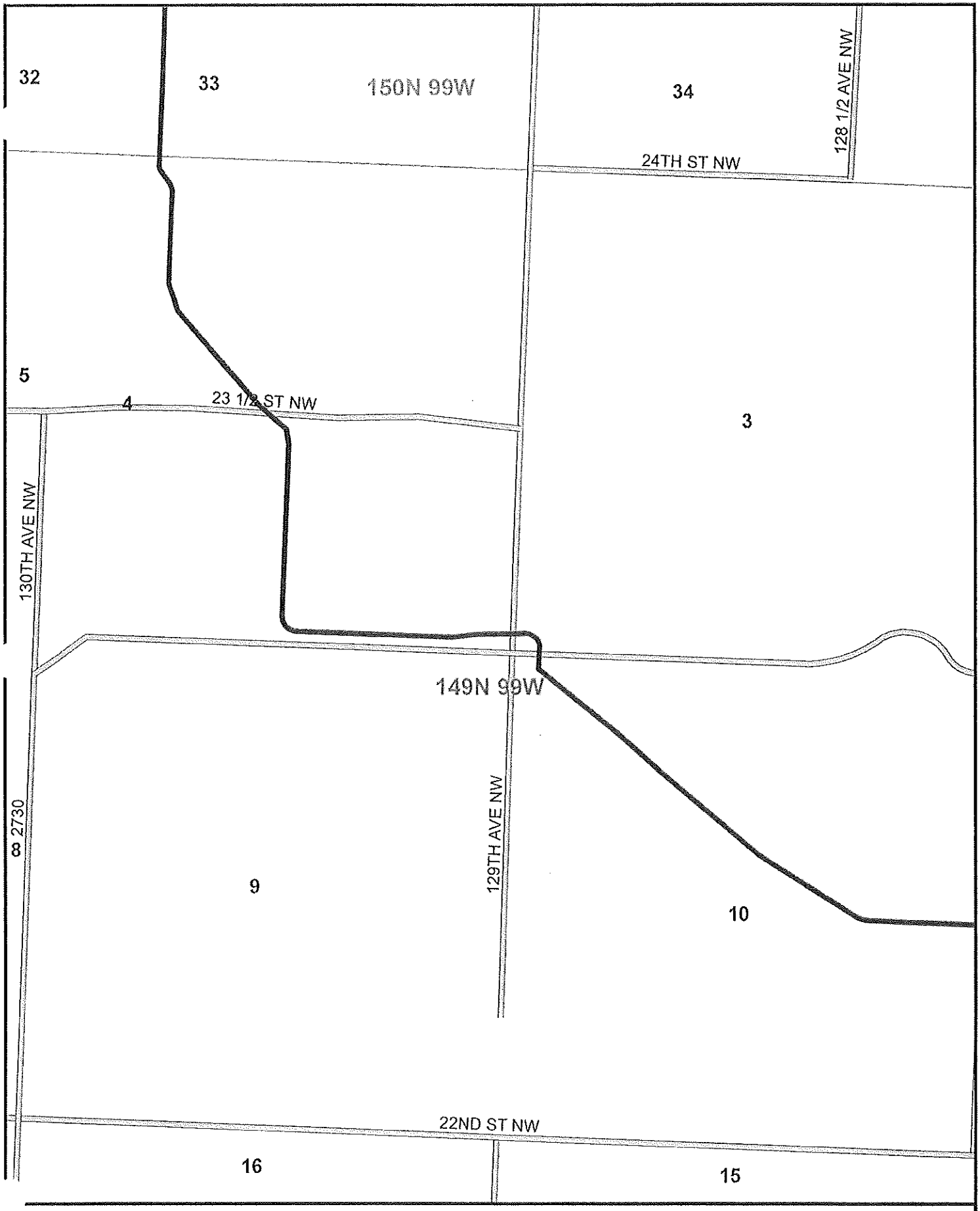


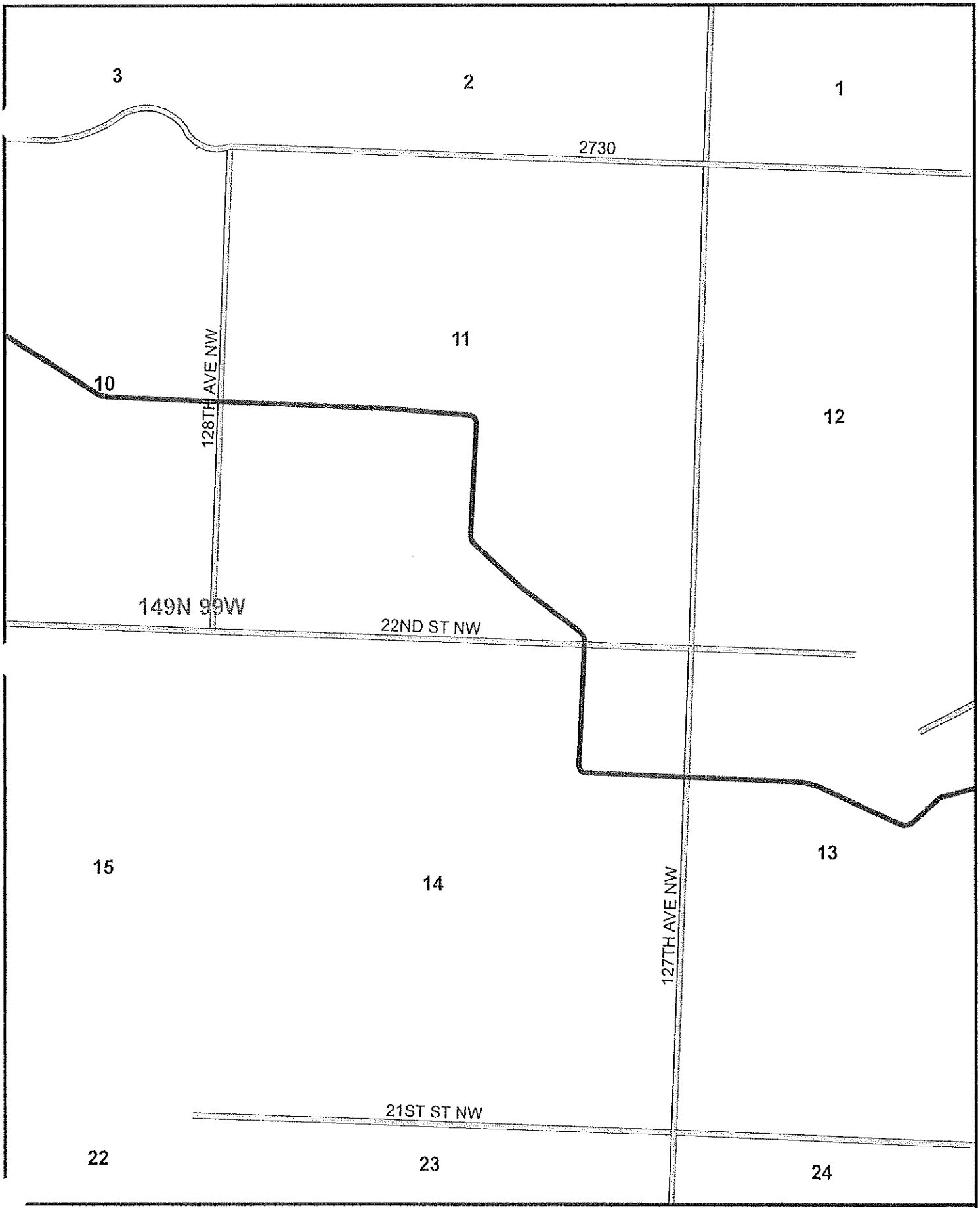
SADDLE BUTTE ALEXANDER PIPELINE ROUTE

T. 150N R. 99W

Preliminary Route and Proposed Pipeline

BARTLETT & WEST


32
33
150N 99W
34
128 1/2 AVE NW
24TH ST NW
5
4
23 1/2 ST NW
3
130TH AVE NW
149N 99W
8
2730
9
129TH AVE NW
10
22ND ST NW
16
15
NORTH
0 250 500 750 1,000 Feet
SADDLE BUTTE ALEXANDER PIPELINE ROUTE
T. 149N R. 99W
Preliminary Route and Proposed Pipeline
BARTLETT & WEST



NORTH

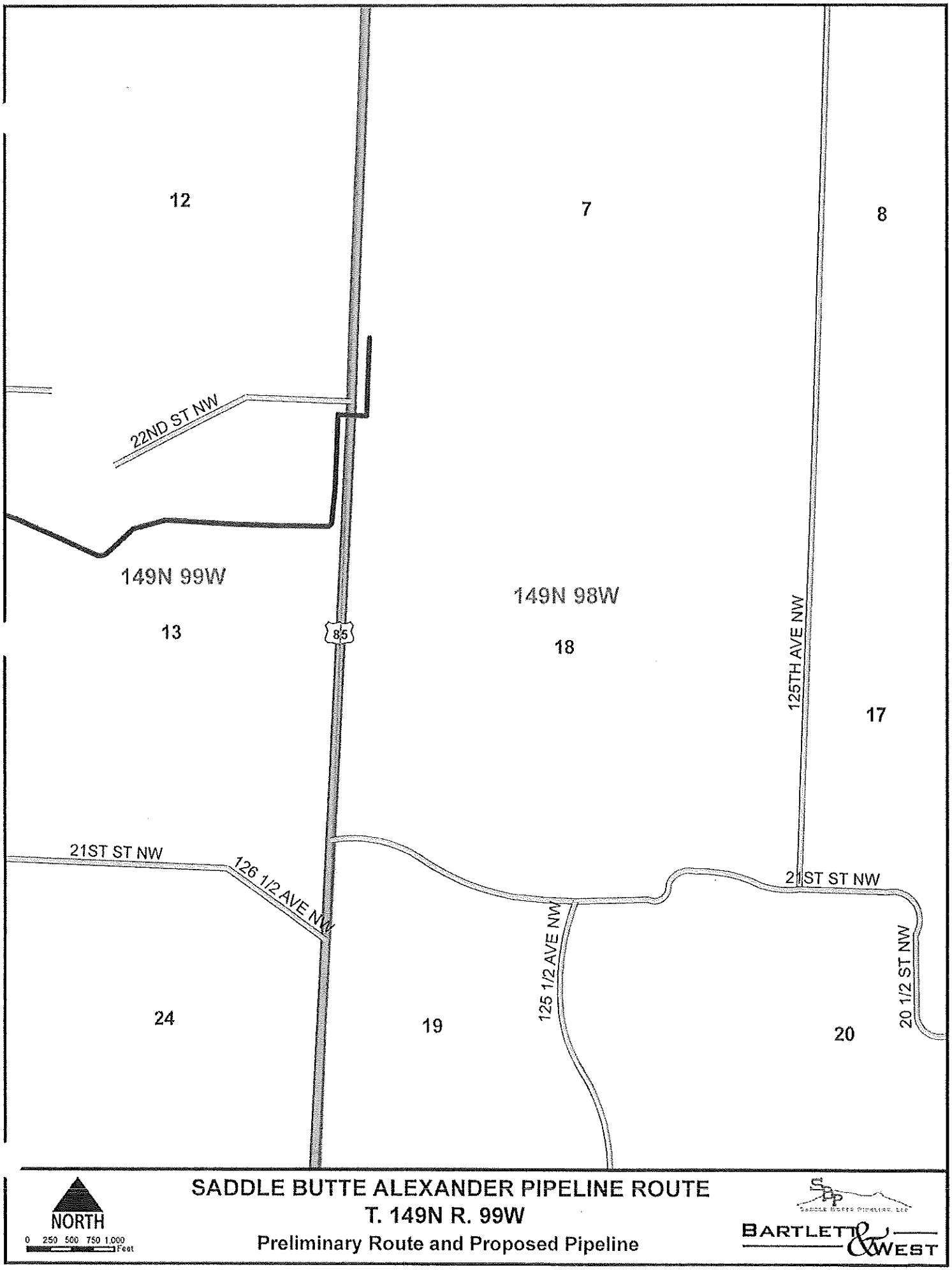
0 250 500 750 1,000 Feet

SADDLE BUTTE ALEXANDER PIPELINE ROUTE

T. 149N R. 99W

Preliminary Route and Proposed Pipeline

BARTLETT & WEST



SADDLE BUTTE ALEXANDER PIPELINE ROUTE

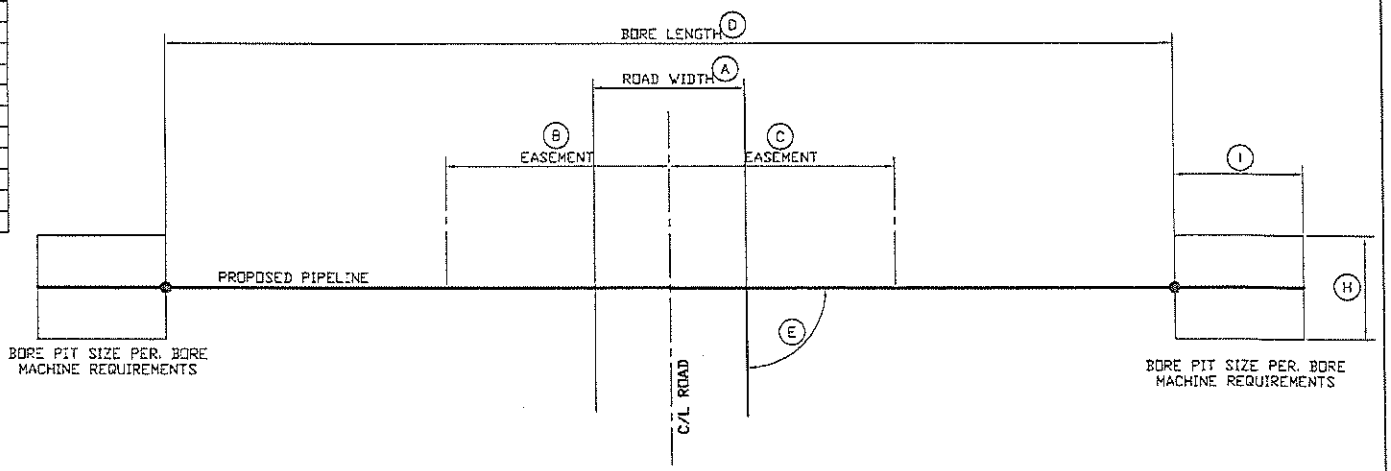
T. 149N R. 99W

Preliminary Route and Proposed Pipeline

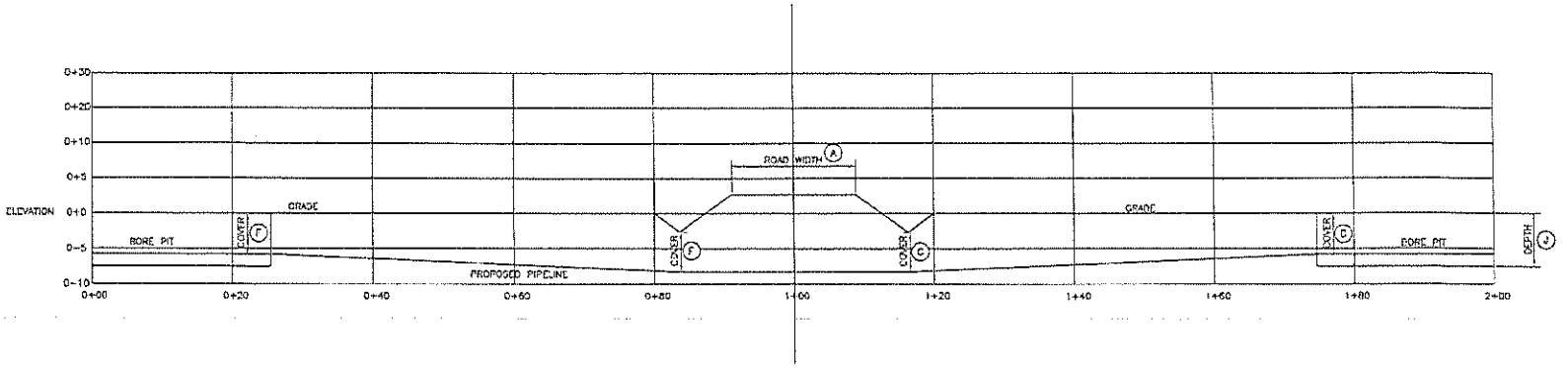
BARTLETT & WEST

TYPICAL CROSSING DETAIL

	DESCRIPTION	DIMENSION
A	ROAD WIDTH	26 ft
B	EASEMENT R	33 Ft
C	EASEMENT L	33 Ft
D	BORE LENGTH	APROX. 200 ft
E	CROSSING ANGLE	90 deg
F	DEPTH OF COVER	6'-0" min
G	DEPTH OF COVER	6'-0" min
H	PIT WIDTH	25'-0"
I	PIT LENGTH	18'-0"
J	PIT DEPTH	7'-0"



PLAN VIEW



SECTION VIEW

	DESIGNED BY: MMP DRAWN BY: MMP CHECKED BY: MMP PROJECT ENGR:	BARTLETT & WEST SERVICE THE BARTLETT & WEST WAY.	TYPICAL PIPELINE CROSSING	PROJ NO: CONST PROJ: SCALE: 1 = 1' DATE:	DRAWING NO: SHEET NO: 1

APPENDIX H

WETLANDS REPORT

SWCA®
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.®

Wetland Delineation Report for the Johnsons Corner to Alexander Pipeline Project, McKenzie County, North Dakota

Prepared for

Targa Resources,Corp.

Prepared by

SWCA Environmental Consultants

July 2016

Wetland Delineation Report for the Johnsons Corner to Alexander Pipeline Project, McKenzie County, North Dakota

Prepared for

Targa Resources, Corp.
1000 Louisiana Street, Suite 4300
Houston, Texas 77002

Prepared by

Emily Schwartz and Jason Bivens, Environmental Specialists

Reviewed by

Jeff Towner, M.S., Natural Resources Team Lead

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

SWCA Project No. 38605

July 29, 2016

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1
1.1 Background 1
1.2 Regulatory Background 1
1.2.1 Clean Water Act, Section 404 1
1.2.2 USACE Nationwide Permit 12 1
1.2.3 USACE Regional Conditions 1
2.0 METHODS 2
2.1 Survey Area 2
2.2 Pre-Field Review 4
2.3 Wetlands 4
2.3.1 Hydrophytic Vegetation 4
2.3.2 Wetland Hydrology 4
2.3.3 Hydric Soil 4
2.4 Waterbodies 5
2.5 Mapping 5
3.0 RESULTS 6
3.1 Vegetation 6
3.1.1 Herbaceous Upland 6
3.1.2 Shrubland and Woody Vegetation 6
3.1.3 Cropland 6
3.1.4 Hydrophytic Vegetation 7
3.2 Hydrology 7
3.3 Wetlands 7
3.4 Waterbodies 8
3.5 Soils 9
3.5.1 Zahl 11
3.5.2 Williams 11
3.5.3 Vebar 11
3.5.4 Flasher 12
3.5.5 Tally 12
3.5.6 Cabba 12
3.5.7 Maschetah 12
3.5.8 Rhame 12
3.5.9 Fleak 13
4.0 CONCLUSIONS AND RECOMMENDATIONS 13
5.0 LITERATURE CITED 14

LIST OF FIGURES

Figure **Page**
1 Project area overview depicting general site conditions in the survey area, facing west (photo taken July 6, 2016). 3
2 Project area overview depicting general site conditions in the survey area, facing west (photo taken July 7, 2016). 3

LIST OF TABLES

Table **Page**
1 PEM Wetland Acreage within the Survey Area 7
2 Streams within the Survey Area 9
3 NRCS Derived Soil Series Present within the Survey Area 9

LIST OF APPENDICES

Appendix
A Vicinity and Site Layout Maps
B Wetland Delineation Data Forms
C Photographs of Project Area

1.0 INTRODUCTION

1.1 BACKGROUND

SWCA Environmental Consultants (SWCA) conducted wetland delineation field surveys to identify any wetlands or potential waters of the U.S., as specified in Section 404 of the Clean Water Act. The investigation was conducted for Targa Resources, Corp., for the existing Johnsons Corner to Alexander Pipeline which is an approximately 54-mile-long gathering pipeline, located on private lands in McKenzie County, North Dakota. The Johnsons Corner to Alexander Pipeline is an existing pipeline that is being converted from a gathering system to a transmission line, requiring a Certificate of Corridor Compatibility and Route Permit from the North Dakota Public Service Commission (NDPSC).

SWCA conducted field surveys on July 5 through 8, 2016, to determine the potential presence and extent of wetlands and waterbodies, including those that are likely jurisdictional waters of the U.S. according to the U.S. Army Corps of Engineers (USACE) regulatory program, within the approximate 54-mile-long pipeline survey corridor. Maps of the survey area and natural resource features identified during the field surveys are provided in Appendix A.

This report describes the methodology used by SWCA's biologists to complete the aforementioned surveys. Additionally, this report presents the results of the completed field surveys and regulatory recommendations to ensure compliance with USACE Nationwide Permit (NWP) 12.

1.2 REGULATORY BACKGROUND

1.2.1 Clean Water Act, Section 404

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

1.2.2 USACE Nationwide Permit 12

NWP 12 authorizes the construction of utility line projects in non-tidal waters of the U.S., provided the activity does not result in the permanent loss of greater than 0.5 acre of waters of the U.S., including wetlands.

NWP 12 requires that the permittee submit a pre-construction notification (PCN) prior to commencing construction if certain criteria are met, including if discharges result in the loss of greater than 0.10 acre of waters of the U.S.

1.2.3 USACE Regional Conditions

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

2.0 METHODS

2.1 SURVEY AREA

Overall, northwest North Dakota is characterized by a moderate to cool climate, with cold, dry winters and mild to warm summers. Mean annual precipitation for the area is 14 to 16 inches. The project is located in the Northwestern Great Plains (level III ecoregion) which is a semiarid rolling plain of shale and sandstone-derived soils punctuated by occasional buttes and badlands (U.S. Geological Survey [USGS] 2014). Figures 1 and 2 show general topography of the project area.

The surveyed area for the project area discussed herein is situated on the USGS Camp Creek East (1978), Camp Creek West (1979), Watford City NW (1978), Watford City (1978), Arnegard (1978), Schafer (1995), Shafer SE (1995), Tepee Buttes (1995), Lone Butte NW (1995), and Johnson Corner (1995), North Dakota, quadrangles. The proposed Johnsons Corner to Alexander project corridor that was surveyed in July 2016 encompasses portions of 64 sections within 11 townships and ranges.

- Sections 19–21, 27, 28, 34, and 35, Township (T) 152 North (N), Range (R) 101 West (W)
- Sections 1 and 2, T151N, R101W
- Sections 6, 7, 17, 18, and 20–24, T151N, R100W
- Sections 19, 29, 30, and 32, T151N, R99W
- Sections 5, 8, 17, 20, 21, 28, 29, 32, and 33, T150N, R99W
- Sections 3, 4, 10, 11, 13, and 14, T149N, R99W
- Sections 1, 7, 11, 12, 14–18, T149N, R98W
- Sections 31–36, T150N, R97W
- Sections 4 and 6, T149N, R97W
- Sections 24–26, 31, 32, 34, and 35, T150N, R96W
- Sections 3–5, T149N, R96W

Figure 1. Project area overview depicting general site conditions in the survey area, facing west (photo taken July 6, 2016).

Figure 2. Project area overview depicting general site conditions in the survey area, facing west (photo taken July 7, 2016).

2.2 PRE-FIELD REVIEW

Prior to conducting field surveys, SWCA reviewed applicable National Wetlands Inventory (NWI) data, National Hydrography Dataset (NHD) flowline data, as well as preliminary National Weather Service climatic data.

2.3 WETLANDS

NWI mapping for the region indicates the presence of wetlands within the project area (U.S. Fish and Wildlife Service [USFWS] 2012). SWCA biologists conducted wetland delineations within the survey area based on the principles and guidelines provided in the *Corps of Engineers Wetlands Determination Manual* (Manual) (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Determination Manual: Great Plains Region Version 2.0* (Supplement) (USACE 2010). According to the Manual, an area is a wetland if three specific wetland indicators—hydrophytic vegetation, wetland hydrology, and hydric soils—are present, with certain exceptions. All wetlands and waterbodies geographically referenced within the survey area during field survey are depicted on the site layout maps in Appendix A. Wetland delineation data forms are provided in Appendix B.

2.3.1 Hydrophytic Vegetation

Biologists recorded all plants within the vegetative community of the survey area based on the respective stratum in which each species is located. The Supplement defines a tree as a woody-stemmed plant with a trunk diameter at breast height of equal to or greater than 3 inches, regardless of height. The sapling and shrub stratum is composed of woody-stemmed plants with a trunk diameter at breast height of less than 3 inches, regardless of height. The herbaceous stratum includes all non-woody-stemmed plants regardless of height. Finally, the woody vine stratum includes all woody-stemmed vines, regardless of diameter.

SWCA recorded the binomial scientific name and percent cover of all plants within a 30-foot radius for the tree stratum, a 15-foot radius for the sapling/shrub stratum, a 5-foot radius for the herbaceous stratum, and a 30-foot radius for the woody vine stratum. SWCA biologists noted each plant species' respective USFWS indicator status (i.e., upland [UPL], facultative upland [FACU], facultative [FAC], facultative wetland [FACW], and obligate [OBL]). Vegetation communities met the hydrophytic vegetation criterion for wetlands if greater than 50% of dominant species had an indicator status of FAC, FACW, or OBL.

2.3.2 Wetland Hydrology

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

2.3.3 Hydric Soil

Biologists recorded detailed notes regarding soil profiles including the hue, value, and chroma (i.e., color) of the soil (using Munsell Soil Color Charts); the depth and extent of that soil color

within the entire soil profile; the concentration of any redoximorphic concentrations or depletions; and the texture of the soil at each depth where a color change was observed. Common hydric soil indicators of the Northern Great Plains subregion include the presence of hydrogen sulfide gas within the soil pit, redox depressions, redox dark surfaces, and depleted matrix.

2.4 WATERBODIES

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

The NHD is a digital vector dataset referred to by SWCA biologists in the field to confirm or disprove the existence of features such as lakes, ponds, streams, rivers, canals, dams, and stream gages (USGS 2011). NHD flowlines (24k lines) are features that contain flow direction and form a network (USGS 2011). In the field, SWCA biologists confirm or disprove 24K lines based on the presence of streams, OHWM, hydrophytic vegetation, wetland hydrology, and hydric soils. A desktop analysis is then performed to determine if the 24K lines show significant nexus to waters as described in Title 33 Code of Federal Regulations Part 328.3 (a) (1)–(3).

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

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

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

2.5 MAPPING

The boundaries of each wetland, waterbody, and woody vegetation habitat were geographically recorded using a Trimble GeoXT global positioning system (GPS) unit. The aforementioned GPS unit is capable of recording geographic data with sub-meter accuracy. SWCA used

Universal Transverse Mercator Zone 13 North as the projected coordinate system and North American Datum 1983 as the datum. ArcGIS v10.0 (ESRI Redlands, California) was used to analyze recorded features, calculate areas, and generate the maps provided in Appendix A. Please note that all data collected using the GPS unit and displayed on the attached maps are for review purposes only and do not represent a professional civil survey.

3.0 RESULTS

3.1 VEGETATION

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

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

3.1.1 Herbaceous Upland

The herbaceous upland community consists of areas dominated by non-woody vegetation such as grasses and forbs. The dominant herbaceous community within the proposed pipeline survey area includes non-native grasses and forbs including smooth brome (*Bromus inermis*), alfalfa (*Medicago stiva*), Kentucky bluegrass (*Poa pratensis*), and crested wheatgrass (*Agropyron cristatum*). The remaining herbaceous upland consisted of mixed-grass prairie comprised of green needlegrass (*Nassella viridula*), western wheatgrass (*Pascopyrum smithii*), western yarrow (*Achillea millefolium*), American licorice (*Glycyrrhiza lepidota*), white sagebrush (*Artemisia ludoviciana*), prairie rose (*Rosa arkansana*), prairie coneflower (*Ratibida columnifera*), and purple coneflower (*Echinacea angustifolia*).

3.1.2 Shrubland and Woody Vegetation

Shrubland communities occurring throughout the survey area consisted of upland areas dominated by woody-stemmed vegetation including primarily silver buffaloberry (*Shepherdia argentea*), chokecherry (*Prunus virginiana*), and western snowberry (*Symphoricarpos occidentalis*).

Within the survey area, forested upland vegetation consisted of American elm (*Ulmus americana*), Rocky Mountain juniper (*Juniperus scopulorum*), peachleaf willow (*Salix amygdaloides*), and green ash (*Fraxinus pennsylvanica*).

3.1.3 Cropland

Cropland was confirmed in the survey area and classified as small grains. Common crops in the area include wheat (*Triticum aestivum*), durum (*Tricum durum*), canola (*Brassica napus*), oats (*Avena sativa*), and barley (*Hordeum vulgare*) (U.S. Department of Agriculture 2006).

3.1.4 Hydrophytic Vegetation

Aquatic vegetation species confirmed during the survey included prairie cordgrass (*Spartina pectinata*), baltic rush (*Juncus balticus*), cattail (*Typha latifolia*), foxtail barley (*Hordeum jubatum)*, three square (*Scripus pungens*), curly dock (*Rumex crispus*), softstem bulrush (*Schoenoplectus tabernaemontani*), and swamp smartweed (*Persicaria amphibian*).

3.2 HYDROLOGY

Wetland communities observed during the delineation 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 and hydric soils criteria defined by the Manual and Supplement. Common indicators of wetland hydrology observed during field surveys included Surface Water (A1), Saturation (A3), Algal Mat or Crust (B4), Surface Soil Cracks (B6), Inundation Visible on Aerial Imagery (B7), Drainage Patterns (B10), Aquatic Invertebrates (B13), Saturation Visible on Aerial Imagery (C9), Geomorphic Position (D2), and FAC-Neutral Test (D5).

3.3 WETLANDS

SWCA recorded 15 PEM wetlands within the 200-foot survey area, totaling approximately 4.05 acres (Table 1). According to NWI data, one additional wetland was within the survey area (USFWS 2012); however, during the field surveys that area was confirmed as an upland (ADP2U) and lacked all of the three wetland criteria. All 15 of the recorded wetlands showed connectivity to local streams and drainages and therefore all are potentially jurisdictional; however, the USACE has the final authority to determine jurisdictional status.

Table 1. PEM Wetland Acreage within the Survey Area

Feature ID	Associated Sampling Point	Sample Point Location		Total Size (acres)	Wetland Acres within 100-foot-ROW	Length of Required Crossing (feet)
		Latitude	Longitude			
AWET1 (North Fork Creek)	ADP3W	47.779795	-102.936974	0.37	0.19	128
	ADP4U	47.779971	-102.936935			
AWET2	ADP5W	47.762606	-102.942999	0.06	0.01	37
	ADP6U	47.76256	-102.943006			
AWET3	ADP7W	47.759482	-102.950032	0.08	0.03	27
	ADP8U	47.759477	-102.950138			
AWET4	ADP9W	47.758867	-102.9636	0.19	0.07	48
	ADP10U	47.75887	-102.963518			
AWET5	ADP11W	47.763616	-103.014212	0.25	0.12	62
	ADP12U	47.763599	-103.014298			
AWET6	ADP13W	47.763233	-103.021186	1.05	0.59	131
	ADP14U	47.763333	-103.021429			
AWET7	ADP23W	47.796899	-103.368629	0.16	0.07	45
	ADP24U	47.79682	-103.36861			

Feature ID	Associated Sampling Point	Sample Point Location		Total Size (acres)	Wetland Acres within 100-foot-ROW	Length of Required Crossing (feet)
		Latitude	Longitude			
AWET8	ADP31W	47.921024	-103.551973	0.10	0	0
	ADP32U	47.921089	-103.55197			
AWET9	ADP33W	47.921023	-103.552875	0.04	0	20
	ADP34U	47.921029	-103.552922			
AWET10	ADP35W	47.92146	-103.55635	0.19	0.11	85
	ADP36U	47.921432	-103.556414			
BWET1	BDP2W	47.761641	-103.041042	0.27	0.10	148
	BDP3U	47.761614	-103.041072			
BWET2	BDP4W	47.76327	-103.051275	0.16	0.08	52
	BDP5U	47.763294	-103.051299			
BWET3	BDP10W	47.740168	-103.33418	0.02	0	0
	BDP11U	47.740186	-103.334228			
BWET4	BDP19W	47.926719	103.561528	0.01	0	0
	BDP20U	47.926682	-103.561481			
BWET5	BDP22W	47.954185	-103.60264	1.10	0.57	267
	BDP23U	47.954271	-103.602708			
NWI	ADP2U	47.78768	-102.915383	0	0	0
Total				**4.05**	**1.94**	**1,050**

ROW = right-of-way

3.4 WATERBODIES

SWCA identified 12 waterbodies, classified as either ephemeral, intermittent, or perennial streams, within the survey area (Table 2). All recorded streams are likely jurisdictional; however, the USACE has the final authority to determine jurisdictional status. Six named streams (USGS 2011) were surveyed within the proposed alignment. Timber Creek (BSTR8), Cherry Creek (BSTR4 and BSTR7), Spring Creek (BSTR6), and Sevenmile Creek (BSTR5) all displayed OHWMs and were recorded as streams. North Fork Creek (AWET1) did not have signs of an OWHM or flowing water, however the area did meet the wetland criteria. Tobacco Garden Creek (at ADP27U) was dominated by upland vegetation, did not have hydric soils present, and showed no indicators of an OWHM. As such, this crossings was recorded as upland. In addition to the recorded waterbodies, SWCA recorded one upland swale and 24 upland data points that fell along NHD 24K flowlines (Appendices A and B). These areas did not show indicators of hydrology; UPL or FACU vegetation species were dominant in the plant communities; and they lacked hydric soils. Therefore, they do not meet the criteria to be considered waters of the U.S., including wetlands.

Table 2. Streams within the Survey Area

Feature ID	Description	Location		Total Area (acres)	Length of Required Crossing (feet)
		Latitude	Longitude		
ASTR1	Ephemeral	47.762703	-102.94339	0.01	4
ASTR2	Intermittent	47.763119	-103.02117	0.07	19
BSTR1	Ephemeral	47.761836	-103.041462	0.05	28
BSTR2	Ephemeral	47.761387	-103.044151	0.08	32
BSTR3	Intermittent	47.765775	-103.129038	0.08	51
BSTR4 (Cherry Creek)	Perennial	47.756173	-103.157667	0.27	65
BSTR5 (Sevenmile Creek)	Ephemeral	47.754595	-103.161697	0.08	22
BSTR6 (Spring Creek)	Perennial	47.727888	-103.293639	0.15	38
BSTR7 (Cherry Creek)	Perennial	47.740313	-103.333978	0.34	87
BSTR8 (Timber Creek)	Perennial	47.950991	-103.589956	0.13	34
BSTR9	Ephemeral	47.95408	-103.602424	0.03	12
BSTR10	Intermittent	47.957486	-103.604769	0.06	207
Total				**1.35**	**599**

3.5 SOILS

Based on Natural Resources Conservation Service (NRCS) mapping (NRCS 2013), 71 soil types are present in the project 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 2013).

Table 3. NRCS Derived Soil Series Present within the Survey Area

Soil Type	MUSYM	% Slope	Area (acres)	% of Total Area
Zahl-Williams loams	E3555D	9 to 15	99.65	7.58
Williams-Zahl loams	E3541C	6 to 9	90.17	6.86
Vebar-Flasher-Tally complex	E1355D	9 to 15	72.43	5.51
Zahl-Cabba-Maschetah complex	E3609F	6 to 70	70.92	5.40
Rhame-Fleak complex	L1425F	9 to 50	70.92	5.40
Flasher-Vebar-Parshall complex	E1423F	9 to 35	65.08	4.95
Cabba-Chama-Sen silt loams	E2741D	9 to 15	64.54	4.91
Williams-Zahl loams	E3541B	3 to 6	63.44	4.83
Zahl-Beisigl-Tally complex	E3637D	9 to 15	59.71	4.54
Vebar-Cohagen fine sandy loams	E1333C	6 to 9	40.49	3.08
Dogtooth-Janesburg-Cabba complex	E0701F	6 to 35	32.48	2.47

Soil Type	MUSYM	% Slope	Area (acres)	% of Total Area
Zahl-Max loams, dissected	E3567F	15 to 45	30.03	2.29
Belfield-Grail clay loams	E0605A	0 to 2	27.35	2.08
Chama-Cabba-Sen silt loams	E2737C	6 to 9	27.03	2.06
Cabba-Chama-Shambo loams	E2617F	9 to 50	23.97	1.82
Zahl-Max loams	E3559E	15 to 25	23.90	1.82
Williams-Bowbells loams	E3527B	3 to 6	23.41	1.78
Beisigl-Flasher-Telfer loamy fine sands	E1403D	6 to 15	21.20	1.61
Korchea-Fluvaquents complex, channeled, frequently flooded	E4139A	0 to 2	19.98	1.52
Beisigl-Telfer loamy fine sands	E1603D	6 to 15	17.69	1.35
Boxwell-Kremlin loams	L2807D	9 to 15	17.45	1.33
Cabba-Chama-Havrelon, occasionally flooded complex	E4190F	2 to 70	17.38	1.32
Amor-Cabba loams	E2601C	6 to 9	17.37	1.32
Dooley-Zahl complex	E3703D	9 to 15	15.59	1.19
Daglum-Belfield complex	E0447B	0 to 6	15.09	1.15
Zahl-Tally-Williams complex	E3635C	6 to 9	14.95	1.14
Dooley-Zahl complex	E3703B	3 to 6	14.48	1.10
Farnuf loam	E2120B	2 to 6	14.34	1.09
Cabba-Badland complex	E3107F	6 to 70	14.13	1.08
Belfield-Savage-Daglum complex	E0617B	2 to 6	12.22	0.93
Dogtooth-Janesburg silt loams	E0559B	0 to 6	11.43	0.87
Zahl-Williams-Cabba complex	E3639C	6 to 9	10.78	0.82
Savage silty clay loam	E0837B	2 to 6	10.39	0.79
Boxwell-Cabbart-Arikara complex	L2633F	9 to 70	9.99	0.76
Chama-Sen-Cabba silt loams	E2913B	3 to 6	9.95	0.76
Golva silt loam	E2213C	6 to 9	9.86	0.75
Niobell-Williams loams	E3513B	3 to 6	9.70	0.74
Dooley-Zahl complex	E3703C	6 to 9	8.98	0.68
Williams-Bowbells loams	E3527A	0 to 3	8.72	0.66
Vebar-Cohagen fine sandy loams	E1333B	3 to 6	8.42	0.64
Golva silt loam	E2213B	2 to 6	6.73	0.51
Lawther silty clay	E0821A	0 to 2	6.69	0.51
Havrelon loam, occasionally flooded	E4121A	0 to 2	6.53	0.50
Amor-Cabba loams	E2601D	9 to 15	6.33	0.48
Cherry silt loam	E3203C	6 to 9	6.23	0.47
Lihen-Parshall complex	E1805B	0 to 6	6.14	0.47
Rhame-Kremlin-Archin complex	L2335D	6 to 15	5.67	0.43
Ridgelawn silt loam, occasionally flooded	E4153A	0 to 2	5.33	0.41
Regent-Cabba complex	E0921C	6 to 9	5.24	0.40
Rhame-Chinook fine sandy loams	L1355D	9 to 15	4.99	0.38
Farnuf loam	E2120A	0 to 2	4.99	0.38
Savage-Grail silty clay loams	E0835A	0 to 2	4.98	0.38
Farnuf loam	E2120C	6 to 9	4.91	0.37
Brandenburg-Cabba-Dogtooth complex	E3013F	15 to 70	4.68	0.36
Moreau-Barkof silty clays	E1009B	3 to 6	4.52	0.34

Soil Type	MUSYM	% Slope	Area (acres)	% of Total Area
Amor-Shambo loams	E2803B	3 to 6	4.27	0.33
Tally-Parshall fine sandy loams	E1865B	2 to 6	4.27	0.32
Cabbart-Badland complex	L3107F	6 to 70	4.20	0.32
Zahl-Cabba-Williams complex	E3641D	9 to 15	4.18	0.32
Boxwell-Kremlin loams	L2803B	3 to 6	2.94	0.22
Flasher-Rock outcrop-Vebar complex	E1475F	9 to 70	2.84	0.22
Scairt-Maltese-Boxwell complex	L2311E	2 to 25	2.10	0.16
Golva silt loam	E2213A	0 to 2	1.88	0.14
Moreau-Cabba complex	E0907D	9 to 15	1.68	0.13
Moreau-Wayden silty clays	E0913C	6 to 9	1.45	0.11
Sen-Janesburg silt loams	E2439B	3 to 6	1.36	0.10
Dooley fine sandy loam	E3701B	3 to 6	1.29	0.10
Noonan-Niobell-Williams loams	E3517B	3 to 6	1.11	0.08
Manning-Schaller-Wabek complex	E4561F	6 to 35	0.40	0.04
Arikara-Shambo-Cabba loams	E2725F	9 to 70	0.30	0.03
Lonna silt loam	L3203C	6 to 9	<0.002	<0.01
Total			**1,313.84**	**100.00**

Source: Natural Resources Conservation Service 2013
ROW = right-of-way

3.5.1 Zahl

The Zahl series consists of very deep, slowly permeable, well-drained soils found on glacial till plains, moraines, and valley side slopes at approximately 1 to 60 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 14 inches and mean annual air temperature is approximately 40 degrees Fahrenheit (°F). This soil type is largely used for rangeland foraging. Native vegetation species common to this soil type include western wheatgrass, little bluestem (*Schizachyrium scoparium*), and needle and thread (*Hesperostipa comata*) (NRCS 2013).

3.5.2 Williams

The Williams series consists of very deep, slowly permeable, well-drained soils found on glacial till plains and moraines with slopes at approximately 0 to 35 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 14 inches and mean annual air temperature is approximately 42°F. This soil type is largely used for cultivation. Native vegetation species common to this soil type include western wheatgrass, needle and thread, blue grama (*Bouteloua gracilis*), and green needlegrass (NRCS 2013).

3.5.3 Vebar

The Vebar series consists of moderately deep, moderately rapidly permeable, well-drained soils found on uplands with slopes ranging from approximately 0 to 65 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 cultivation of corn (*Zea mays*) and small grains. Native vegetation species common to this soil type include needle and thread, and prairie sandreed (*Calamovilfa longifolia*) (NRCS 2013).

3.5.4 Flasher

The Flasher series consists of shallow, somewhat excessively drained soils formed in soft sandstone on side slopes, shoulder slopes, and summits of hills and ridges on uplands, and side slopes of valleys. Permeability is moderately rapid or rapid. Slopes range from 3 to 70 percent. The mean annual precipitation found throughout the spatial extent of this soil type is about 14 inches and mean annual temperature is about 42°F. These soils are used mainly for range and pasture. Native vegetation is prairie sandreed, blue grama, little bluestem, upland sedges (*Carex* sp.), some creeping juniper (*Juniperus horizontalis*), and other shrubs (NRCS 2013).

3.5.5 Tally

The Tally series consists of very deep, well-drained soils that formed in material derived from eolian deposits, alluvium, or glaciofluvial deposits. These soils are on stream terraces, alluvial fans, till plains, drainageways, hills, sedimentary plains, and outwash plains. Slopes are 0 to 45 percent. The mean annual precipitation found throughout the spatial extent of this soil type is about 15 inches, and mean annual temperature is about 43°F. Potential native vegetation is mainly western wheatgrass, needle and thread, prairie junegrass (*Koeleria macrantha*), prairie sandreed, forbs, and shrubs (NRCS 2013).

3.5.6 Cabba

The Cabba series consists of shallow, well-drained, moderately permeable soils found on hills, escarpments, and sedimentary plains. The soil slopes broadly range between 2 and 70 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 16 inches and mean annual air temperature is approximately 43°F. The most common vegetation species found on this soil type are little bluestem, green needlegrass, and other various herbs, forbs, and shrub species (NRCS 2013).

3.5.7 Maschetah

The Maschetah series consists of very deep, well-drained soils found on sedimentary plains and hills. Slopes range from 1 to 50 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 17 inches and mean annual air temperature is approximately 43°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, green needlegrass, and fringed sagewort (*Artemisia frigida*) (NRCS 2013).

3.5.8 Rhame

The Rhame series consists of moderately deep, well-drained soils that form on pediments, hills, escarpments, and ridges. Slopes range from approximately 0 to 45 percent. Soils consist of fine sandy loam or sandy loam textures. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 17 inches and mean annual air temperature is approximately 43°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, green needlegrass, and fringed sagewort (NRCS 2013).

3.5.9 Fleak

The Fleak series consists of shallow, excessively drained soils that form on ridges and hilltops. Slopes range from 6 to 70 percent. Soils consist of fine sand or loamy fine sand textures. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 17 inches and mean annual air temperature is approximately 43°F. The potential native vegetation is primarily mid- and short grasses such as western wheatgrass, prairie sandreed, green needlegrass, little bluestem, needle and thread, blue grama, shrubs, and forbs (NRCS 2013).

4.0 CONCLUSIONS AND RECOMMENDATIONS

1. SWCA biologists recorded 15 wetlands, totaling approximately 4.05 acres within the 200-foot-wide survey area. In total, approximately 1.94 acres of PEM wetlands are within the 100-foot construction ROW. None of the wetland crossings exceeded 500 feet and SWCA did not observe any fill material placed into the wetlands during initial construction of the project. The project would be authorized under NWP 12 if permit conditions continue to be met.
2. SWCA recorded 12 streams within the survey corridor, totaling approximately 1.35 acres. The longest stream crossing is approximately 207 feet, remaining under the 500-foot threshold of NWP 12. All recorded streams exhibited characteristics of waters of the U.S. and may be considered jurisdictional under the USACE standards. SWCA did not observe any fill material placed into the streams during initial construction of the project. The project would be authorized under NWP 12 if permit conditions continue to be met.
3. If additional dredged or fill material is to be placed into any waters of the U.S., including wetlands, for the project, SWCA recommends that the USACE be contacted with a request to confirm the preliminary jurisdictional determinations provided in this report, and that a pre-construction notification be provided to the USACE, if necessary, to ensure compliance with their program.

5.0 LITERATURE CITED

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Determination Manual*. Technical Report Y-87-1. Vicksburg, Mississippi: U.S. Army Engineer Waterways Experiment Station.

Natural Resources Conservation Service (NRCS). 2013 Web Soil Survey. Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Available at: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed July 20, 2016.

U.S. Army Corps of Engineers (USACE). 2010. *Regional Supplement to the Corps of Engineers Wetland Determination Manual: Great Plains Region Version 2.0*. Edited by J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-12. Vicksburg, Mississippi: U.S. Army Engineer Research and Development Center.

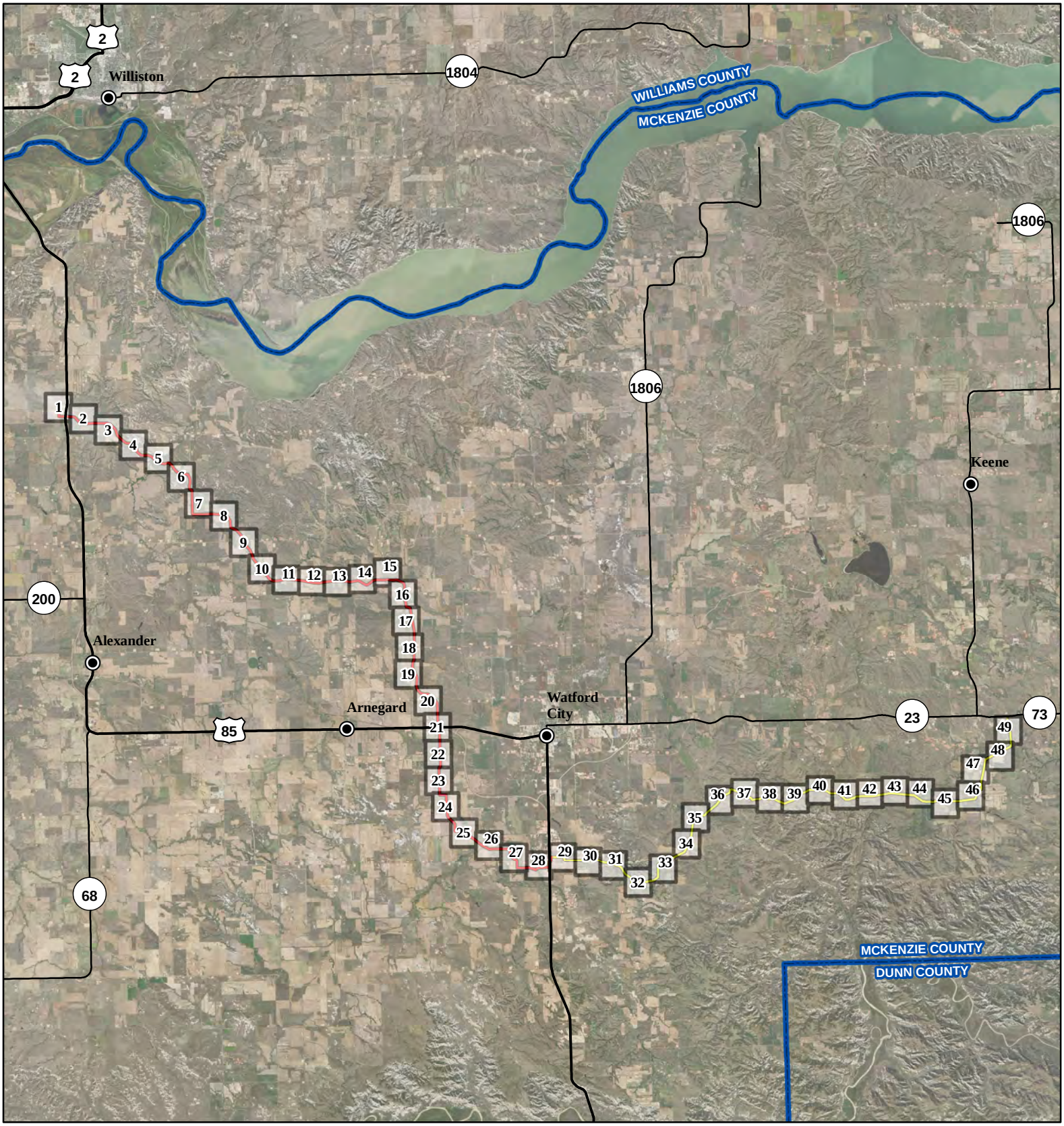
U.S. Department of Agriculture. 2006. *Soil Survey McKenzie County, North Dakota.* Available at: http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/north_dakota/ND053/0/McKenzie%20County.pdf. Accessed January 14, 2016.

U.S. Fish and Wildlife Service (USFWS). 2012. National Wetlands Inventory: Wetlands Online Mapper. Available at: http://westlandsfew.er.usgs.gov/wtlnds/launch.html. Accessed July 15, 2016.

U.S. Geological Survey (USGS). 2011. *NHD Frequently Asked Questions.* Available at: http://nhd.usgs.gov/nhd_faq.html#q101. Accessed January 14, 2016.

———. 2014. Land Cover Trends Project. Available at: http://landcovertrends.usgs.gov/gp/eco43Report.html. Accessed July 15, 2016.

APPENDIX A
Vicinity and Site Layout Maps



Johnsons Corner to Alexander

- City
- Smokey Trunkline
- Alexander Pipeline
- U.S. Highway
- State Highway
- County Boundary

SWCA®
ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Miles
0 5 10

Kilometers
0 10 20

Base Map: 2015 Aerial Imagery
Source: USDA/FSA -
Aerial Photography Field Office
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek West (1978)

Township/Range: T. 152N, R. 101W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek West (1978)

Township/Range: T. 152N, R. 101W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

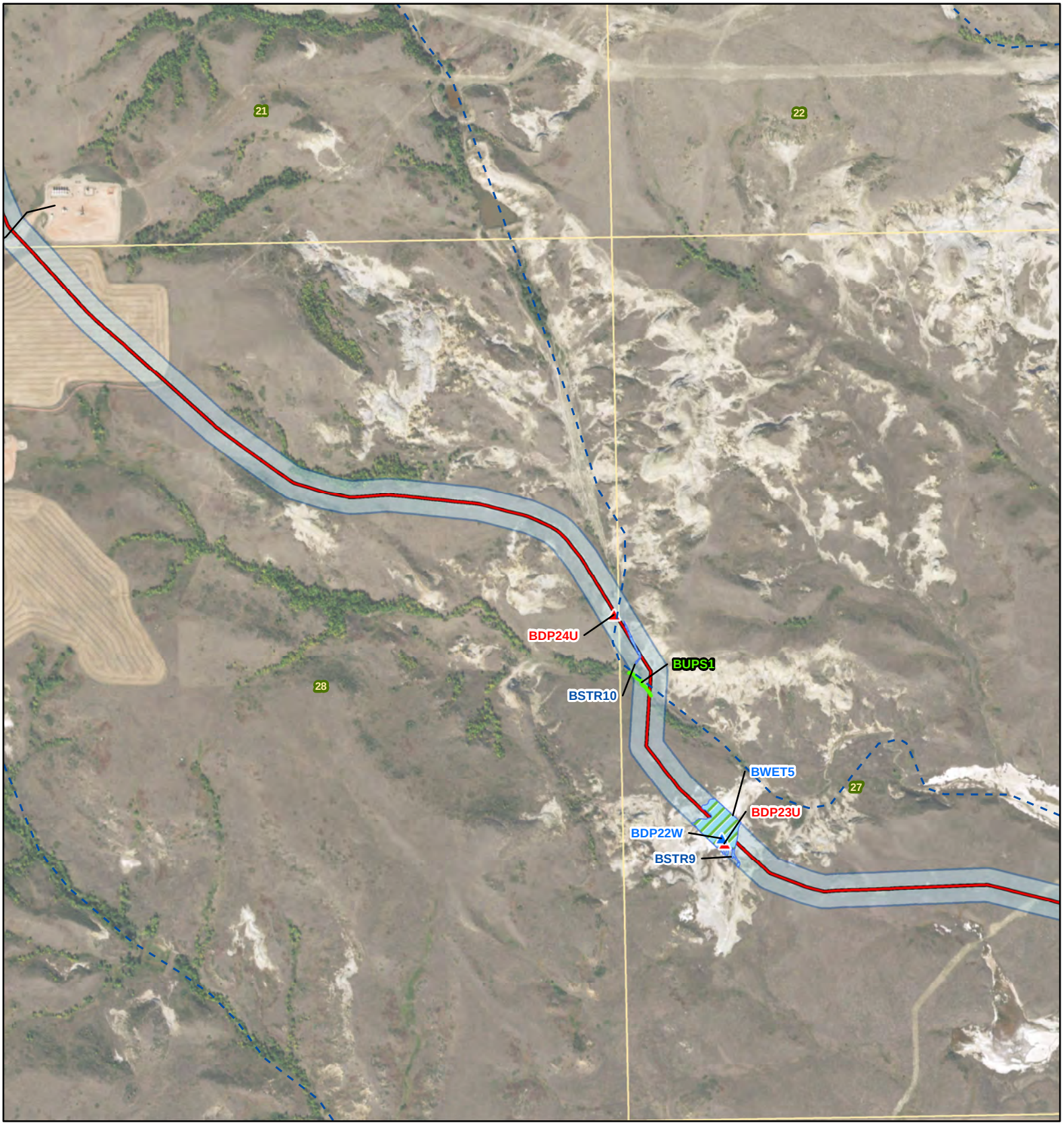
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978),
Camp Creek West (1978)
Township/Range: T. 152N, R. 101W

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

N W E S



Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

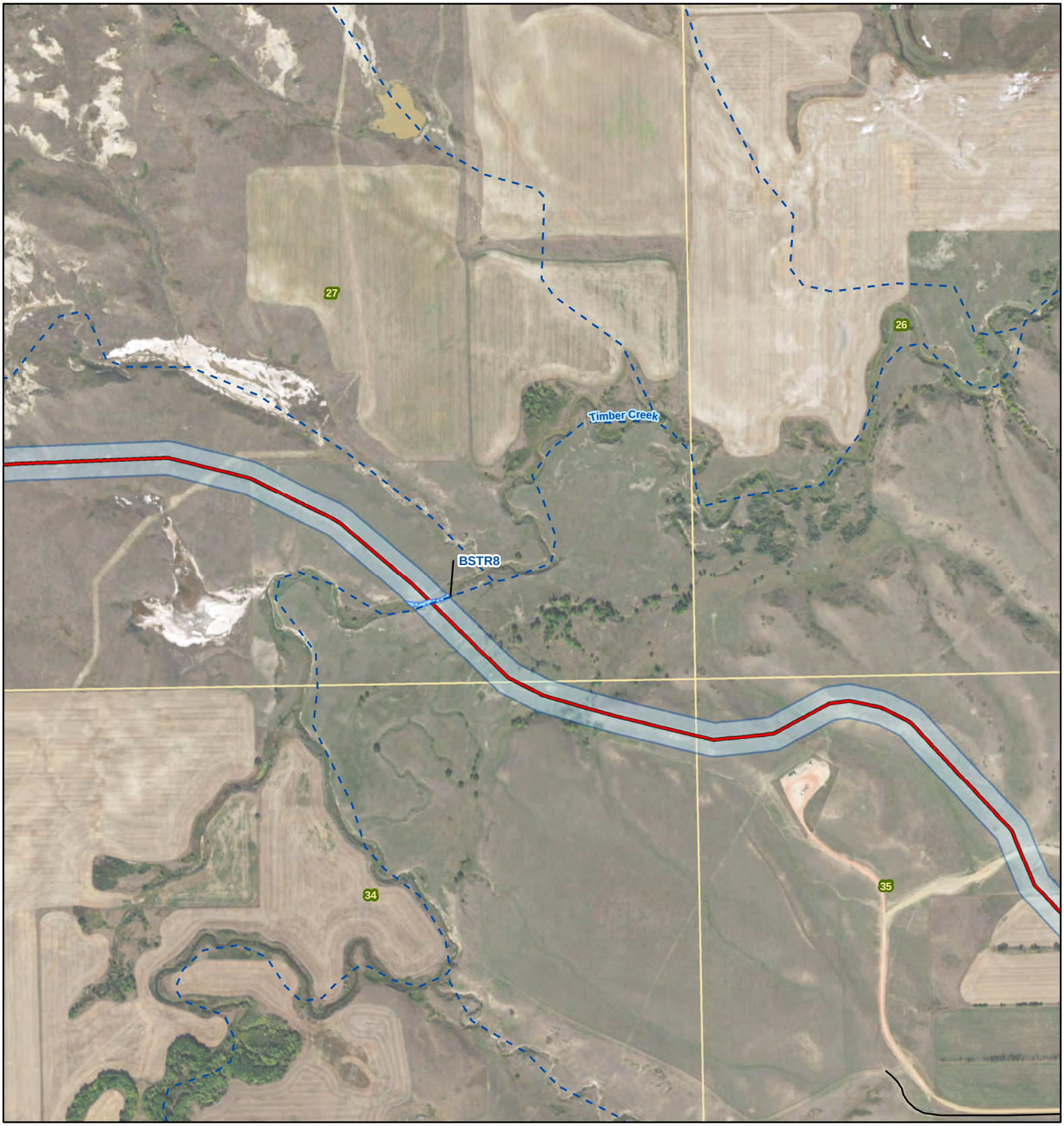
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 152N, R. 101W

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

N W E S



Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 152N, R. 101W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 151N, R. 101W &
T. 152N, R. 101W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

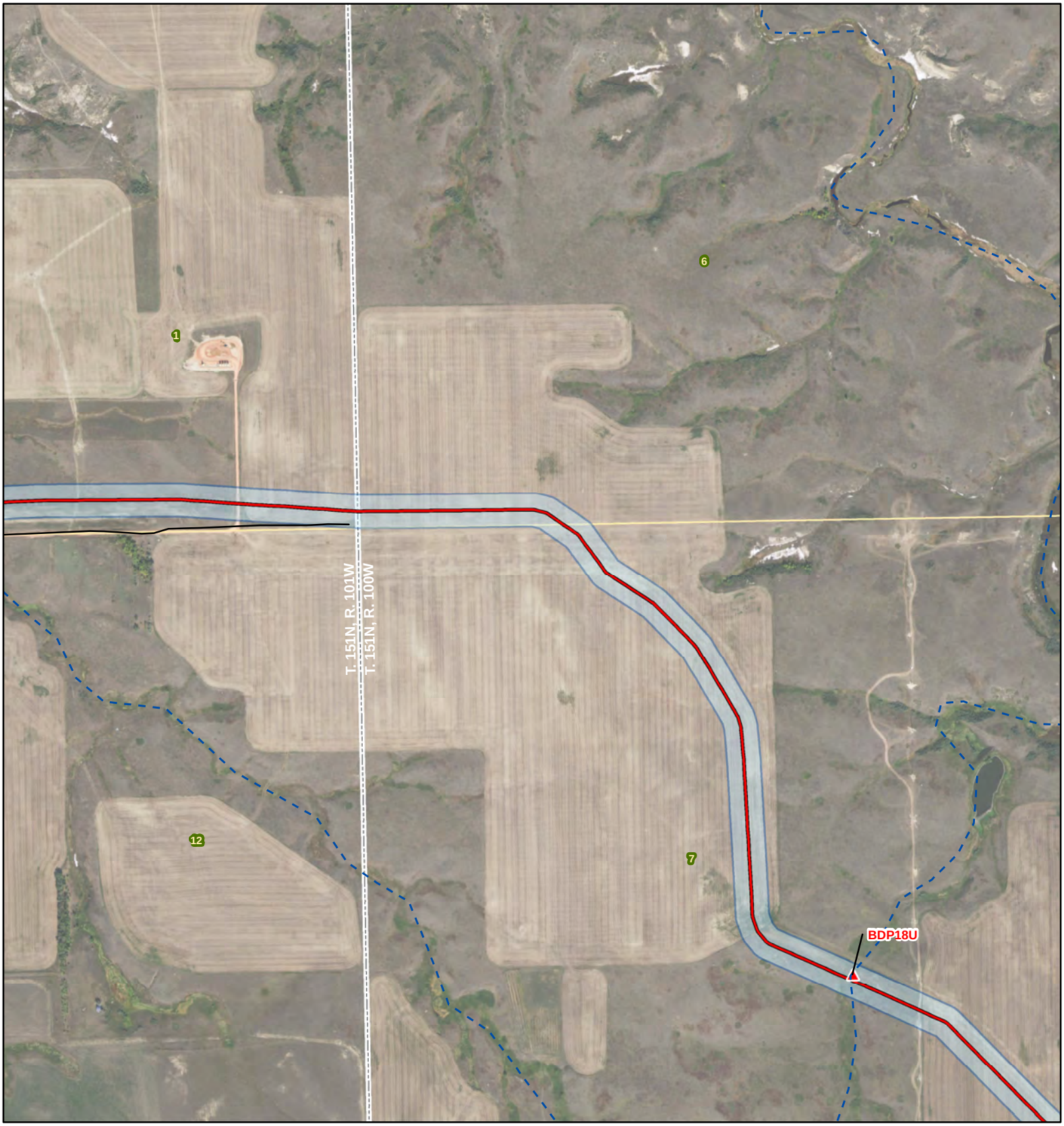
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 151N, R. 101W

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

N W E S



Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 151N, R. 100W &
T. 151N, R. 101W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 151N, R. 100W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

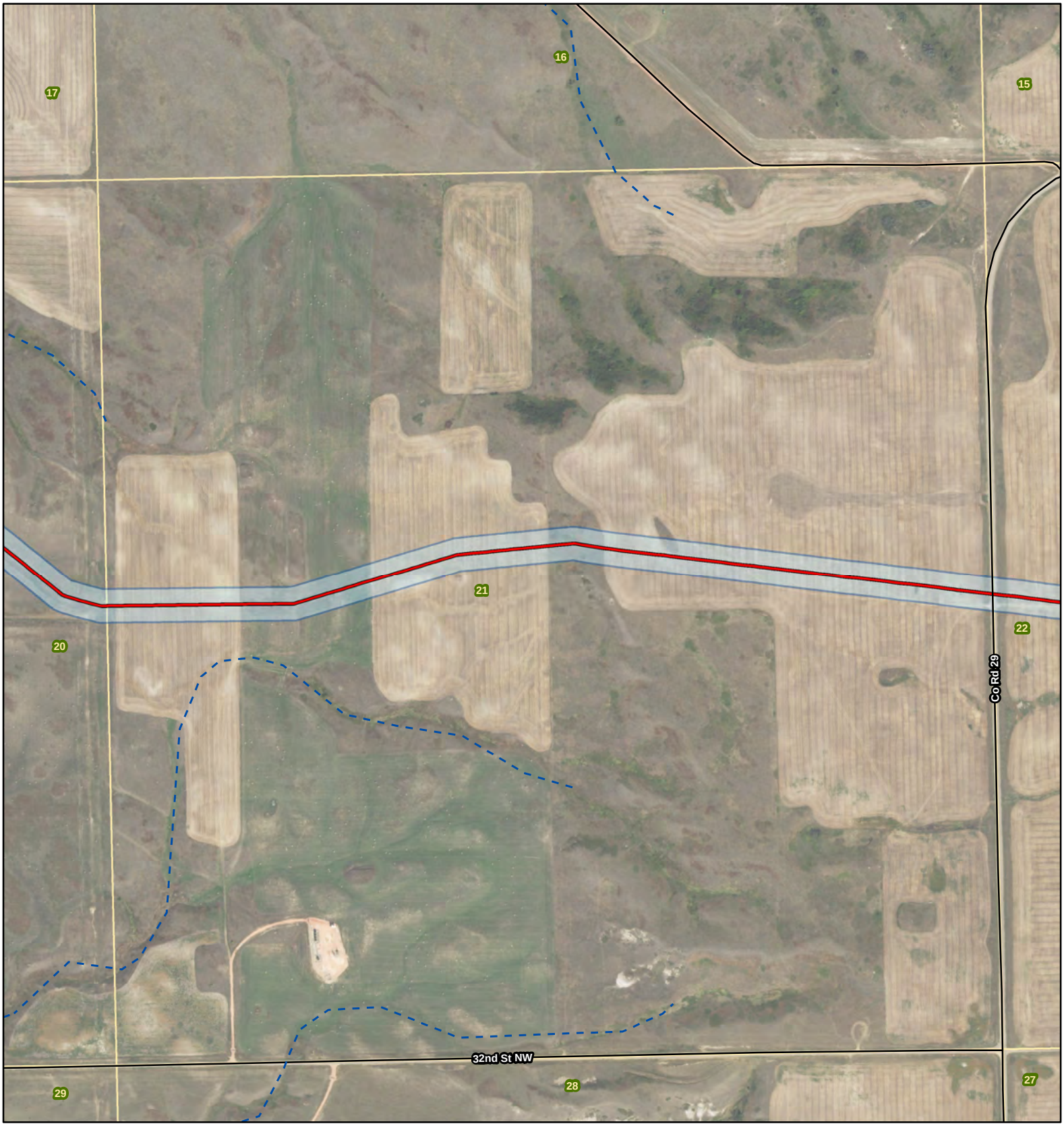
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978),
Camp Creek East (1978)
Township/Range: T. 151N, R. 100W

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

N W E S



Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

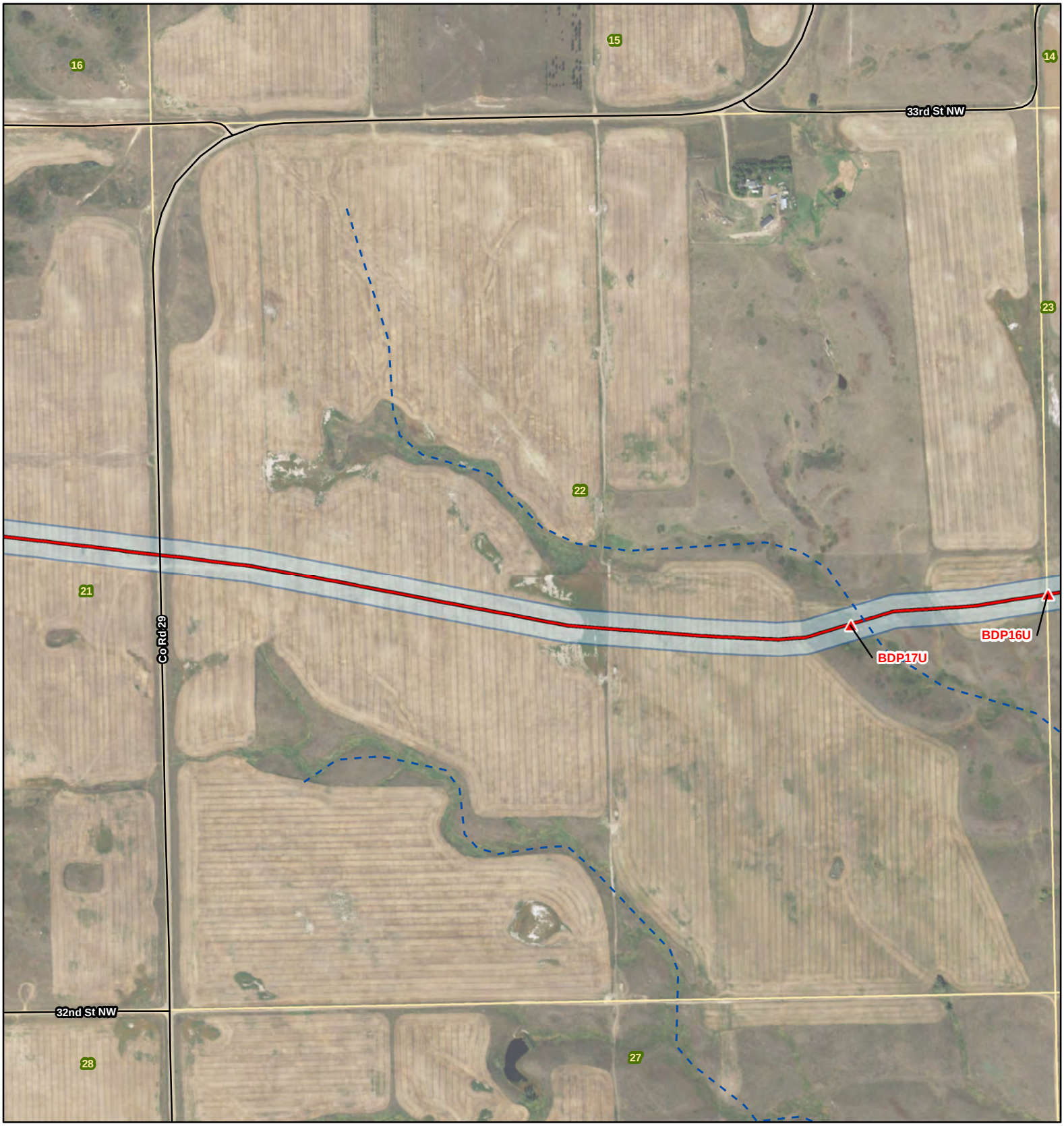
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 100W

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

N W E S



Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 100W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 100W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 100W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 99W &
T. 151N, R. 100W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Arnegard (1978),
Watford City NW (1978)
Township/Range: T. 151N, R. 99W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Arnegard (1978)

Township/Range: T. 151N, R. 99W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Arnegard (1978)

Township/Range: T. 150N, R. 99W &
T. 151N, R. 99W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

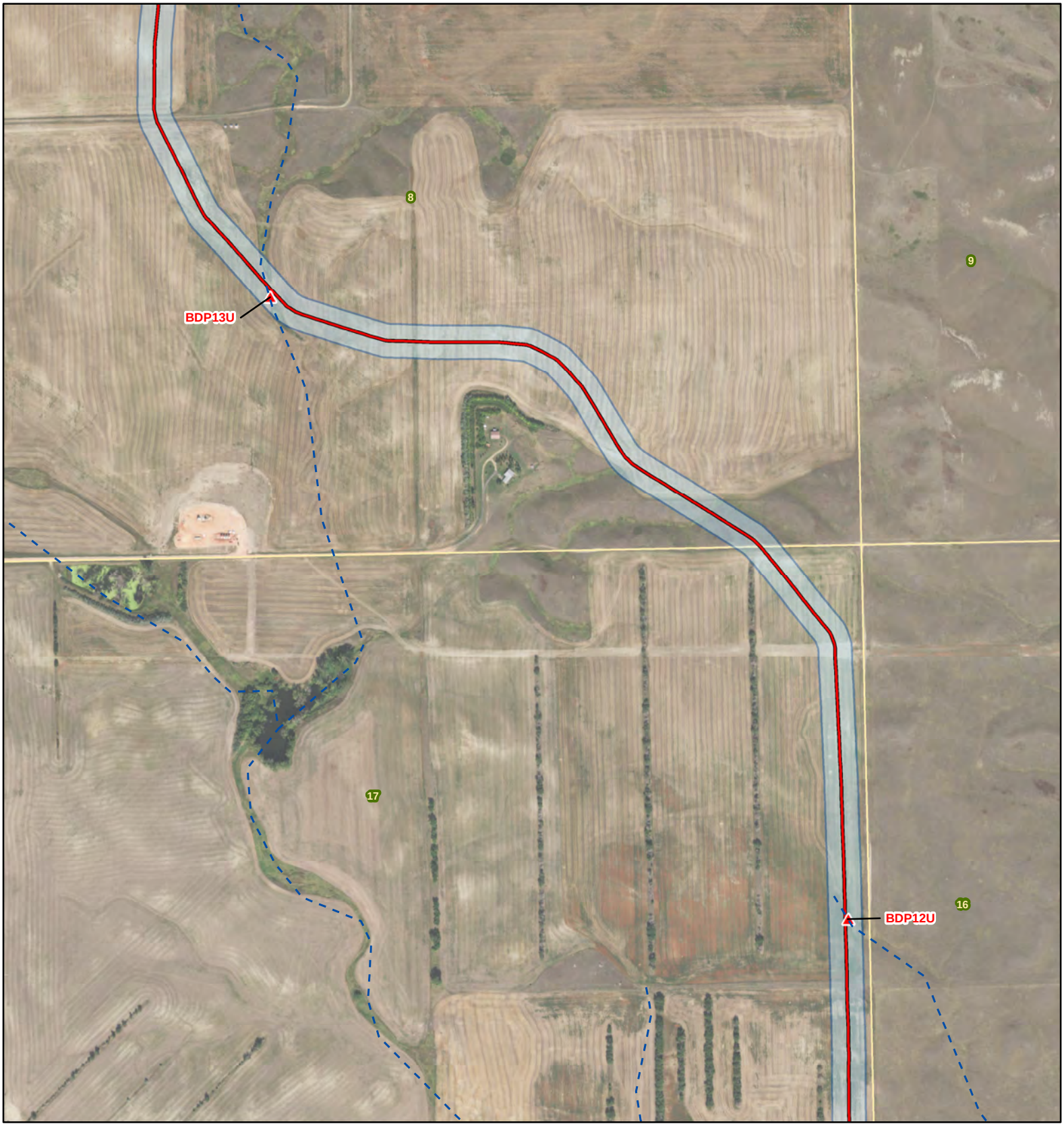
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Arnegard (1978)

Township/Range: T. 150N, R. 99W

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

N W E S



Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

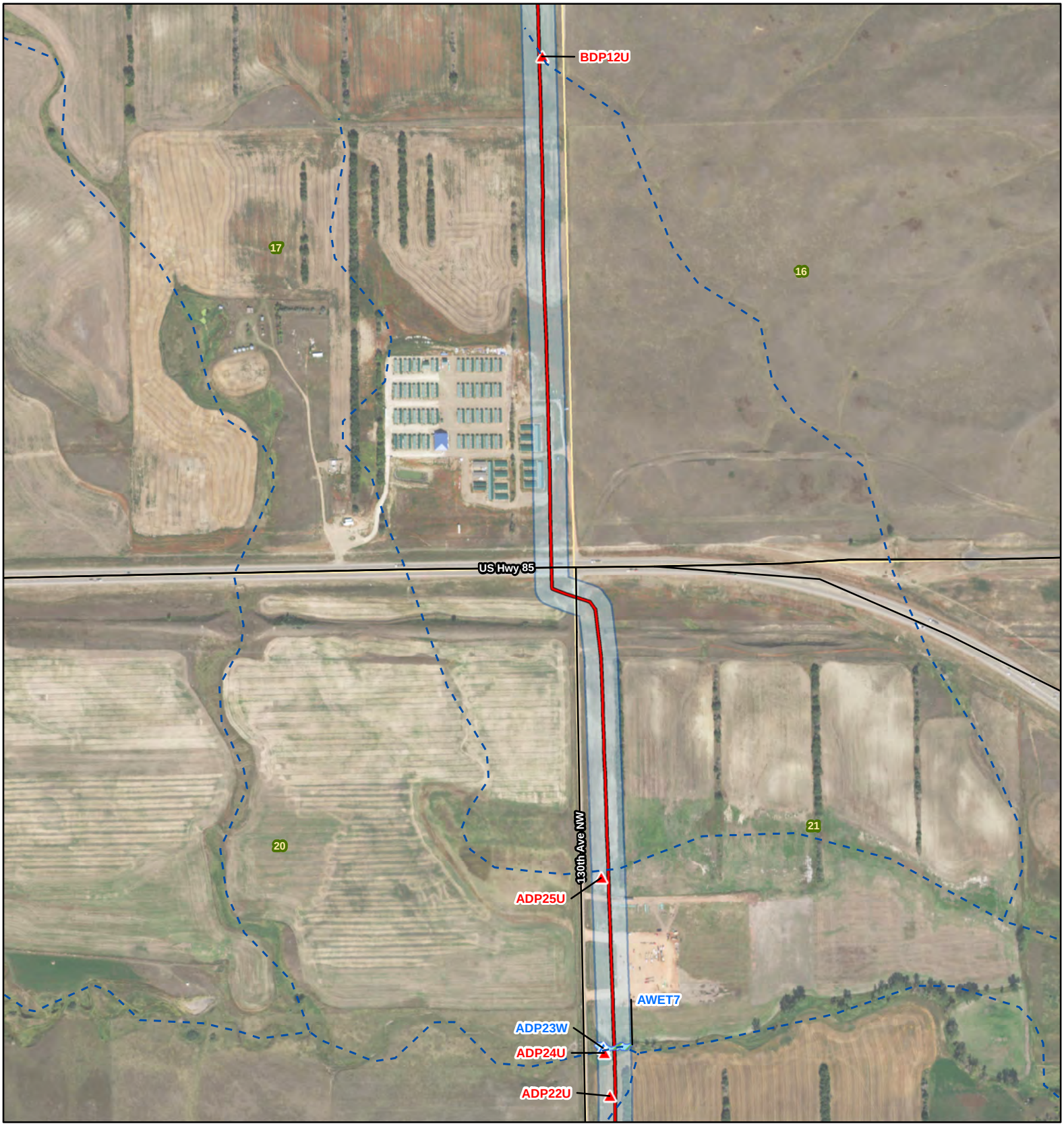
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978),
Arnegard (1978)
Township/Range: T. 150N, R. 99W

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

N W E S



Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978)

Township/Range: T. 150N, R. 99W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978)

Township/Range: T. 150N, R. 99W

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

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

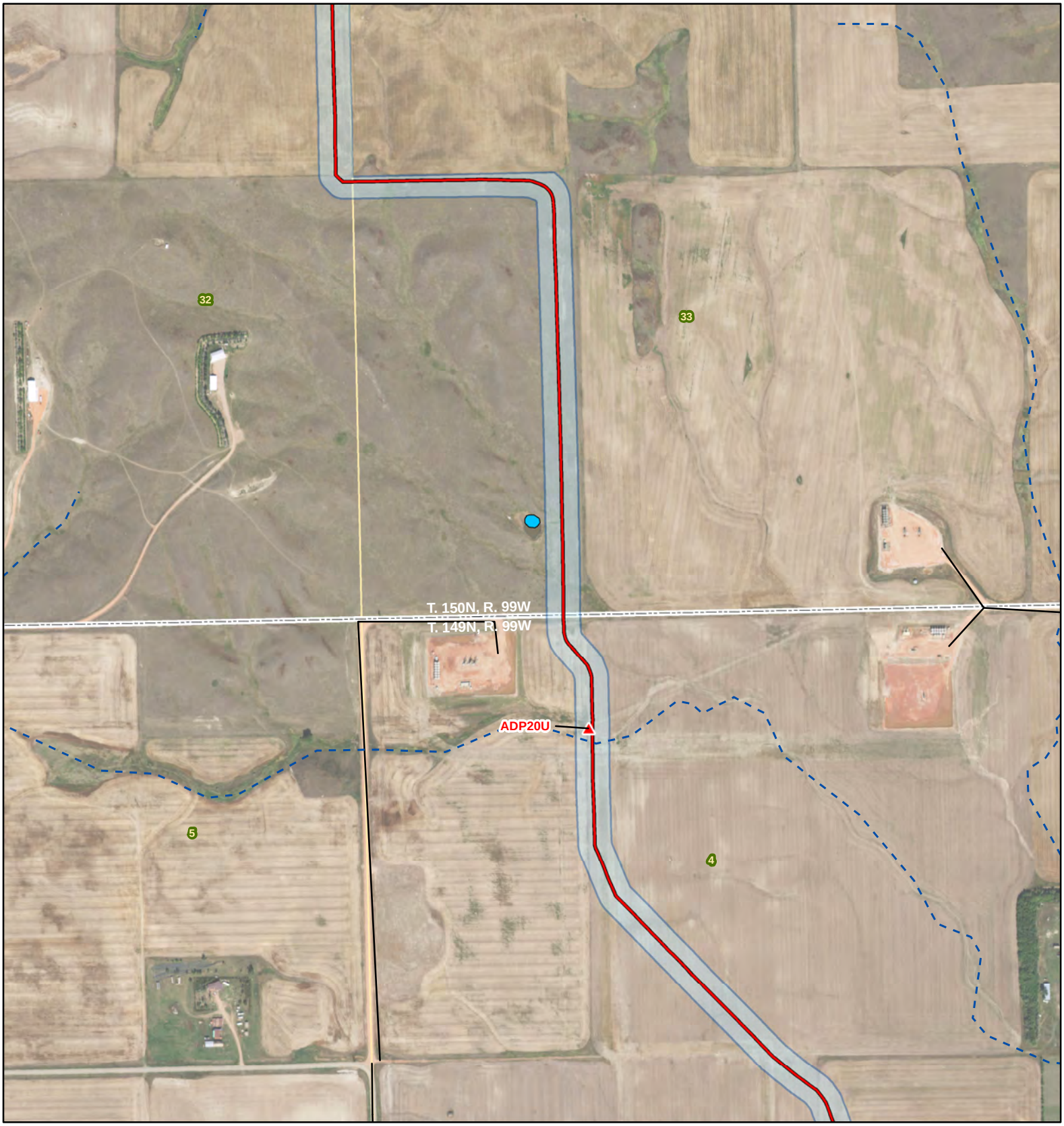
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978)

Township/Range: T. 150N, R. 99W

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

N
W E
S



Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

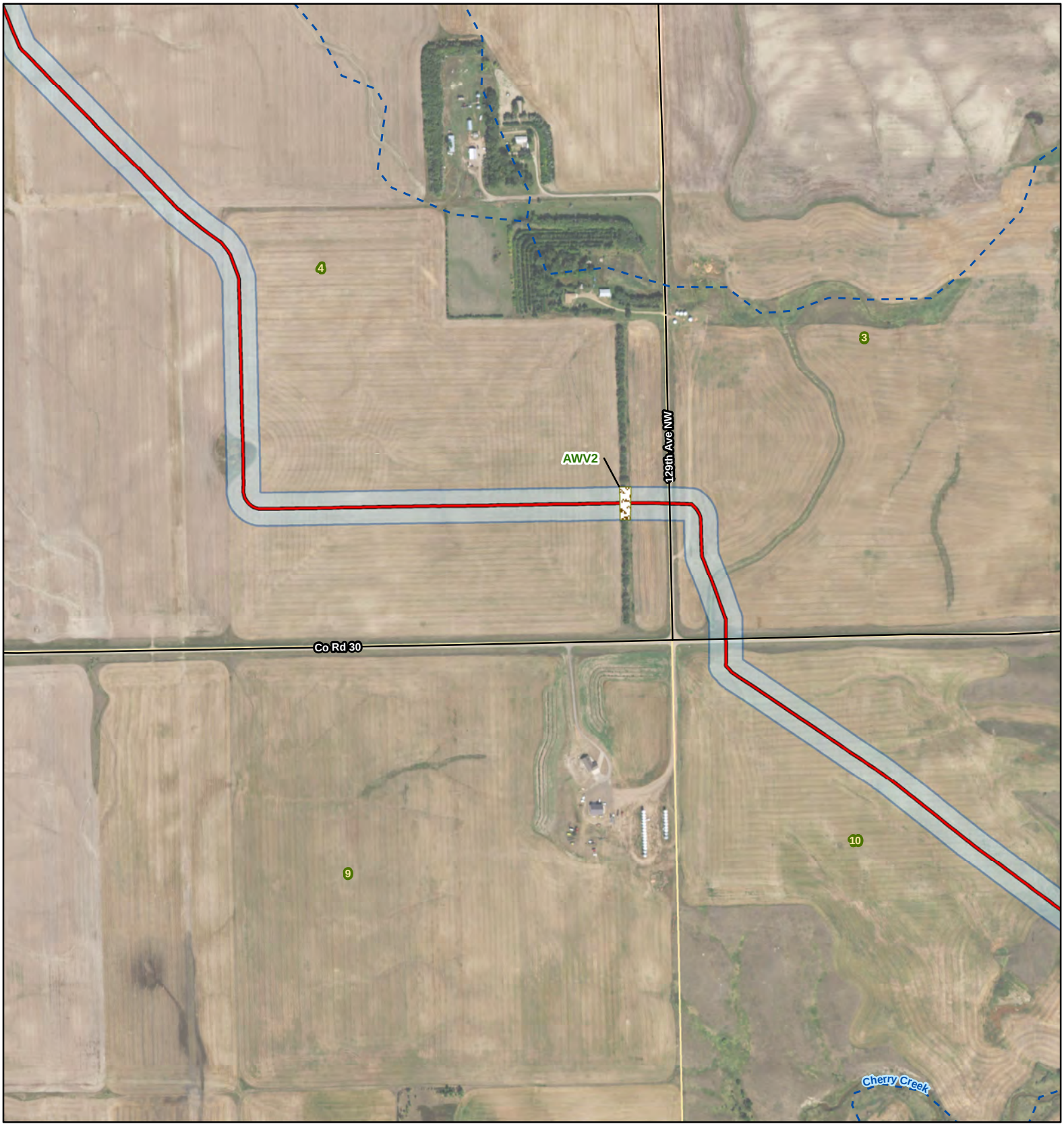
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978)

Township/Range: T. 149N, R. 99W &
T. 150N, R. 99W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S



Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995),
Watford City (1978)
Township/Range: T. 149N, R. 99W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995)

Township/Range: T. 149N, R. 99W

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

N
W E
S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995)

Township/Range: T. 149N, R. 99W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

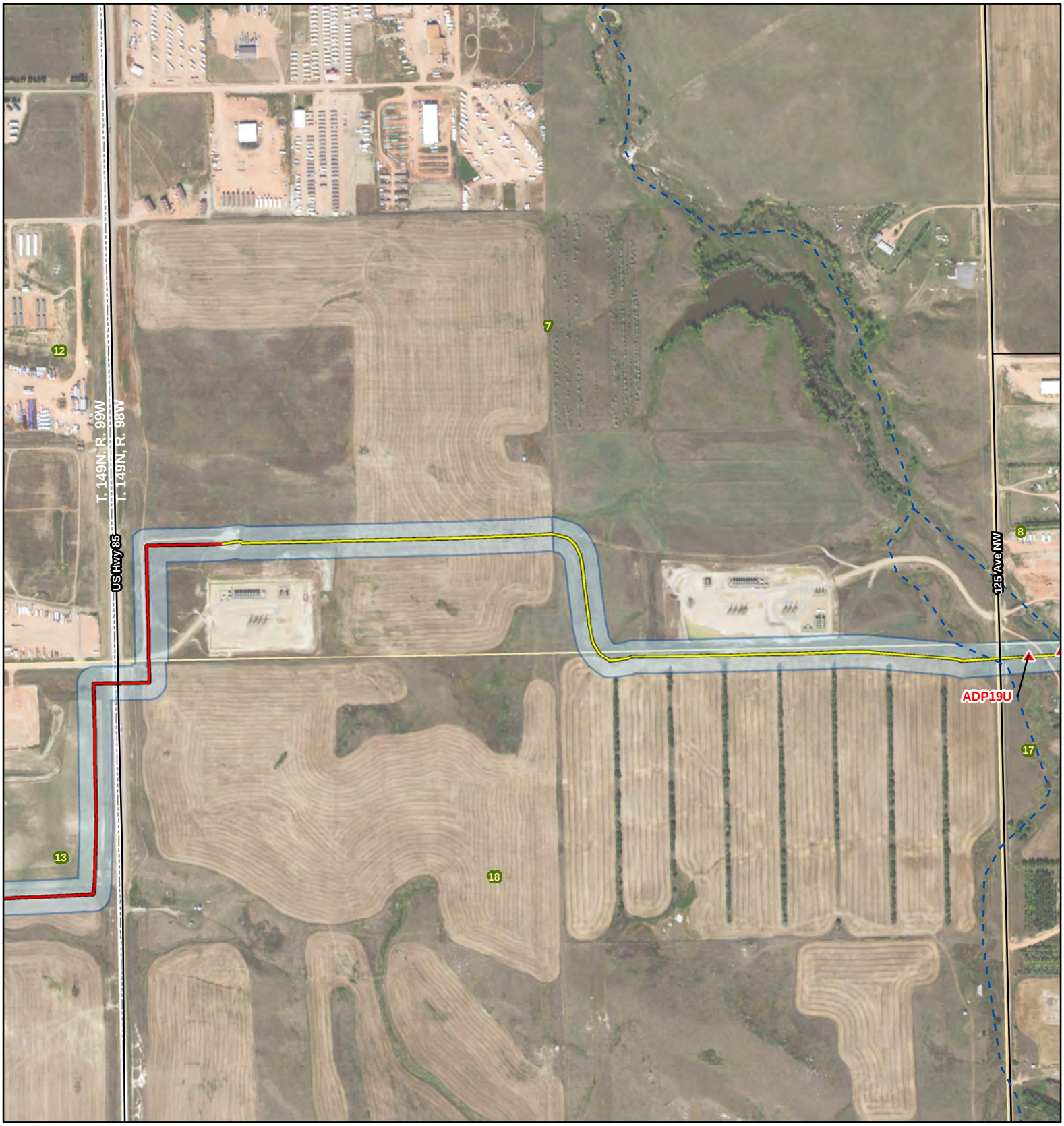
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995)

Township/Range: T. 149N, R. 98W &
T. 149N, R. 99W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S



Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995)

Township/Range: T. 149N, R. 98W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995),
Tepee Buttes (1995)
Township/Range: T. 149N, R. 98W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

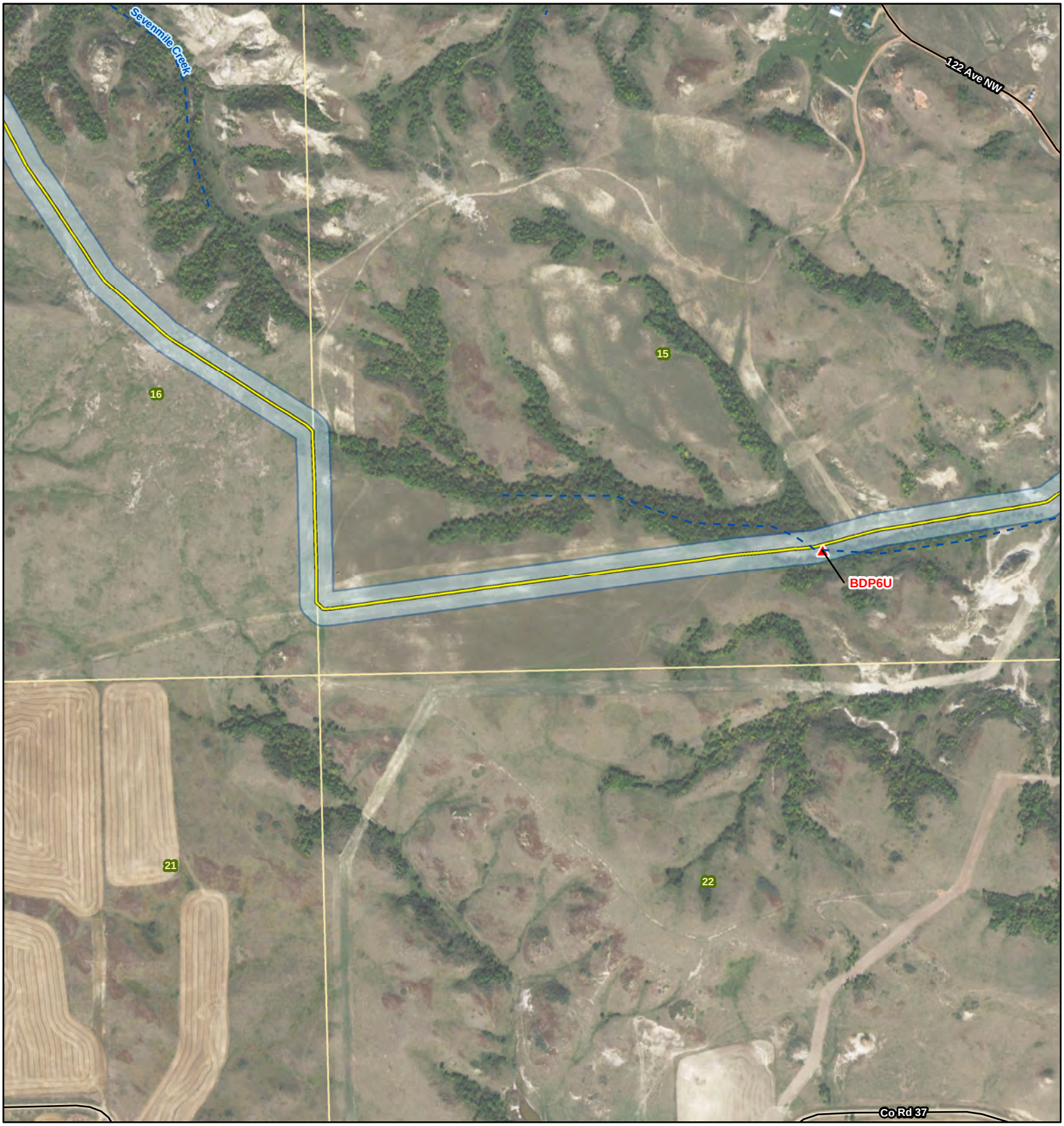
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995)

Township/Range: T. 149N, R. 98W

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

N W E S



Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995)

Township/Range: T. 149N, R. 98W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995)

Township/Range: T. 149N, R. 98W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995)

Township/Range: T. 149N, R. 98W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer (1995),
Lone Butte NW (1995)
Township/Range: T. 149N, R. 98W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

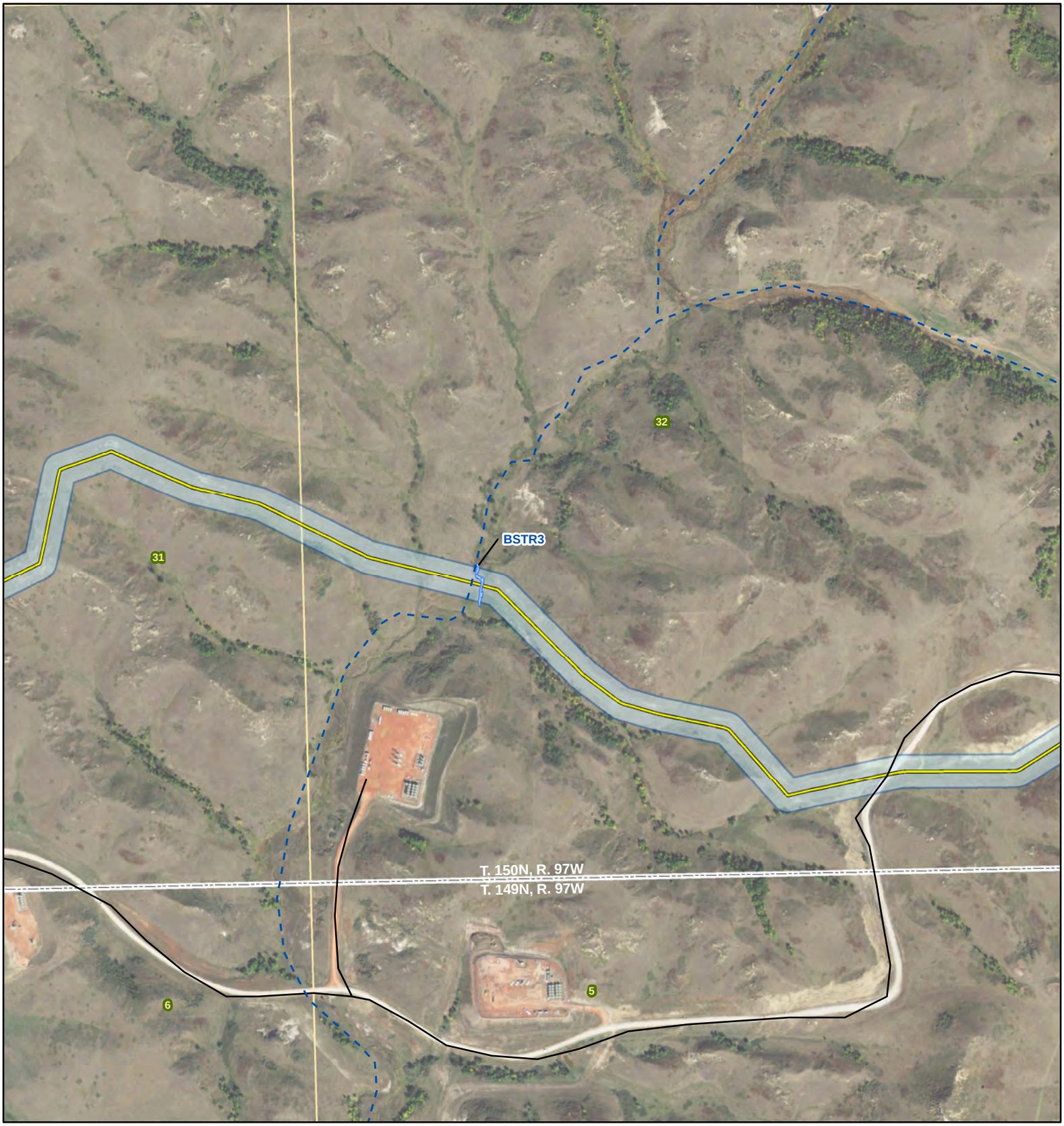
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer (1995)

Township/Range: T. 150N, R. 97W &
T. 149N, R. 97W & T. 149N, R. 98W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S



Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995),
Schafer (1995)
Township/Range: T. 150N, R. 97W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 149N, R. 97W &
T. 150N, R. 97W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA®
ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 150N, R. 97W &
T. 149N, R. 97W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 150N, R. 97W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 150N, R. 97W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 150N, R. 96W &
T. 150N, R. 97W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995),
Schafer SE (1995)
Township/Range: T. 150N, R. 96W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 149N, R. 96W &
T. 150N, R. 96W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 149N, R. 96W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 150N, R. 96W &
T. 149N, R. 96W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

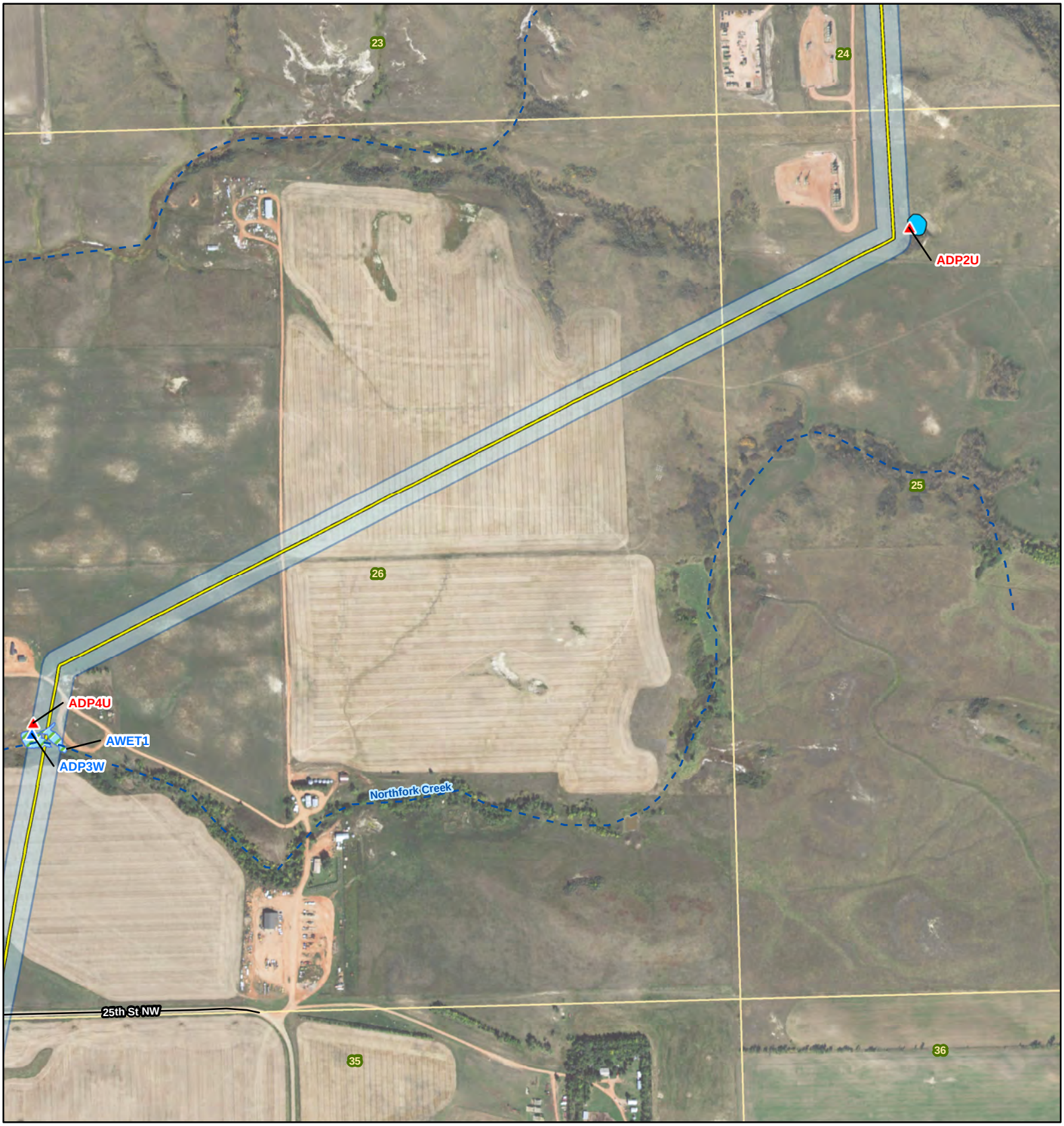
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 150N, R. 96W

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

N W E S



Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 150N, R. 96W

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

N W E S

Johnsons Corner to Alexander

- Upland Data Point
- Wetland Data Point
- Subsidence
- Upland Swale
- Smokey Trunkline
- Alexander Pipeline
- NHD Flowline
- Existing Road
- Stream
- Wetland
- Woody Vegetation
- Noxious Weed
- NWI Wetland
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

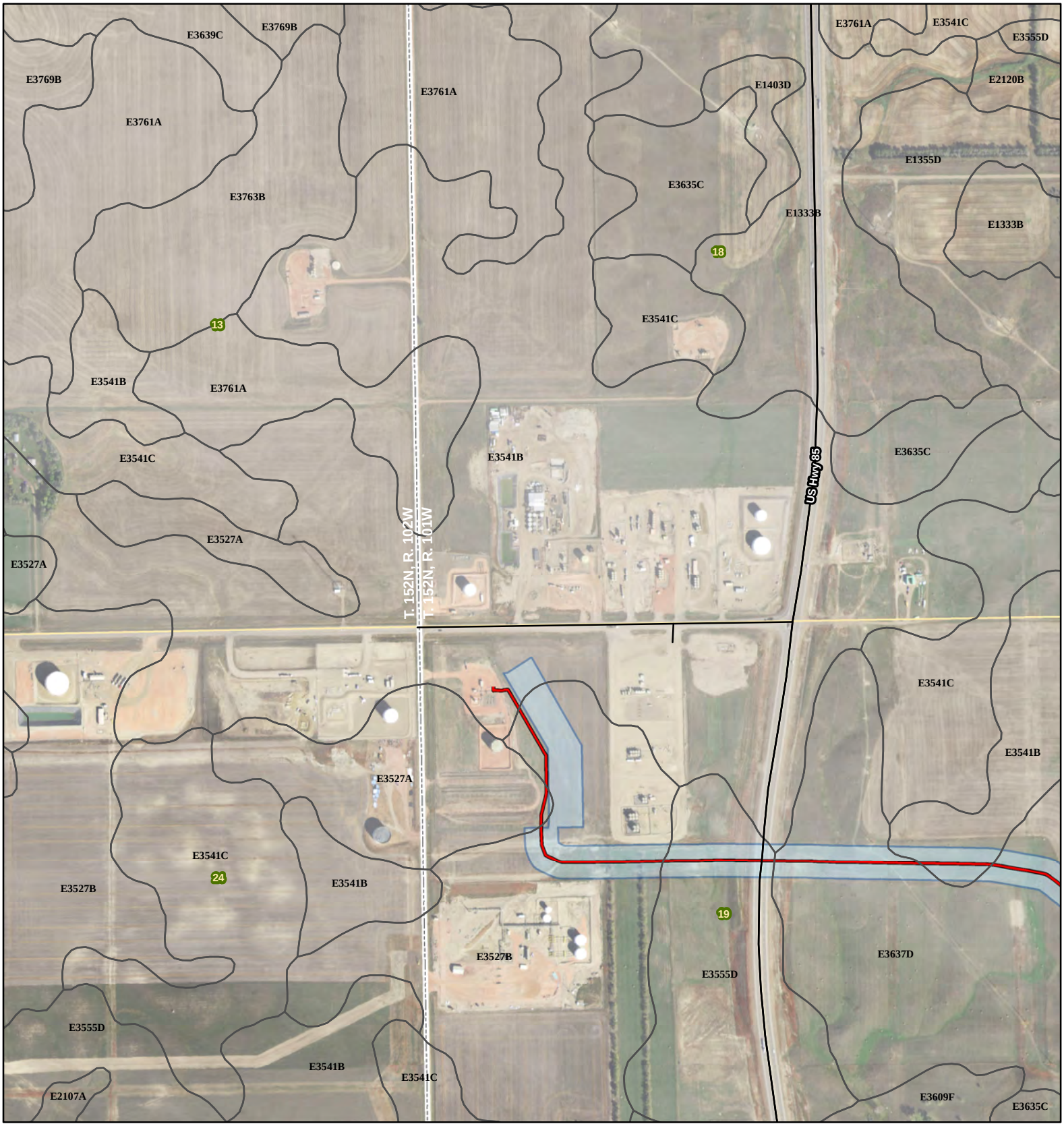
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 150N, R. 96W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek West (1978)

Township/Range: T. 152N, R. 101W

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

N W E S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek West (1978)

Township/Range: T. 152N, R. 101W

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

N W E S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

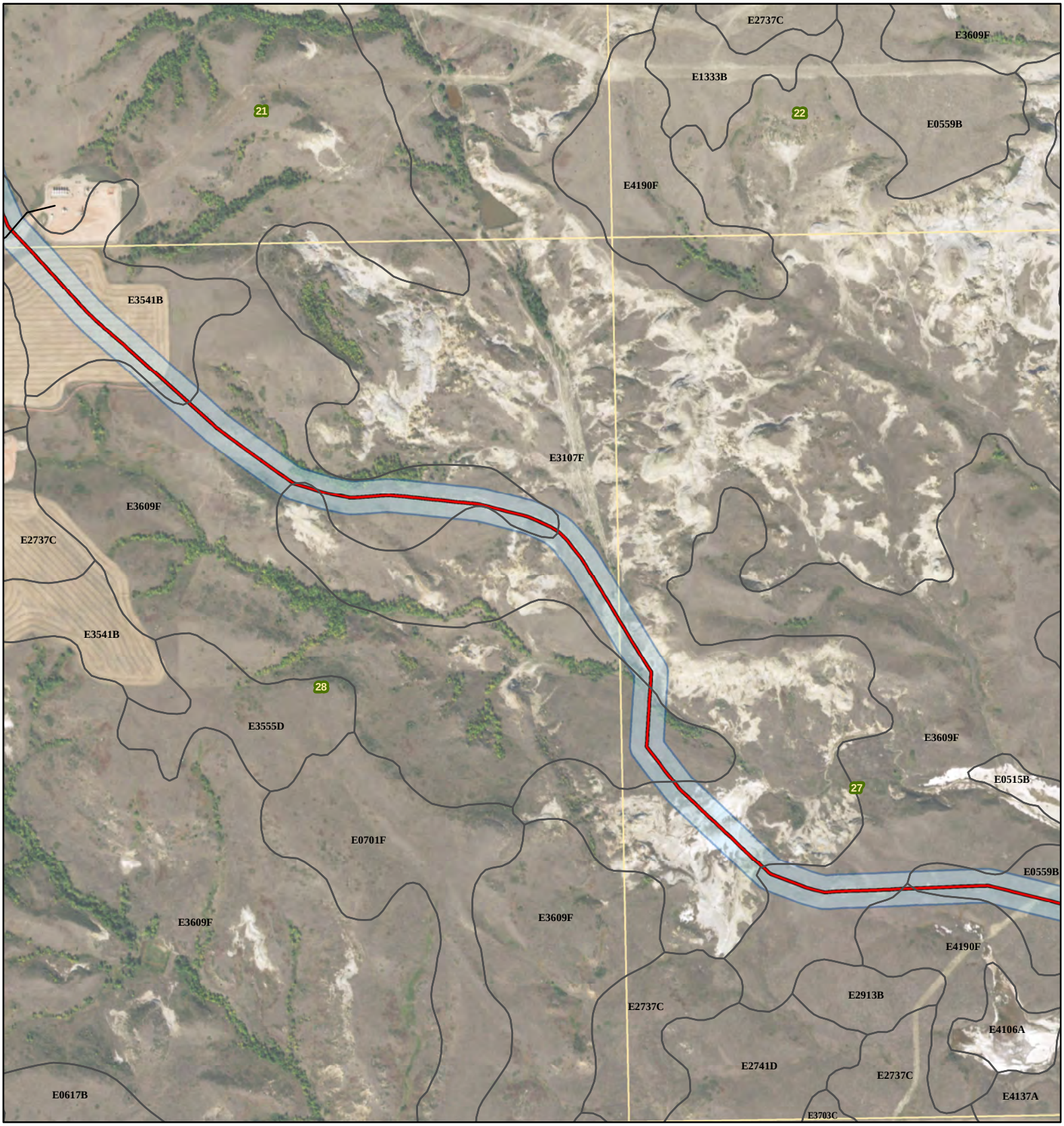
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978),
Camp Creek West (1978)
Township/Range: T. 152N, R. 101W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

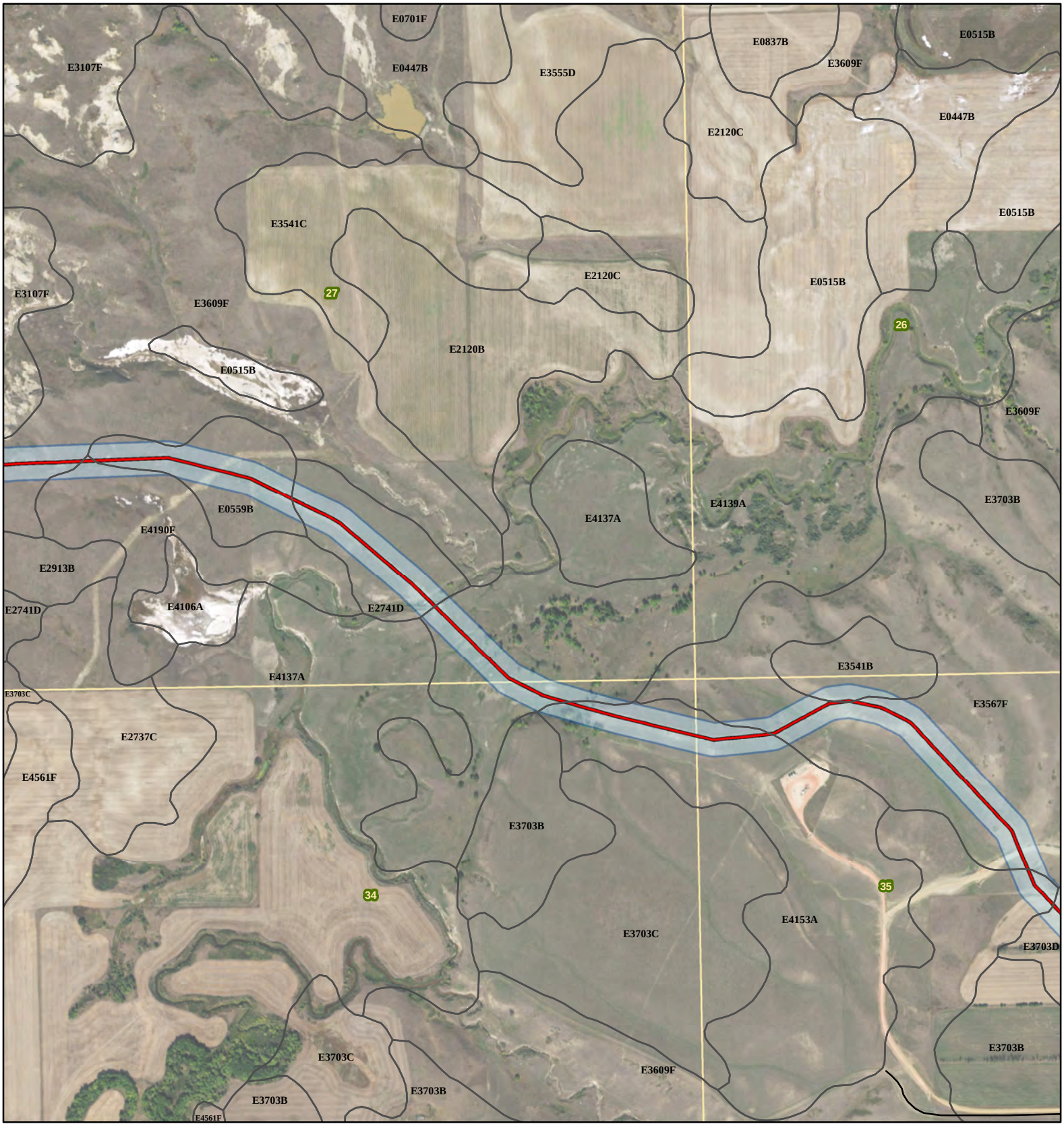
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 152N, R. 101W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

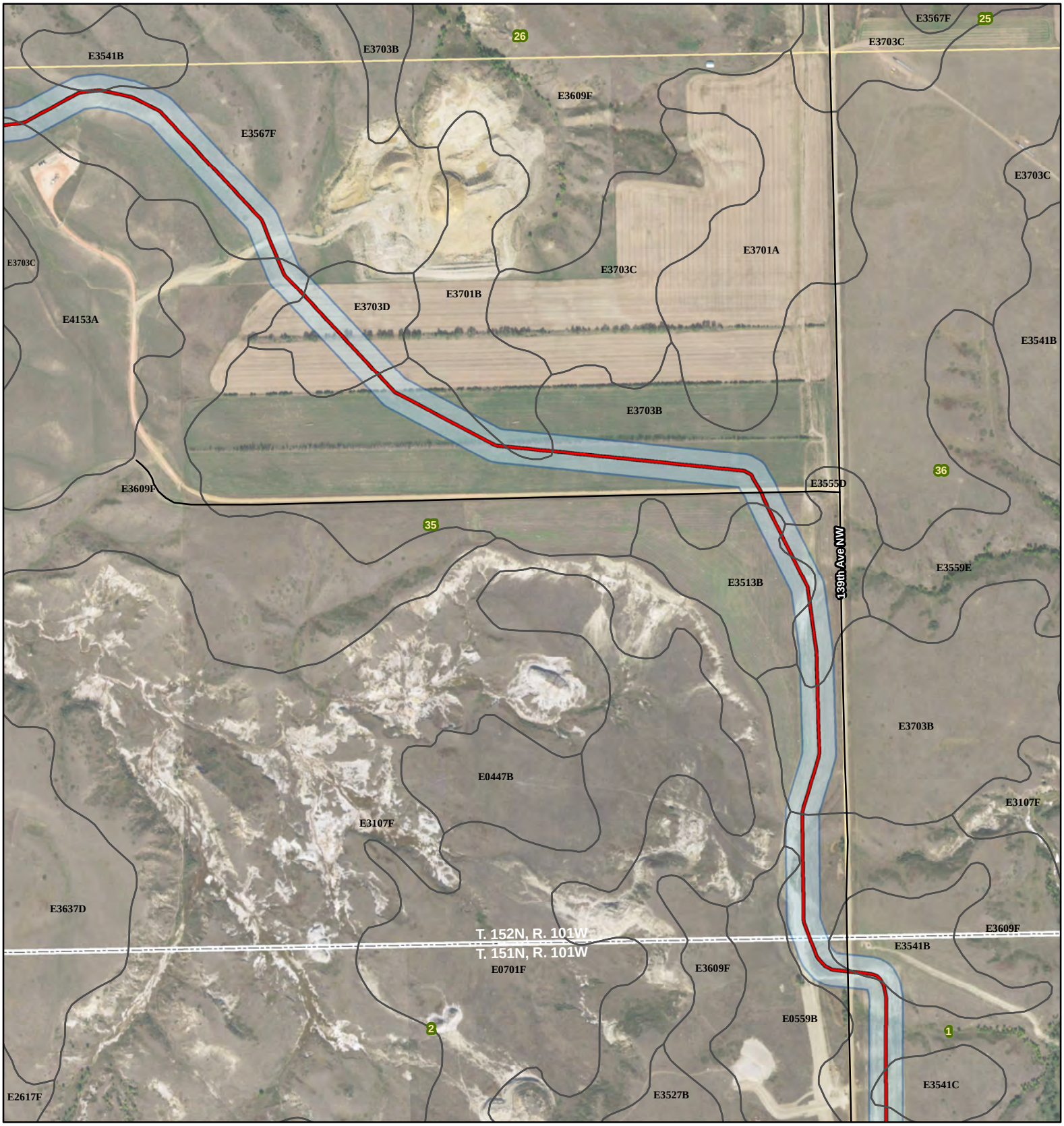
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 152N, R. 101W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

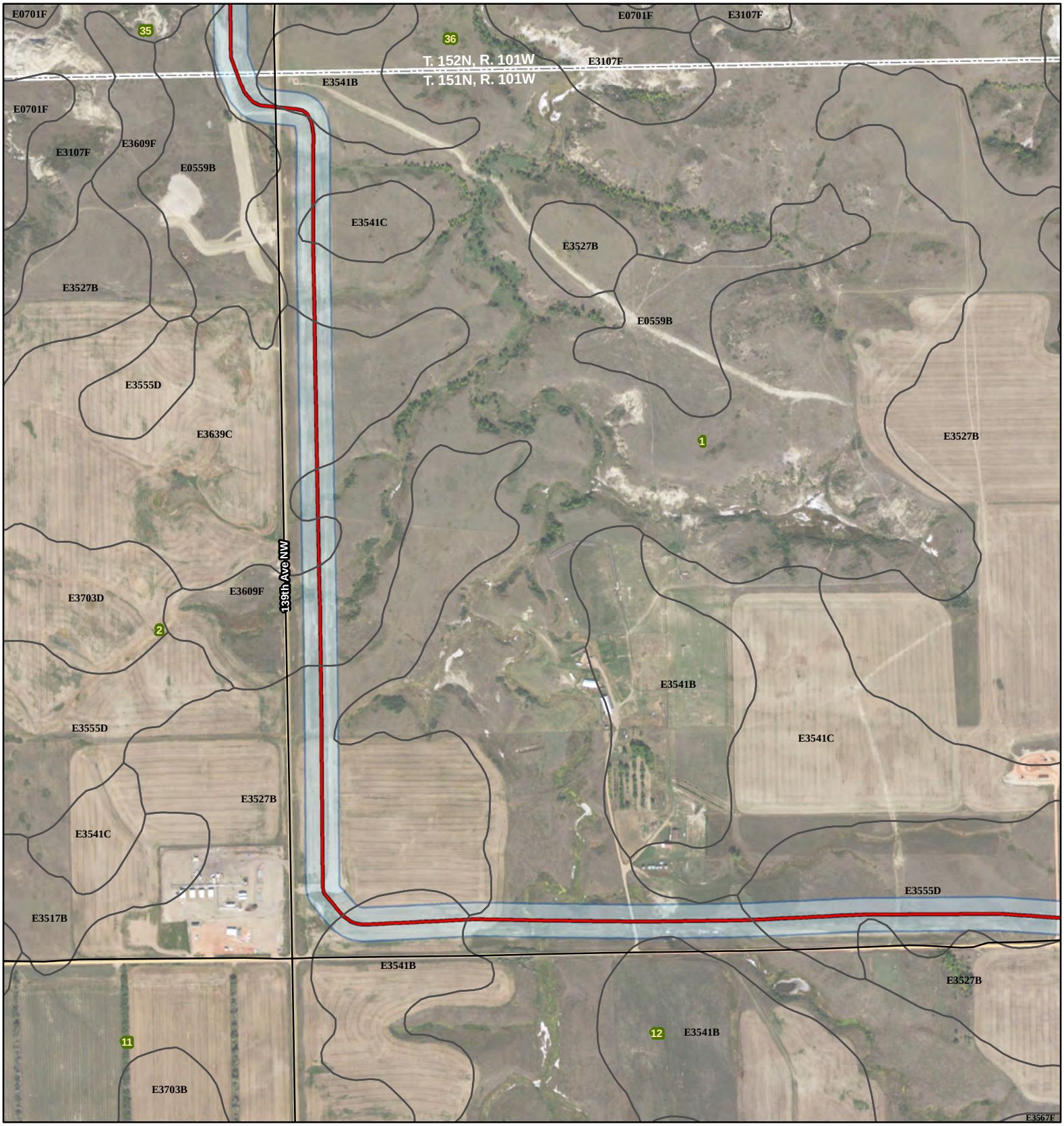
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 151N, R. 101W &
T. 152N, R. 101W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

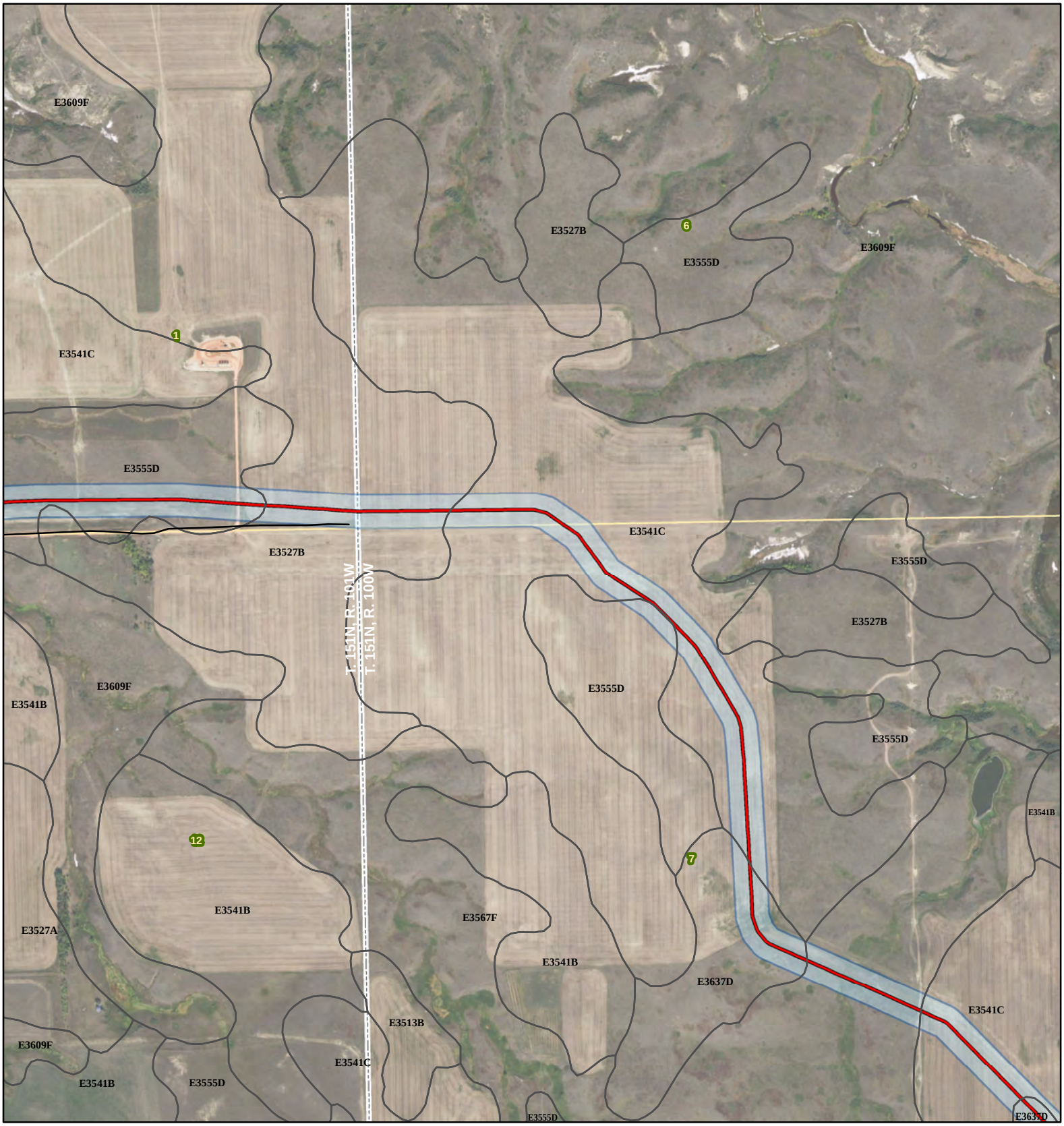
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 151N, R. 101W

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



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

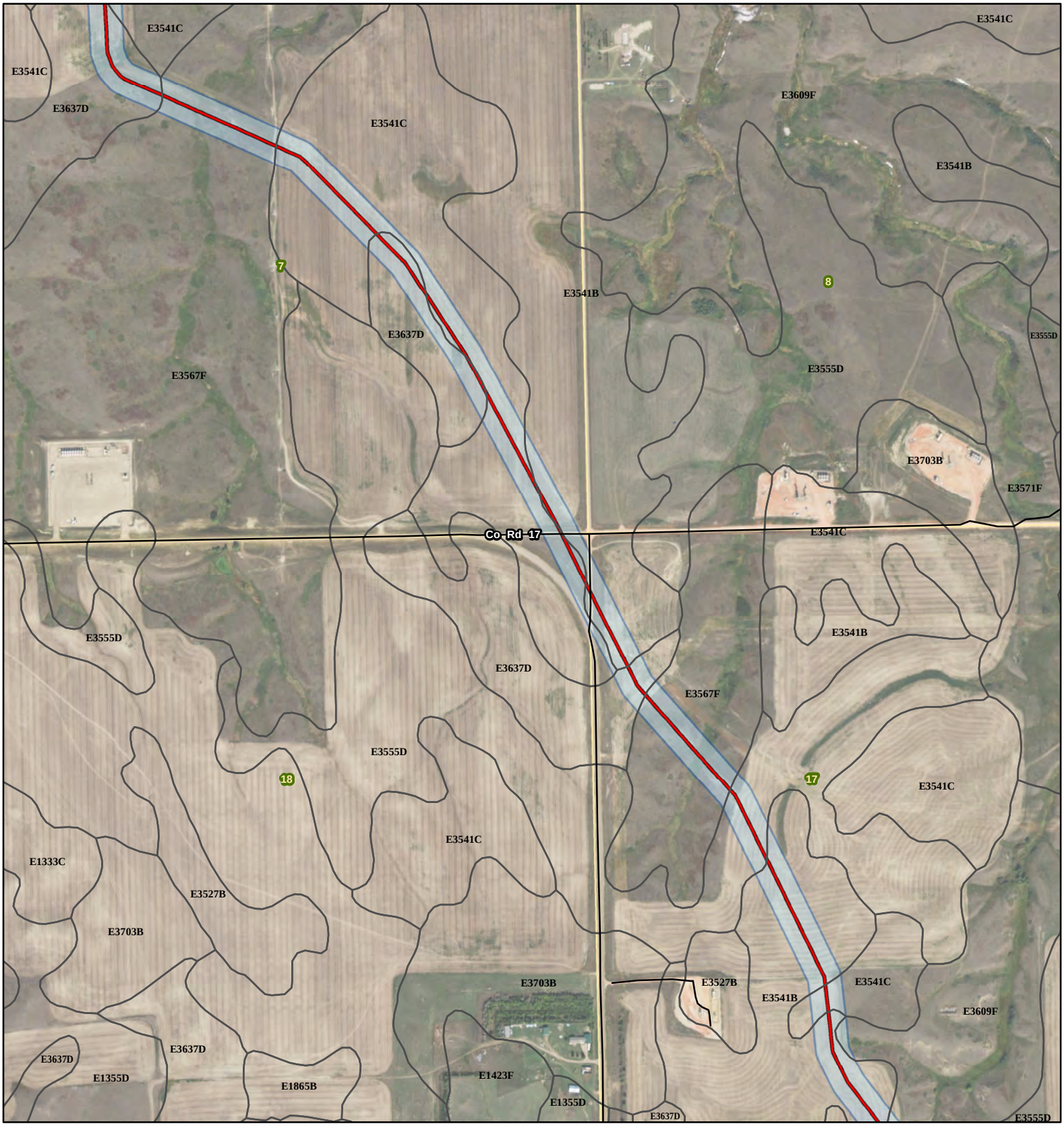
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 151N, R. 100W &
T. 151N, R. 101W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

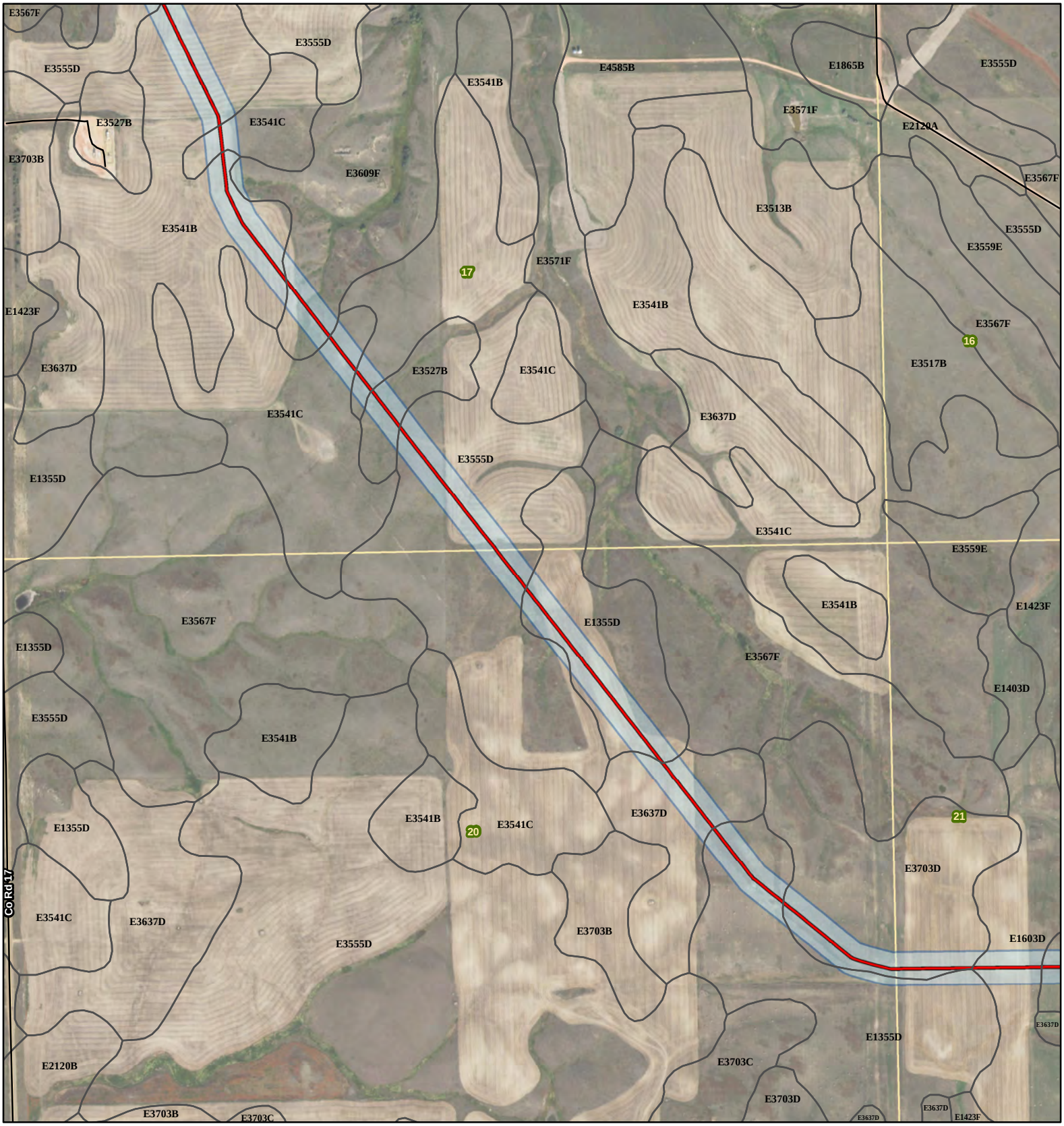
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Camp Creek East (1978)

Township/Range: T. 151N, R. 100W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

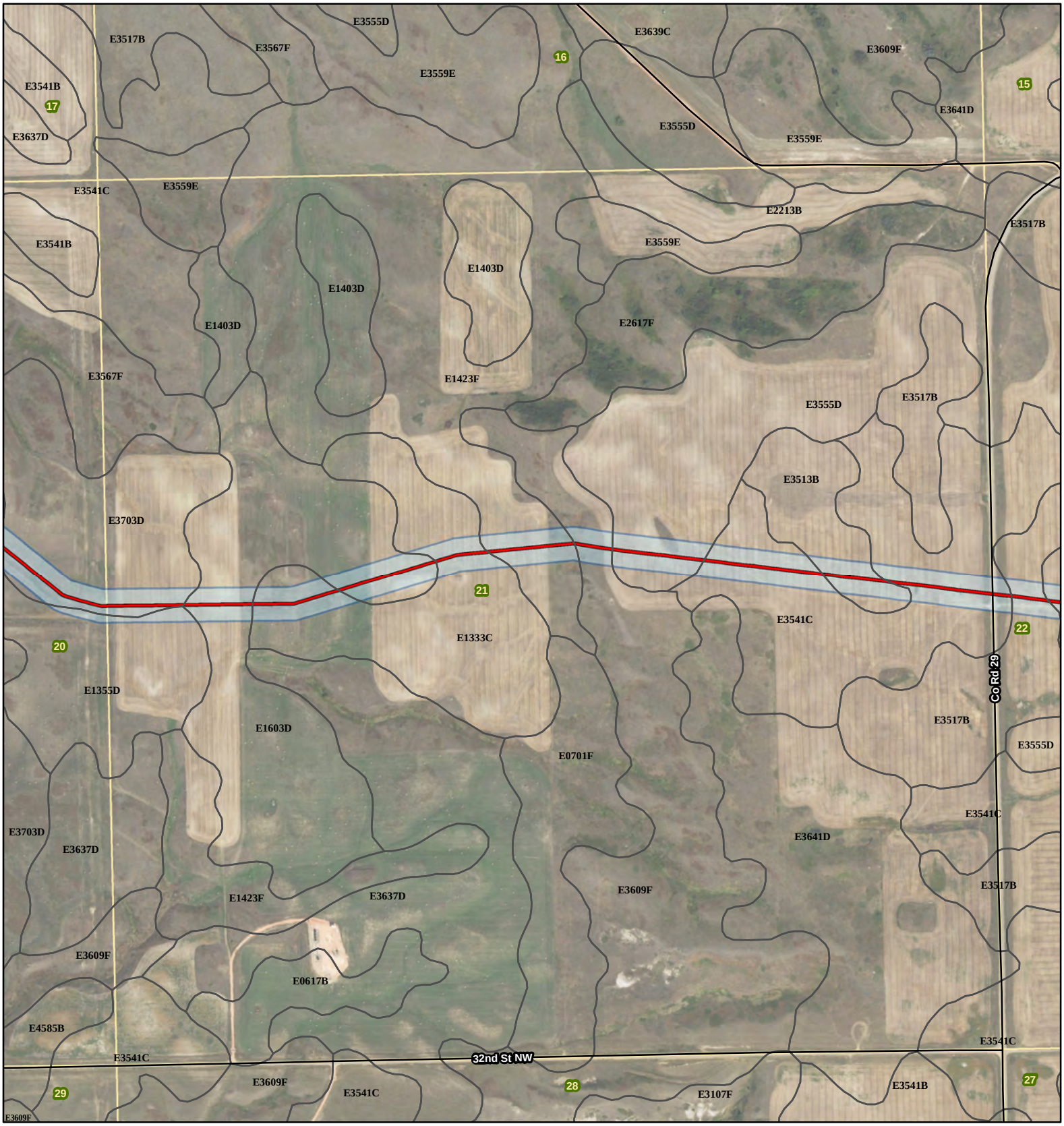
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978),
Camp Creek East (1978)
Township/Range: T. 151N, R. 100W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

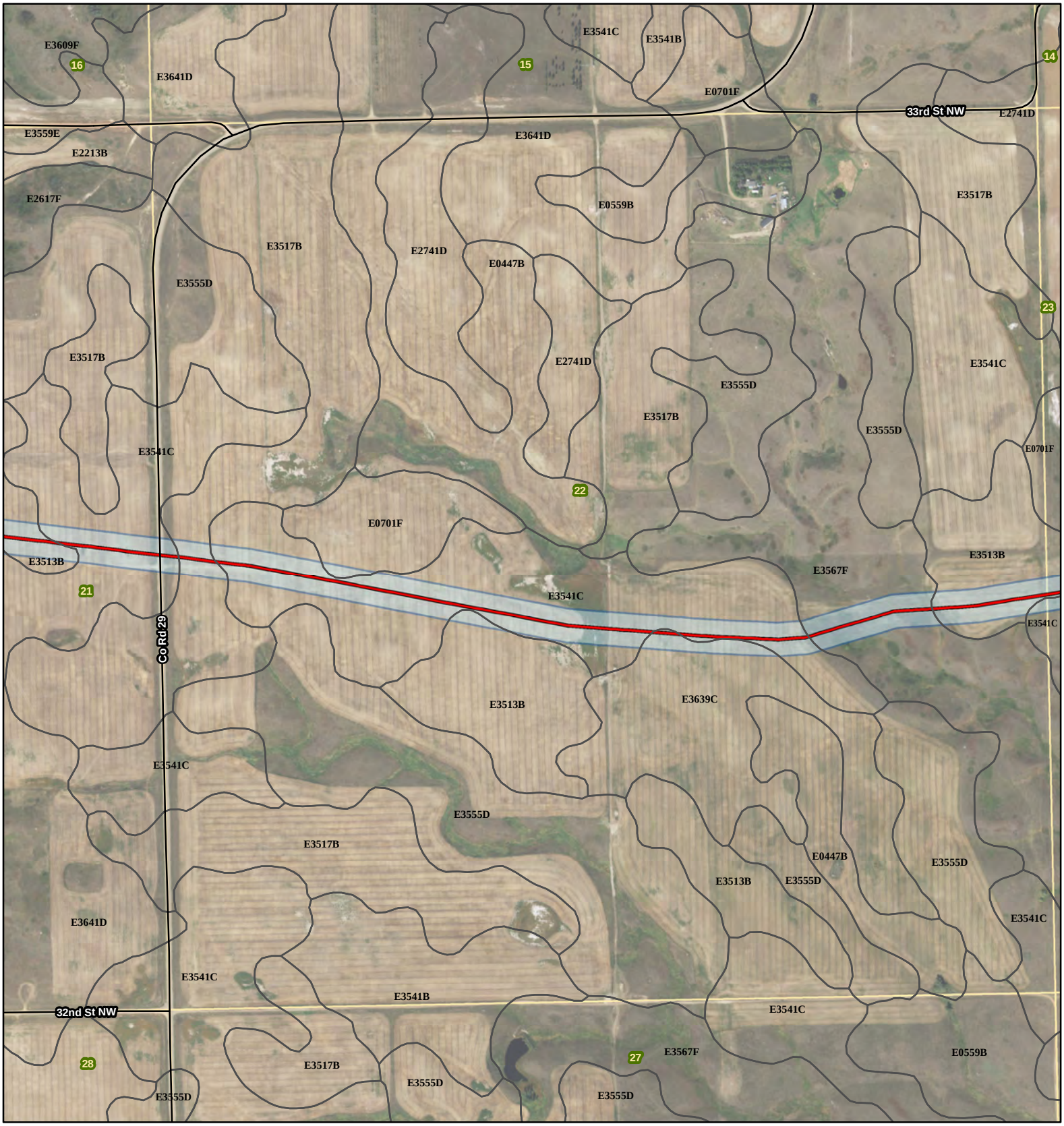
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 100W

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



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

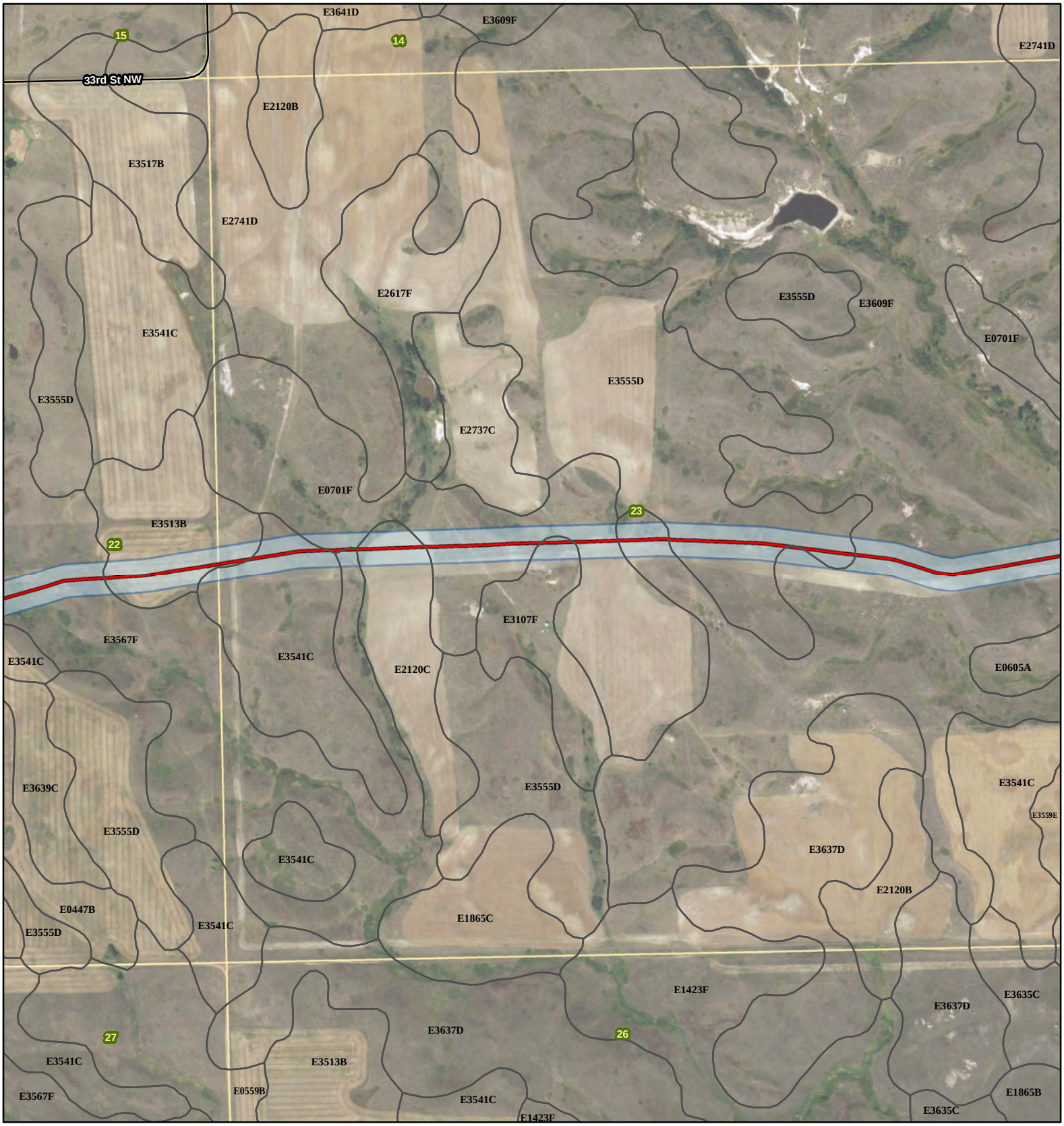
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 100W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

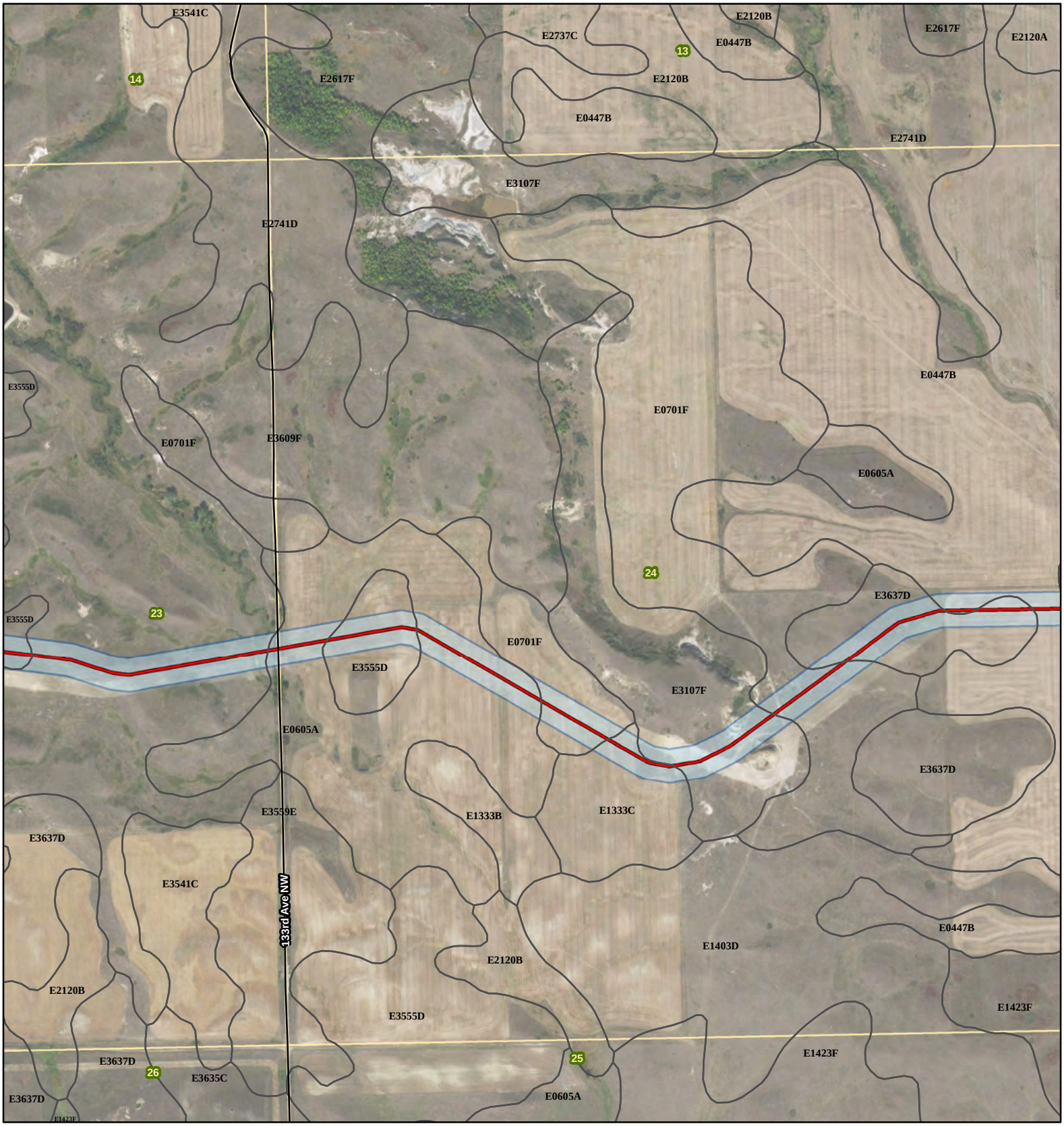
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 100W

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



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 100W

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

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

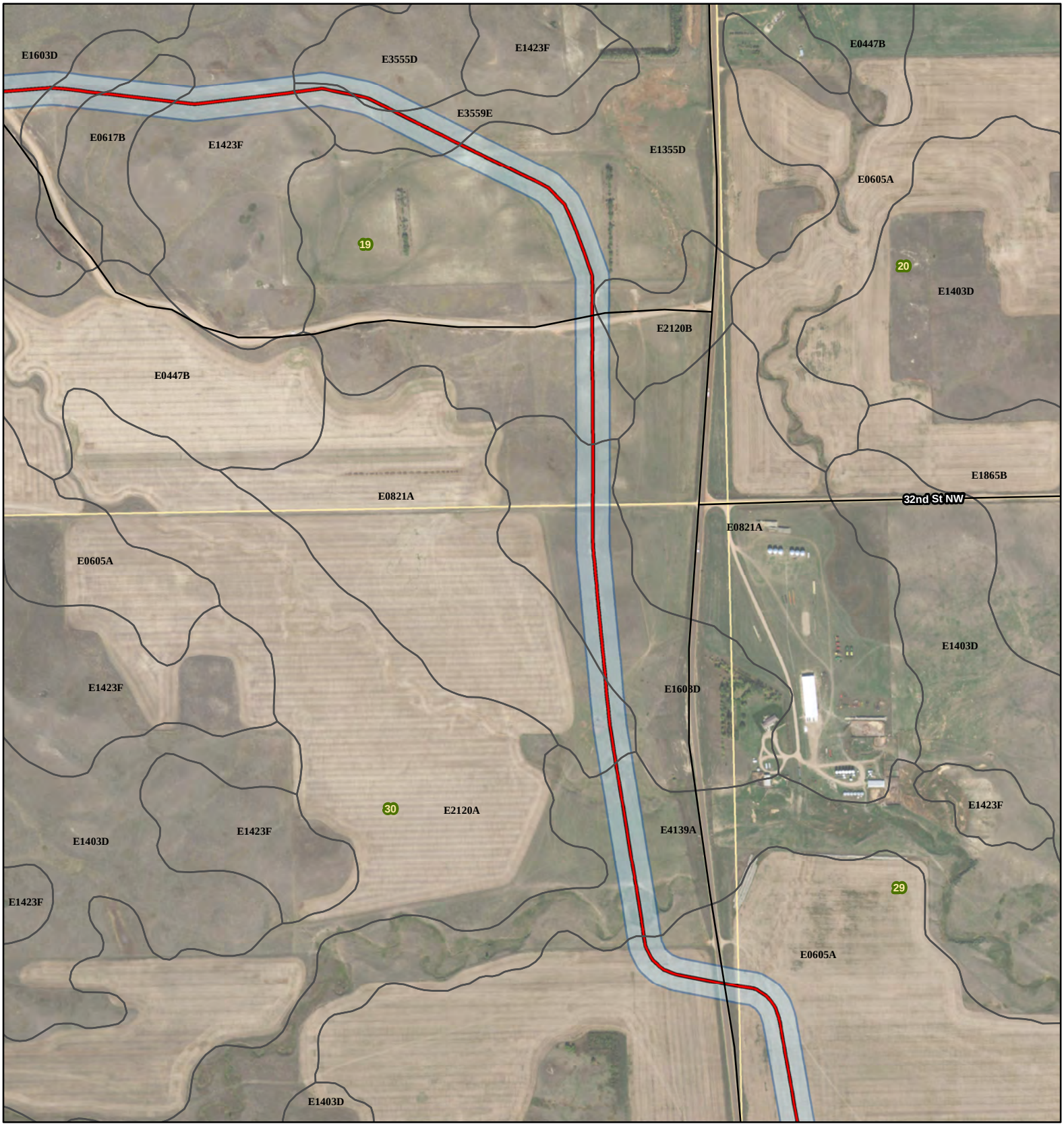
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City NW (1978)

Township/Range: T. 151N, R. 99W &
T. 151N, R. 100W
McKenzie County, North Dakota
Projection: NAD 1983 UTM Zone 13N

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

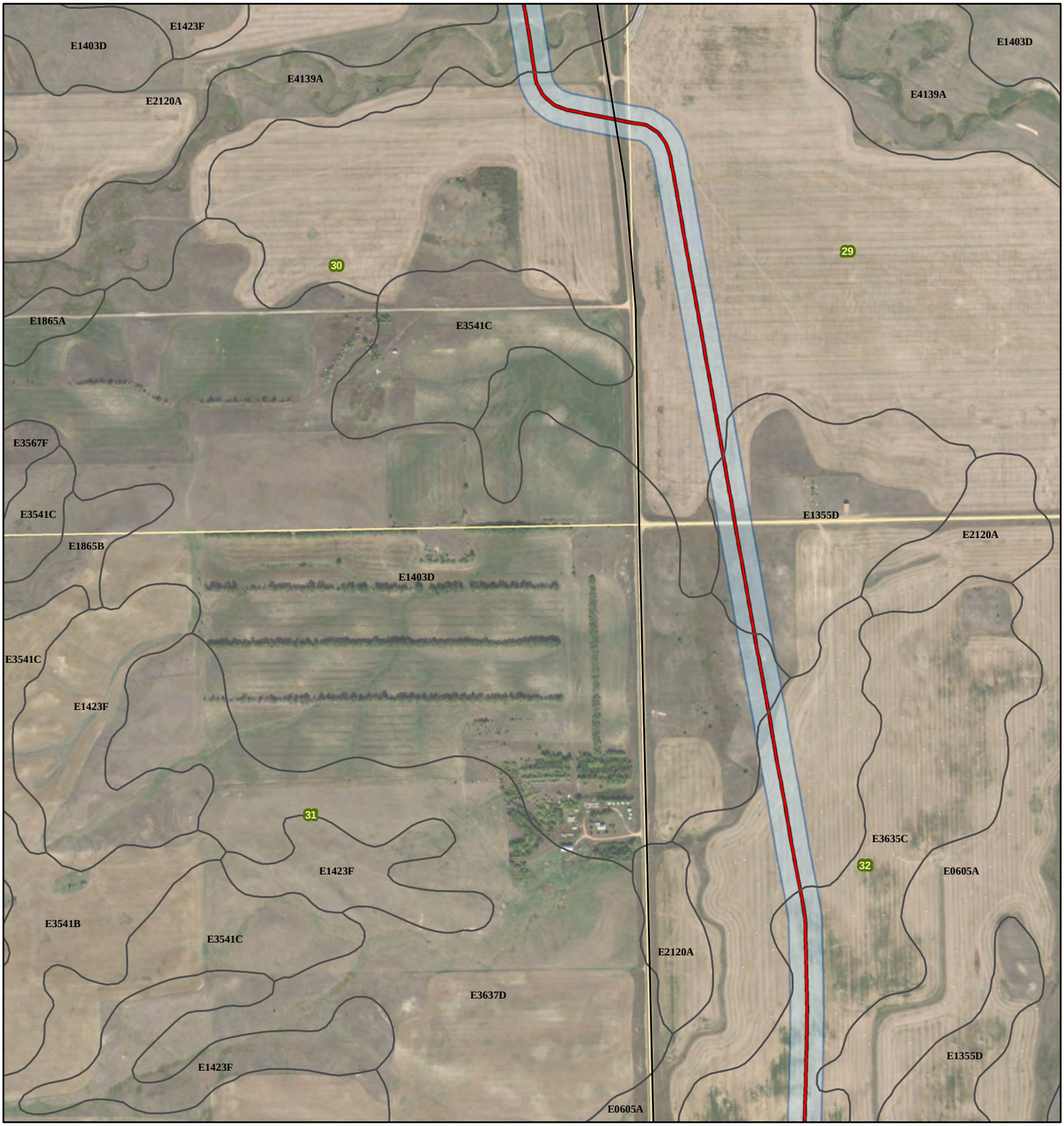
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Arnegard (1978),
Watford City NW (1978)
Township/Range: T. 151N, R. 99W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

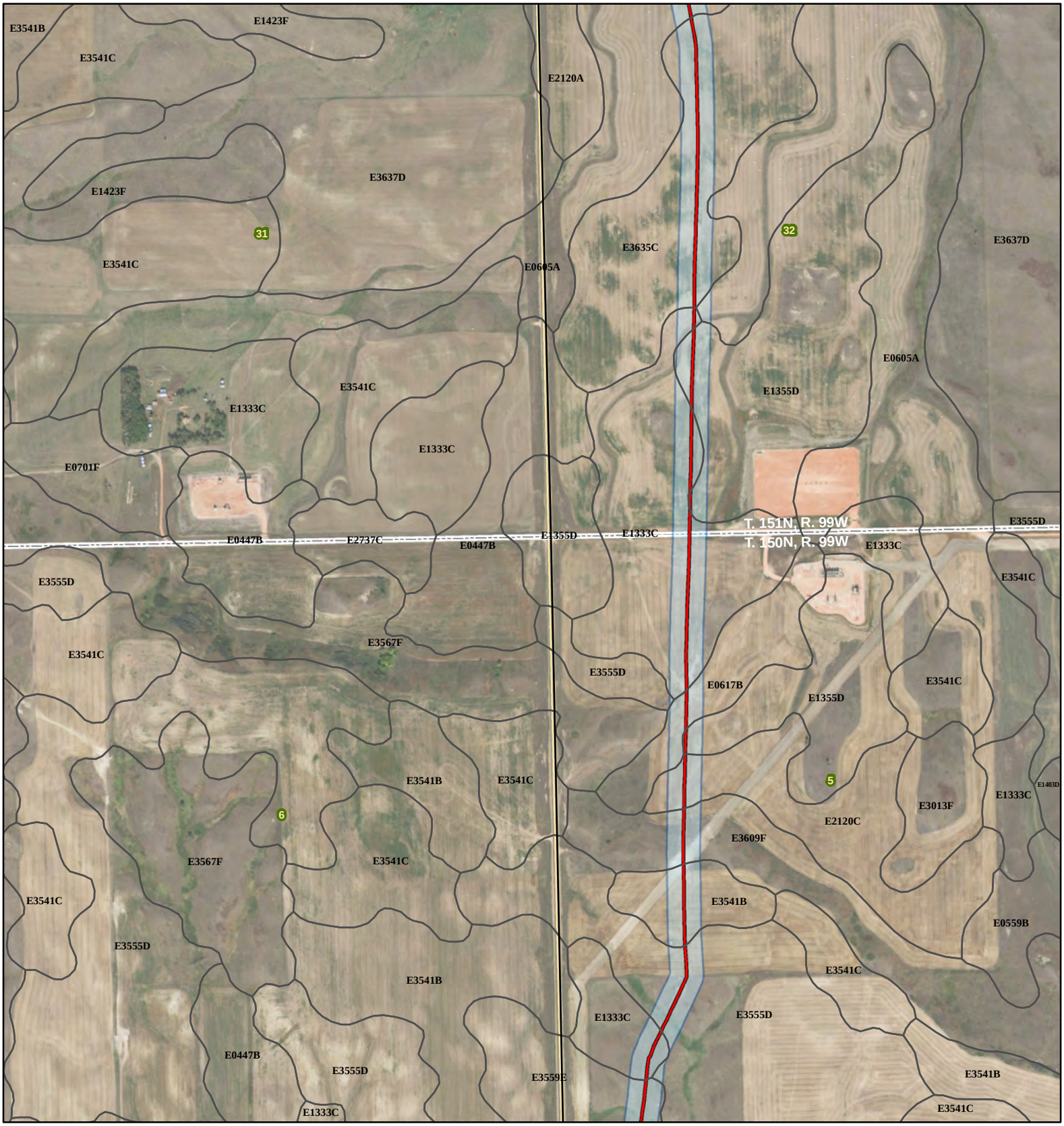
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Arnegard (1978)

Township/Range: T. 151N, R. 99W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

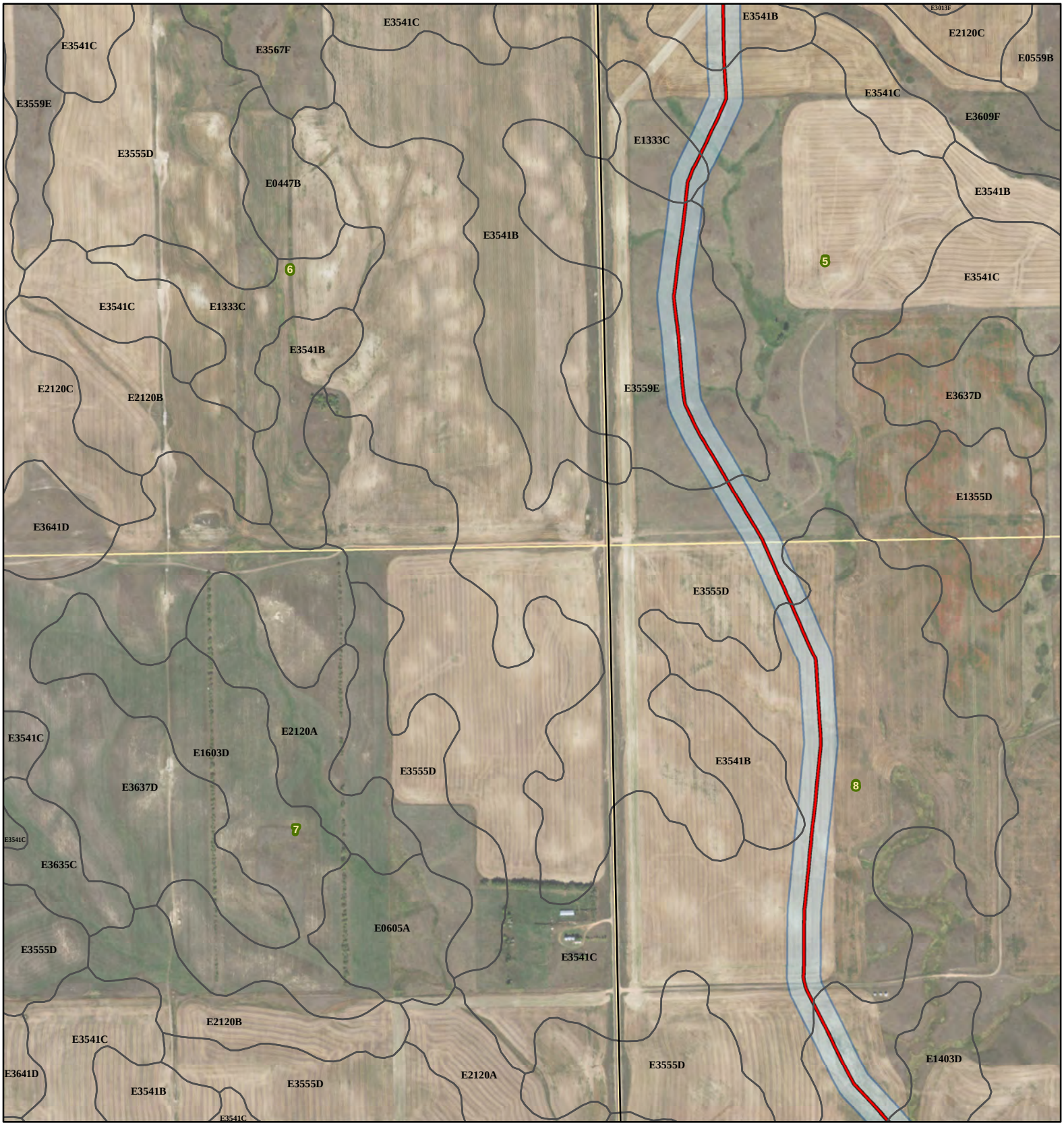
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Arnegard (1978)

Township/Range: T. 150N, R. 99W &
T. 151N, R. 99W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

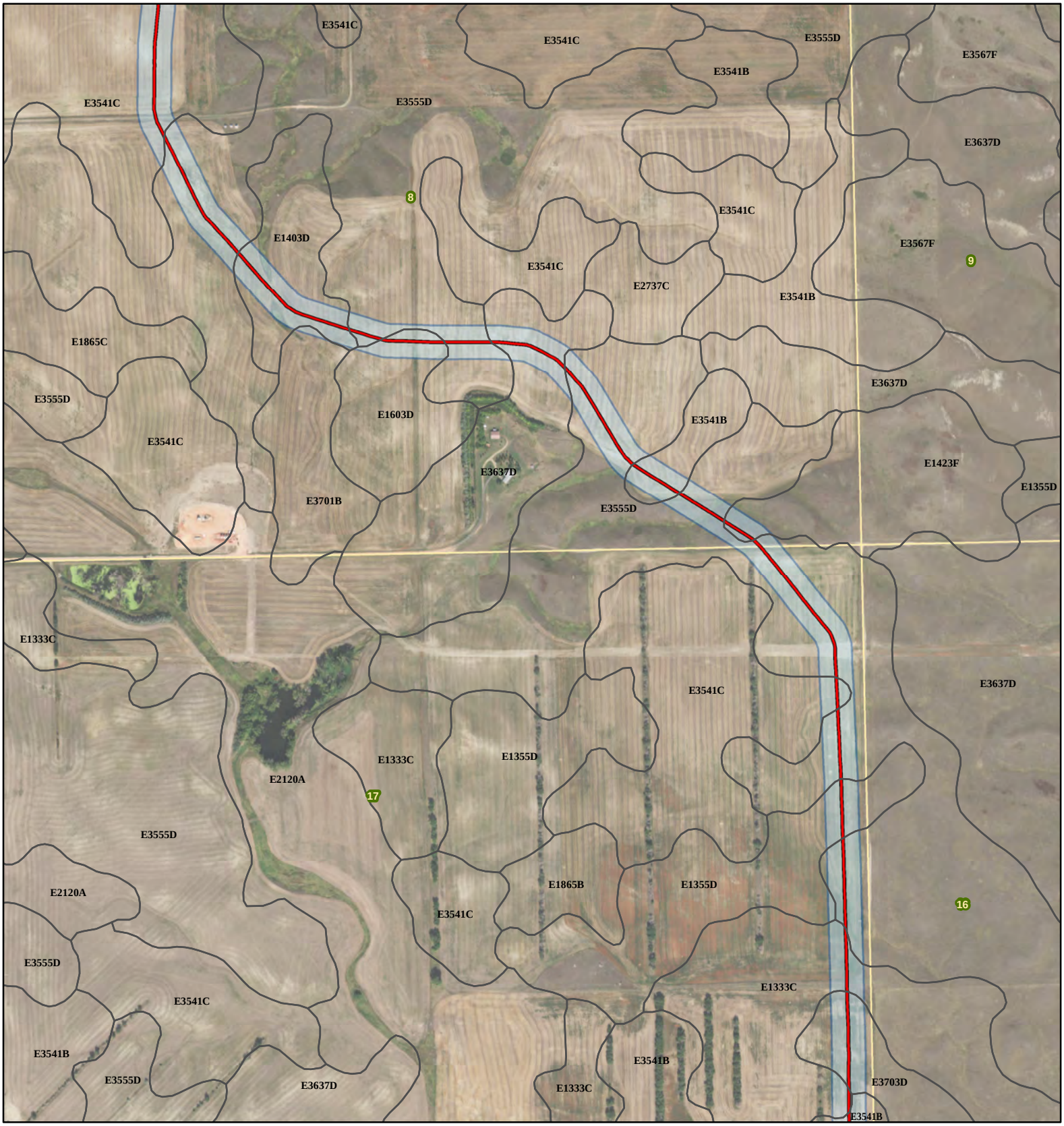
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Arnegard (1978)

Township/Range: T. 150N, R. 99W

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



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

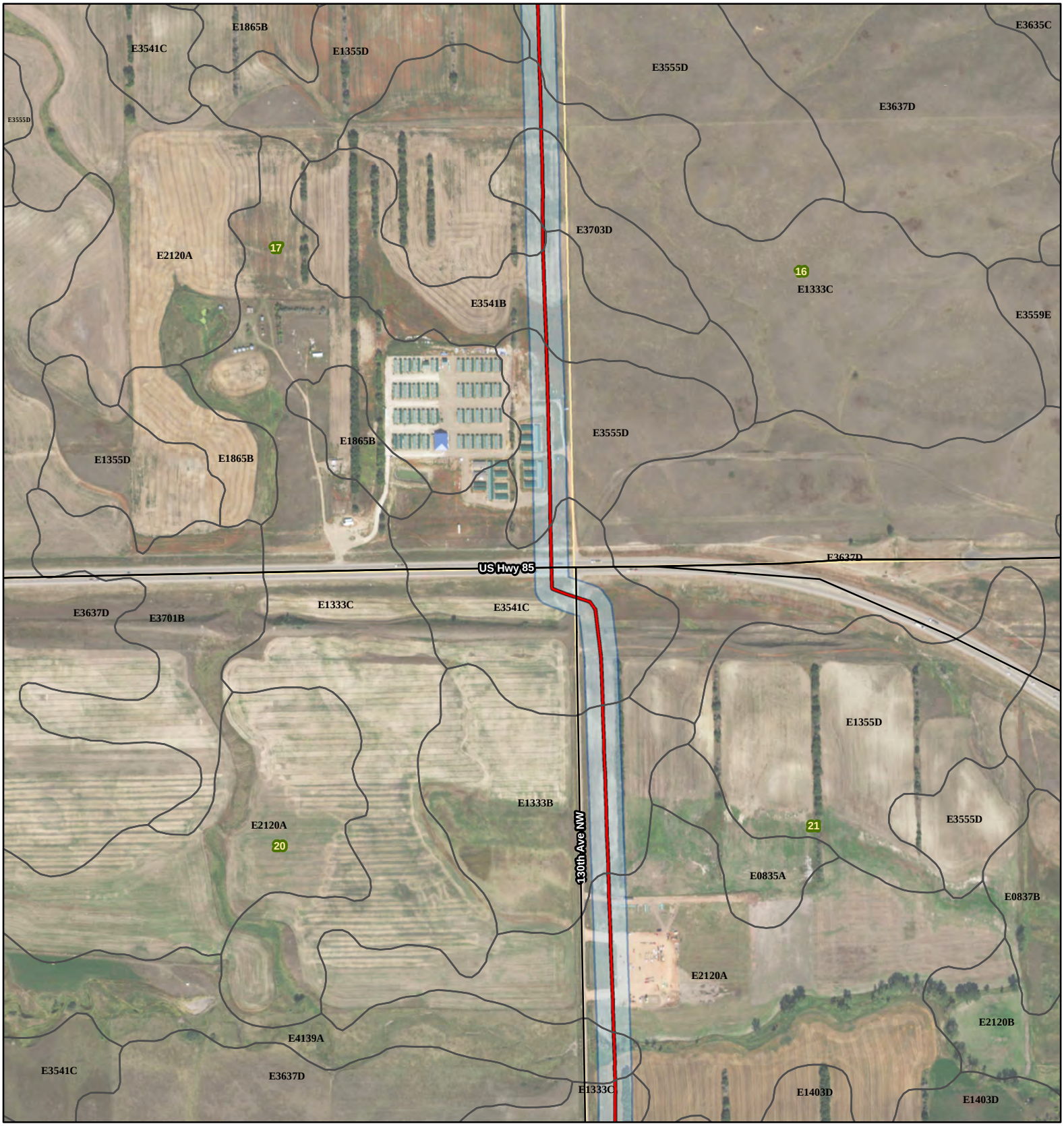
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978),
Arnegard (1978)
Township/Range: T. 150N, R. 99W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

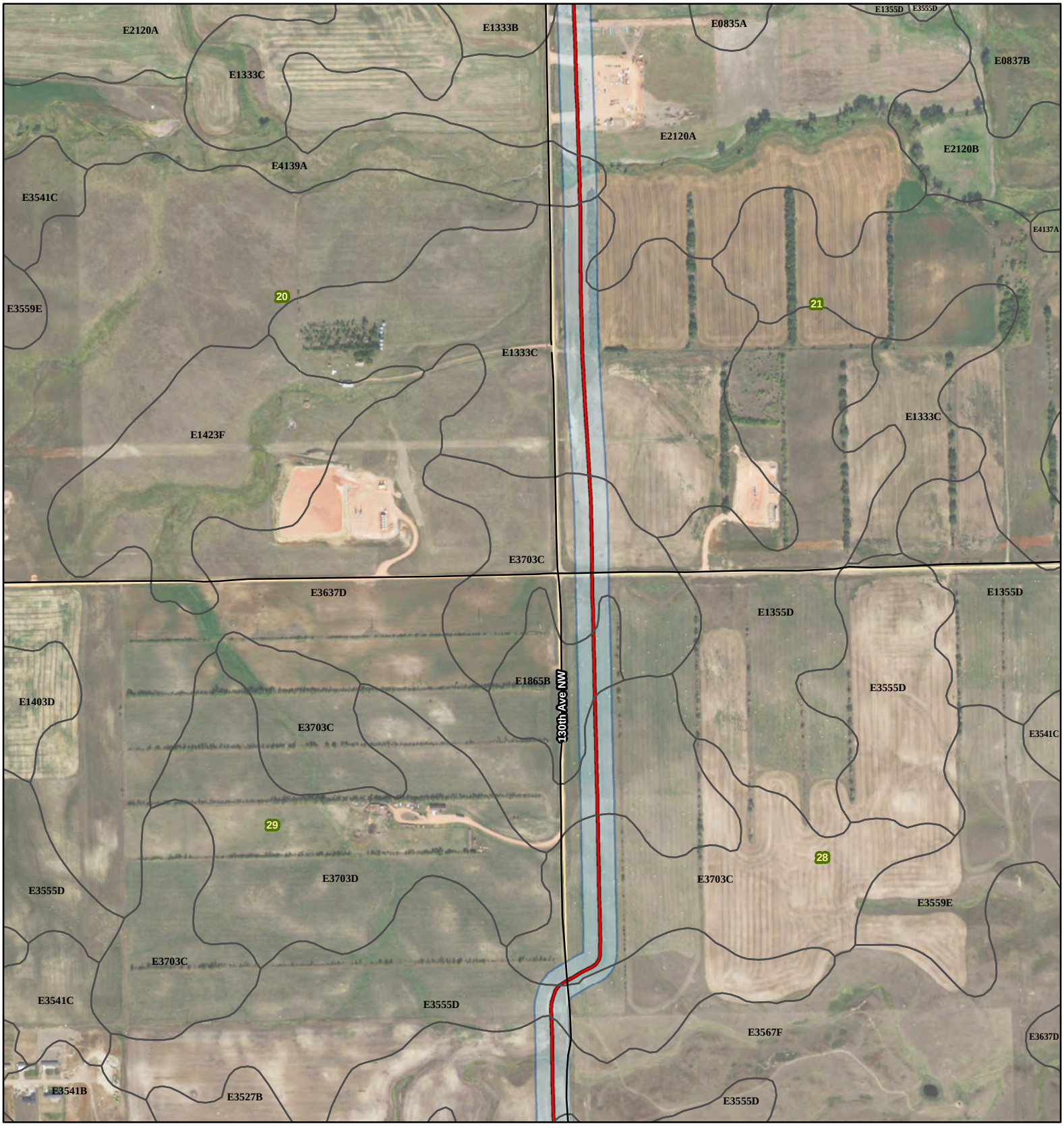
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978)

Township/Range: T. 150N, R. 99W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

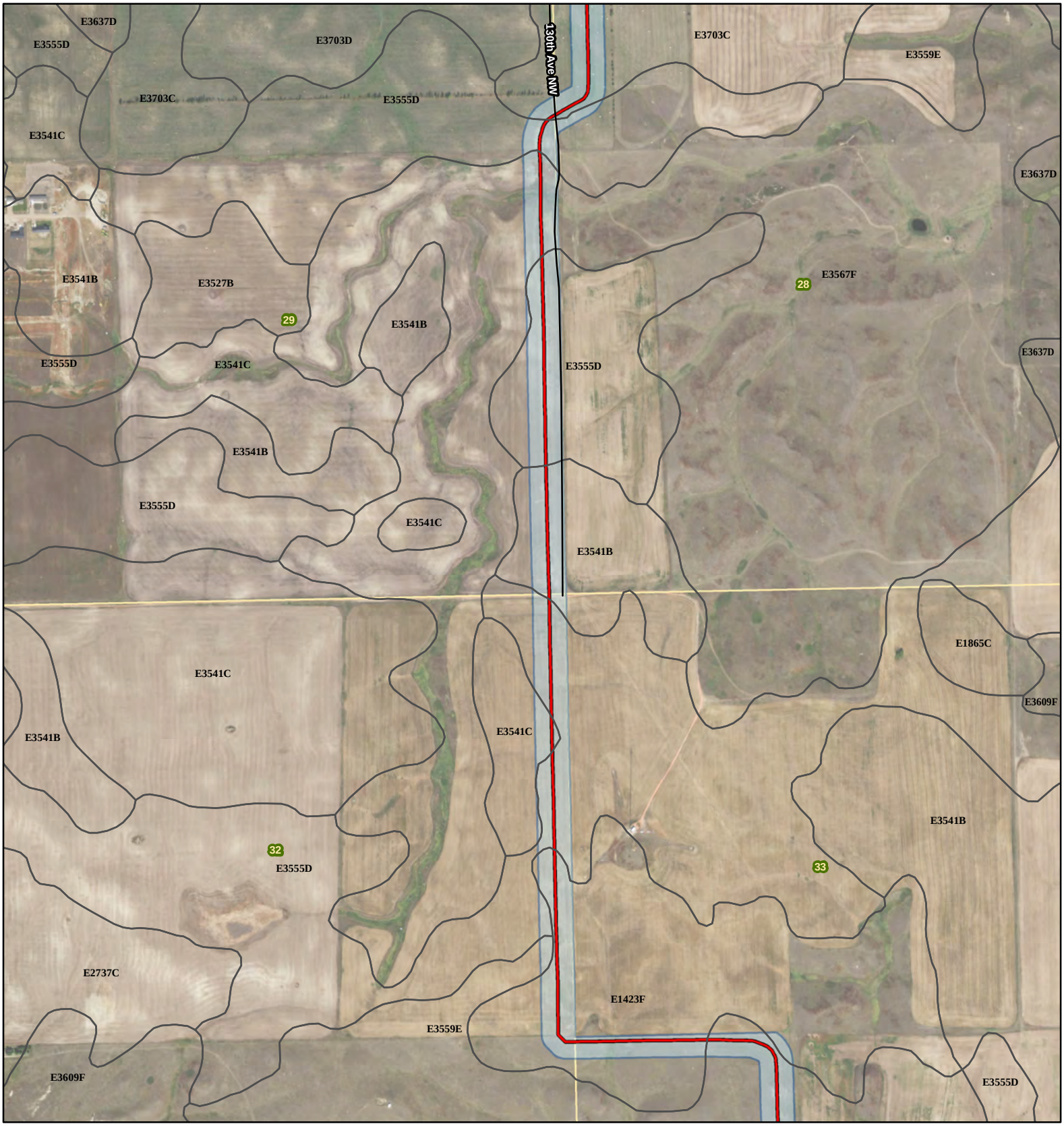
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978)

Township/Range: T. 150N, R. 99W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

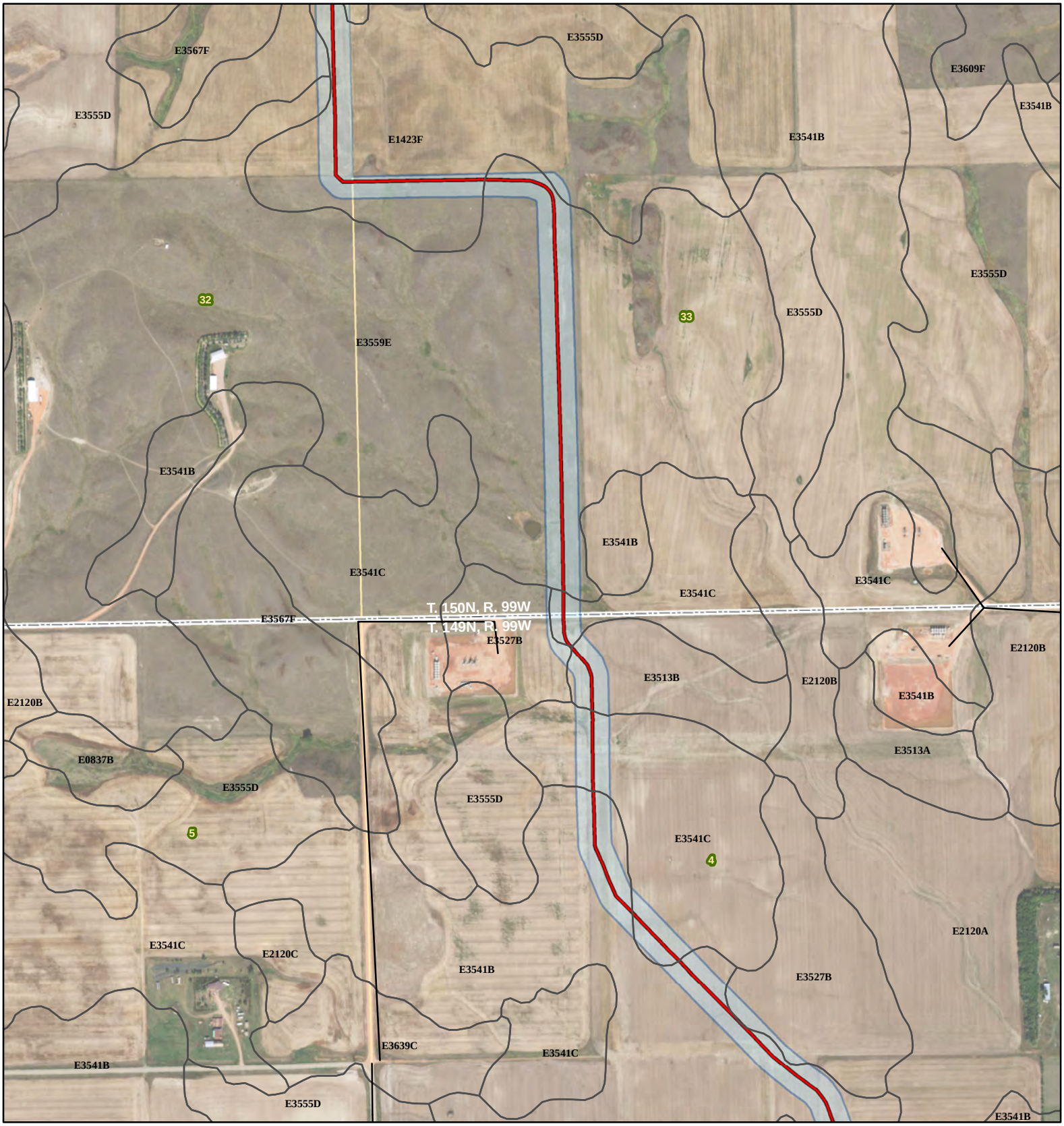
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978)

Township/Range: T. 150N, R. 99W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

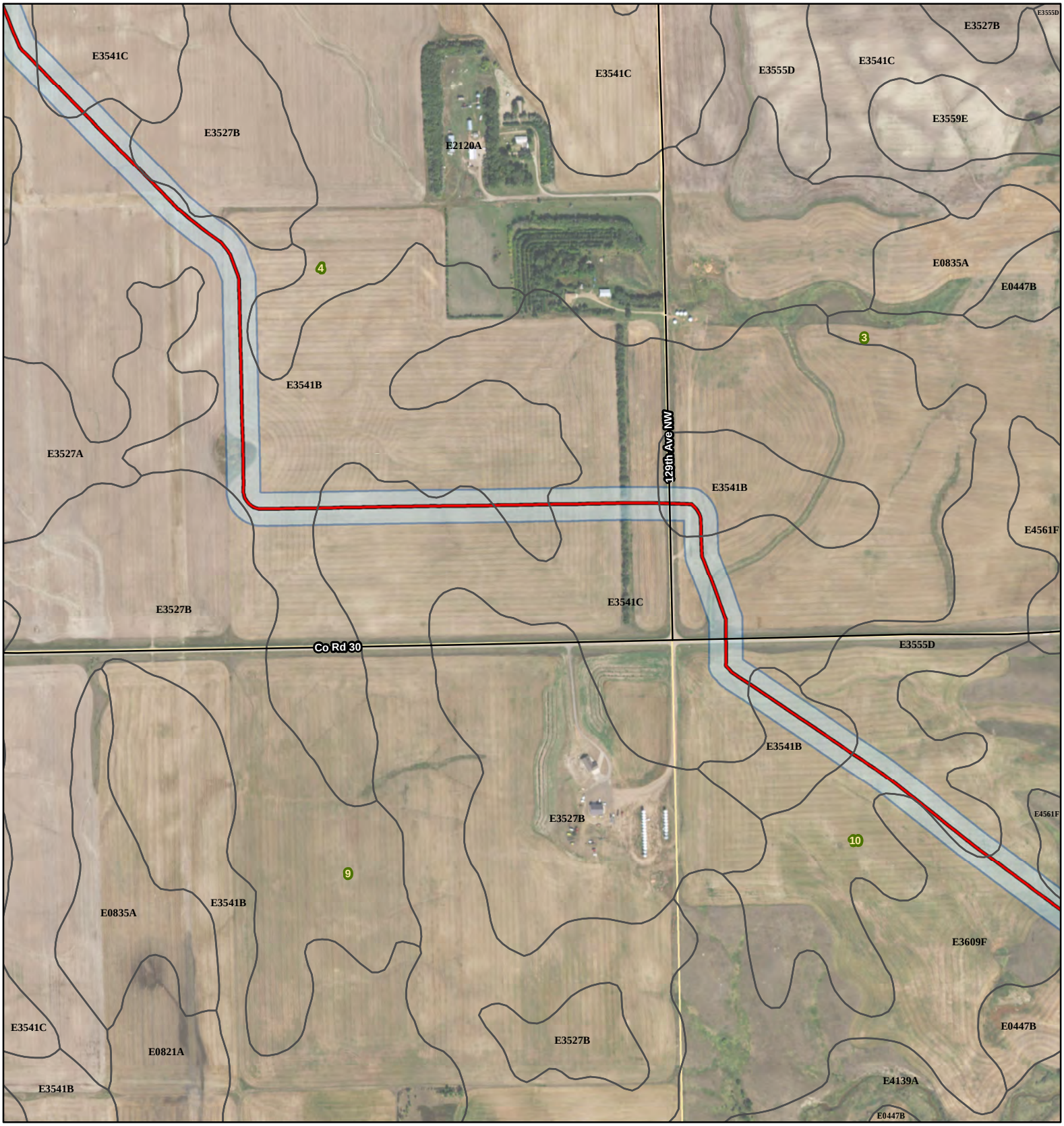
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Watford City (1978)

Township/Range: T. 149N, R. 99W &
T. 150N, R. 99W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995),
Watford City (1978)
Township/Range: T. 149N, R. 99W

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

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

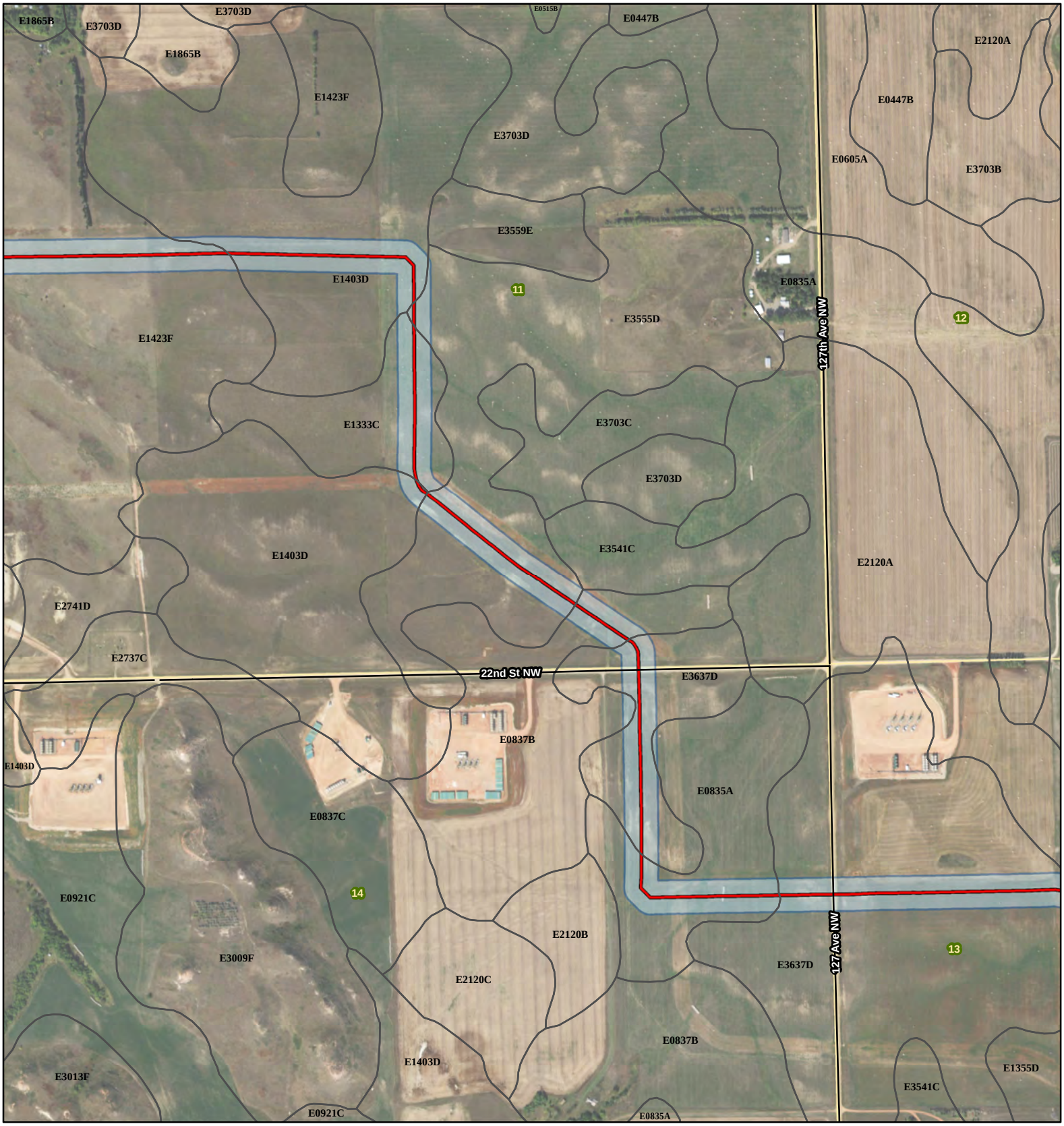
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995)

Township/Range: T. 149N, R. 99W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

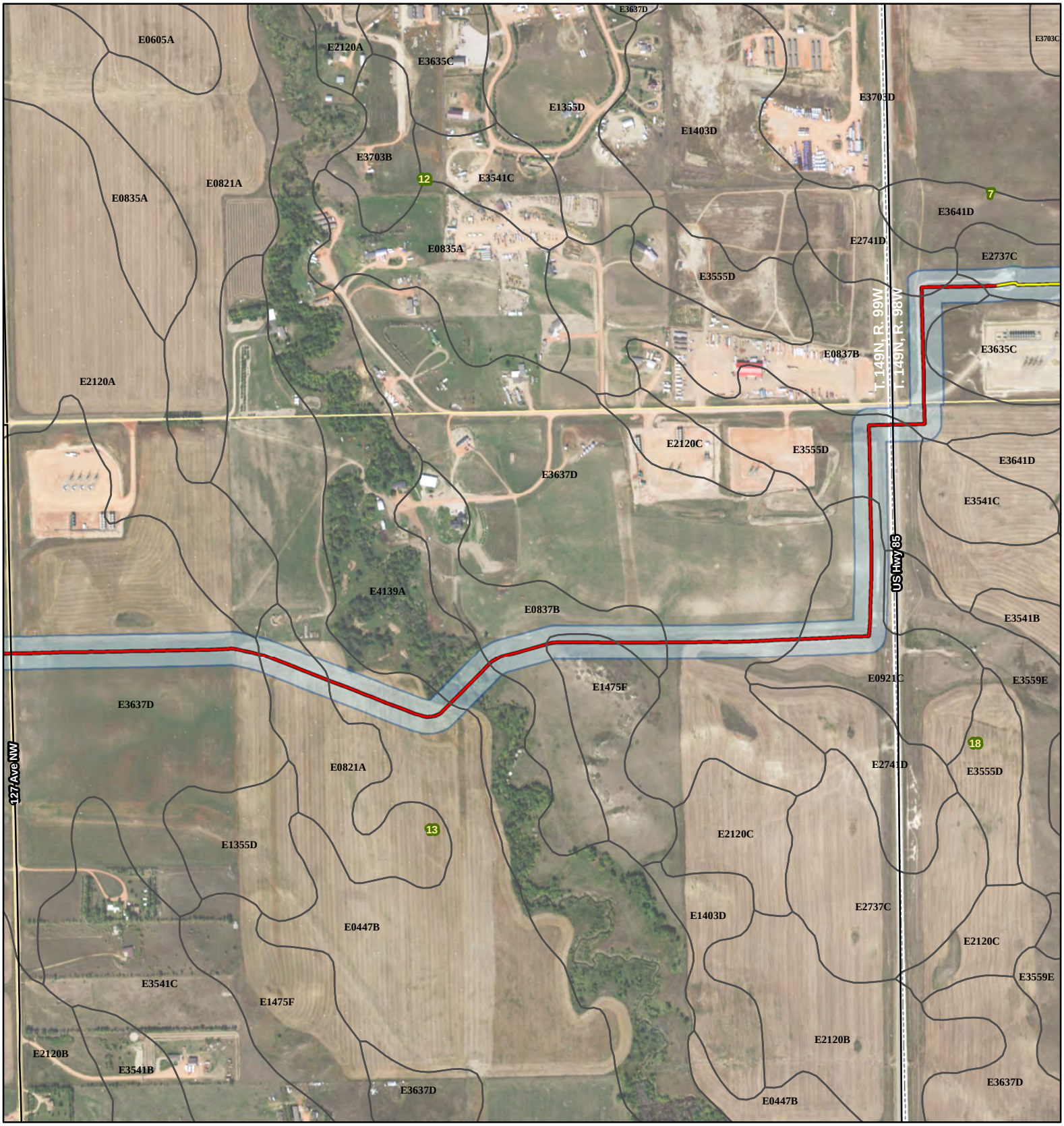
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995)

Township/Range: T. 149N, R. 99W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

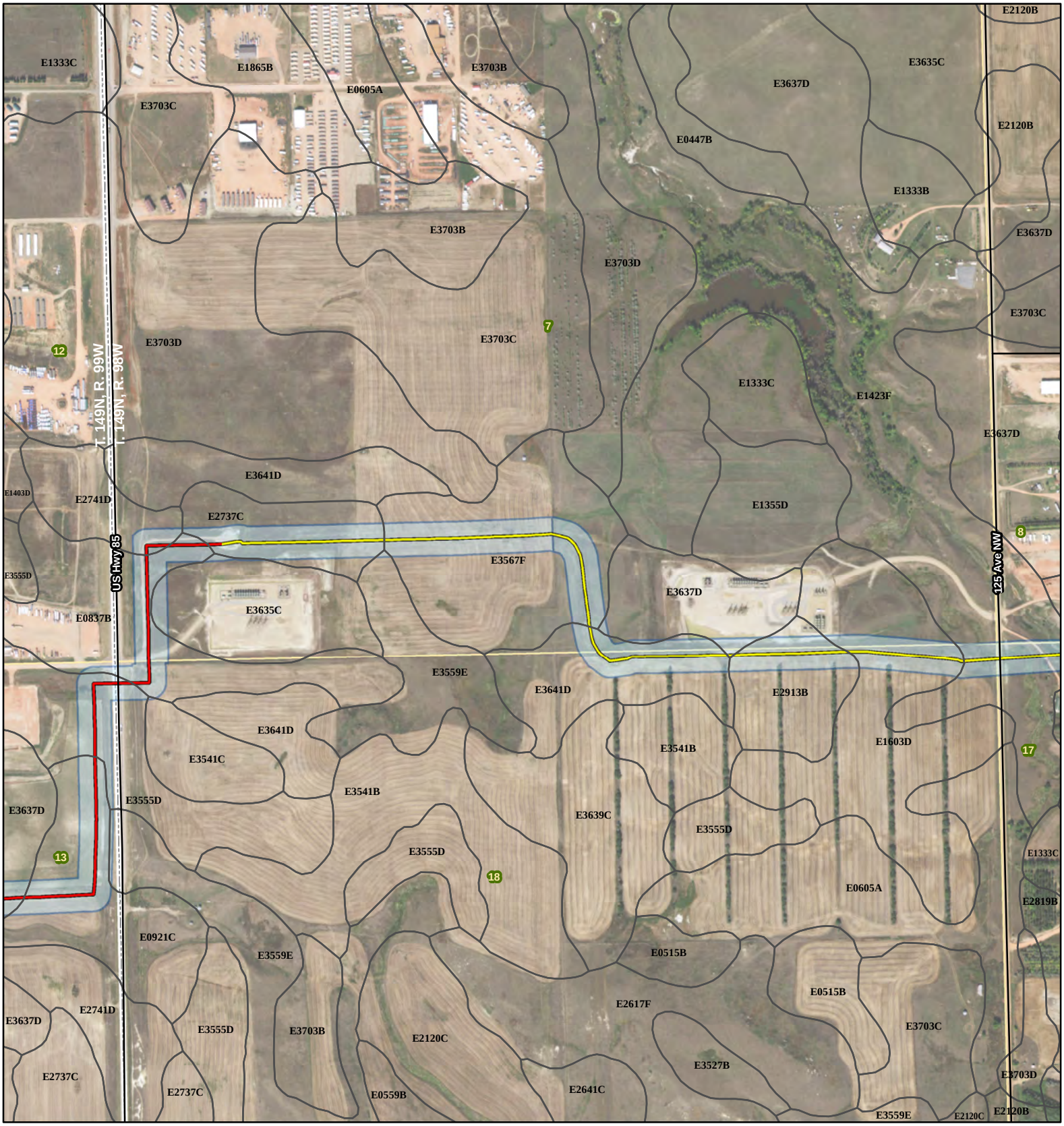
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995)

Township/Range: T. 149N, R. 98W &
T. 149N, R. 99W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

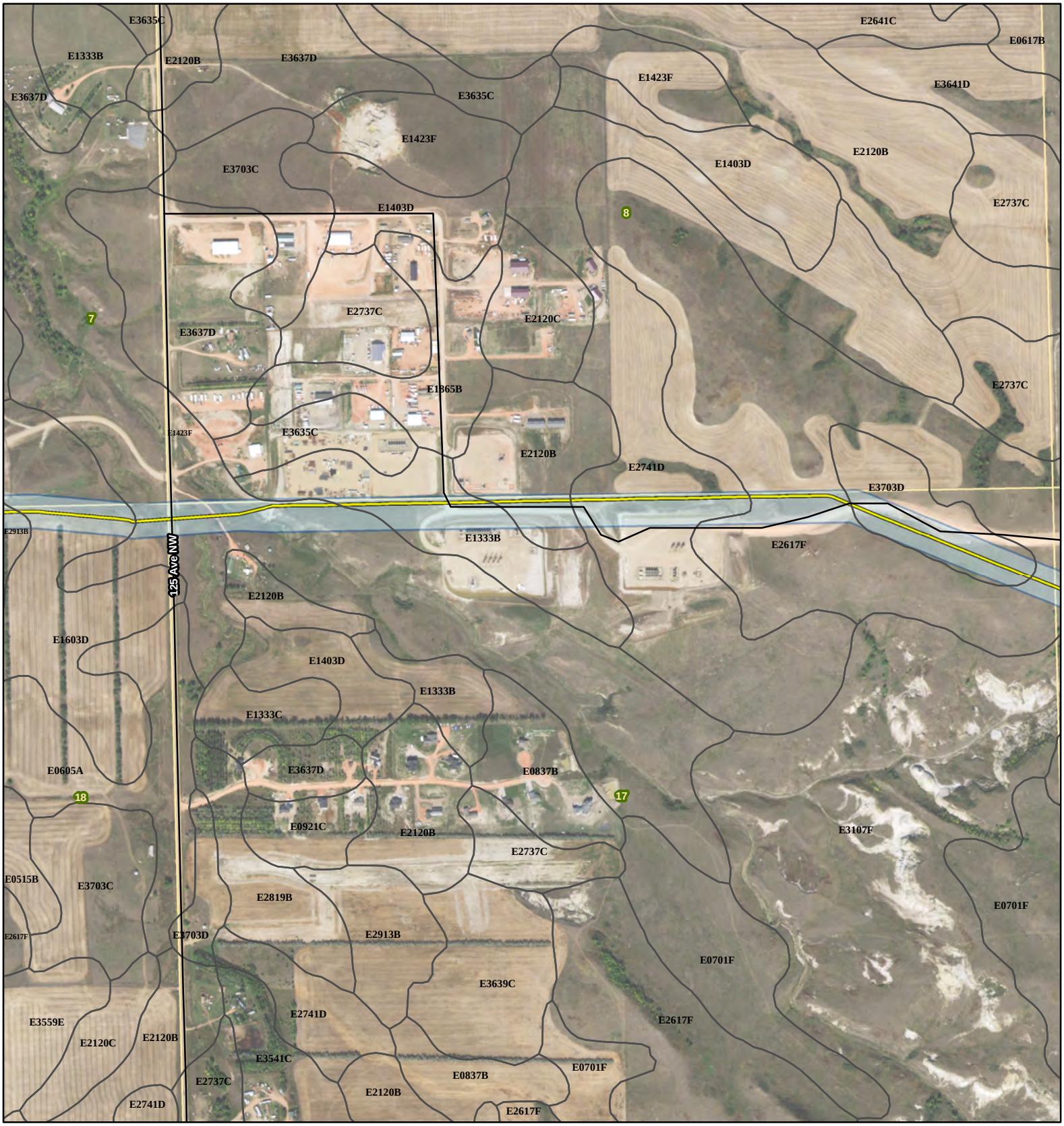
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Tepee Buttes (1995)

Township/Range: T. 149N, R. 98W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

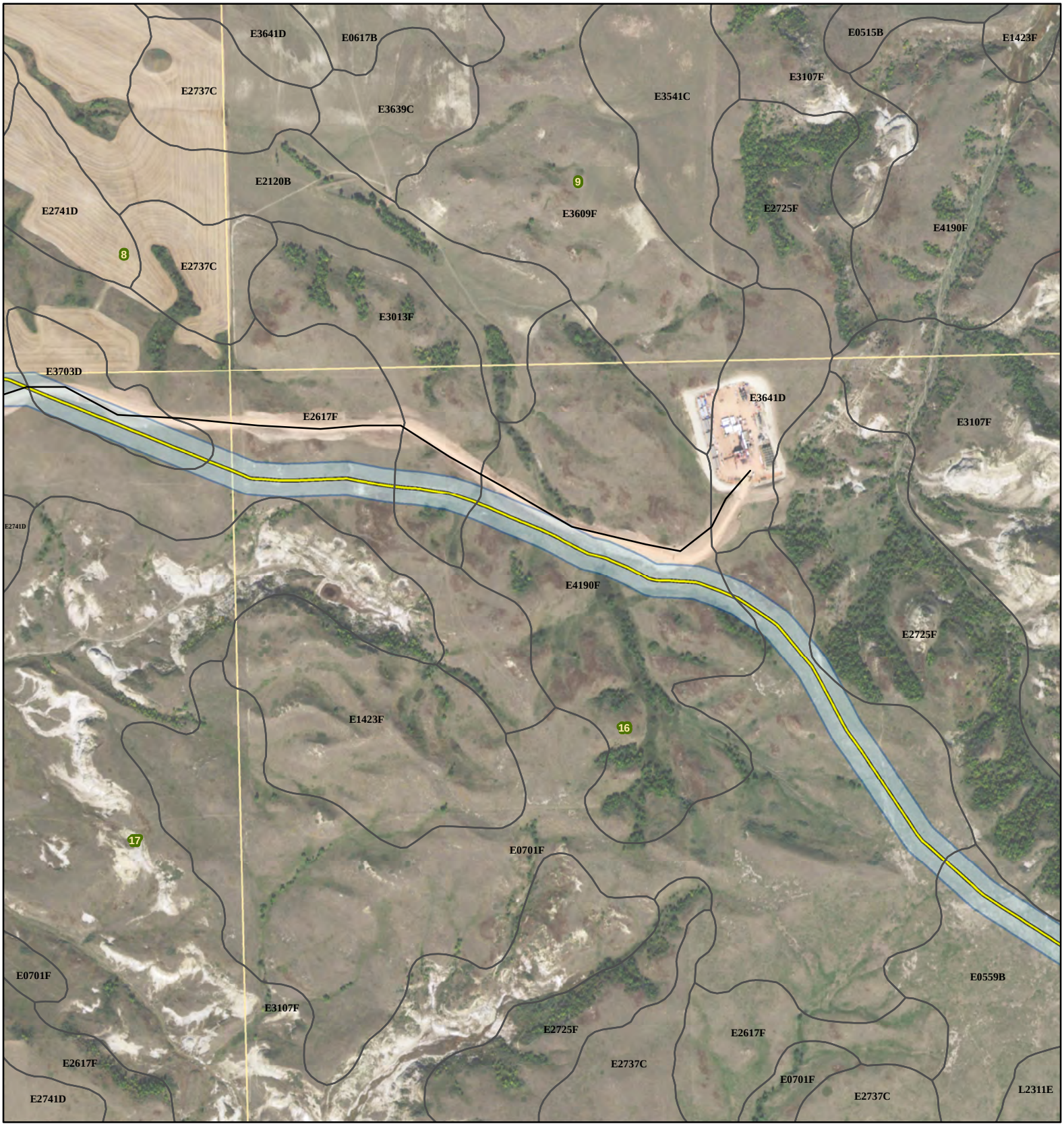
Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995),
Tepee Buttes (1995)
Township/Range: T. 149N, R. 98W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

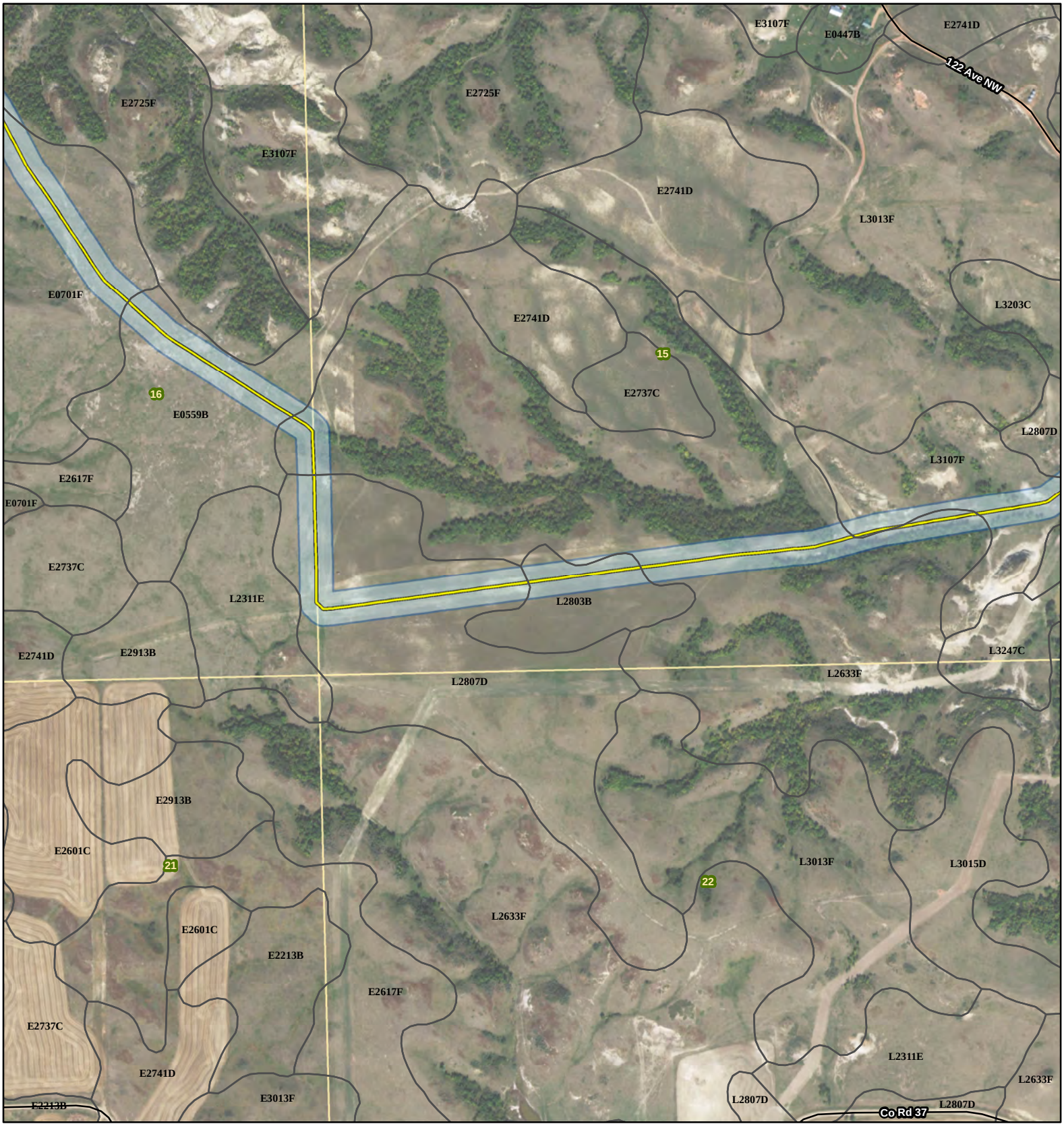
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995)

Township/Range: T. 149N, R. 98W

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

N W E S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995)

Township/Range: T. 149N, R. 98W

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

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

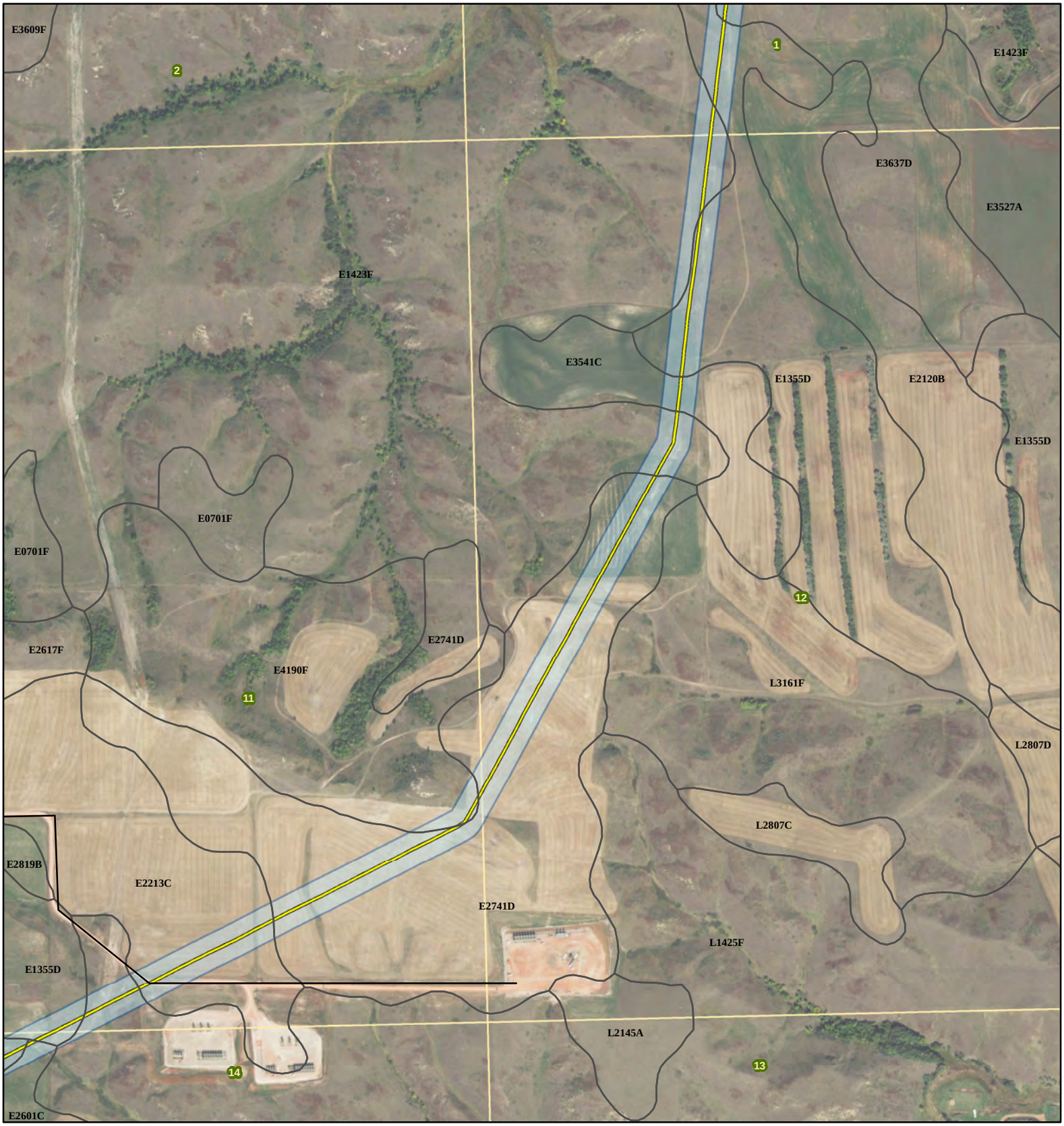
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995)

Township/Range: T. 149N, R. 98W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Lone Butte NW (1995)

Township/Range: T. 149N, R. 98W

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

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer (1995),
Lone Butte NW (1995)
Township/Range: T. 149N, R. 98W

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

N W E S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer (1995)

Township/Range: T. 150N, R. 97W &
T. 149N, R. 97W & T. 149N, R. 98W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N W E S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA®
ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995),
Schafer (1995)
Township/Range: T. 150N, R. 97W

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

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 149N, R. 97W &
T. 150N, R. 97W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 150N, R. 97W &
T. 149N, R. 97W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 150N, R. 97W

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

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

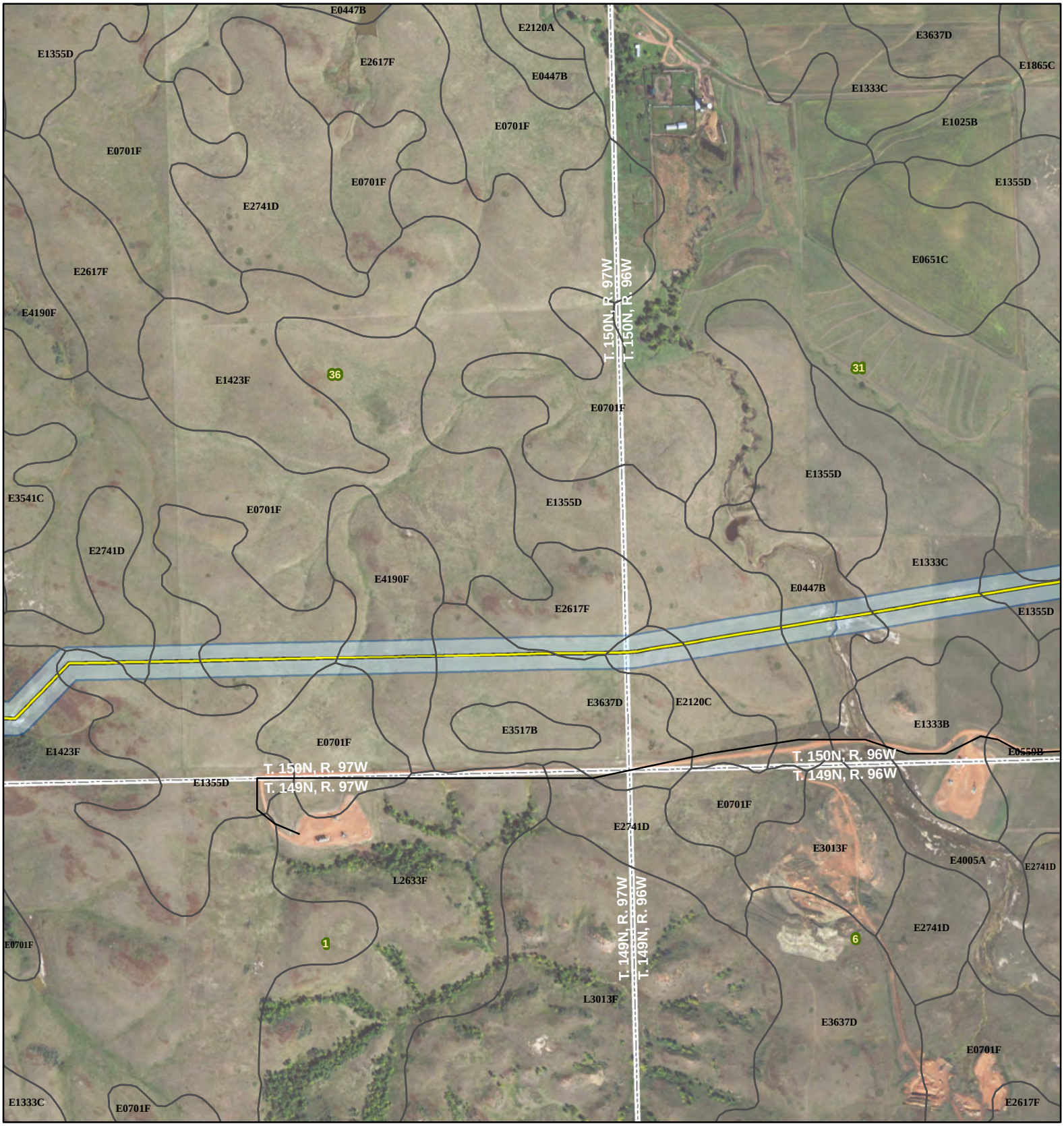
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 150N, R. 97W

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

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Schafer SE (1995)

Township/Range: T. 150N, R. 96W &
T. 150N, R. 97W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995),
Schafer SE (1995)
Township/Range: T. 150N, R. 96W

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

N W E S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 149N, R. 96W &
T. 150N, R. 96W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 149N, R. 96W

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

N W E S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

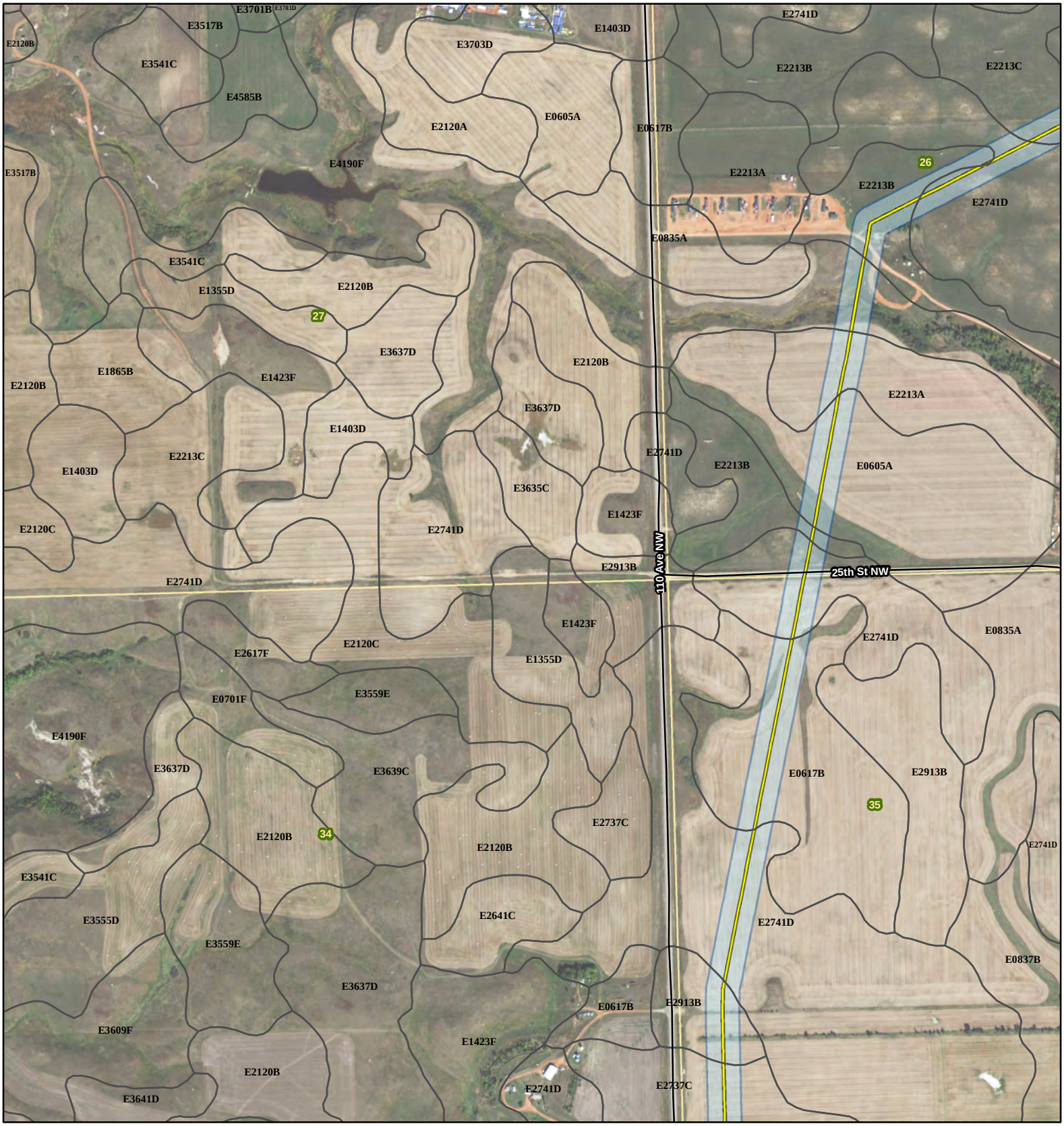
Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 150N, R. 96W &
T. 149N, R. 96W
McKenzie County, North Dakota

Projection: NAD 1983 UTM Zone 13N

N
W E
S



Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 150N, R. 96W

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

N
W E
S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 150N, R. 96W

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

N W E S

Johnsons Corner to Alexander

- Smokey Trunkline
- Alexander Pipeline
- Existing Road
- Soil Unit Boundary
- Survey Area
- Township/Range Boundary
- Section Boundary

SWCA® ENVIRONMENTAL CONSULTANTS

116 North 4th Street
Suite 200
Bismarck, ND 58501

Phone: 701.258.6622
Fax: 701.258.5957

www.swca.com

Meters
0 250 500

Feet
0 1,000 2,000

Base Map: 2015 Aerial Imagery
Source: USDA/FSA - Aerial Photography Field Office
Quadrangle: Johnsons Corner (1995)

Township/Range: T. 150N, R. 96W

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

N W E S

APPENDIX B
Wetland Delineation Data Forms

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Johnsons Corner to Alexander City/County: McKenzie Sampling Date: 7/5/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP10U
Investigator(s): A.Stegeman, D. Redding Section, Township, Range: 4 , 149N, 96W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.758870 Long: -102.963518 Datum: NAD83
Soil Map Unit Name: Flasher-Veber-Parshall complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
	= Total Cover		
Herb Stratum (Plot size:)			
1. *Poa pratensis*	60%	Y	FACU
2. *Bromus inermis*	40%	Y	UPL
3.			
	100% = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum 0.00%

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	0%	x 2	0.0%
FAC species	0%	x 3	0.0%
FACU species	60%	x 4	240.0%
UPL species	40%	x 5	200.0%
Column Totals:	100.0% (A)		440% (B)

Prevalence Index = B/A = 4.40

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks:

Sampling Point: ADP10U

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-20	10YR 3/2	100%					Clay Loam	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner to Alexander City/County: McKenzie Sampling Date: 7/6/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP11W
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 31 , 150N, 96W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.763616 Long: -103.014212 Datum: NAD83
Soil Map Unit Name: Vebar-Flasher-Tally complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

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

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
		= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Hordeum jubatum*	40%	Y	FACW
2. *Eleocharis fallax*	40%	Y	OBL
3. *Schoenoplectus maritimus*	15%	N	OBL
4. *Rumex crispus*	5%	N	FAC
5.			
	100%	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
		= Total Cover	

% Bare Ground in Herb Stratum 5.00%

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	55%	x 1	55.0%
FACW species	40%	x 2	80.0%
FAC species	5%	x 3	15.0%
FACU species	0%	x 4	0.0%
UPL species	0%	x 5	0.0%
Column Totals:	100.0% (A)		150% (B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- Y 2 - Dominance Test if >50%
- Y 3 - Prevalence Index is ≤ 3.0
- ___ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a seperate sheet)
- ___ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes X No**

Remarks:

Sampling Point: ADP11W

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-3	10YR 3/1	100%					Clay	
10-16	10YR 6/2	95%	7.5YR 6/2	5%	C	M	Sand	
3-10	10YR 5/2	90%	7.5YR 4/6	10%	C	M	Sand	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/6/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP12U
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 31 , 150N, 96W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.763599 Long: -103.014298 Datum: NAD83
Soil Map Unit Name: Vebar-Flasher-Tally complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
		= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Poa pratensis*	75%	Y	FACU
2. *Echinacea angustifolia*	10%	N	UPL
3. *Symphoricarpos occidentalis*	5%	N	UPL
4. *Campanulastrum americanum*	5%	N	FAC
5. *Dalea lasiathera*	5%	N	UPL
6.			
	100%	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
		= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	0%	x 2	0.0%
FAC species	5%	x 3	15.0%
FACU species	75%	x 4	300.0%
UPL species	20%	x 5	100.0%
Column Totals:	100.0% (A)		415% (B)

Prevalence Index = B/A = 4.15

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks:

Sampling Point: ADP12U

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-16	10YR 4/4	100%					Silty Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/6/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP13W
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 31 , 150N, 96W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.763233 Long: -103.021186 Datum: NAD83
Soil Map Unit Name: Daglum-Belfield complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Hordeum jubatum*	60%	Y	FACW
2. *Eleocharis fallax*	25%	Y	OBL
3. *Juncus balticus*	15%	N	FACW
4.			
	100%	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum 10.00%

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	25%	x 1	25.0%
FACW species	75%	x 2	150.0%
FAC species	0%	x 3	0.0%
FACU species	0%	x 4	0.0%
UPL species	0%	x 5	0.0%
Column Totals:	100.0% (A)		175% (B)

Prevalence Index = B/A = 1.75

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes X No**

Remarks:

Sampling Point: ADP13W

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-16	5B 4/1	60%	10YR 4/1	40%			Sandy Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/6/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP14U
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 31 , 150N, 96W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.763333 Long: -103.021429 Datum: NAD83
Soil Map Unit Name: Daglum-Belfield complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Poa pratensis*	80%	Y	FACU
2. *Hordeum jubatum*	15%	N	FACW
3. *Ratibida columnifera*	5%	N	UPL
4.			
	100%	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	15%	x 2	30.0%
FAC species	0%	x 3	0.0%
FACU species	80%	x 4	320.0%
UPL species	5%	x 5	25.0%
Column Totals:	100.0% (A)		375% (B)

Prevalence Index = B/A = 3.75

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks:

Sampling Point: ADP14U

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-16	10YR 4/2	100%					Silty Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/7/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP23W
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 21 , 150N, 99W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.796899 Long: -103.368629 Datum: NAD83
Soil Map Unit Name: Korchea-Fluvaquents complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

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

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Spartina pectinata*	65%	Y	FACW
2. *Eleocharis fallax*	20%	N	OBL
3. *Typha latifolia*	10%	N	OBL
4. *Cirsium arvense*	5%	N	FACU
5. *Sium suave*	5%	N	OBL
6.			
	105% = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	35%	x 1	35.0%
FACW species	65%	x 2	130.0%
FAC species	0%	x 3	0.0%
FACU species	5%	x 4	20.0%
UPL species	0%	x 5	0.0%
Column Totals:	105.0% (A)		185% (B)

Prevalence Index = B/A = 1.76

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes X No**

Remarks:

Sampling Point: ADP23W

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-18	10YR 4/1	95%	7.5YR 4/6	5%	C	M	Sandy Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/7/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP24U
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 21 , 150N, 99W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.796820 Long: -103.368610 Datum: NAD83
Soil Map Unit Name: Korchea-Fluvaquents complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	100%	Y	UPL
2.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	0%	x 2	0.0%
FAC species	0%	x 3	0.0%
FACU species	0%	x 4	0.0%
UPL species	100%	x 5	500.0%
Column Totals:	100.0% (A)		500% (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks:

Sampling Point: ADP24U

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-20	10YR 2/1	100%					Clay Loam	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/8/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP31W
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 1 , 151N, 101W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.921024 Long: -103.551973 Datum: NAD83
Soil Map Unit Name: Zahl-Cabba-Maschetah complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

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

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Hordeum jubatum*	50%	Y	FACW
2. *Schoenoplectus maritimus*	15%	N	OBL
3. *Phleum pratense*	10%	N	FACU
4. *Eleocharis fallax*	5%	N	OBL
5. *Juncus balticus*	5%	N	FACW
6.			
	85% = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum 10.00%

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	20%	x 1	20.0%
FACW species	55%	x 2	110.0%
FAC species	0%	x 3	0.0%
FACU species	10%	x 4	40.0%
UPL species	0%	x 5	0.0%
Column Totals:	85.0% (A)		170% (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes X No**

Remarks:

Sampling Point: ADP31W

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-18	10YR 2/1	95%	7.5YR 4/6	5%	C	M	Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 3

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/8/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP32U
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 1 , 151N, 101W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.921089 Long: -103.551970 Datum: NAD83
Soil Map Unit Name: Zahl-Cabba-Maschetah complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
		= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Pascopyrum smithii*	75%	Y	FACU
2. *Melilotus officinalis*	15%	N	FACU
3.			
	90%	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
		= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	0%	x 2	0.0%
FAC species	0%	x 3	0.0%
FACU species	90%	x 4	360.0%
UPL species	0%	x 5	0.0%
Column Totals:	90.0% (A)		360% (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks:

Sampling Point: ADP32U

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-18	10YR 4/1	100%					Silty Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/8/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP33W
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 1 , 151N, 101W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.921023 Long: -103.552875 Datum: NAD83
Soil Map Unit Name: Zahl-Cabba-Maschetah complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Hordeum jubatum*	60%	Y	FACW
2. *Spartina pectinata*	40%	Y	FACW
3. *Rumex crispus*	5%	N	FAC
4.			
	105%	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum 10.00%

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	100%	x 2	200.0%
FAC species	5%	x 3	15.0%
FACU species	0%	x 4	0.0%
UPL species	0%	x 5	0.0%
Column Totals:	105.0% (A)		215% (B)

Prevalence Index = B/A = 2.05

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- Y 2 - Dominance Test if >50%
- Y 3 - Prevalence Index is ≤ 3.0
- ___ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a seperate sheet)
- ___ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes X No**

Remarks:

Sampling Point: ADP33W

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-18	10YR 4/1	95%	7.5YR 4/6	5%	C	M	Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 3

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/8/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP34U
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 1 , 151N, 101W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.921029 Long: -103.552922 Datum: NAD83
Soil Map Unit Name: Zahl-Cabba-Maschetah complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	50%	Y	UPL
2. *Thinopyrum intermedium*	50%	Y	UPL
3.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	0%	x 2	0.0%
FAC species	0%	x 3	0.0%
FACU species	0%	x 4	0.0%
UPL species	100%	x 5	500.0%
Column Totals:	100.0% (A)		500% (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks:

Sampling Point: ADP34U

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-18	10YR 4/3	100%					Silty Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/8/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP35W
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 1 , 151N, 101W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.921460 Long: -103.556350 Datum: NAD83
Soil Map Unit Name: Zahl-Cabba-Maschetah complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

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

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Spartina pectinata*	75%	Y	FACW
2. *Phleum pratense*	15%	N	FACU
3. *Persicaria amphibia*	5%	N	OBL
4.			
	95%	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum 5.00%

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	5%	x 1	5.0%
FACW species	75%	x 2	150.0%
FAC species	0%	x 3	0.0%
FACU species	15%	x 4	60.0%
UPL species	0%	x 5	0.0%
Column Totals:	95.0% (A)		215% (B)

Prevalence Index = B/A = 2.26

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- Y 2 - Dominance Test if >50%
- Y 3 - Prevalence Index is ≤ 3.0
- ___ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a seperate sheet)
- ___ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes X No**

Remarks:

Sampling Point: ADP35W

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-20	10YR 4/1	95%	7.5YR 4/6	5%	C	M	Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 4

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/8/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP36U
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 1 , 151N, 101W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.921432 Long: -103.556414 Datum: NAD83
Soil Map Unit Name: Zahl-Cabba-Maschetah complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	95%	Y	UPL
2. *Symphoricarpos occidentalis*	5%	N	UPL
3.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	0%	x 2	0.0%
FAC species	0%	x 3	0.0%
FACU species	0%	x 4	0.0%
UPL species	100%	x 5	500.0%
Column Totals:	100.0% (A)		500% (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks:

Sampling Point: ADP36U

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-4	10YR 2/1	100%					Silt Loam	
4-20	10YR 4/3	100%					Silty Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/5/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP3W
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 26 , 150N, 96W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.779795 Long: -102.936974 Datum: NAD83
Soil Map Unit Name: Cabba-Chama-Havrelon NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

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

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Juncus balticus*	40%	Y	FACW
2. *Spartina pectinata*	40%	Y	FACW
3. *Eleocharis fallax*	10%	N	OBL
4. *Hordeum jubatum*	10%	N	FACW
5. *Schoenoplectus americanus*	5%	N	OBL
6.			
	105% = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	15%	x 1	15.0%
FACW species	90%	x 2	180.0%
FAC species	0%	x 3	0.0%
FACU species	0%	x 4	0.0%
UPL species	0%	x 5	0.0%
Column Totals:	105.0% (A)		195% (B)

Prevalence Index = B/A = 1.86

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes X No**

Remarks:

Sampling Point: ADP3W

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-15	5GY 4/1	95%	5YR 4/6	5%	C	M	Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches):

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes	X	No	Depth (inches):	10
Water Table Present?	Yes	X	No	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes	X	No	Depth (inches):	0

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner to Alexander City/County: McKenzie Sampling Date: 7/5/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP4U
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 26 , 150N, 96W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.779971 Long: -102.936935 Datum: NAD83
Soil Map Unit Name: Cabba-Chama-Havrelon NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	50%	Y	UPL
2. *Poa pratensis*	30%	Y	FACU
3. *Agropyron cristatum*	15%	N	UPL
4. *Spartina pectinata*	5%	N	FACW
5.			
	100%	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	5%	x 2	10.0%
FAC species	0%	x 3	0.0%
FACU species	30%	x 4	120.0%
UPL species	65%	x 5	325.0%
Column Totals:	100.0% (A)		455% (B)

Prevalence Index = B/A = 4.55

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks:

Sampling Point: ADP4U

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-3	10YR 4/1	100%					Clay Loam	
3-20	10YR 4/2	100%					Silty Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/5/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP5W
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 34 , 150N, 96W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.762606 Long: -102.942999 Datum: NAD83
Soil Map Unit Name: Flasher-Vebar-Parshall complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

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

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Spartina pectinata*	90%	Y	FACW
2. *Hordeum jubatum*	10%	N	FACW
3.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	100%	x 2	200.0%
FAC species	0%	x 3	0.0%
FACU species	0%	x 4	0.0%
UPL species	0%	x 5	0.0%
Column Totals:	100.0% (A)		200% (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes X No**

Remarks:

Sampling Point: ADP5W

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-16	5GY 5/1	90%	7.5YR 3/4	10%	C	M	Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/5/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP6U
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 34 , 150N, 96W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.762560 Long: -102.943006 Datum: NAD83
Soil Map Unit Name: Flasher-Vebar-Parshall complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
		= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	90%	Y	UPL
2. *Sonchus oleraceus*	5%	N	UPL
3. *Poa pratensis*	5%	N	FACU
4.			
	100%	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
		= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	0%	x 2	0.0%
FAC species	0%	x 3	0.0%
FACU species	5%	x 4	20.0%
UPL species	95%	x 5	475.0%
Column Totals:	100.0% (A)		495% (B)

Prevalence Index = B/A = 4.95

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks:

Sampling Point: ADP6U

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-6	10YR 4/3	100%					Silty Clay	
6-20	10YR 5/2	100%					Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/5/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP7W
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 3 , 149N, 96W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.759482 Long: -102.950032 Datum: NAD83
Soil Map Unit Name: Moreau-Wayden silty clays, NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Typha latifolia*	55%	Y	OBL
2. *Spartina pectinata*	50%	Y	FACW
3.			
	105%	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	55%	x 1	55.0%
FACW species	50%	x 2	100.0%
FAC species	0%	x 3	0.0%
FACU species	0%	x 4	0.0%
UPL species	0%	x 5	0.0%
Column Totals:	105.0% (A)		155% (B)

Prevalence Index = B/A = 1.48

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes X No**

Remarks:

Sampling Point: ADP7W

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-16	5G 4/1	90%	7.5YR 4/6	10%	C	M	Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches):

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 6

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/5/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP8U
Investigator(s): A. Stegeman, D. Redding Section, Township, Range: 3 , 149N, 96W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.759477 Long: -102.950138 Datum: NAD83
Soil Map Unit Name: Moreau-Wayden silty clays, NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Poa pratensis*	70%	Y	FACU
2. *Bromus inermis*	40%	Y	UPL
3. *Artemisia ludoviciana*	5%	N	UPL
4. *Glycyrrhiza lepidota*	5%	N	FACU
5.			
	120% = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	0%	x 2	0.0%
FAC species	0%	x 3	0.0%
FACU species	75%	x 4	300.0%
UPL species	45%	x 5	225.0%
Column Totals:	120.0% (A)		525% (B)

Prevalence Index = B/A = 4.38

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks:

Sampling Point: ADP8U

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-20	10YR 3/2	100%					Clay Loam	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/5/2016
Applicant/Owner: Targa State: ND Sampling Point: ADP9W
Investigator(s): A. Stegeman, D. Reddingn Section, Township, Range: 4 , 149N, 96W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.758867 Long: -102.963600 Datum: NAD83
Soil Map Unit Name: Flasher-Vebar-Parshall complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes	X	No	
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes X No**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
		= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Spartina pectinata*	75%	Y	FACW
2. *Schoenoplectus maritimus*	20%	N	OBL
3. *Typha latifolia*	10%	N	OBL
4.			
	105%	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
		= Total Cover	

% Bare Ground in Herb Stratum 5.00%

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	30%	x 1	30.0%
FACW species	75%	x 2	150.0%
FAC species	0%	x 3	0.0%
FACU species	0%	x 4	0.0%
UPL species	0%	x 5	0.0%
Column Totals:	105.0% (A)		180% (B)

Prevalence Index = B/A = 1.71

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes X No**

Remarks:

Sampling Point: ADP9W

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-18	5G 4/1	75%	7.5YR 4/6	25%	C	M	Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 6

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/7/2016
Applicant/Owner: Targa State: ND Sampling Point: BDP10W
Investigator(s): M.keller, P.Dodge Section, Township, Range: 10 , 149N, 99W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.740168 Long: -103.334180 Datum: NAD83
Soil Map Unit Name: Korchea-Fluvaquents complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

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

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Spartina pectinata*	100%	Y	FACW
2.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	100%	x 2	200.0%
FAC species	0%	x 3	0.0%
FACU species	0%	x 4	0.0%
UPL species	0%	x 5	0.0%
Column Totals:	100.0% (A)		200% (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- Y 2 - Dominance Test if >50%
- Y 3 - Prevalence Index is ≤ 3.0
- ___ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a seperate sheet)
- ___ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes X No**

Remarks:

Sampling Point: BDP10W

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-20	10YR 3/2	97%	10YR 3/4	3%	C	M	Clay Loam	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/7/2016
Applicant/Owner: Targa State: ND Sampling Point: BDP11U
Investigator(s): M.keller, P.Dodge Section, Township, Range: 10 , 149N, 99W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.740186 Long: -103.334228 Datum: NAD83
Soil Map Unit Name: Korchea-Fluvaquents complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	90%	Y	UPL
2. *Artemisia ludoviciana*	5%	N	UPL
3. *Symphoricarpos occidentalis*	5%	N	UPL
4.			
	100%	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	0%	x 2	0.0%
FAC species	0%	x 3	0.0%
FACU species	0%	x 4	0.0%
UPL species	100%	x 5	500.0%
Column Totals:	100.0% (A)		500% (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks:

Sampling Point: BDP11U

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-2	10YR 2/1	100%					Silt Loam	
2-20	10YR 2/2	100%					Silt Loam	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/8/2016
Applicant/Owner: Targa State: ND Sampling Point: BDP19W
Investigator(s): M.keller, P.Dodge Section, Township, Range: 1 , 151N, 101W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.926719 Long: -103.561528 Datum: NAD83
Soil Map Unit Name: Zahl-Cabba-Maschetah complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

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

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Hordeum jubatum*	40%	Y	FACW
2. *Eleocharis fallax*	20%	Y	OBL
3. *Typha latifolia*	20%	Y	OBL
4. *Thinopyrum intermedium*	10%	N	UPL
5. *Carex lupulina*	10%	N	OBL
6.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	50%	x 1	50.0%
FACW species	40%	x 2	80.0%
FAC species	0%	x 3	0.0%
FACU species	0%	x 4	0.0%
UPL species	10%	x 5	50.0%
Column Totals:	100.0% (A)		180% (B)

Prevalence Index = B/A = 1.80

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes X No**

Remarks:

Sampling Point: BDP19W

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-20	10YR 2/1	90%	5YR 3/3	10%	C	M	Silt Loam	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: TargaJohnsons CornerTo Alexander City/County: McKenzie Sampling Date: 7/8/2016
Applicant/Owner: Targa State: ND Sampling Point: BDP20U
Investigator(s): M.keller, P.Dodge Section, Township, Range: 1 , 151N, 101W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.926719 Long: -103.561528 Datum: NAD83
Soil Map Unit Name: Zahl-Cabba-Maschetah complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Sonchus oleraceus*	70%	Y	UPL
2. *Thinopyrum intermedium*	30%	Y	UPL
3.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	0%	x 2	0.0%
FAC species	0%	x 3	0.0%
FACU species	0%	x 4	0.0%
UPL species	100%	x 5	500.0%
Column Totals:	100.0% (A)		500% (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks:

Sampling Point: BDP20U

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-20	10YR 4/2	100%					Silt Loam	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner to Alexander City/County: McKenzie Sampling Date: 7/8/2016
Applicant/Owner: Targa State: ND Sampling Point: BDP22W
Investigator(s): M.keller, P.Dodge Section, Township, Range: 27 , 152N, 101W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): none Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.954271 Long: -103.602708 Datum: NAD83
Soil Map Unit Name: Cabba-Badland complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

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

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Juncus balticus*	80%	Y	FACW
2.			
	80% = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	80%	x 2	160.0%
FAC species	0%	x 3	0.0%
FACU species	0%	x 4	0.0%
UPL species	0%	x 5	0.0%
Column Totals:	80.0% (A)		160% (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes X No**

Remarks:

Sampling Point: BDP22W

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-6	5Y 5/1	95%	5Y 6/6	5%	C	M	Silt	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 6

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 4

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/8/2016
Applicant/Owner: Targa State: ND Sampling Point: BDP23U
Investigator(s): M.keller, P.Dodge Section, Township, Range: 27 , 152N, 101W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.957961 Long: -103.605227 Datum: NAD83
Soil Map Unit Name: Cabba-Badland complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
		= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Poa pratensis*	40%	Y	FACU
2. *Bromus inermis*	40%	Y	UPL
3. *Sporobolus airoides*	20%	Y	FAC
4.			
	100%	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
		= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	0%	x 2	0.0%
FAC species	20%	x 3	60.0%
FACU species	40%	x 4	160.0%
UPL species	40%	x 5	200.0%
Column Totals:	100.0% (A)		420% (B)

Prevalence Index = B/A = 4.20

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks:

Sampling Point: BDP23U

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-20	10YR 5/2	100%					Silt	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner to Alexander City/County: McKenzie Sampling Date: 7/6/2016
Applicant/Owner: Targa State: ND Sampling Point: BDP2W
Investigator(s): M.keller, P.Dodge Section, Township, Range: 36 , 150N, 97W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.761641 Long: -103.041042 Datum: NAD83
Soil Map Unit Name: Flasher-Vebar-Parshall complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

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

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Hordeum jubatum*	35%	Y	FACW
2. *Juncus balticus*	30%	Y	FACW
3. *Spartina pectinata*	25%	Y	FACW
4. *Typha latifolia*	15%	N	OBL
5.			
	105%	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	15%	x 1	15.0%
FACW species	90%	x 2	180.0%
FAC species	0%	x 3	0.0%
FACU species	0%	x 4	0.0%
UPL species	0%	x 5	0.0%
Column Totals:	105.0% (A)		195% (B)

Prevalence Index = B/A = 1.86

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- Y 2 - Dominance Test if >50%
- Y 3 - Prevalence Index is ≤ 3.0
- ___ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a seperate sheet)
- ___ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes X No**

Remarks:

SOIL

Sampling Point: BDP2W

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-10	10R 5/2	97%	5YR 4/6	3%	C	M	Clay	
10-20	10YR 5/4	97%	5YR 5/8	3%	C	M	Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner to Alexander City/County: McKenzie Sampling Date: 7/6/2016
Applicant/Owner: Targa State: ND Sampling Point: BDP3U
Investigator(s): M.keller, P.Dodge Section, Township, Range: 36 , 150N, 97W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.761614 Long: -103.041072 Datum: NAD83
Soil Map Unit Name: Flasher-Vebar-Parshall complex NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Poa pratensis*	70%	Y	FACU
2. *Pascopyrum smithii*	25%	Y	FACU
3. *Carex filifolia*	5%	N	UPL
4.			
	100%	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	0%	x 2	0.0%
FAC species	0%	x 3	0.0%
FACU species	95%	x 4	380.0%
UPL species	5%	x 5	25.0%
Column Totals:	100.0% (A)		405% (B)

Prevalence Index = B/A = 4.05

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks:

Sampling Point: BDP3U

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-4	10YR 4/2	100%					Clay Loam	
4-16	10YR 5/2	97%	10YR 4/6	3%	C	M	Silty Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: targa Johnsons Corner to alexander City/County: McKenzie Sampling Date: 7/6/2016
Applicant/Owner: Targa State: ND Sampling Point: BDP4W
Investigator(s): M.keller, P.Dodge Section, Township, Range: 35 , 150N, 97W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.763270 Long: -103.051275 Datum: NAD83
Soil Map Unit Name: Cabba-Chama-Havrelon NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

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

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. *Spartina pectinata*	60%	Y	FACW
2. *Juncus balticus*	15%	N	FACW
3. *Hordeum jubatum*	15%	N	FACW
4. *Typha latifolia*	10%	N	OBL
5.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	10%	x 1	10.0%
FACW species	90%	x 2	180.0%
FAC species	0%	x 3	0.0%
FACU species	0%	x 4	0.0%
UPL species	0%	x 5	0.0%
Column Totals:	100.0% (A)		190% (B)

Prevalence Index = B/A = 1.90

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- Y 2 - Dominance Test if >50%
- Y 3 - Prevalence Index is ≤ 3.0
- ___ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a seperate sheet)
- ___ Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes X No**

Remarks:

Sampling Point: BDP4W

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-20	10YR 3/1	97%	10YR 4/4	3%	C	M	Clay Loam	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** **X** **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Targa Johnsons Corner To Alexander City/County: McKenzie Sampling Date: 7/6/2016
Applicant/Owner: Targa State: ND Sampling Point: BDP5U
Investigator(s): M.keller, P.Dodge Section, Township, Range: 35 , 150N, 97W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <5%
Subregion (LRR): LRR-F Lat: 47.763294 Long: -103.051299 Datum: NAD83
Soil Map Unit Name: Cabba-Chama-Havrelon NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (if needed, explain in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important feautres, etc.

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** **No** **X**

Remarks:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
		= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Pascopyrum smithii*	70%	Y	FACU
2. *Rosa arkansana*	10%	N	FACU
3. *Hordeum jubatum*	10%	N	FACW
4. *Ratibida columnifera*	10%	N	UPL
5.			
	100%	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
		= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0%	x 1	0.0%
FACW species	10%	x 2	20.0%
FAC species	0%	x 3	0.0%
FACU species	80%	x 4	320.0%
UPL species	10%	x 5	50.0%
Column Totals:	100.0% (A)		390% (B)

Prevalence Index = B/A = 3.90

Hydrophytic Vegetation Indicators:

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

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** **No** **X**

Remarks:

Sampling Point: BDP5U

SOIL

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

Depth (inches)	Matrix Color:	Matrix %	Redox Features Color:	Redox Features %	Redox Features Type:	Redox Features Loc:	Texture:	Remarks:
0-2	10YR 4/1	100%					Clay Loam	
2-20	10YR 5/3	100%					Silty Clay	

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

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

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

Indicators for Problematic Hydric Soils

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

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

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Targa Johnsons Corner to Alexander County: McKenzie Sampling Date: July 5, 2016
Applicant/Owner: Targa State: ND Sampling Point: ADP2U
Investigator(s): A. Stegeman and D.Redding Section, Township, Range: 25, 150N, 96W
Landform (hillslope, terrace, etc.): deppression Local relief (concave, convex, none): concave Slope (%): 4-5%
Subregion (LRR): LRR-F Lat: 47.78768 Long: -102.91538 Datum: NAD83
Soil Map Unit Name: Moreau-Wayden silty clays NWI Classification: PABFh
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No ____
Are Vegetation **No**, Soil **No**, or Hydrology **No** naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ____ No **X**
Hydric Soil Present? Yes ____ No **X**
Wetland Hydrology Present? Yes ____ No **X**

Is the Sampled Area within a Wetland? **Yes** ____ **No** **X**

Remarks:
This point was determined not to be within a wetland due to the lack of all three wetland criteria.

VEGETATION - Use scientific names of plants.

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5 ft.)			
1. *Symphoricarpos occidentalis*	10	No	UPL
2. *Poa pratensis*	90	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
100 = Total Cover			
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)
Total Number of Dominant Species Across All Strata: **1** (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**90**	x 4 =	**360**
UPL species	**10**	x 5 =	**50**
Column Totals:	**100** (A)		**410** (B)

Prevalence Index = B/A = **4.10**

Hydrophytic Vegetation Indicators:
____ 1 - Rapid Test for Hydrophytic Vegetation
____ 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤ 3.0[1]
____ 4 - Morphological Adaptations[1] (Explain)
____ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** **X**

Remarks:
No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FACU or drier).

SOIL

Sampling Point: **ADP2U**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR 5/2	100	None	—	—	—	Silty Clay	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

HYDROLOGY

Wetland hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No **X** Depth (inches): **N/A**

Water Table Present? Yes _____ No **X** Depth (inches): **>20**

Saturation Present? (includes capillary fringe) Yes _____ No **X** Depth (inches): **>20**

Wetland Hydrology Present? **Yes** _____ **No** **X**

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

Remarks:

No positive indication of wetland hydrology was observed.

Pictures - N-1646, E-1647, S-1648, W-1649 Disprove NWI in pipeline ROW

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Targa Johnsons Corner to Alexander County: McKenzie Sampling Date: July 7, 2016
Applicant/Owner: Targa State: ND Sampling Point: ADP27U
Investigator(s): A. Stegeman and D.Redding Section, Township, Range: 30, 151N, 99W
Landform (hillslope, terrace, etc.): deppression Local relief (concave, convex, none): concave Slope (%): 4-5%
Subregion (LRR): LRR-F Lat: 47.87091 Long: -103.39306 Datum: NAD83
Soil Map Unit Name: Korchea-Fluvaquents Complex NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks.)
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No ____
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ____ No **X**
Hydric Soil Present? Yes ____ No **X**
Wetland Hydrology Present? Yes ____ No **X**

Is the Sampled Area within a Wetland? **Yes** ____ **No** **X**

Remarks:
This point was determined not to be within a wetland due to the lack of all three wetland criteria.

VEGETATION - Use scientific names of plants.

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 15 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5 ft.)			
1. *Symphoricarpos occidentalis*	50	Yes	UPL
2. *Pascopyrum smithii*	50	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
100 = Total Cover			
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**50**	x 4 =	**200**
UPL species	**50**	x 5 =	**250**
Column Totals:	**100** (A)		**450** (B)

Prevalence Index = B/A = **4.50**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
____ 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤ 3.0[1]
____ 4 - Morphological Adaptations[1] (Explain)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** **X**

Remarks:
No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FACU or drier).

SOIL

Sampling Point: **ADP27U**

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

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

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No **X** Depth (inches): **N/A**

Water Table Present? Yes ___ No **X** Depth (inches): **>20**

Saturation Present? (includes capillary fringe) Yes ___ No **X** Depth (inches): **>20**

Wetland Hydrology Present? **Yes** ___ **No** **X**

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

Remarks:

No positive indication of wetland hydrology was observed.

Pictures - N-1774, E-1775, S-1776, W-1777 Disprove NHD flowline on Tobacco Garden Creek

APPENDIX C
Photographs of Project Area

Figure C1. AWET2 and ASTR1 facing west (photograph taken July 5, 2016).

Figure C2. AWET3 facing south (photograph taken July 5, 2016).

Figure C3. AWET4 facing south (photograph taken July 5, 2016).

Figure C4. BSTR1 and BWET1 facing west (photograph taken July 6, 2016).

Figure C5. Cherry Creek - BSTR4 facing southwest (photograph taken July 6, 2016).

Figure C6. Sevenmile Creek - BSTR5 facing north (photograph taken July 6, 2016).

Figure C7. Spring Creek - BSTR6 facing south (photograph taken July 6, 2016).

Figure C8. BDP6U facing east (photograph taken July 6, 2016).

Figure C9. ADP27U facing east (photograph taken July 7, 2016).

Figure C10. ADP22U facing west (photograph taken July 7, 2016).

Figure C11. Cherry Creek - BSTR7 facing south (photograph taken July 7, 2016).

Figure C12. Timber Creek - BSTR8 facing northeast (photograph taken July 7, 2016).

Figure C13. BSTR10 facing southeast (photograph taken July 8, 2016).

Figure C14. AWET10 facing northeast (photograph taken July 8, 2016).

This page intentionally left blank.

APPENDIX I

AGENCY COMMUNICATION

TARGA

US Department of Transportation
Federal Aviation Administration

Date: 7/18/2016

No objection provided the Federal Aviation is notified of construction or alterations as required by Federal Aviation Regulations, Part 77, Objects Affecting Navigable Airspace, Paragraph 77.9. Notice may be filed on-line at https://oeaaa.faa.gov.

Don Phillips, Program Manger DWP
FAA/Dakota-Minnesota Airports District Office, Bismarck Office
2301 University Drive, Building 23B
Bismarck, ND 58504

July 12, 2016

Laurie Suttmeier
Airports District Office Manager
Federal Aviation Administration
Bismarck Airports District Office, BIS-ADO-600
2301 University Drive, Building 23B
Bismarck, ND 58504

Re: Application to the North Dakota Public Service Commission for Corridor Compatibility and Pipeline Route Certificates for a crude oil pipeline from Johnsons Corner to Alexander.

Dear Ms. Suttmeier:

Targa Badlands LLC is preparing an application for Corridor Compatibility and Pipeline Route Certificates in accordance with North Dakota Century Code § 49-22-07. The project involves the addition of crude oil tankage to an existing gathering system and, therefore, requires a change in the pipeline classification from "gathering" to "transmission" under North Dakota Public Service Commission rules. Transmission pipelines require both a corridor certificate and a route permit issued by the PSC.

The pipeline originates east of Johnsons Corner on section 24 of Township 150, Range 96, and terminates on section 19 of Township 152, Range 101, north of Alexander. The Johnsons Corner facility will include two 20,000-barrel storage tanks for crude oil. The Alexander facility will include a 30,000-barrel storage tank for crude oil. The crude oil is gathered from the Fort Berthold Indian Reservation and delivered to the Enbridge terminal north of Alexander. The pipeline possesses a maximum capacity of 50,000 barrels of crude oil per day. A map of the project is attached, with the Johnsons Corner tank facility shown at the east end of the indicated pipeline and the Alexander tank facility shown at the west end of the pipeline.

Per North Dakota Administrative Code 69-06-05 (PSC administrative rules), we are consulting with the Federal Aviation Administration, Bismarck Airports District Office for assistance in identifying concerns or issues associated with this project. The project occupies the sections of land listed at the end of this letter.

Information, comments, and guidance provided by your office will be used to help guide further developments and improvements to this project. Please identify permits or conditions your office will require for project compliance.

We have sent similar letters to other federal and state agencies and offices regarding this project. We would appreciate a response from you by August 9, 2016. Please contact me at 1-713-584-1264 or rudysalazar@targaresources.com or Paul Pansegrau at 1-701-258-5165 or ppansegrau@ene.com if you have any questions.

Respectfully,

Rodolfo Salazar

Rudy Salazar
Senior Environmental Specialist
Targa Resources, LLC
1000 Louisiana St.
Houston, TX 77007

Enclosures: Project Map

cc: Paul Pansegrau, Ecology and Environment, Inc.

Table 1. Key Component Locations

Component Name	Township	Range	Sections
Johnson's Corner Tank Facility	150	96	24
Pipeline	150	96	24, 25, 26, 31, 32, 34, 35
	149	96	3, 4, 5
	150	97	31, 32, 33, 34, 35, 36
	149	97	4, 6,
	149	98	1, 7, 11, 12, 14, 15, 16, 17, 18
	149	99	3, 4, 10, 11, 13, 14
	150	99	5, 8, 17, 20, 21, 28, 29, 32, 33
	151	99	19, 29, 30, 32
	151	100	6, 7, 17, 18, 20, 21, 22, 23, 24
	151	101	1, 2
	152	101	19, 20, 21, 27, 28, 34, 35
Alexander Tank Facility	152	101	19

Rodriguez, May

From: Haupt, Michael L. <mhaupt@nd.gov>
Sent: Tuesday, July 19, 2016 1:56 PM
To: rudysalazar@targaresources.com
Cc: Pansegrau, Paul
Subject: Johnsons corner to Alexander proposed pipeline
Attachments: 149-98-16MCK.pdf; 150-97-36MCK.pdf

Rudy,

Good afternoon! It appears that the ND School Trust has at least two tracts within the proposed Targa Badlands project, including section 16-149-98 and 36-150-97. Targa has applied for a pipeline easement across section 16, but not section 36. Both tracts contain a suitable pipeline corridor as shown on the attached aerial photo. Let me know if you have questions. 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.

North Dakota Department of Transportation

Grant Levi, P.E.
Director

Jack Dalrymple
Governor

July 27, 2016

Rudy Salazar
Senior Environmental Specialist
Targa Resources, LLC
1000 Louisiana St.
Houston, TX 77007

CORRIDOR COMPATIBILITY AND PIPELINE ROUTE CERTIFICATES FOR CRUDE OIL PIPELINE FROM JOHNSON CORNER TO ALEXANDER, WILLIAMS COUNTY, NORTH DAKOTA

We have reviewed your July 12, 2016, letter.

This project should have no adverse effect on the North Dakota Department of Transportation highways.

However, if because of this project any work needs to be done on highway right of way, appropriate permits and risk management documents will need to be obtained from the Department of Transportation District Engineer, Joel Wilt at 701-774-2700.

Robert Fode

ROBERT A. FODE, P.E., DIRECTOR - OFFICE OF PROJECT DEVELOPMENT

57\raf\js
c: Joel Wilt, Williston District Engineer

"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

August 9, 2016

Rudy Salazar
Senior Environmental Specialist
Targa Resources, LLC
1000 Louisiana Street
Houston, TX 77007

Dear Mr. Salazar:

RE: Crude Oil Pipeline from Johnsons Corner to Alexander

Targa Badlands LLC is preparing an application for Corridor Compatibility and Pipeline Route Certificates to change the classification of the above-mentioned pipeline from "gathering" to "transmission" under North Dakota Public Service Commission rules. The existing pipeline originates east of Johnsons Corner and terminates north of Alexander in McKenzie County, North Dakota.

A primary concern with pipeline projects is the possible disturbance of native prairie and wooded draws associated with construction of the pipeline and access roads. Avoidance of native prairie areas reduces impacts to a number of grassland species including many of the species of conservation priority. We ask that work within these areas be avoided to the extent possible, every effort be made to prevent destruction of woody vegetation, and disturbed areas be reclaimed to pre-project conditions.

The pipeline route crosses Cherry Creek, a classified fishery. We recommend that classified streams be crossed by directional boring to protect the resource. If this method is not feasible, construction should not take place within the waterway between April 15 and June 1, and controls should be implemented to minimize erosion and sedimentation. The department also recommends that additional precautions be implemented into the design of pipes crossing under the State's waterways. One means of minimizing a potentially large pipeline failure is to incorporate pressure sensing valves on both sides of the waterway. These valves should be placed as close to the waterway as possible while staying out of the floodplain to reduce potential damage from ice and other floating debris. A maintenance schedule should be developed to insure the integrity of the pipe for the life of the project.

Aquatic nuisance species (ANS) are a major concern in North Dakota. State law requires that the contractor, including any and all subcontractors involved in this project, take appropriate precautions to prevent the introduction or movement of ANS within the state. The contractor should provide the department a reasonable opportunity to inspect any equipment prior to these items being launched or placed into waters of the state. The Department's Aquatic Nuisance Species Coordinator, Ms. Jessica Howell, can be contacted at 701-368-8368 for equipment inspections or additional information regarding ANS prevention protocols.

The National Wetland Inventory indicates a variety of wetlands within the proposed project corridor. Steps should be taken to protect any wetlands that cannot be avoided, no alterations should be made to existing drainage patterns, and above-ground appurtenances should not be placed in wetland areas. Unavoidable destruction or degradation of wetland acres should be mitigated in kind.

Aerial surveys should be conducted for raptor nests before construction begins. We recommend that a ½-mile construction buffer be implemented around active eagle nest sites (known occupied within the past 5 years). Ms. Sandra Johnson, Conservation Biologist, may be contacted at 701-328-6327 for additional information on golden eagle nest sites in the state.

We do not believe this project will have significant adverse effects on wildlife or wildlife habitat, including species of conservation priority, provided these recommendations were implemented where appropriate during project construction.

Sincerely,

Greg Link
Chief
Conservation & Communication Division

js

North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
(701) 328-2750 • TTY 1-800-366-6888 or 711 • FAX (701) 328-3696 • http://swc.nd.gov

July 25, 2016

Rudy Salazar, Senior Environmental Specialist
Targa Resources, LLC
1000 Louisiana St.
Houston, TX 77007

Dear Mr. Salazar:

This is in response to your request for review of environmental impacts associated with the Targa Badlands LLC's application to the North Dakota Public Service Commission for Corridor Compatibility and Pipeline Route Certificates for a crude oil pipeline from Johnsons Corner to Alexander, ND. The pipeline originates east of Johnsons Corner on Section 24 of Township 150, Range 96, and terminates on Section 19 of Township 152, Range 101, north of Alexander, ND.

The proposed project has been reviewed by State Water Commission staff and the following comments are provided:

- There are no floodplains identified and/or mapped where this proposed project is to take place. The project takes place in an area of No Special Flood Hazard Area. No floodplain permits are necessary from McKenzie County relative to the National Flood Insurance Program (NFIP). The NFIP map used to make this determination is: McKenzie County, Panel #38053CIND0A, Date 9/2/2015.

- The ND State Water Commission (Commission) maintains a network of observation/monitor water wells and the location of gaging stations throughout the state, and many are located close to public right-of-ways. The location information can be obtained from the Commission's website at: http://swc.nd.gov.; then click on "Information and Education"; then click on "Maps/GIS and Data," then click on "Map Services;" then click on the "Ground and Surface Water Information" map. Please inform the Water Appropriations Division of the Commission at 701-328-2754, if gaging stations or water wells may be affected by the project or accidently damaged.

- A surface drain permit may be required if fill is being placed in a slough, pond, lake or water course with an 80 acre or larger watershed. Please contact Graham Hart, 701-328-3095, or the State Water Commission website at www.swc.nd.gov, regarding permit requirements.

- It is the responsibility of the project sponsor to ensure that local, state and federal agencies are contacted for any required approvals, permits, and easements.

- All waste material associated with the project must be disposed of properly and not placed in identified floodway areas.

Thank you for the opportunity to provide review comments. If you have any questions, please call me at 701-328-4967.

Sincerely,

Linda Weispfenning
Water Resource Planner

LW:dm/1570

JACK DALRYMPLE, GOVERNOR
CHAIRMAN

GARLAND ERBELE, P.E.
CHIEF ENGINEER-SECRETARY

NORTH DAKOTA
DEPARTMENT *of* HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

July 21, 2016

Mr. Rudy Salazar
Senior Environmental Specialist
Targa Resources, LLC
1000 Louisiana Street
Houston, TX 77002

Re: Addition of Tankage to Crude Oil Pipeline from Johnson's Corner to Alexander
McKenzie County, North Dakota

Dear Mr. Salazar:

This department has reviewed the information concerning the above-referenced project submitted to Dr. Terry Dwelle under date of July 12, 2016, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. All necessary measures must be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise are to be dealt with in an efficient and effective manner.

2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.

3. Oil and gas projects disturbing one or more acres are required to have a permit to discharge storm water runoff if runoff from the project will carry eroded material to a water of the state. A permit is not required for oil and gas projects if runoff from the project will not carry eroded material to a water of the state. Further information on the storm water permit may be obtained from the Department's website or by calling the Division of Water Quality (701-328-5210). In addition, cities or counties may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local storm water management considerations are addressed.

4. Noise from construction activities may have adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is equipped with a recommended muffler in good working order. Noise effects can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,

L. David Glatt, P.E., Chief
Environmental Health Section

LDG:cc
Attach.

NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

Fill Material

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

Jack Dalrymple
Governor of North Dakota

North Dakota State Historical Board

Margaret Puetz
Bismarck - President

Gereld Gerntholz
Valley City – Vice President

Albert I. Berger
Grand Forks - Secretary

Calvin Grinnell
New Town

Diane K. Larson
Bismarck

Chester E. Nelson, Jr.
Bismarck

A. Ruric Todd III
Jamestown

Sara Otte Coleman
Director
Tourism Division

Kelly Schmidt
State Treasurer

Alvin A. Jaeger
Secretary of State

Mark Zimmerman
Director
Parks and Recreation Department

Grant Levi
Director
Department of Transportation

Claudia J. Berg
Director

Accredited by the American Alliance of Museums since 1986

July 18, 2016

Mr. Rudy Salazar
Senior Environmental Specialist
Targa Resources, LLC
1000 Louisiana Street
Houston, TX 77007

ND SHPO REF.: 16-1309 PSC Targa Badlands LLC crude oil pipeline from Johnsons Corner to Alexander, McKenzie County, North Dakota

Dear Mr. Salazar:

We received your preliminary letter on the new Johnsons Corner to Alexander crude oil pipeline. We recommend a Class III (pedestrian) cultural resources survey of the entire project area as there are areas of concern and known archeological sites in the vicinity.

Thank you for the opportunity to review the project to date. We look forward to review of the Class III report prior to any earth work. If you have questions, please contact Susan Quinnell at (701) 328-3576 or squinnell@nd.gov

Sincerely,

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

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640

REPLY TO
ATTENTION OF

July 18, 2016

North Dakota Regulatory Office

NWO-2016-01488-BIS
PM/255-0015

Targa Resources, LLC
Attn: Mr./Ms. Rudy Salazar
1000 Louisiana Street
Houston, Texas 77007

Dear Mr./Ms. Salazar:

We are responding to your July 12, 2016 request for comments on the Targa Badlands LLC - Johnsons Corner Pipeline project. The proposed project consists of the addition of crude oil tankage to an existing gathering system and, therefore, a change of pipeline classification from gathering to transmission. The proposed project extends from Johnsons Corner in Section 24, Township 150 North, Range 96 East, and terminates in Section 19, township 152, Range 101 East, north of Alexander at approximate Latitude 47.8496340°, Longitude -103.30210°, McKenzie County, North Dakota.

Based on the information contained within your letter, it appears a Department of the Army permit **may not** be required for all of your proposed project. A change in classification does not trigger review under Section 404 of the Clean Water Act or Section 10 of the rivers and Harbors Act. As per the below information, a permit is required only if it results in fill material being placed in waters of the U.S. or if the action requires work through, under or over a Section 10 water.

Corps Regulatory Offices administer Section 10 of the Rivers and Harbors Act (Section 10) and Section 404 of the Clean Water Act (Section 404). Section 10 regulates work impacting navigable waters. **This includes work over, through, or under Section 10 waters.** Section 10 waters in North Dakota are the Missouri River (including Lake Sakakawea and Lake Oahe), Yellowstone River, James River south of the railroad tracks in Jamestown, North Dakota, Bois de Sioux River, Red River of the North, and the Upper Des Lacs Lake. Section 404 regulates the discharge of dredge or fill material (temporarily or permanently) in waters of the United States. Waters of the United States may include, but are not limited to, rivers, streams, ditches, coulees, lakes, ponds, and their adjacent wetlands. Fill material includes, but is not limited to, rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mines or other excavation activities and materials used to create any structure or infrastructure in waters of the United States.

Please refer to identification number NWO-2016-01488-BIS in any correspondence concerning this project. If you have any questions, please contact me at 1513 South 12th Avenue, Bismarck, North Dakota 58504, by email at *Patricia.L.Mcqueary@usace.army.mil*, or telephone at 701-255-0015 x2001. For more information regarding our program, please visit our website at http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/NorthDakota.aspx.

Sincerely,

Patricia L. McQueary
North Dakota State Program Manager
Omaha District Regulatory Division

Cc:
Mr. Paul Pansegrau, Ecology and Environment, 107 West Main Street, Suite 325 Bismarck ND 58501

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640

REPLY TO
ATTENTION OF

July 18, 2016

North Dakota Regulatory Office

NWO-2016-01488-BIS
PM/255-0015

COPY

Targa Resources, LLC
Attn: Mr./Ms. Rudy Salazar
1000 Louisiana Street
Houston, Texas 77007

Dear Mr./Ms. Salazar:

We are responding to your July 12, 2016 request for comments on the Targa Badlands LLC - Johnsons Corner Pipeline project. The proposed project consists of the addition of crude oil tankage to an existing gathering system and, therefore, a change of pipeline classification from gathering to transmission. The proposed project extends from Johnsons Corner in Section 24, Township 150 North, Range 96 East, and terminates in Section 19, township 152, Range 101 East, north of Alexander at approximate Latitude 47.8496340°, Longitude -103.30210°, McKenzie County, North Dakota.

Based on the information contained within your letter, it appears a Department of the Army permit **may not** be required for all of your proposed project. A change in classification does not trigger review under Section 404 of the Clean Water Act or Section 10 of the rivers and Harbors Act. As per the below information, a permit is required only if it results in fill material being placed in waters of the U.S. or if the action requires work through, under or over a Section 10 water.

Corps Regulatory Offices administer Section 10 of the Rivers and Harbors Act (Section 10) and Section 404 of the Clean Water Act (Section 404). Section 10 regulates work impacting navigable waters. **This includes work over, through, or under Section 10 waters.** Section 10 waters in North Dakota are the Missouri River (including Lake Sakakawea and Lake Oahe), Yellowstone River, James River south of the railroad tracks in Jamestown, North Dakota, Bois de Sioux River, Red River of the North, and the Upper Des Lacs Lake. Section 404 regulates the discharge of dredge or fill material (temporarily or permanently) in waters of the United States. Waters of the United States may include, but are not limited to, rivers, streams, ditches, coulees, lakes, ponds, and their adjacent wetlands. Fill material includes, but is not limited to, rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mines or other excavation activities and materials used to create any structure or infrastructure in waters of the United States.

Please refer to identification number NWO-2016-01488-BIS in any correspondence concerning this project. If you have any questions, please contact me at 1513 South 12th Avenue, Bismarck, North Dakota 58504, by email at *Patricia.L.Mcqueary@usace.army.mil*, or telephone at 701-255-0015 x2001. For more information regarding our program, please visit our website at http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/NorthDakota.aspx.

Sincerely,

Patricia L. McQueary
North Dakota State Program Manager
Omaha District Regulatory Division

Cc:
Mr. Paul Pansegrau, Ecology and Environment, 107 West Main Street, Suite 325 Bismarck ND 58501

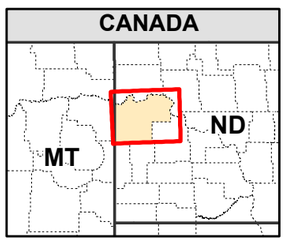
APPENDIX J

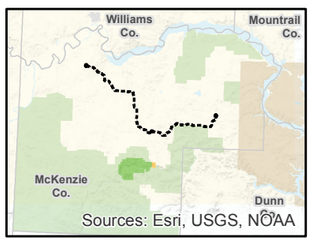
MAPS OF EXCLUSION AND AVOIDANCE AREAS

Avoidance and Exclusion Area Map Index

Name	Map ID/Label Number
Theodore Roosevelt National Park – North Unit	1
Fort Union National Historic Site	2
Old Sod Post Office (NHR #80002919)	3
Fairview Lift Bridge (NHR #97000239)	4
Sandstone School (NHR #08000278)	5
Lewis & Clark	6
Tobacco Gardens	7
Fort Bufford State Historic Site	8
Missouri-Yellowstone Confluence Interpretative Center	9
Lewis & Clark Trail Museum	10
Long-X Trading Post Visitor Center	11
McKenzie County Heritage Park	12
Nature Park	13
Pioneer Museum of McKenzie County	14
Three Affiliated Tribes Museum	15
Tourist Park Campground	16
Veteran's Memorial Park	17
Wild West Water Park	18
Children's Playground	19
Crow Flies High	20
Maah Daah Hey Trail (USFS)	21
Four Bears Memorial Park	22
Veteran's Memorial Building	23
Walter Chaloner Memorial	24
Dakota Skipper Critical Habitat Units Unit 10	25
Dakota Skipper Critical Habitat Units Unit 11	26
Dakota Skipper Critical Habitat Units Unit 12	27
Little Missouri National Grasslands	28
Little Missouri River	29
Antelope Creek WMA	30

Name	Map ID/Label Number
Big Oxbow WMA	31
Lewis & Clark WMA	32
Neus Point WMA	33
Ochs Point WMA	34
Overlook WMA	35
Sullivan WMA	36
Tobacco Gardens WMA	37
Killdeer Mountains WMA – Unit 1	38
Killdeer Mountains WMA – Unit 2	39
State PLOTS Lands	40
	41
	42
	43
	44
Residence #1	45
Residence #2	46
Residence #3	47
Residence #4	48
Residence #5	49
Residence #6	50
Residence #7	51
Residence #8	52
Residence #9	53
Residence #10	54
Residence #11	55
Residence #12	56
Residence #13	57
Residence #14	58
Business #1	59
Lake Sakakawea	60

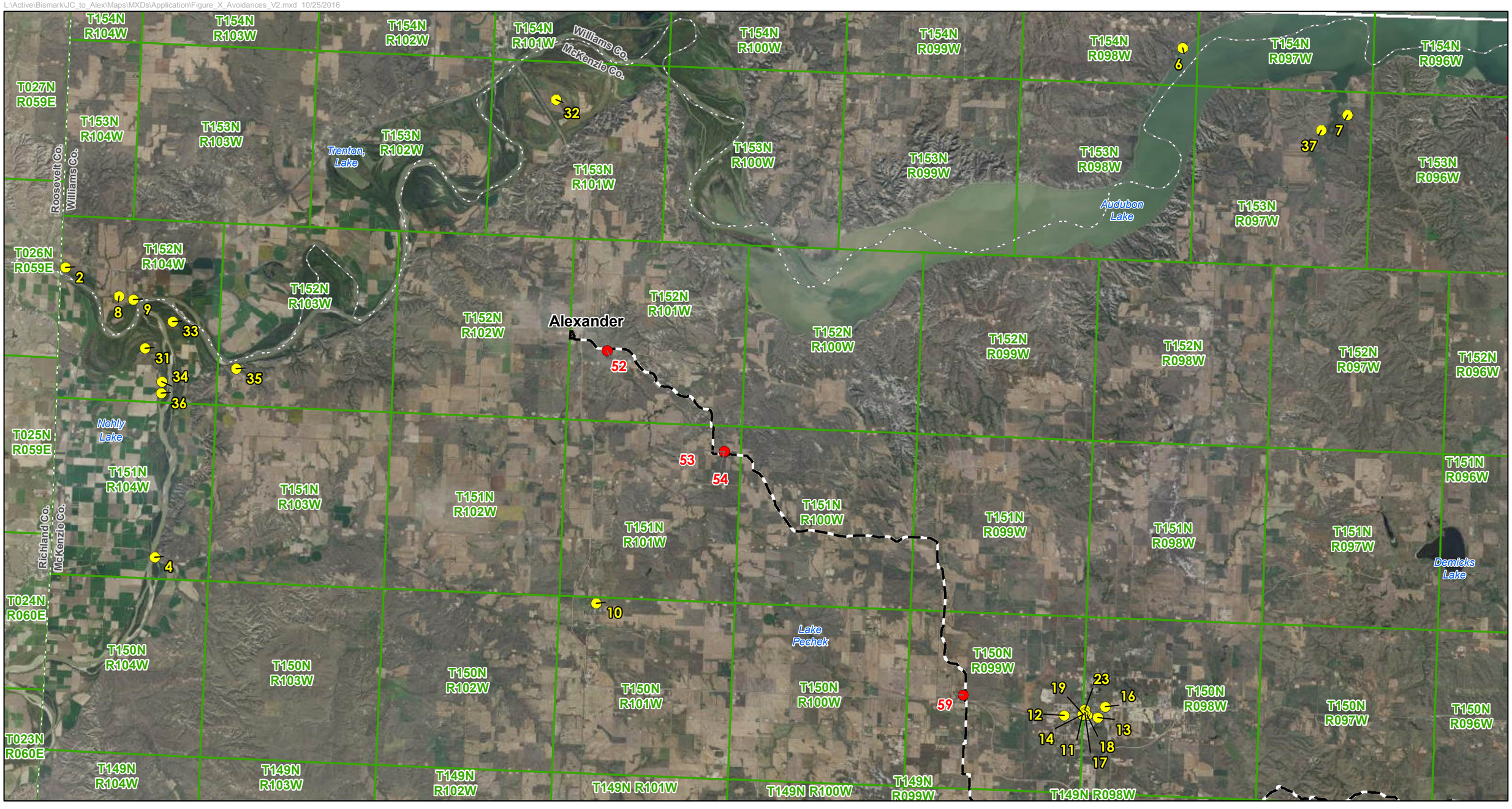


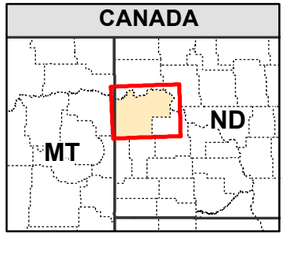


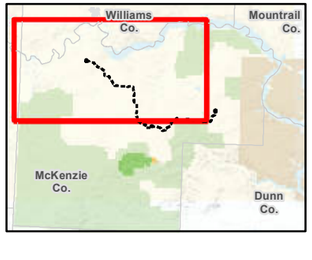
Appendix J - Map ID Index
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_V2.mxd 10/25/2016







County Boundary

Johnsons Corner – Alexander Pipeline

Facility

Township Boundary

Exclusion Area

Avoidance Area

N

Scale: 1:200,000

0 2.5 5

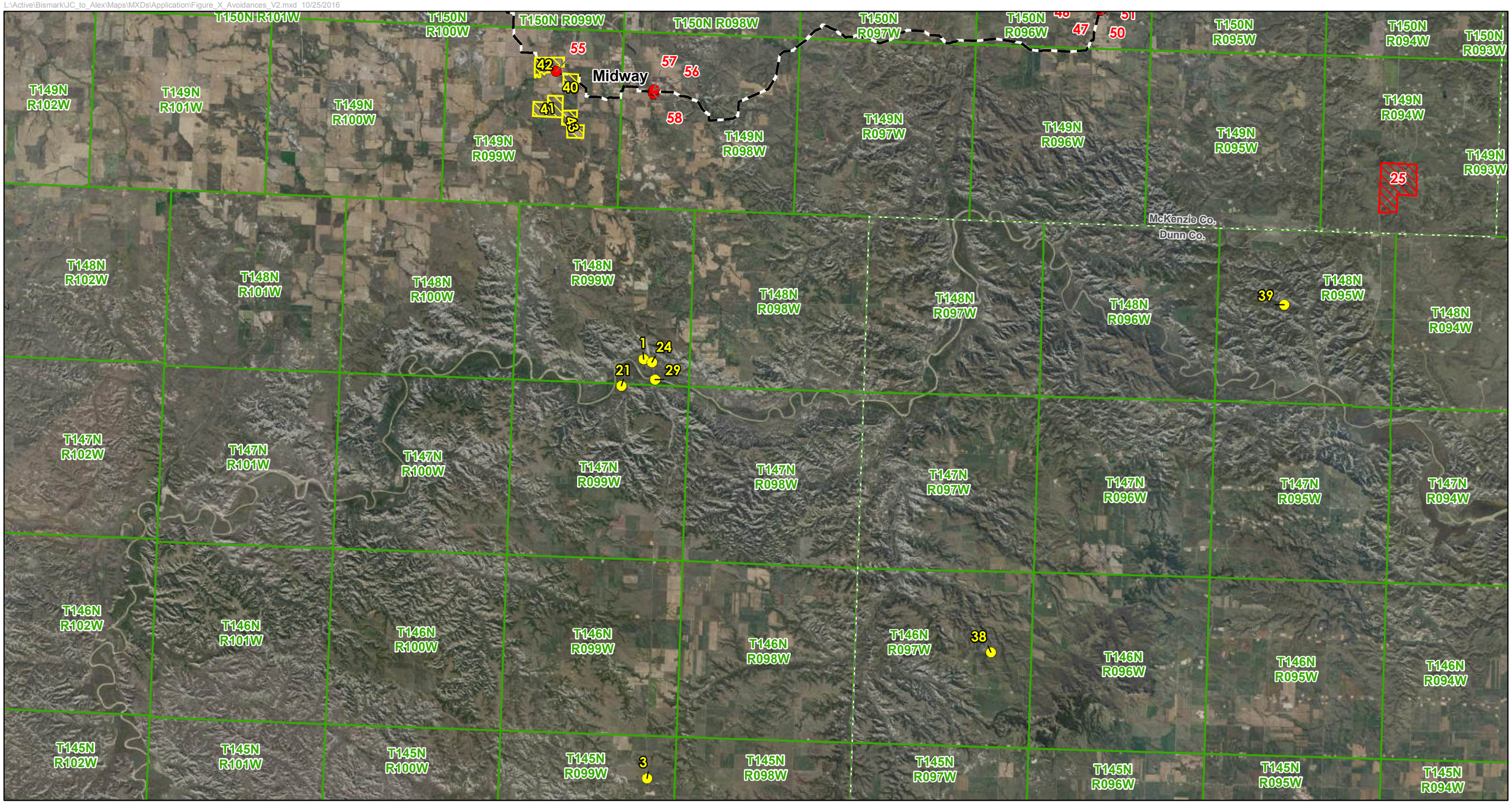
Miles

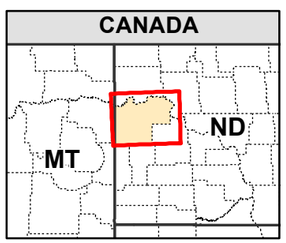
Sources: Esri, USGS, NOAA

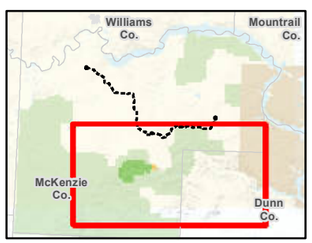
Appendix J - Figure 1
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_V2.mxd 10/25/2016







County Boundary

Johnsons Corner – Alexander Pipeline

Facility

Township Boundary

Exclusion Area

Avoidance Area

N

Scale: 1:200,000

0 2.5 5

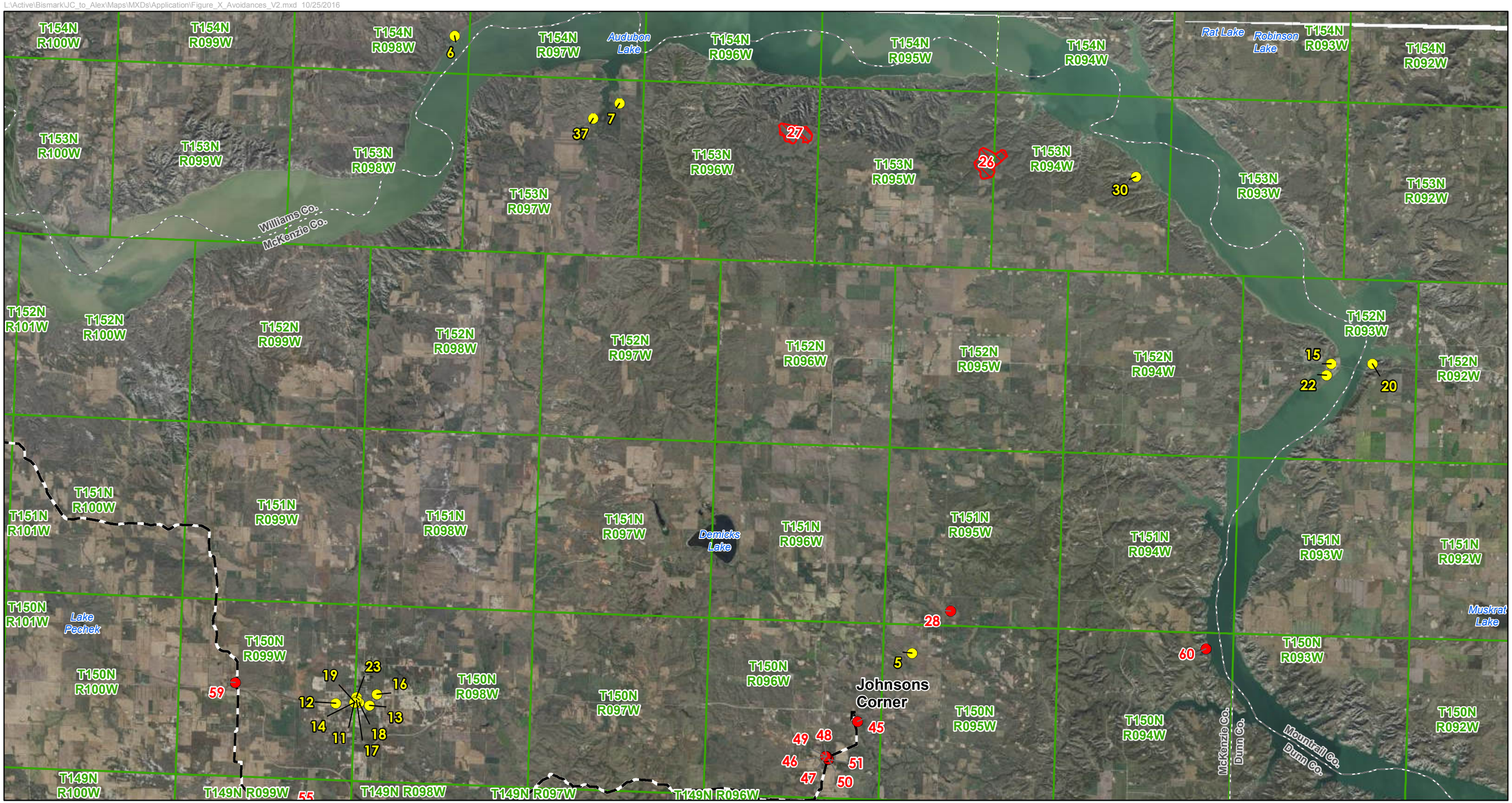
Miles

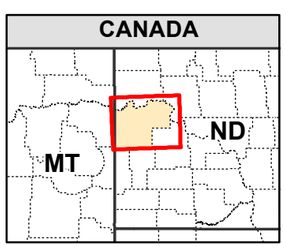
Sources: Esri, USGS, NOAA

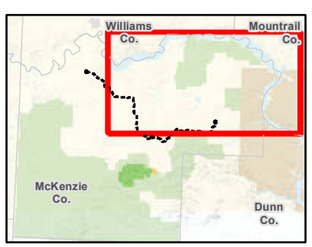
Appendix J - Figure 2
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_V2.mxd 10/25/2016







County Boundary

Johnsons Corner – Alexander Pipeline

Facility

Township Boundary

Exclusion Area

Avoidance Area

N

Scale: 1:200,000

0 2.5 5

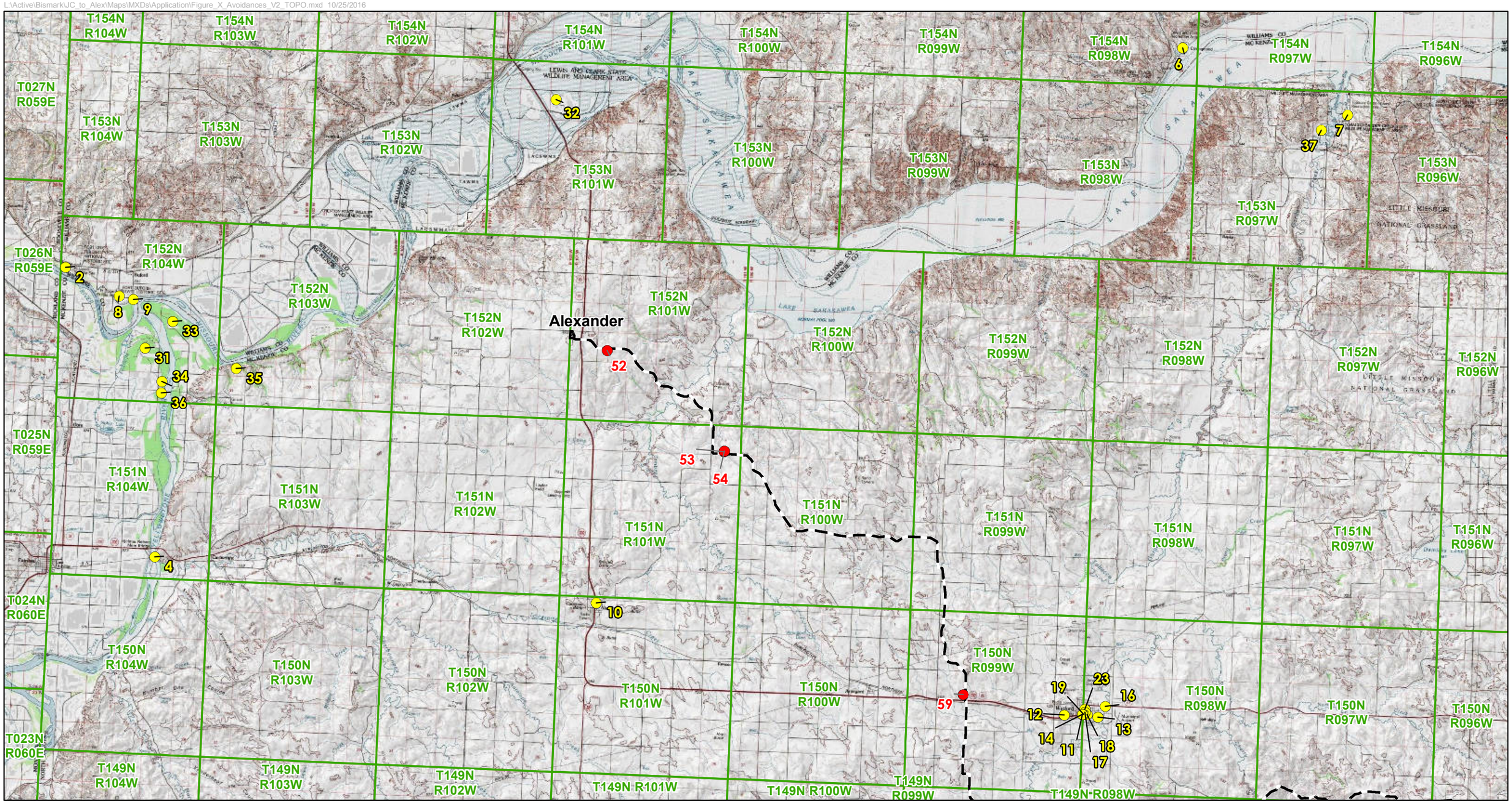
Miles

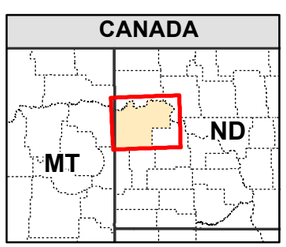
Sources: Esri, USGS, NOAA

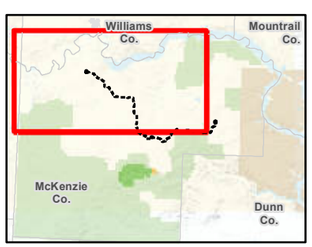
Appendix J - Figure 3
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_V2_TOPO.mxd 10/25/2016







Johnsons Corner – Alexander Pipeline

Facility

Township Boundary

Exclusion Area

Avoidance Area

N

Scale: 1:200,000

0 2.5 5

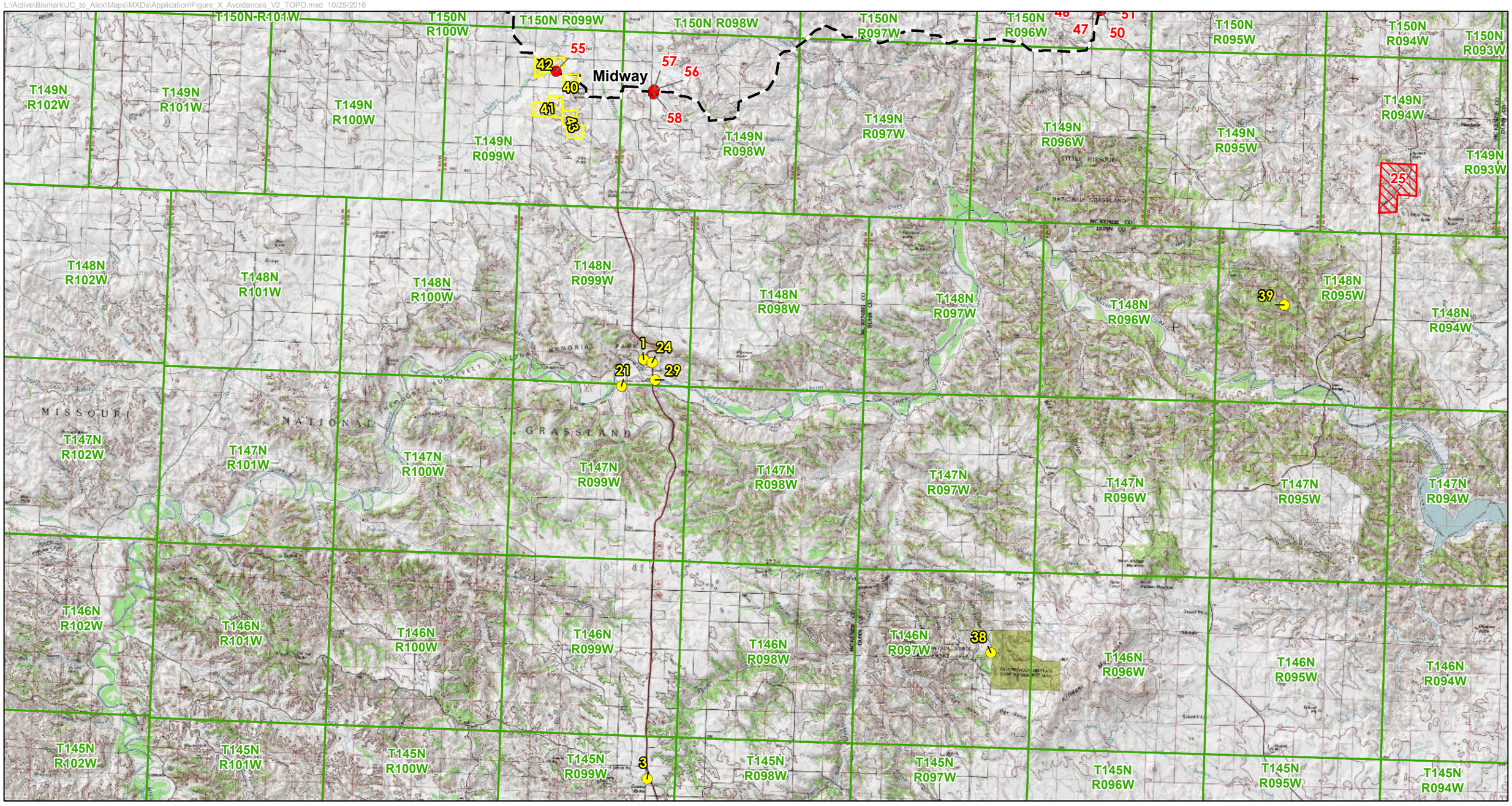
Miles

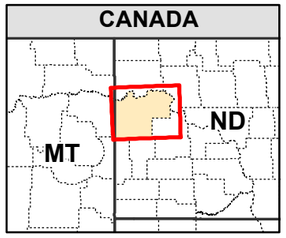
Copyright:© 2013 National

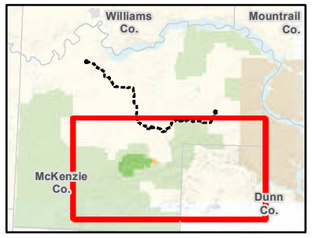
Appendix J - Figure 4
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_V2_TOPO.mxd 10/25/2016







Johnsons Corner – Alexander Pipeline

Facility

Township Boundary

Exclusion Area

Avoidance Area

N

Scale: 1:200,000

0 2.5 5

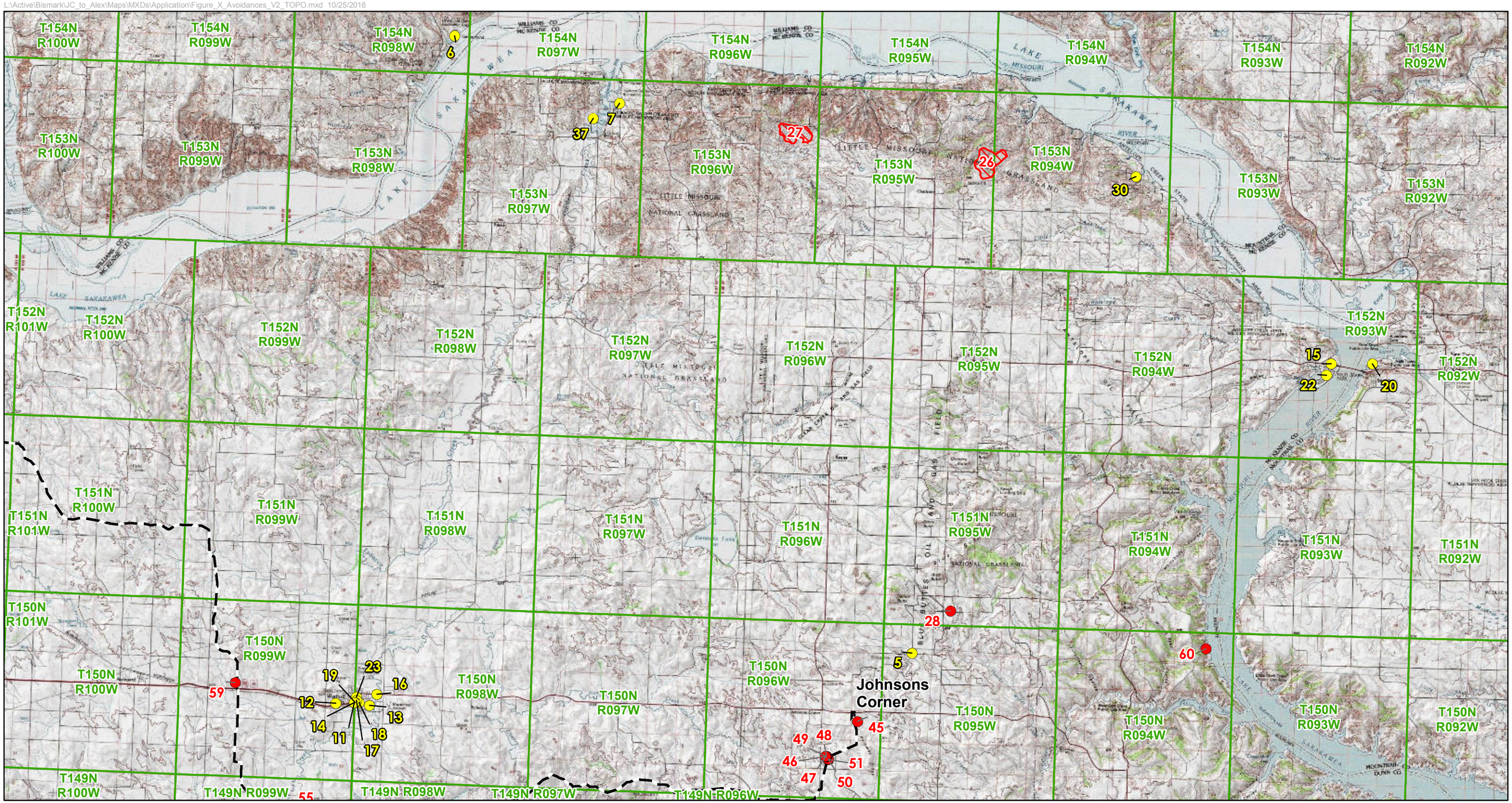
Miles

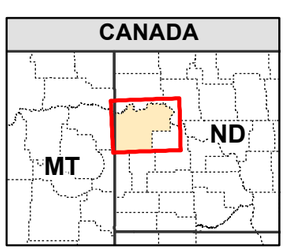
Copyright:© 2013 National

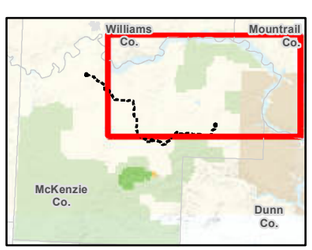
Appendix J - Figure 5
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_V2_TOPO.mxd 10/25/2016







Johnsons Corner – Alexander Pipeline

Facility

Township Boundary

Exclusion Area

Avoidance Area

N

Scale: 1:200,000

0 2.5 5

Miles

Copyright:© 2013 National

Appendix J - Figure 6
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016

13
18
17
County Road 16
Alexander
Us Hwy 85
T152N R102W
T152N R101W
24
19
20
Us Hwy 85
52

CANADA
MT
ND

Williams Co.
Mountrail Co.
McKenzie Co.
Dunn Co.

Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

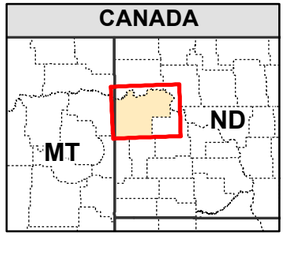
Avoidance Areas

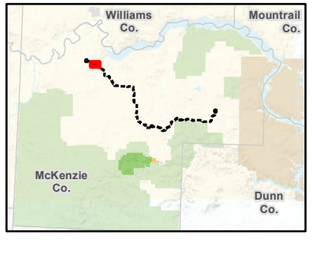
N
Scale: 1:9,000
0 500 1,000
Feet
Sources: Esri, USGS, NOAA

Appendix J - Figure 7
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016





Johnsons Corner – Alexander Pipeline

200ft Corridor

Facility

Township Boundary

Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

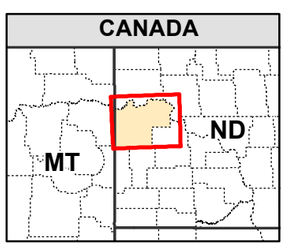
Feet

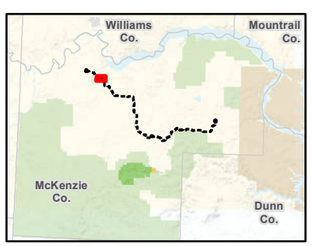
Sources: Esri, USGS, NOAA

Appendix J - Figure 8
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016





Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

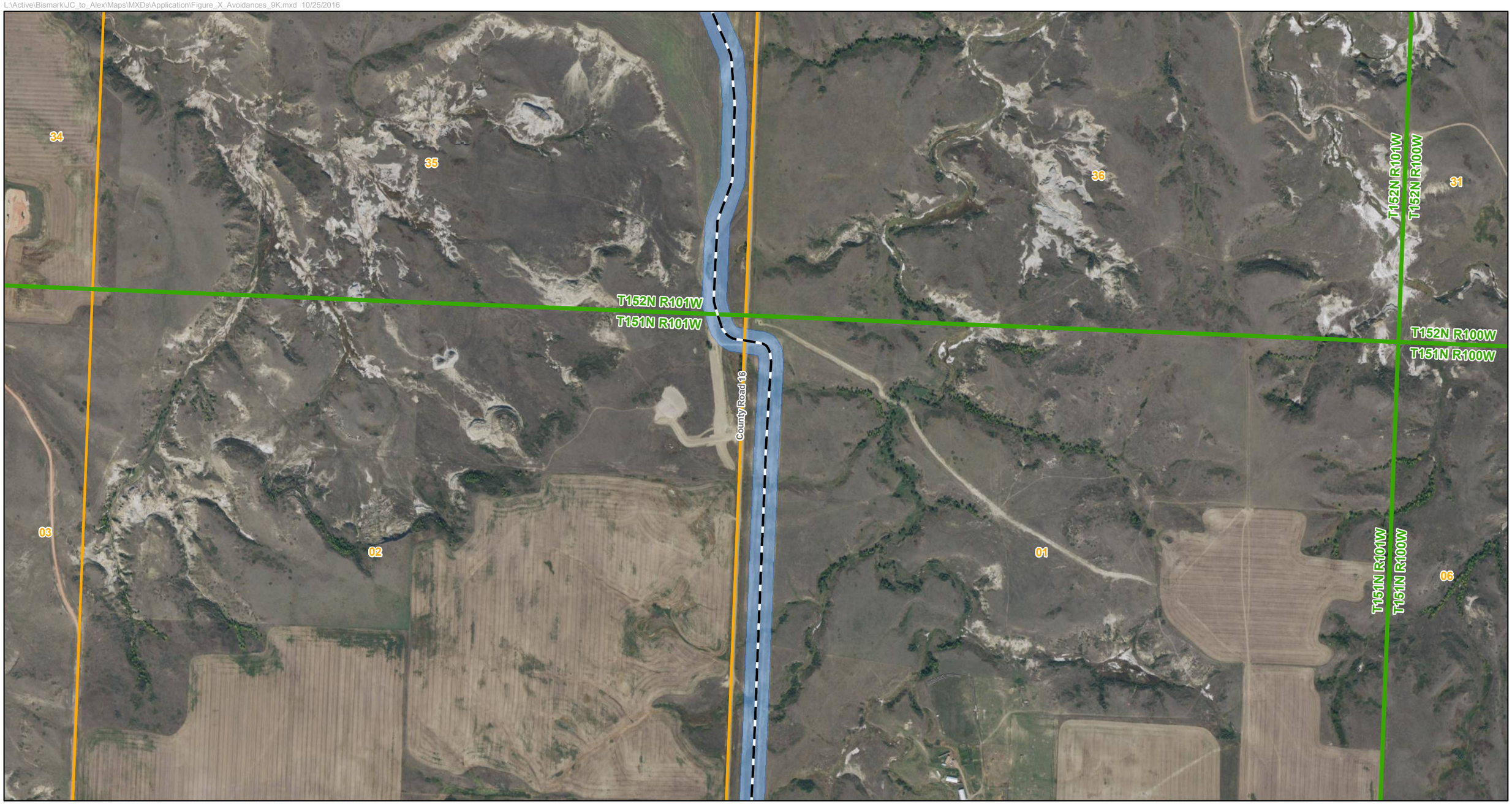
Feet

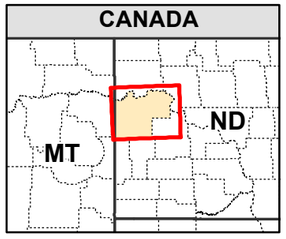
Sources: Esri, USGS, NOAA

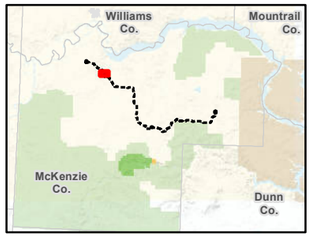
Appendix J - Figure 9
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016







Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

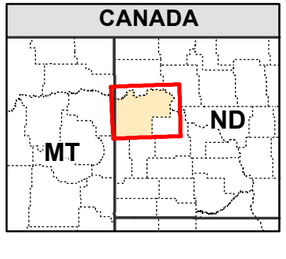
Feet

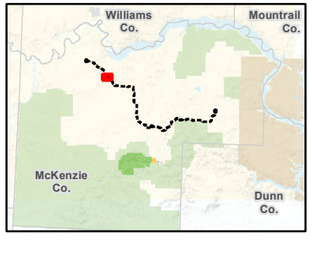
Sources: Esri, USGS, NOAA

Appendix J - Figure 10
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016





Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

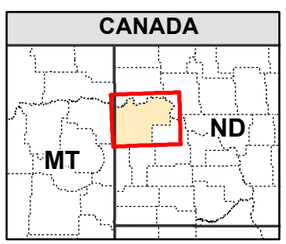
Feet

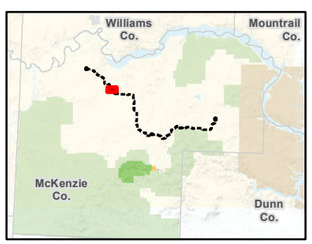
Sources: Esri, USGS, NOAA

Appendix J - Figure 11
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016





Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

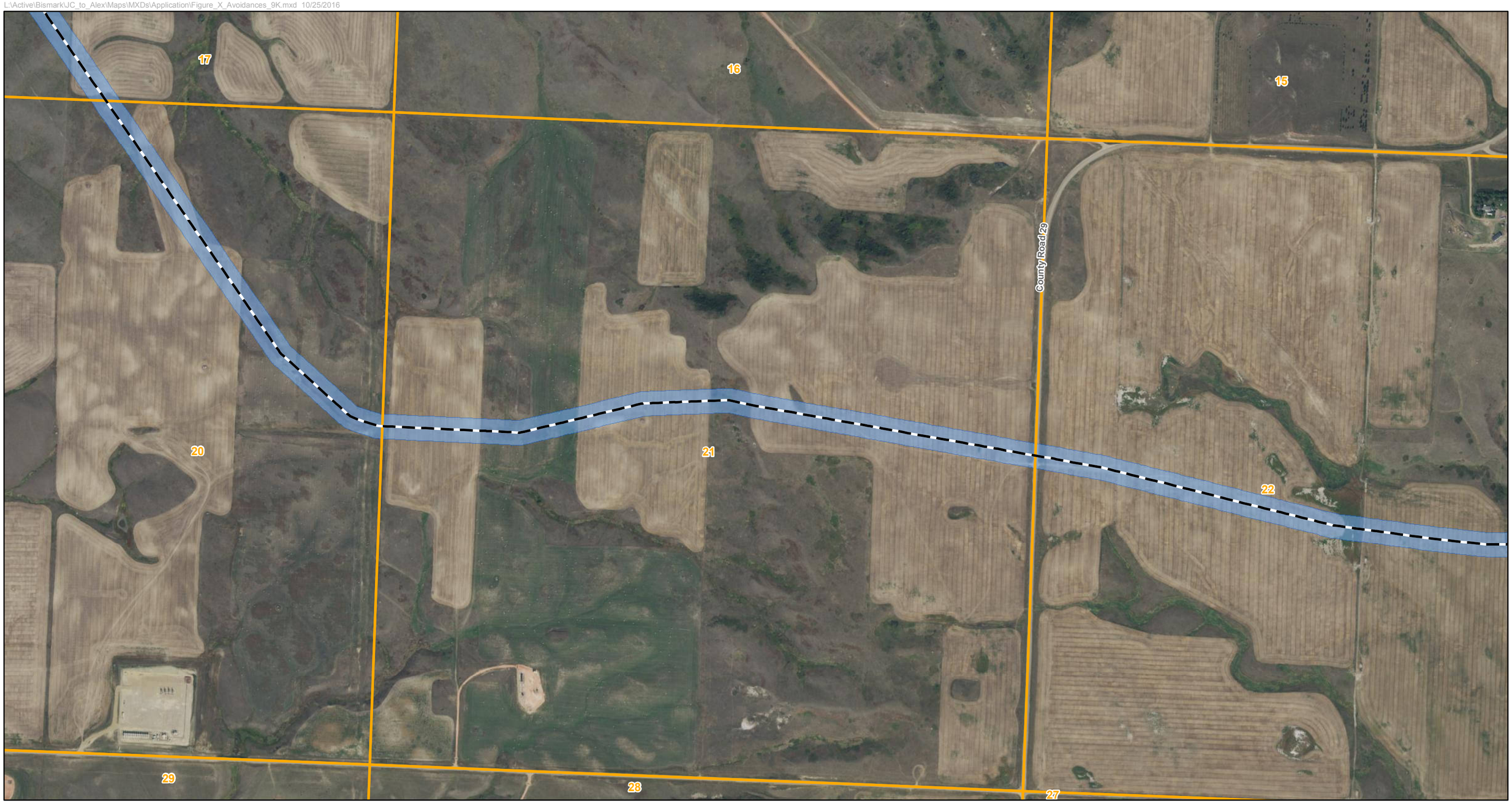
Feet

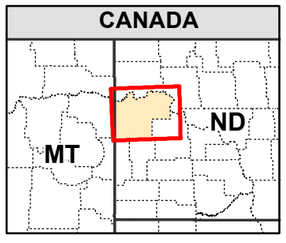
Sources: Esri, USGS, NOAA

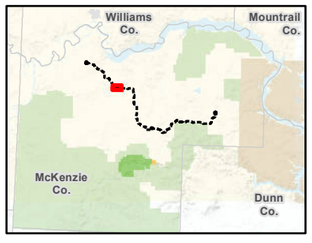
Appendix J - Figure 12
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016







Johnsons Corner – Alexander Pipeline

200ft Corridor

Facility

Township Boundary

Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

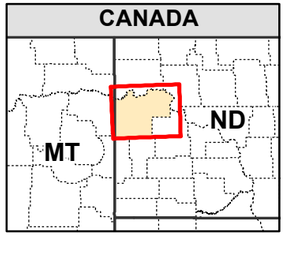
Feet

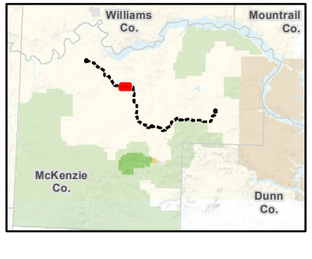
Sources: Esri, USGS, NOAA

Appendix J - Figure 13
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016





Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

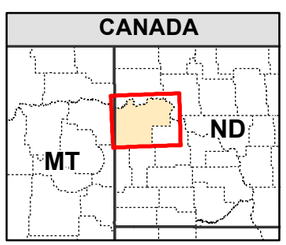
Feet

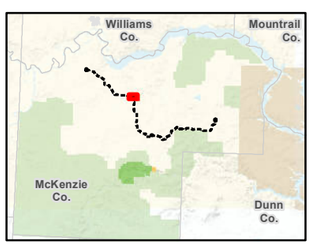
Sources: Esri, USGS, NOAA

Appendix J - Figure 14
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016





Johnsons Corner – Alexander Pipeline

200ft Corridor

Facility

Township Boundary

Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

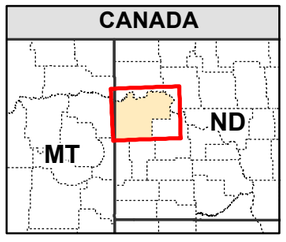
Feet

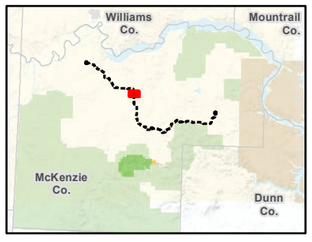
Sources: Esri, USGS, NOAA

Appendix J - Figure 15
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016





Johnsons Corner – Alexander Pipeline

200ft Corridor

Facility

Township Boundary

Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

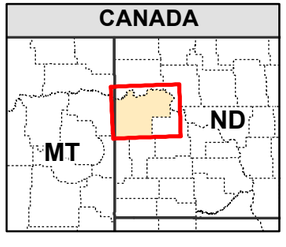
Feet

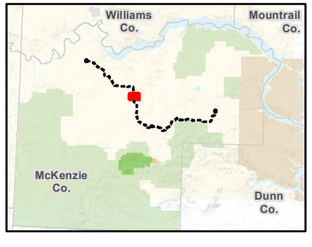
Sources: Esri, USGS, NOAA

Appendix J - Figure 16
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

Lowham Walsh LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016





Johnsons Corner – Alexander Pipeline

200ft Corridor

Facility

Township Boundary

Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

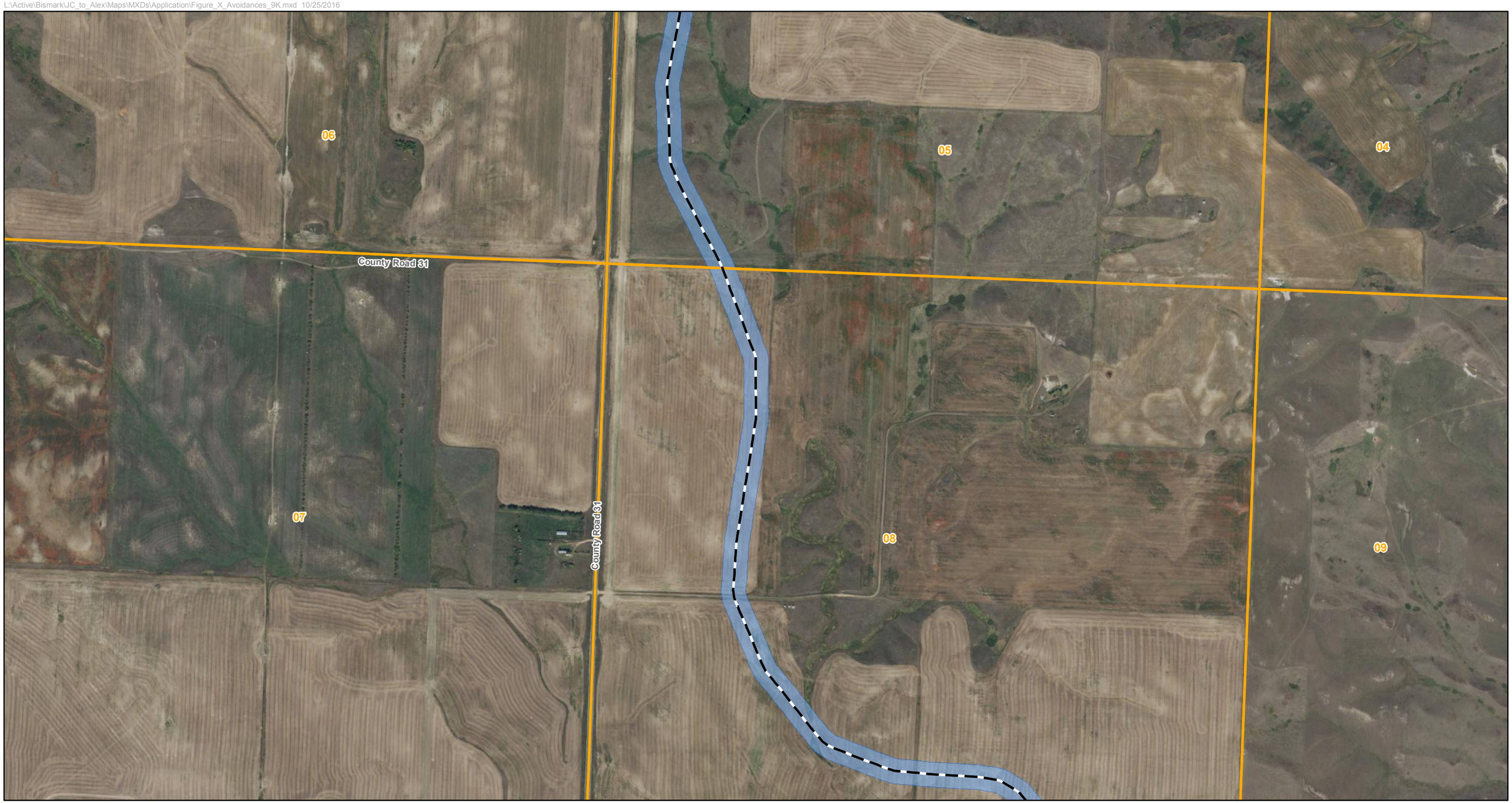
Feet

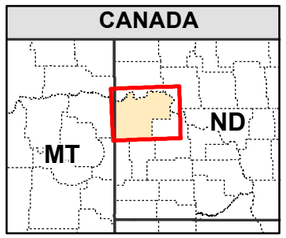
Sources: Esri, USGS, NOAA

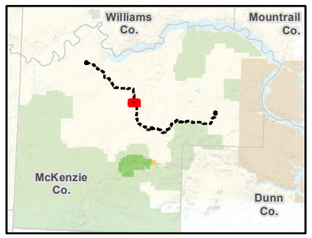
Appendix J - Figure 17
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016







Johnsons Corner – Alexander Pipeline

200ft Corridor

Facility

Township Boundary

Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

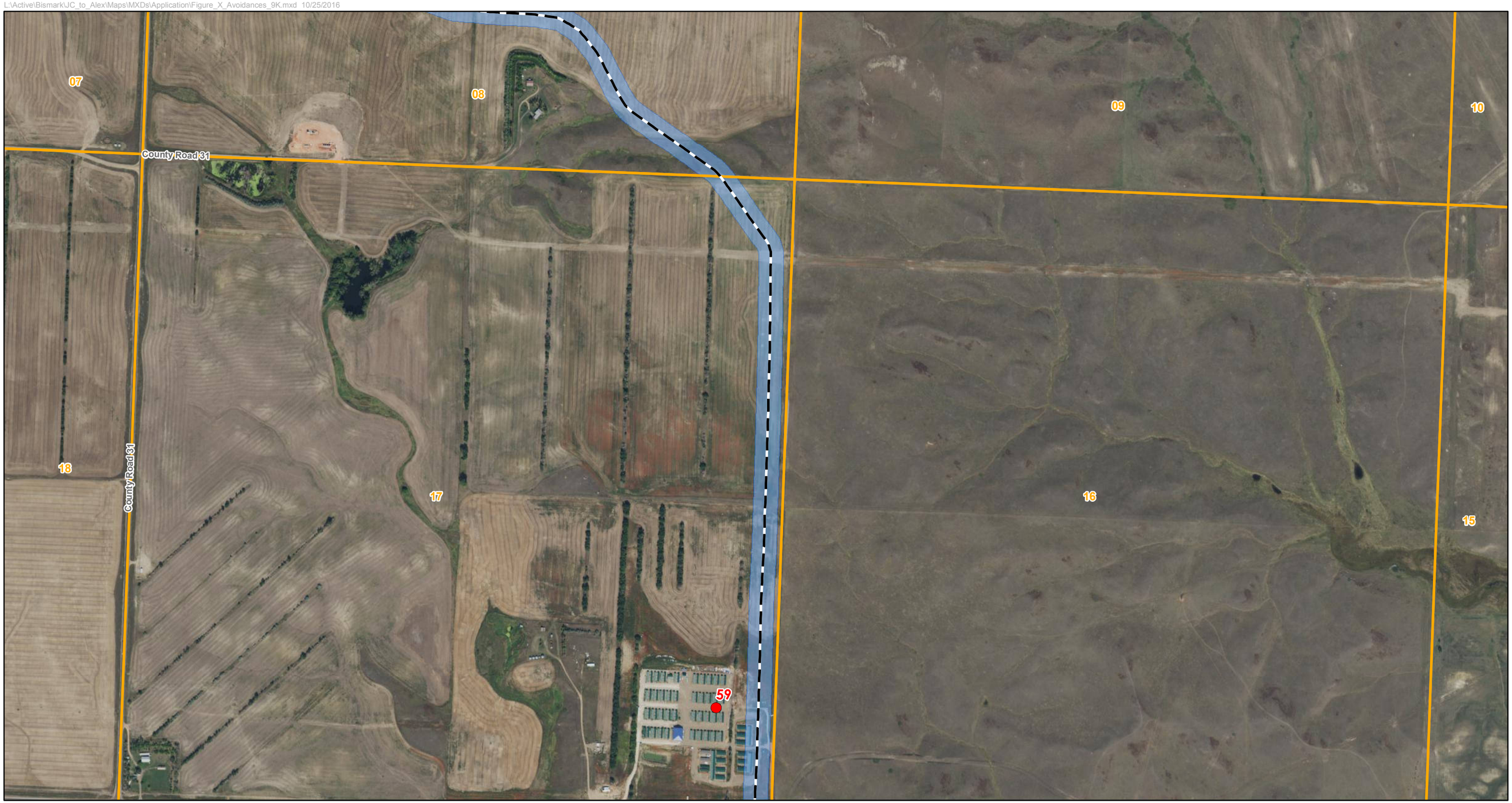
Feet

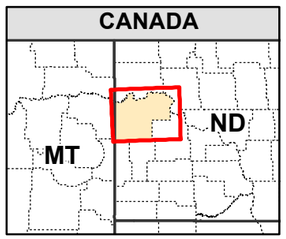
Sources: Esri, USGS, NOAA

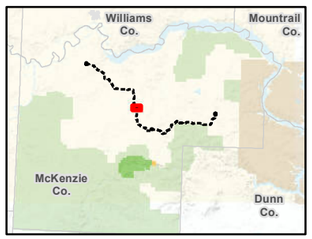
Appendix J - Figure 18
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016







Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

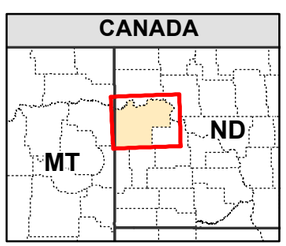
Feet

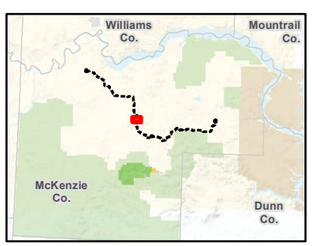
Sources: Esri, USGS, NOAA

Appendix J - Figure 19
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016





Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

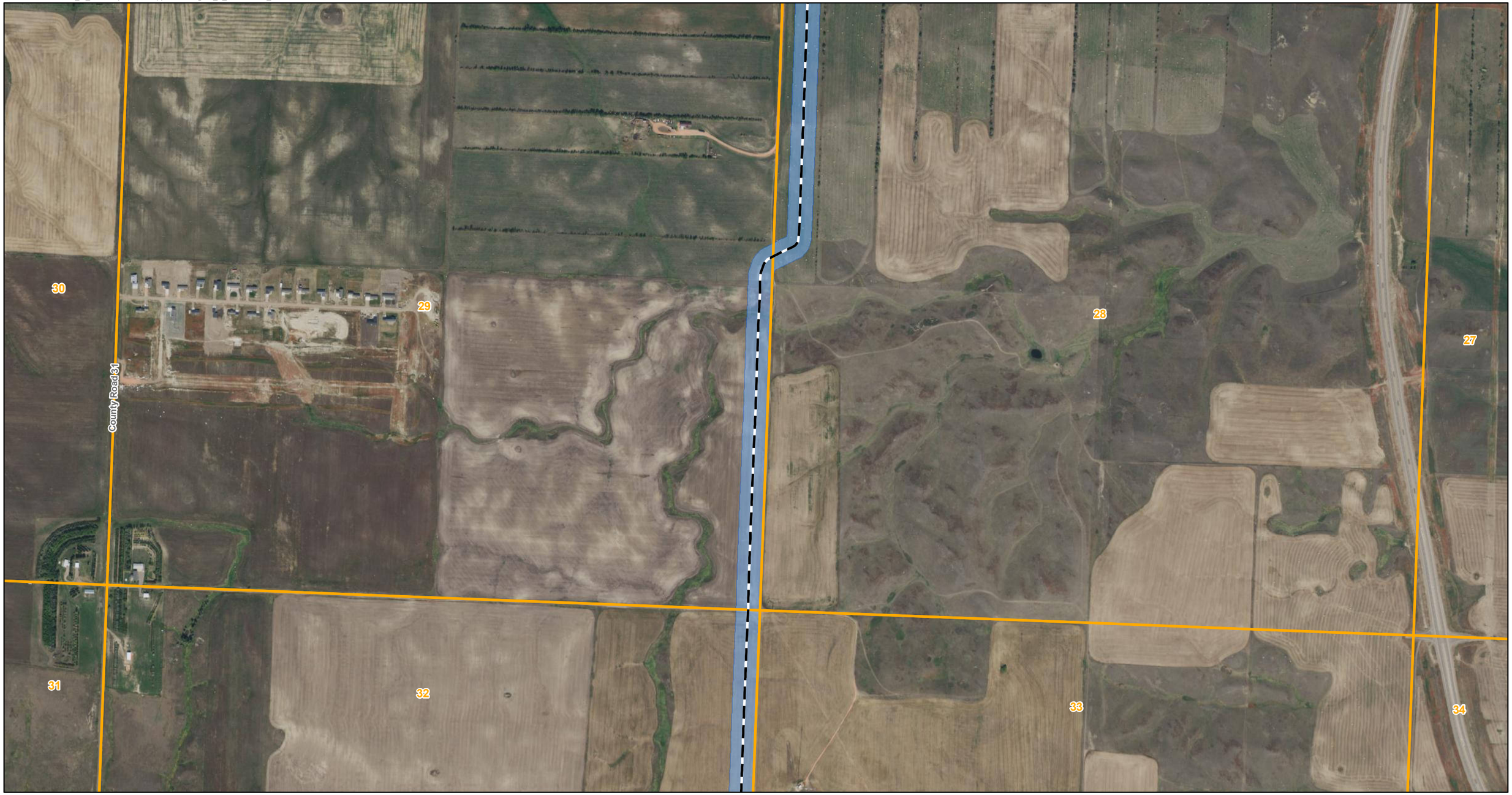
Feet

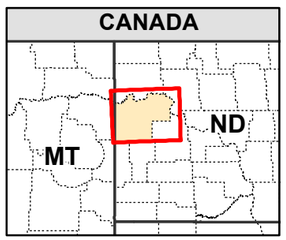
Sources: Esri, USGS, NOAA

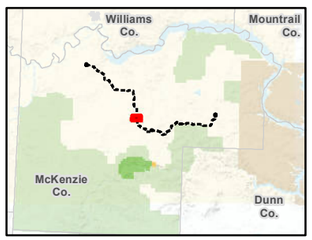
Appendix J - Figure 20
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016







Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

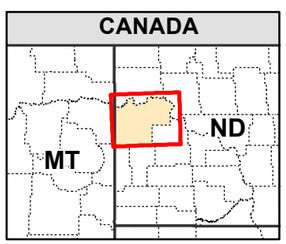
Feet

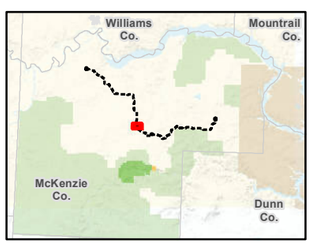
Sources: Esri, USGS, NOAA

Appendix J - Figure 21
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016





Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

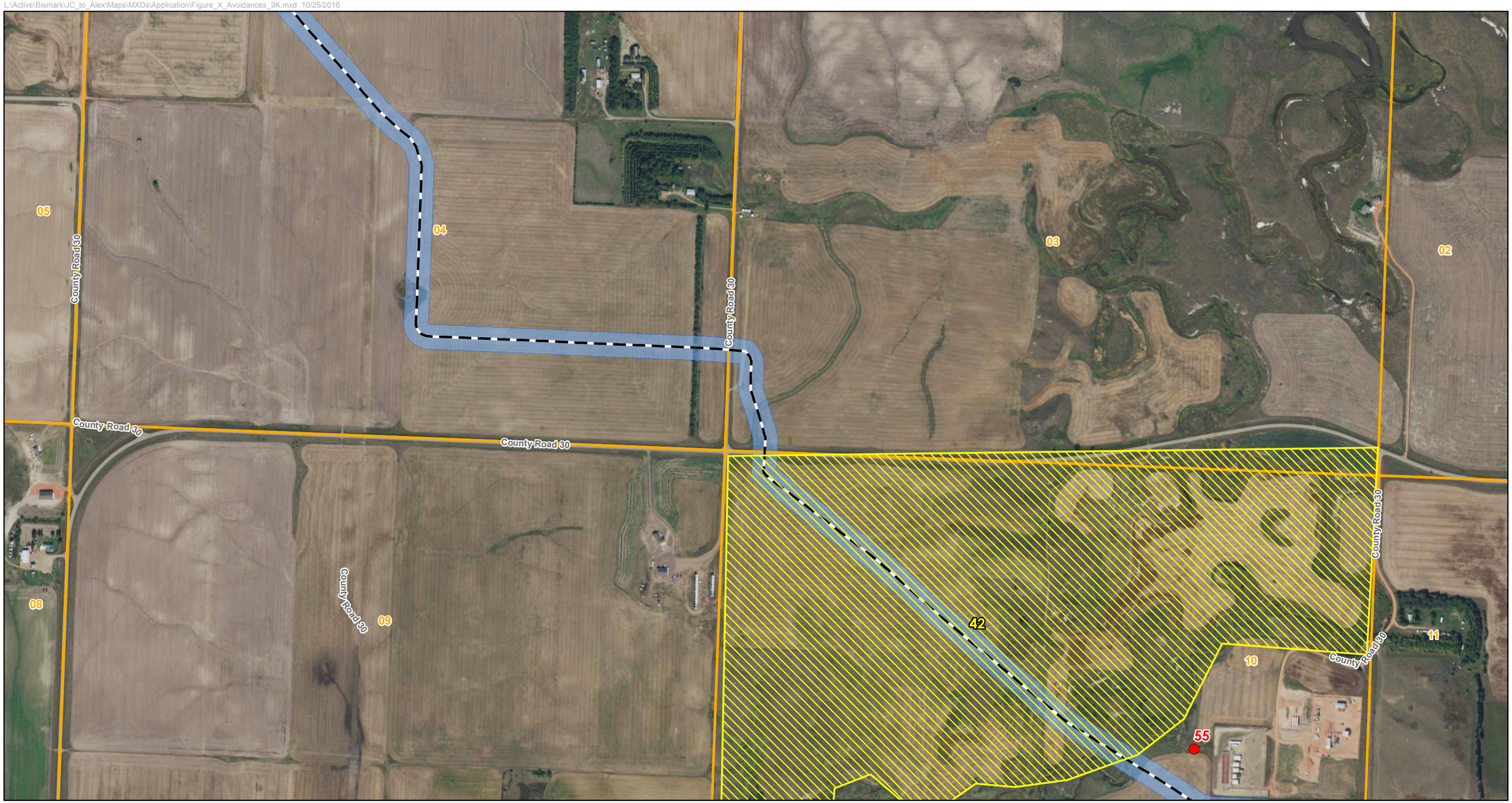
Feet

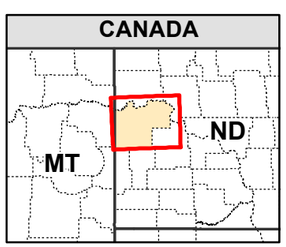
Sources: Esri, USGS, NOAA

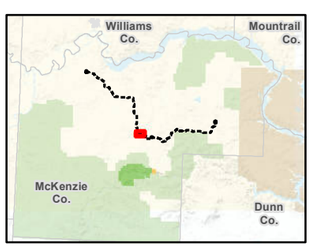
Appendix J - Figure 22
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016







Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

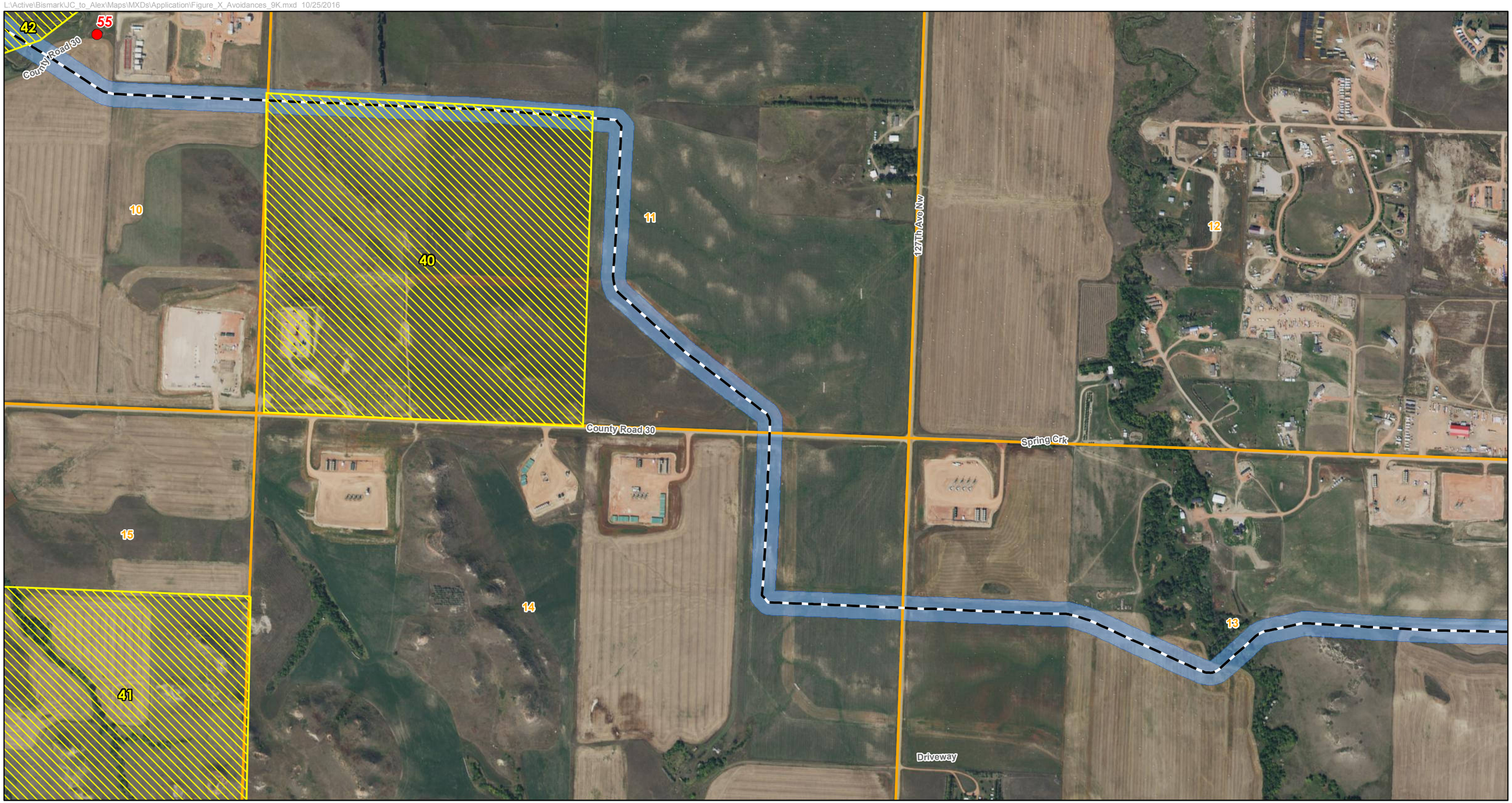
Feet

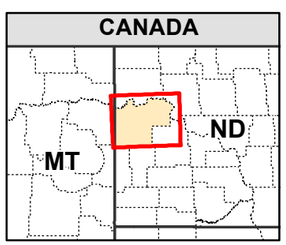
Sources: Esri, USGS, NOAA

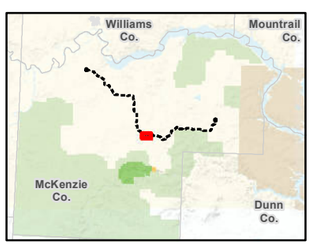
Appendix J - Figure 23
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

Lowham Walsh LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016







Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

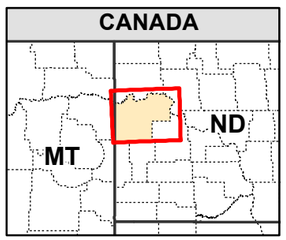
Feet

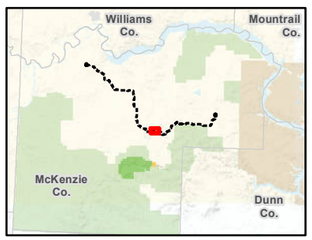
Sources: Esri, USGS, NOAA

Appendix J - Figure 24
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016





Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

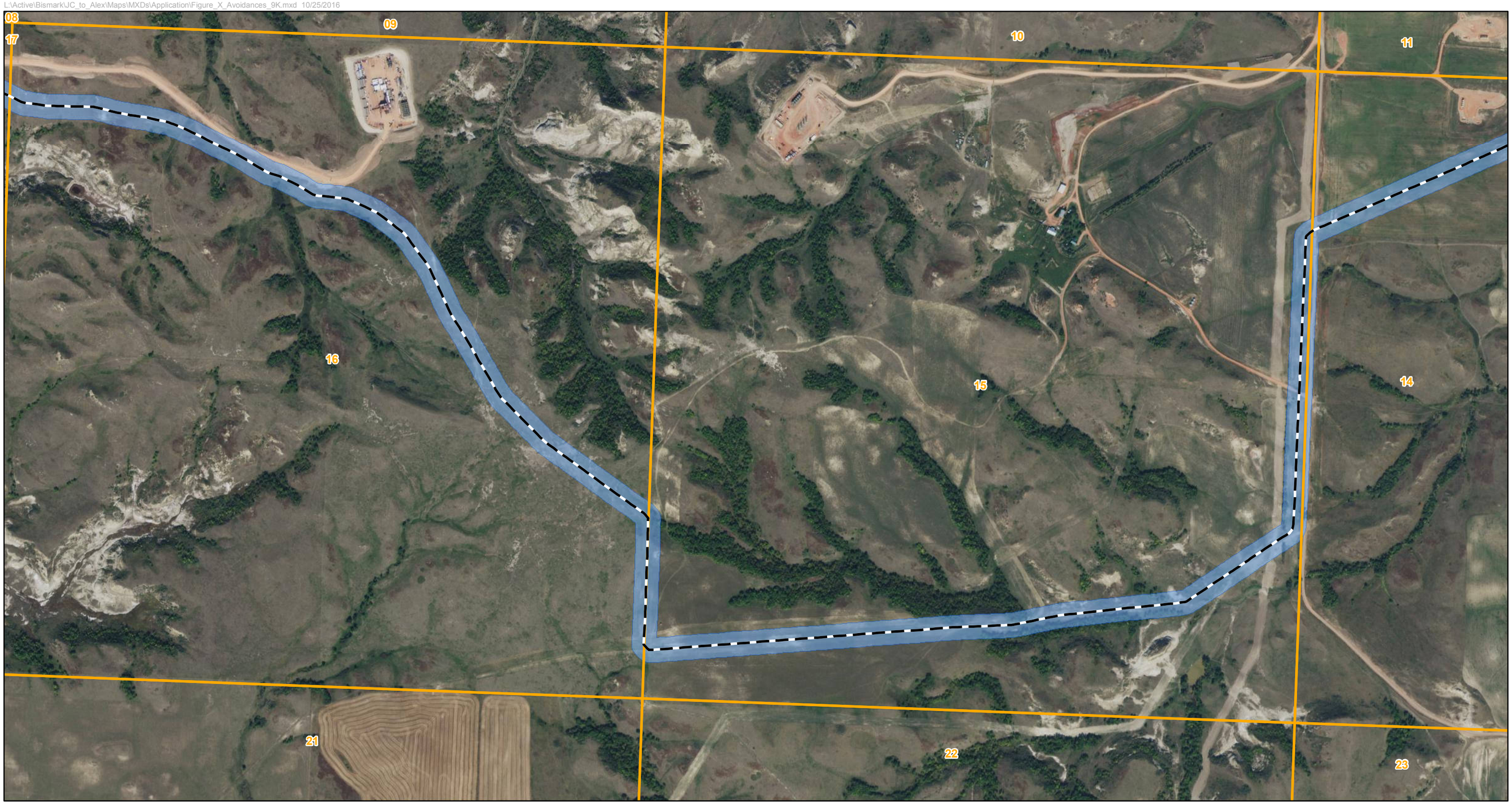
Feet

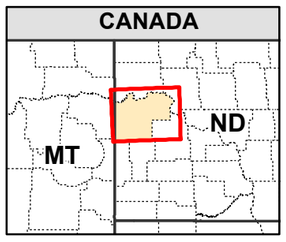
Sources: Esri, USGS, NOAA

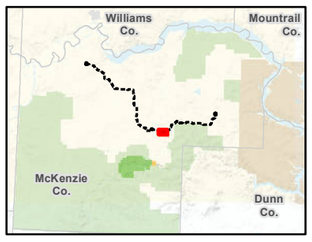
Appendix J - Figure 25
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016







Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

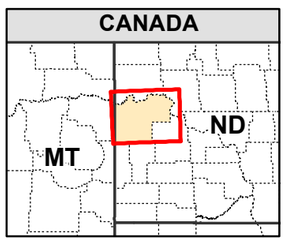
Feet

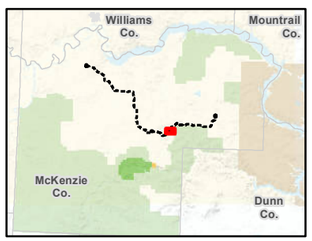
Sources: Esri, USGS, NOAA

Appendix J - Figure 26
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016





Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

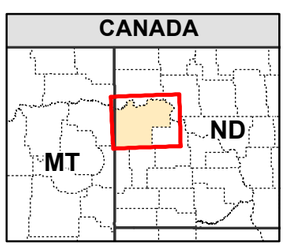
Feet

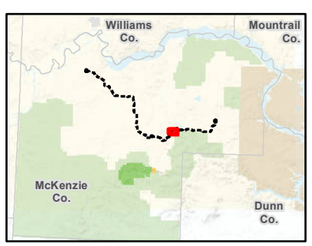
Sources: Esri, USGS, NOAA

Appendix J - Figure 27
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

Lowham Walsh LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016





Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

Feet

Sources: Esri, USGS, NOAA

Appendix J - Figure 28
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016

31

32

33

T150N R097W

T149N R097W

06

05

04

CANADA

MT

ND

Williams Co.

Mountrail Co.

McKenzie Co.

Dunn Co.

Johnsons Corner – Alexander Pipeline

200ft Corridor

Facility

Township Boundary

Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

Feet

Sources: Esri, USGS, NOAA

Appendix J - Figure 29
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016

33

34

35

T150N R097W

T149N R097W

04

03

02

CANADA

MT

ND

Williams Co.

Mountrail Co.

McKenzie Co.

Dunn Co.

Johnsons Corner – Alexander Pipeline

200ft Corridor

Facility

Township Boundary

Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

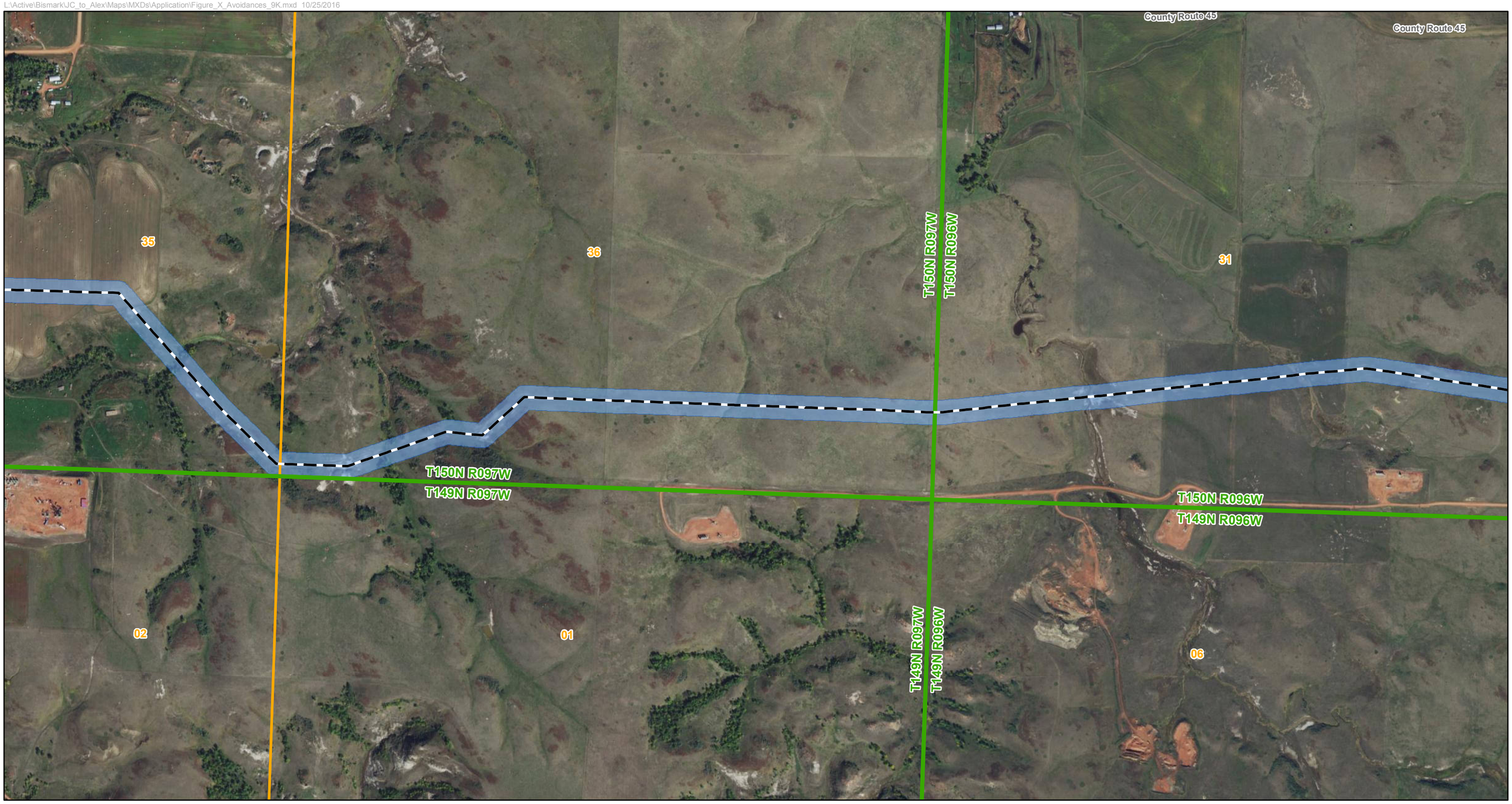
Feet

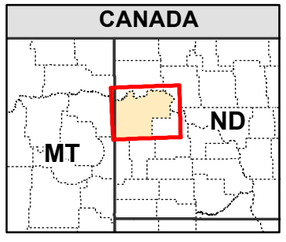
Sources: Esri, USGS, NOAA

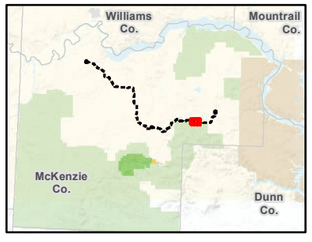
Appendix J - Figure 30
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016







Johnsons Corner – Alexander Pipeline

200ft Corridor

Facility

Township Boundary

Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

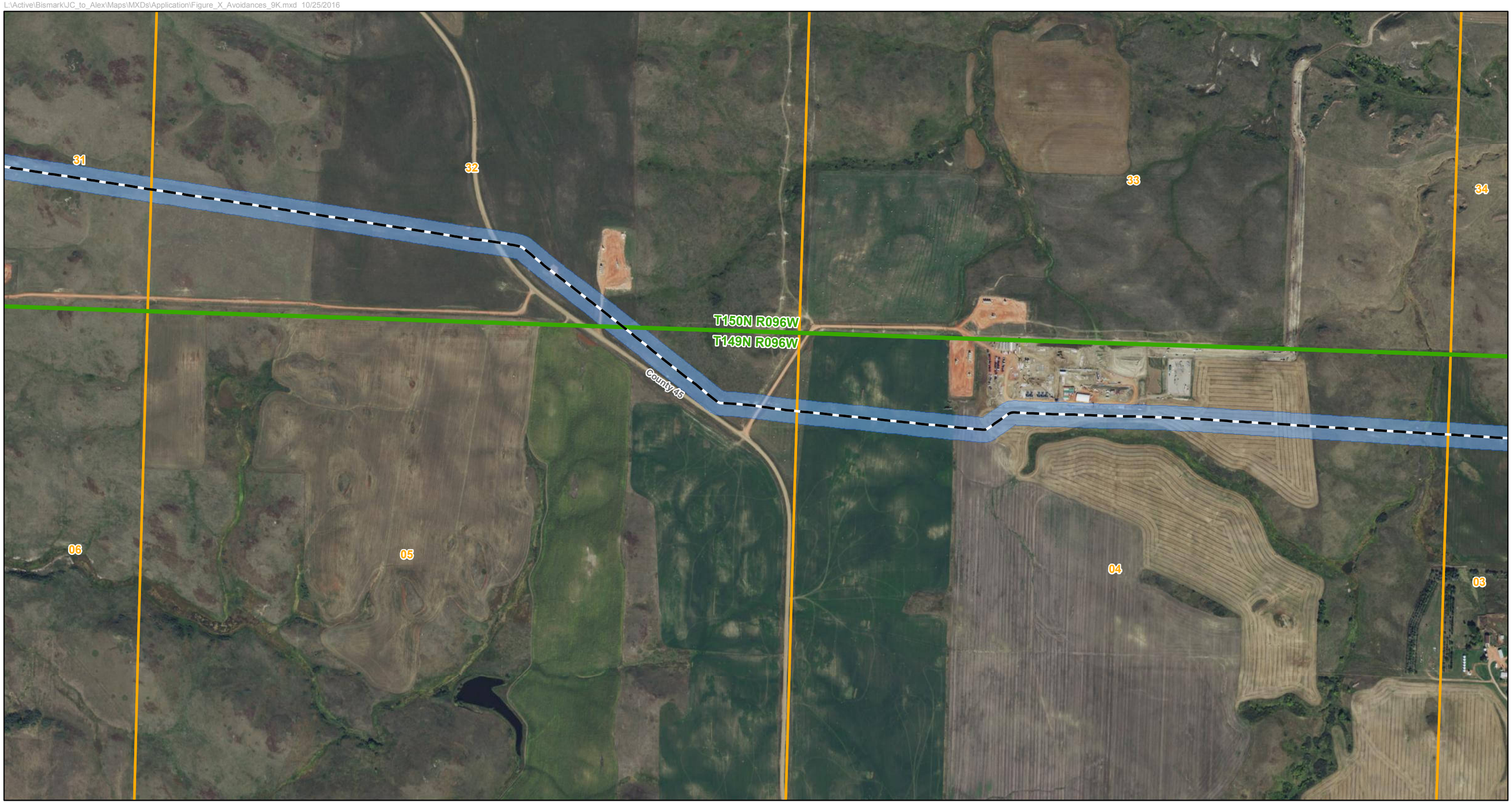
Feet

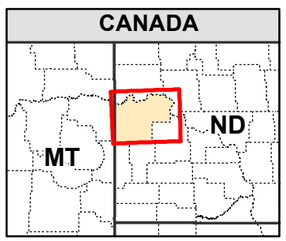
Sources: Esri, USGS, NOAA

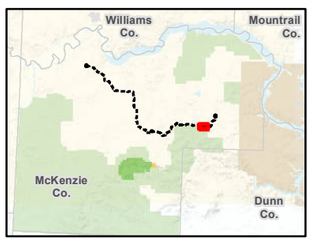
Appendix J - Figure 31
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016







Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

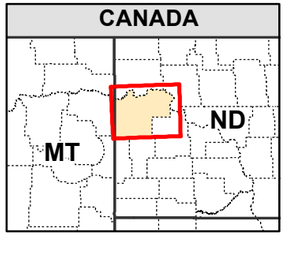
Feet

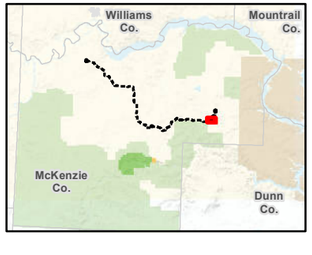
Sources: Esri, USGS, NOAA

Appendix J - Figure 32
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016





Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

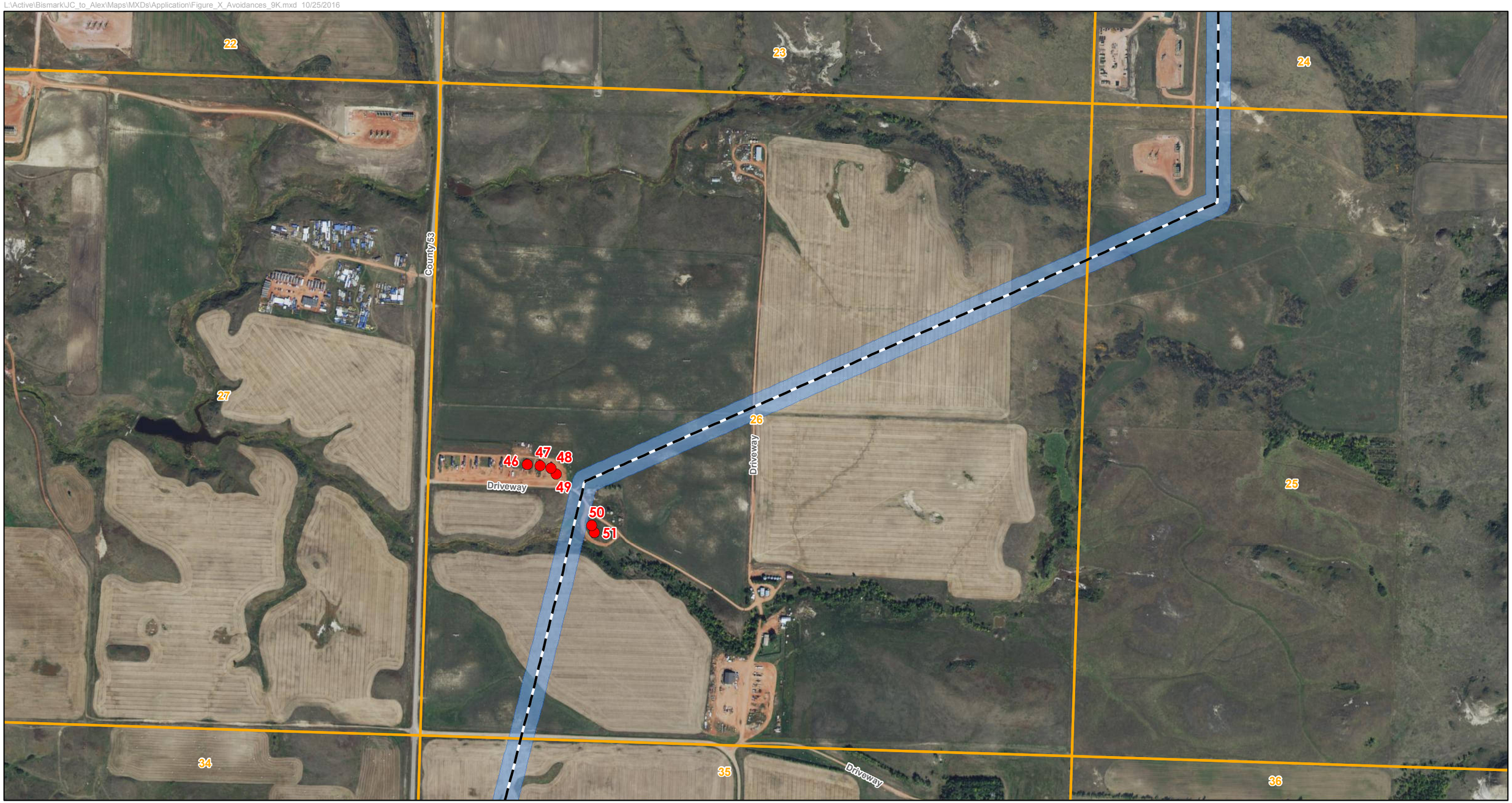
Feet

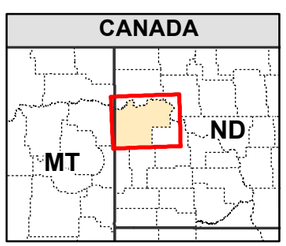
Sources: Esri, USGS, NOAA

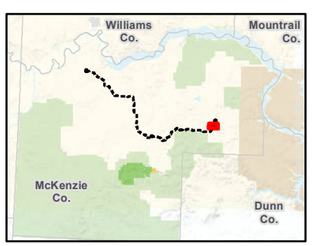
Appendix J - Figure 33
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

LOWHAM WALSH LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016







Johnsons Corner – Alexander Pipeline
200ft Corridor
Facility
Township Boundary
Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

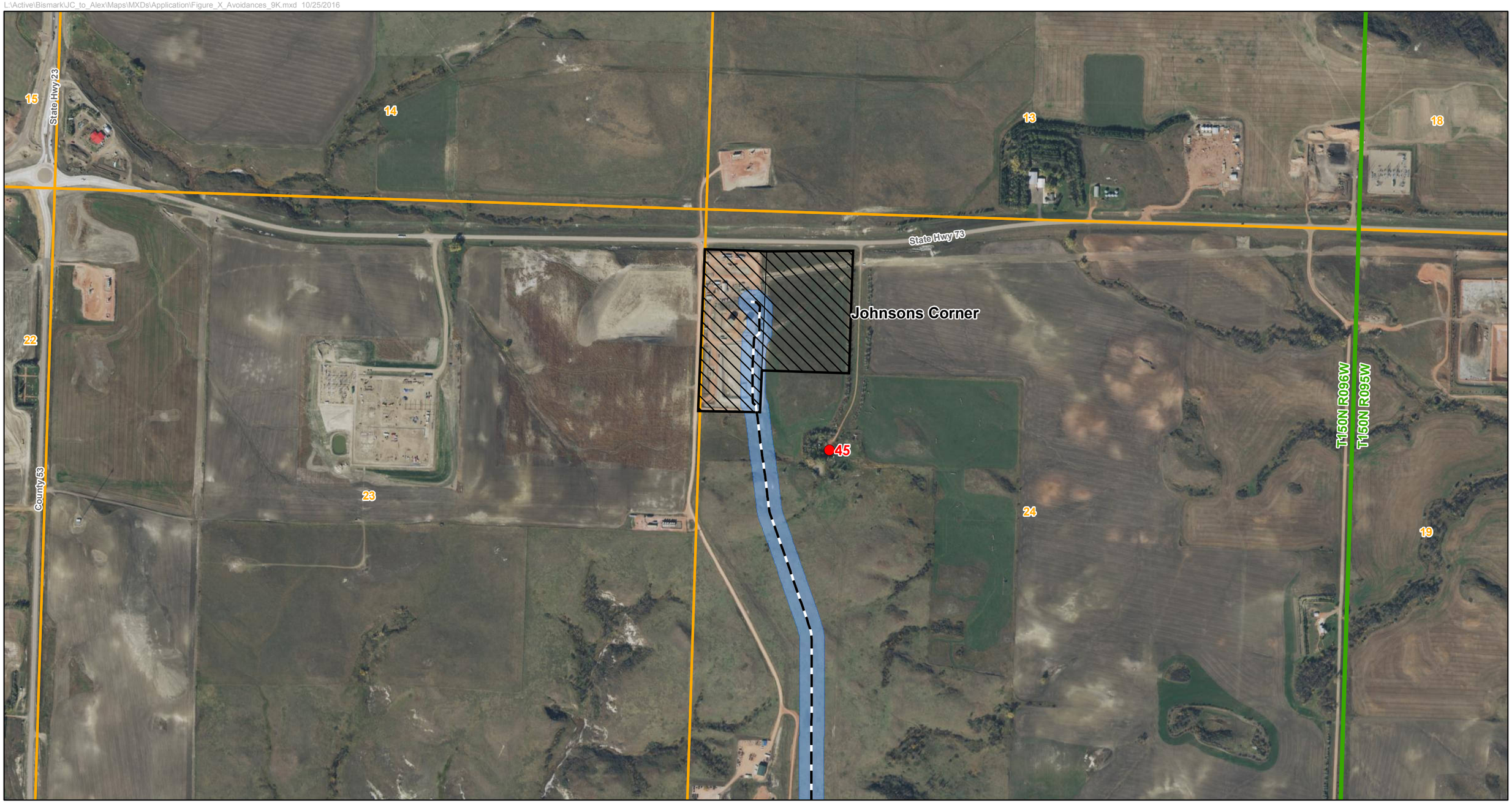
Feet

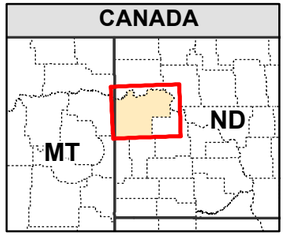
Sources: Esri, USGS, NOAA

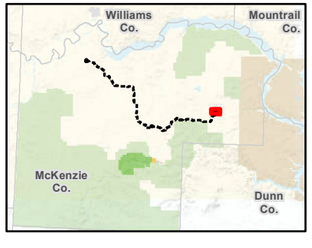
Appendix J - Figure 34
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

Lowham Walsh LLC
Engineering & Environmental Services

L:\Active\Bismark\JC_to_Alex\Maps\MXDs\Application\Figure_X_Avoidances_9K.mxd 10/25/2016







Johnsons Corner – Alexander Pipeline

200ft Corridor

Facility

Township Boundary

Section Boundary

Exclusion Areas

Avoidance Areas

N

Scale: 1:9,000

0 500 1,000

Feet

Sources: Esri, USGS, NOAA

Appendix J - Figure 35
Exclusions and Avoidances
Johnsons Corner – Alexander Pipeline
McKenzie Co., North Dakota

Lowham Walsh LLC
Engineering & Environmental Services

APPENDIX K

LIST OF TREES AND SHRUBS REMOVED TO FACILITATE CONSTRUCTION

Appendix K: List of Trees and Shrubs Removed to Facilitate Pipeline Construction

Type	Removal Status	Impact Corridor	Section	Township	TDIR	Range	RDIR	Location – Latitude	Location – Longitude
Shrub	Removed	Permanent	4	149	N	96	W	47.75892428	-102.9639362
Trees	Removed	Permanent	4	149	N	97	W	47.76013281	-103.0973934
Trees	Removed	Permanent	4	149	N	97	W	47.76040584	-103.0986521
Trees	Removed	Permanent	4	149	N	97	W	47.76046384	-103.098567
Shrub	Removed	Permanent	1	149	N	98	W	47.75630909	-103.1574942
Shrub	Removed	Permanent	1	149	N	98	W	47.75636495	-103.1574146
Shrub	Removed	Permanent	1	149	N	98	W	47.75649908	-103.1571453
Shrub	Removed	Permanent	15	149	N	98	W	47.7202278	-103.202201
Shrub	Removed	Permanent	15	149	N	98	W	47.72024831	-103.2023767
Shrub	Removed	Permanent	15	149	N	98	W	47.72028157	-103.2019169
Shrub	Removed	Permanent	15	149	N	98	W	47.72030299	-103.2020679
Shrub	Removed	Permanent	15	149	N	98	W	47.7203224	-103.2022436
Shrub	Removed	Temporary	15	149	N	98	W	47.7214434	-103.2188902
Shrub	Removed	Temporary	15	149	N	98	W	47.72752352	-103.1976447
Shrub	Removed	Temporary	15	149	N	98	W	47.72773499	-103.1976487
Trees	Removed	Permanent	15	149	N	98	W	47.71963964	-103.2083635
Trees	Removed	Permanent	15	149	N	98	W	47.71965107	-103.208028
Trees	Removed	Permanent	15	149	N	98	W	47.7196601	-103.2078442
Trees	Removed	Permanent	15	149	N	98	W	47.71974024	-103.2068783
Trees	Removed	Permanent	15	149	N	98	W	47.71976554	-103.2066693
Trees	Removed	Permanent	15	149	N	98	W	47.71983473	-103.2063741
Trees	Removed	Permanent	15	149	N	98	W	47.72009575	-103.2040366
Trees	Removed	Permanent	15	149	N	98	W	47.72011053	-103.2037644
Trees	Removed	Permanent	15	149	N	98	W	47.72180498	-103.2189936
Trees	Removed	Permanent	15	149	N	98	W	47.72186359	-103.1982002
Trees	Removed	Permanent	15	149	N	98	W	47.72193752	-103.1982083

Appendix K: List of Trees and Shrubs Removed to Facilitate Pipeline Construction

Type	Removal Status	Impact Corridor	Section	Township	TDIR	Range	RDIR	Location – Latitude	Location – Longitude
Trees	Removed	Permanent	15	149	N	98	W	47.72243863	-103.1978276
Trees	Removed	Temporary	15	149	N	98	W	47.71973058	-103.2090769
Trees	Removed	Temporary	15	149	N	98	W	47.71973802	-103.2064236
Trees	Removed	Temporary	15	149	N	98	W	47.71982189	-103.2059271
Trees	Removed	Temporary	15	149	N	98	W	47.71985332	-103.2067948
Trees	Removed	Temporary	15	149	N	98	W	47.71986978	-103.2055638
Trees	Removed	Temporary	15	149	N	98	W	47.71992751	-103.2049918
Trees	Removed	Temporary	15	149	N	98	W	47.71995707	-103.2045991
Trees	Removed	Temporary	15	149	N	98	W	47.72008928	-103.2034263
Shrub	Removed	Permanent	16	149	N	98	W	47.72169557	-103.2190316
Shrub	Removed	Permanent	16	149	N	98	W	47.72909177	-103.231727
Shrub	Removed	Permanent	16	149	N	98	W	47.72918041	-103.2317628
Shrub	Removed	Temporary	16	149	N	98	W	47.72151124	-103.219228
Shrub	Removed	Permanent	17	149	N	98	W	47.73210946	-103.2608595
Shrub	Removed	Permanent	18	149	N	98	W	47.73220688	-103.2698855
Shrub	Removed	Permanent	18	149	N	98	W	47.73216765	-103.2645258
Shrub	Removed	Permanent	18	149	N	98	W	47.73217272	-103.2632553
Shrub	Removed	Permanent	18	149	N	98	W	47.73224595	-103.26719
Shrub	Removed	Permanent	18	149	N	98	W	47.73223111	-103.2645544
Shrub	Removed	Temporary	18	149	N	98	W	47.73214885	-103.2685332
Shrub	Removed	Temporary	18	149	N	98	W	47.73216586	-103.2671959
Shrub	Removed	Temporary	18	149	N	98	W	47.73216845	-103.2658903
Trees	Removed	Permanent	4	149	N	99	W	47.74906971	-103.3486978
Trees	Removed	Permanent	4	149	N	99	W	47.74912337	-103.3486994
Shrub	Removed	Permanent	24	150	N	96	W	47.79697658	-102.9173837
Shrub	Removed	Permanent	24	150	N	96	W	47.7982282	-102.9176885

Appendix K: List of Trees and Shrubs Removed to Facilitate Pipeline Construction

Type	Removal Status	Impact Corridor	Section	Township	TDIR	Range	RDIR	Location – Latitude	Location – Longitude
Shrub	Removed	Permanent	24	150	N	96	W	47.79864417	-102.9178365
Shrub	Removed	Permanent	24	150	N	96	W	47.79873277	-102.9178647
Shrub	Removed	Temporary	24	150	N	96	W	47.7969429	-102.9174767
Shrub	Visible	Temporary	25	150	N	96	W	47.78749663	-102.915635
Shrub	Visible	Permanent	26	150	N	96	W	47.77953201	-102.9367818
Shrub	Removed	Permanent	26	150	N	96	W	47.7795362	-102.9366772
Shrub	Removed	Permanent	26	150	N	96	W	47.77959606	-102.936696
Shrub	Removed	Permanent	34	150	N	96	W	47.76265457	-102.9433231
Shrub	Removed	Permanent	35	150	N	96	W	47.76584467	-102.9403761
Shrub	Removed	Permanent	35	150	N	96	W	47.76763324	-102.9404251
Shrub	Removed	Temporary	35	150	N	96	W	47.76764277	-102.9402438
Shrub	Removed	Permanent	32	150	N	97	W	47.7626363	-103.1223499
Shrub	Removed	Permanent	32	150	N	97	W	47.76280389	-103.1225522
Shrub	Removed	Permanent	32	150	N	97	W	47.76594943	-103.1303717
Shrub	Removed	Permanent	32	150	N	97	W	47.76601965	-103.1303886
Shrub	Removed	Permanent	32	150	N	97	W	47.76608226	-103.1306601
Shrub	Removed	Temporary	32	150	N	97	W	47.76255381	-103.1224059
Shrub	Removed	Permanent	33	150	N	97	W	47.76132384	-103.1019076
Shrub	Removed	Permanent	33	150	N	97	W	47.76187515	-103.103141
Shrub	Removed	Temporary	33	150	N	97	W	47.76176987	-103.1031627
Shrub	Removed	Temporary	33	150	N	97	W	47.76192062	-103.1029946
Trees	Removed	Permanent	35	150	N	97	W	47.76317336	-103.0510508
Trees	Removed	Permanent	35	150	N	97	W	47.76328692	-103.0511489
Shrub	Removed	Permanent	36	150	N	97	W	47.76098699	-103.0466812
Shrub	Removed	Permanent	36	150	N	97	W	47.76105134	-103.0470522
Shrub	Removed	Permanent	36	150	N	97	W	47.76106284	-103.0473411

Appendix K: List of Trees and Shrubs Removed to Facilitate Pipeline Construction

Type	Removal Status	Impact Corridor	Section	Township	TDIR	Range	RDIR	Location – Latitude	Location – Longitude
Shrub	Removed	Permanent	36	150	N	97	W	47.76142503	-103.043726
Shrub	Removed	Permanent	36	150	N	97	W	47.76178793	-103.0414138
Shrub	Removed	Permanent	36	150	N	97	W	47.76181868	-103.0425178
Shrub	Removed	Permanent	36	150	N	97	W	47.76181597	-103.042359
Shrub	Removed	Permanent	36	150	N	97	W	47.76231266	-103.0403877
Shrub	Removed	Temporary	36	150	N	97	W	47.76114656	-103.0473151
Shrub	Removed	Temporary	36	150	N	97	W	47.76135281	-103.0436823
Shrub	Removed	Temporary	36	150	N	97	W	47.76152553	-103.0439066
Shrub	Removed	Temporary	36	150	N	97	W	47.76175155	-103.0423706
Trees	Removed	Permanent	36	150	N	97	W	47.76130001	-103.0443521
Shrub	Removed	Permanent	21	151	N	100	W	47.88567197	-103.4868276
Shrub	Removed	Permanent	23	151	N	100	W	47.88391422	-103.451456
Shrub	Removed	Permanent	23	151	N	100	W	47.88394808	-103.4519363
Shrub	Removed	Temporary	23	151	N	100	W	47.88382214	-103.4515086
Shrub	Removed	Temporary	23	151	N	100	W	47.88411644	-103.4454391
Shrub	Removed	Permanent	1	151	N	101	W	47.92665037	-103.5611818
Shrub	Removed	Permanent	19	152	N	101	W	47.97474689	-103.6642543
Shrub	Removed	Permanent	19	152	N	101	W	47.97475266	-103.6635224
Shrub	Removed	Temporary	19	152	N	101	W	47.97466301	-103.6642997
Shrub	Removed	Permanent	21	152	N	101	W	47.96779509	-103.6215863
Shrub	Removed	Permanent	21	152	N	101	W	47.96866252	-103.6228509
Shrub	Removed	Temporary	21	152	N	101	W	47.96775594	-103.6216061
Shrub	Removed	Permanent	27	152	N	101	W	47.95752287	-103.6048327
Shrub	Removed	Permanent	28	152	N	101	W	47.95996379	-103.6112013
Shrub	Removed	Permanent	28	152	N	101	W	47.96058758	-103.6138015
Shrub	Removed	Permanent	34	152	N	101	W	47.94921226	-103.5863971

Appendix K: List of Trees and Shrubs Removed to Facilitate Pipeline Construction

Type	Removal Status	Impact Corridor	Section	Township	TDIR	Range	RDIR	Location – Latitude	Location – Longitude
Trees	Removed	Permanent	35	152	N	101	W	47.94332242	-103.5697499
Trees	Removed	Permanent	35	152	N	101	W	47.94335179	-103.5704356
Trees	Removed	Permanent	35	152	N	101	W	47.94422195	-103.5726881
Trees	Removed	Permanent	35	152	N	101	W	47.94423881	-103.5728391
Trees	Removed	Temporary	35	152	N	101	W	47.94331428	-103.5690208
Trees	Removed	Temporary	35	152	N	101	W	47.94336129	-103.5706393

APPENDIX L

FACILITY RESPONSE PLANS

Facility Response Plan

Alexander Crude Oil Terminal

3/13/2013

Prepared for:

TARGA

1939 125th Avenue NW
Watford City, McKenzie County
North Dakota, 58854

Prepared by:

Compliance Partners Inc.

4038 Timberline Road, Suite 100
Fort Collins, Colorado 80525
970/206-4443

Table of Contents

BASIC FACILITY INFORMATION

General Information

Applicability of Substantial Harm

EMERGENCY RESPONSE ACTION PLAN

Qualified Individual Contact Information 2

Emergency Notification Phone List 3

Spill Response Notification Form 4

Facility Response Equipment List & Location 5-7

Response Equipment Testing/Deployment Drill Log 8

Facility Response Team 9

Evacuation Plan 10

Immediate Actions

Onsite Workers 11

Onsite Workers Reporting Actions 11

Qualified Individuals Duty 12

Nearest Medical Emergency Center 12

Arrival Route of Emergency Personnel/Equipment 12

Facility's Diagrams

Facility Location Map 14
Site Plan Diagram 15
Site Drainage Plan 16
Site Evacuation Plan 17

FACILITY RESPONSE PLAN

Facility Information Form 19-20

Emergency Notification Phone List 21

Spill Response Notification Form 22

Incident Description 23

Response Action 24

Additional Information 25

Facility Response Equipment List & Location 26-28

Response Equipment Testing/Deployment Drill Log 29

Company Emergency Response Team, Contractors & Facility Response Team 30-31

Evacuation Plan & Immediate Actions

- Onsite Workers 32-33
- Onsite Workers Reporting Actions 33
- Qualified Individuals Duty 33-34
- Nearest Medical Emergency Center 34
- Arrival Route of Emergency Personnel/Equipment 34

Hazard Evaluation 35-38

Facility Diagrams

- Diagram 1 – General Location Map 39
- Diagram 2 – Site Plan Diagram 40
- Diagram 3 – Site drainage Plan 41
- Diagram 4 – Site Evacuation 42
- Diagram 5 – Sensitive Areas Location 43
- Diagram 6 – Drinking Water Location 43

Response Actions for Various Discharge Scenarios

- Small Spill Scenarios Analysis 44
- Medium Spill Scenario Analysis 44-45
- Worst-case Spill Scenarios Analysis 45-47

Discharge Detection Systems 48-49

Implementation Procedures 50-51

Response Resources 52-53

Description of Records of Self-Inspections, Drills and Exercises and Response Training 54

Response Equipment Inspection Log 55

Secondary Containment Inspection Log 56

Qualified Individual Notification Drill Log 57

Spill Management Team Tabletop Exercise Log 58

Response Training 59

Personnel Response Training Log 60

Discharge Prevention Meeting Log 61

Security 62

Appendices:

- Appendix A – Emergency Response Contractors Information
- Appendix B – Spill Kit Inventory

BASIC FACILITY INFORMATION

[40 CFR §112, Appendix F Section 2.0]

GENERAL INFORMATION [40 CFR §112 Appendix F, Section 2.0]

Owner/Operator of Facility Name: Targa Badlands, LLC

Facility Name: Alexander Crude Oil Terminal

Facility Address: About 10.0 miles north of the town of Alexander on County Rd 16

City, State, and U.S. Zip: North Dakota, 58801

Facility Phone Number: (701) 580-5972 / (970) 946-7485

Latitude: 47 Degrees 58 Minutes 40.080 Seconds

Longitude: -103 Degrees 40 Minutes 6.240 Seconds

Dun/Bradstreet Number: TBD/TBD

Largest Above Ground Oil Storage Tank Capacity: 1,260,000 gallons

Number of Above Ground Oil Storage Tanks: 2

North American Industrial Classification System: 486110

Maximum Oil Storage Capacity: 1,276,800 gallons (Future = 2,536,800 gallons)

Worst Case Oil Discharge Amount: 1,260,000 gallons

Facility Distance to Navigable Waters: ___0-¼ mile **X** ¼- ½ mile ___½ - 1 mile___>1 mile

APPLICABILITY OF SUBSTANTIAL HARM [40 CFR §112 Attachment C-I]

1. Does the facility transfer oil over-water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

   Yes _____ No **X**

2. Does the facility have a total oil storage capacity greater than or equal to 1 million (1,000,000) gallons *and*, within any storage area, does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation?

   Yes _____ No **X**

3. Does the facility have a total oil storage capacity greater than or equal to 1 million (1,000,000) gallons and is the facility located at a distance (as calculated using the appropriate formula in Appendix C or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?

   Yes **X** No _____

4. Does the facility have a maximum storage capacity of oil greater than or equal to one million (1,000,000) gallons *and* is the facility located at a distance such that a discharge from the facility would shut down a public drinking water intake?

   Yes _____ No **X**

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill 2 in an amount greater than or equal to 10,000 gallons within the last 5 years??

   Yes _____ No **X**

CERTIFICATION OF SUBSTANTIAL HARM DETERMINATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining information, I believe that the submitted information is true, accurate, and complete.

Targa Badlands, LLC

Signature: _____ Printed Name: J S Hopson

Title: Sr. VP ENG & OPS Date: 3/21/13

EMERGENCY RESPONSE ACTION PLAN

[40 CFR §112, Appendix F Section 1.1]

QUALIFIED INDIVIDUAL(S) CONTACT INFORMATION

1. Name: Mr. Tim Stubstad - Supervisor Crude Processing
   Emergency Phone No.: (701) 580-5972 (cell)
   (701) 675-2157 (office)

   Specific Response Training Experience:
   Small-case oil discharge scenario responsibilities, prevention of discharge, emergency response procedures and emergency equipment handling.

2. Name: Mr. Shawn Rost - North Dakota Operations Manager
   Emergency Phone No.: (970) 946-7485 (cell)
   (701) 842-3315 (work)

   Specific Response Training Experience:
   Responsibilities during small-case oil discharge scenario, prevention of discharge, emergency response procedures and emergency equipment handling.

EMERGENCY NOTIFICATION PHONE LIST

Organization	Phone Number
1. National Response Center (NRC)	**(800) 424-8802**
2. Qualified Individual(s):	
a. Shawn Rost (cell)	**(970) 946-7485**
Office	**(701) 842-3315**
b. Tim Stubstad (cell)	**(701) 580-5972**
Office	**(701) 675-2157**
3. Company Response Team: Lee Salazar (Safety Director)	
a. Daytime	**(713) 584-1421**
b. Nighttime	**(713) 553-6595**
4. Federal On-Scene Coordinator (OSC) and/or	
Regional Response Center (RRC)	**(303) 349-0661**
Evening Phone (24-hr)	**(303) 293-1788**
5. Local Response Team/Fire Department	
• Watford, McKenzie	**(701) 444-2934**
• Alexander Volunteer Fire Department	**(701) 828-3352**
6. State Emergency Response Commission (SERC)	**(800) 472-2121**
After Hours	**(701) 328-9921**
7. State Police	**(701) 842-2280**
8. Local Emergency Planning Committee (LEPC)	(**701) 328-8100**
Fire Marshall	**(701) 328-5555**
Community Emergency Response Team (McKenzie Co)	**(701) 444-6853**
24-hr North Dakota D State Radio	**(701) 328-9921**
9. Local Water Supply System	**(701) 328-6409**
ND Dep. of Health/Water Quality Commission	**(701) 328-5210**
10. CDOT/Weather Report	**(701) 774-2700**
11. Local Television/Radio Station	
NBC/KUMV-TV	**(701) 572-4676**
NBC/KQCD-TV	**(701) 483-8231**

12. Hospitals
    a. Mercy Medical Center **(701) 774-7400** / 1301 15th Ave. West, Williston, ND 58801
    b. Trinity Community Clinic **(800) 735-4940** / 1321 W Dakota Pkwy, Williston, ND 58801

SPILL RESPONSE NOTIFICATION FORM

Provide to the National Response Center – NRC

Reporter's Last Name: _____

Reporter's First Name: _____

Reporter's Middle Name Initial: _____

Position: _____

Phone Numbers:

Day: _____

Evening: _____

Company: _Targa Badlands, LLC

Organization Type: _Oil & Gas – Midstream

Address: 1939 125th Avenue NW

City: _Watford City

State: _North Dakota

Zip: _58854

Were Materials Discharged?	Yes ☐	No ☐	
Confidential?	Yes ☐	No ☐	
Meeting Federal Obligations to Report?	Yes ☐	No ☐	**Date Called**: _____
Calling for Responsible Party?	Yes ☐	No ☐	**Time Called**: _____

FACILITY RESPONSE EQUIPMENT LIST & LOCATION

The facility is equipped with a large mobile spill kit (large tote on wheels) with boom, diapers, etc. located on the northeast side of the facility inside the Meter building. Third party contractors provide resources for spill control and communication resources for medium (>2,100 and <1,260,000 gallons) and worst-case (>1,260,000 gallons) discharge scenarios. See Diagram 2 for equipment location at the facility.

1. **Skimmers/Pumps – Operational Status:** None

   Type: _____ **Model:** _____ **Year** _____

   Number: _____

   Capacity (gal/min): _____

   Daily Effective Recovery Rate: _____

   Storage Location(s): _____

   Date Fuel Last Changed: _____

2. **Boom-Operational Status:** Brand New

   Type: Absorbent **Model:** _____ **Year** **2012**

   Number: 4

   Size/Length (ft): 8’ x 10’

   Containment Area (sq. ft.): 80 per boom

   Storage Location: Spill kit, northeast side of facility, inside Meter building

3. **Chemicals Stored (Dispersants listed on EPA’s NCP Product Schedule):**

Type	Amount	Date Purchased	Treatment Capacity	Storage Location
None				

- Were the appropriate procedures used to receive approval for use of dispersants in accordance with the NCP (40 CFR 300.910) and the Area Contingency Plan (ACP), where applicable? Yes ☐ No ☐
- On-Scene Coordinator (OSC) Authorizing Use:

Name: N/A State: _____ Date Authorized: _____

4. **Dispersant Dispensing Equipment – Operational Status: _____**

Type and year	Capacity	Storage Location	Response Time (minutes)
None			

5. **Sorbents – Operational Status:** _New & Ready for Use

Type and Year Purchased: Absorbent socks (2012), Mats Pads (2012), Granular Absorbent (2013)

Amount: Socks: (10) 3" x 10' and (31) 3" x 48 "/ Mats: (1) 100 count / Granular: (1) 30 lbs. /each

A more detailed list can be found as Appendix B

Absorption Capacity (gal): 10 - 76

Storage Location(s): _Spill kit, northeast side of facility, inside Meter building

6. **Hand Tools – Operational Status:** _Excellent

Type and year	Quantity	Storage Location
Shovel	1	Per Work Truck
Hand tools	Various	Per Work Truck

7. **Communication Equipment (include Operating Frequency and Channel and/or Cellular Phone Numbers) – Operational Status:** _Excellent

Type and year	Quantity	Storage Location/Number
Cell phones / new	Various	All operators

8. Fire Fighting and Personnel Protective Equipment – Operational Status: Excellent

Type and year	Quantity	Storage Location
20 lb. ABC and CK fire extinguishers	6	See Diagram 2
Hard Hats & Work Gloves	Provided to each employee	---

9. Other (e.g., Heavy Equipment, Boats and Motors) – Operational Status: _____

Type and year	Quantity	Storage Location
None		

RESPONSE EQUIPMENT TESTING/DEPLOYMENT DRILL LOG

Last Inspection or Response Equipment Test Date: _____

Inspection Frequency: _____

Last Deployment Drill Date: _____

Deployment Frequency: _____

Oil Spill Removal Organization Certification (if applicable): _____

_____

_____

_____

_____

_____

_____

FACILITY RESPONSE TEAM

DATE LAST UPDATED: __3/2013____

Team Member	Response Time	Phone (Day/Evening)
Tim Stubstad	Immediate	(701) 675-2157 / (701) 580-5972
Shawn Rost	Immediate	(970) 946-7485 / (701) 842-3315
Earth Movers / Strata Corporation	1 hour	Scott Brown (24/7): (701) 720-8565 Emergency Answering Service: (800) 373-5259

EVACUATION PLAN

If access to whichever gate is limited due to weather conditions, fire, safety concerns, etc., everyone must evacuate the facility through fastest and safest available gate, gather at a meeting place and wait for further directions:

1. All individuals that are at the facility during a spill shall calmly go to **Meeting Place No. 1** on the other side of the dirt road located northwest of Gates 1 and 2.
2. If accessing Meeting Place No. 1 is not feasible, everyone shall go to **Meeting Place No. 2** on the northeast side of the facility.
3. If somebody was injured, contaminated or physically hurt by the event, call 911, stay calm and provide first aid if trained.
4. When exiting the facility, and particularly if there are high winds, observe the wind boots and assess if it safe to stay at Meeting Place 1 or 2 as vapors released by crude oil can be toxic and cause breathing difficulties and/or even unconsciousness. Direct evacuation away from the facility.
5. Perform head counts/roll call to account for personnel.
6. Stay calm and follow instructions given by qualified individual.

There are fire extinguishers located throughout the facility as follows (see Diagram No. 2):

- **Two on the northeast side of the facility one on the north side and one on the south side of the Meter building**
- **Two by the MCC building: one inside and one outside**
- **By crude oil tank AT-5000 on the west side**
- **A portable extinguisher on the northeast of AT-100 berm south of meter building**

IMMEDIATE ACTIONS

Onsite Workers

1. The first priority should be to shut-off ignition sources (i.e., loading truck engine, open flames, electrical circuits) and to contain the spill on site **as long as safety is not compromised**.
2. Attempt to contain the spill by constructing earthen berms/absorbent material at the leading edge of the spill to prevent further advancement or other material available to contain and stop the flow of oil already on the ground. It is critical to try to prevent any spilled product from reaching any waterways, drainages, or drains.
3. If it is safe to do so, locate where in the flow line the leak occurred.
4. Isolate the section where the spill originated and stop the flow of product by plugging or capping the leak at the source if possible.
5. Block civilian access to the facility and warn personnel of event.
6. Notify the Emergency Response Coordinator (ERC) and site manager:

Tim Stubstad (Site Manager)	Shawn Rost (ERC)
(701) 580-5972 (cell)	(970) 946-7485 (cell)
(701) 675-2157 (work)	(701) 842-3315 (work)

7. Personnel involved with a spill event should be prepared to make recommendations on whether additional cleanup materials, equipment or personnel may be necessary.
8. On-site personnel or an approved outside contractor will be assigned to clean up the spill once a spill has been contained.
9. Any liquids present will be pumped or vacuumed into tanks, trucks, or drums for recovery and disposal according to federal and state waste management requirements. Absorbents will be used to remove any liquid.
10. Soil and other solid materials contaminated with petroleum hydrocarbons will be disposed of in accordance with federal and state hazardous and solid waste regulations.

Spill control equipment including absorbent booms, absorbent socks, granular absorbent, absorbent pads, and disposal bags and labels are stored in the facility spill kit clearly labeled and readily available in the event of a spill (see Diagram 2). A shovel is carried in the facility operator's vehicle for use in constructing berms and diversions to help mitigate any spill which has occurred.

Onsite Workers Reporting Actions

The site manager and the Emergency Response Coordinator (ERC) should be immediately notified in the event of a spill. On site personnel should provide the following information to the ERC:

1. Any injuries, fires and/or explosions.
2. Location of spill including type of terrain and nearest water feature or drainage feature.
3. Date and time of spill event.
4. Source of spill and its relative location to vulnerable wetlands, rivers, farming, etc.
5. Material discharged.
6. Estimated volume of the spill.
7. Any explosions.
8. Weather conditions (i.e., rain, snow, high winds, temperature)
9. Employee/contractor evacuation.

10. Type of cleanup actions in progress or planned.

Follow-up decisions and contacts with agencies other than county or local emergency response agencies are to remain the function of the Emergency Response Coordinator.

Qualified Individual Duties

1. Activate alarms and hazard communication systems.
2. Notify all response personnel.
3. Identify the character, exact source, amount and extent of the release and all other items needed for notification.
4. Notify and provide necessary information to the appropriate Federal, State and local authorities with designed response roles, including the National Response Center, State Emergency Response Commission and Local Emergency Planning Committee.
5. Notify the local police/fire department if oil threatens to reach any creeks and rivers to prevent the public from accessing those water sources
6. Cooperate and work closely with the Federal On-scene Coordinator (FOSC).
7. Assess the interaction of the discharged substance with water and/or other substances stored at the facility and notify response personnel at the scene of that assessment.
8. Evaluate the possible hazards to human health and the environment due to the release. This assessment must consider both the direct and indirect effects of the release (i.e., the effects of any toxic, irritating, or asphyxiating gases that may be generated or the effects of any hazardous surface water runoffs from water or chemical agents used to control fire and heat-induced explosion).
9. Assess and implement prompt spill clean-up operations to contain and remove the substance released.
10. Coordinate rescue and response actions as previously arranged with all response personnel and enact contracts with oil-spill removal entities.
11. Use authority to immediately access company funds to initiate cleanup and spill activities.
12. Direct cleanup activities until properly relieved of this responsibility.
13. Coordinate with appropriate company employees and/or contractors preparing reports and filling out forms documenting the spill.

Nearest Medical Emergency Center

1. Mercy Medical Center is the closest medical facility located about 16.8 miles north of the Alexander Crude Oil Terminal in Williston, ND. ***This is an Emergency/Trauma Center treating lower "Level IV" trauma***.

Address: 1301 15th Avenue W
Williston, ND 58801
PH: (701) 774-7400

Directions: Head east toward Co. Rd 16/39th St NW for 0.4 miles. Turn left onto US-85 N and go north for 12.2 miles. Turn right onto N. Dakota US-2/US-85N/50th St NW and head east for 3.9miles (this road becomes W. Dakota Pkwy). Turn right onto 11th Street W for 0.2 miles. Take the 2nd left onto 15th Avenue W. The hospital will be on your left-hand side before the road curves right.

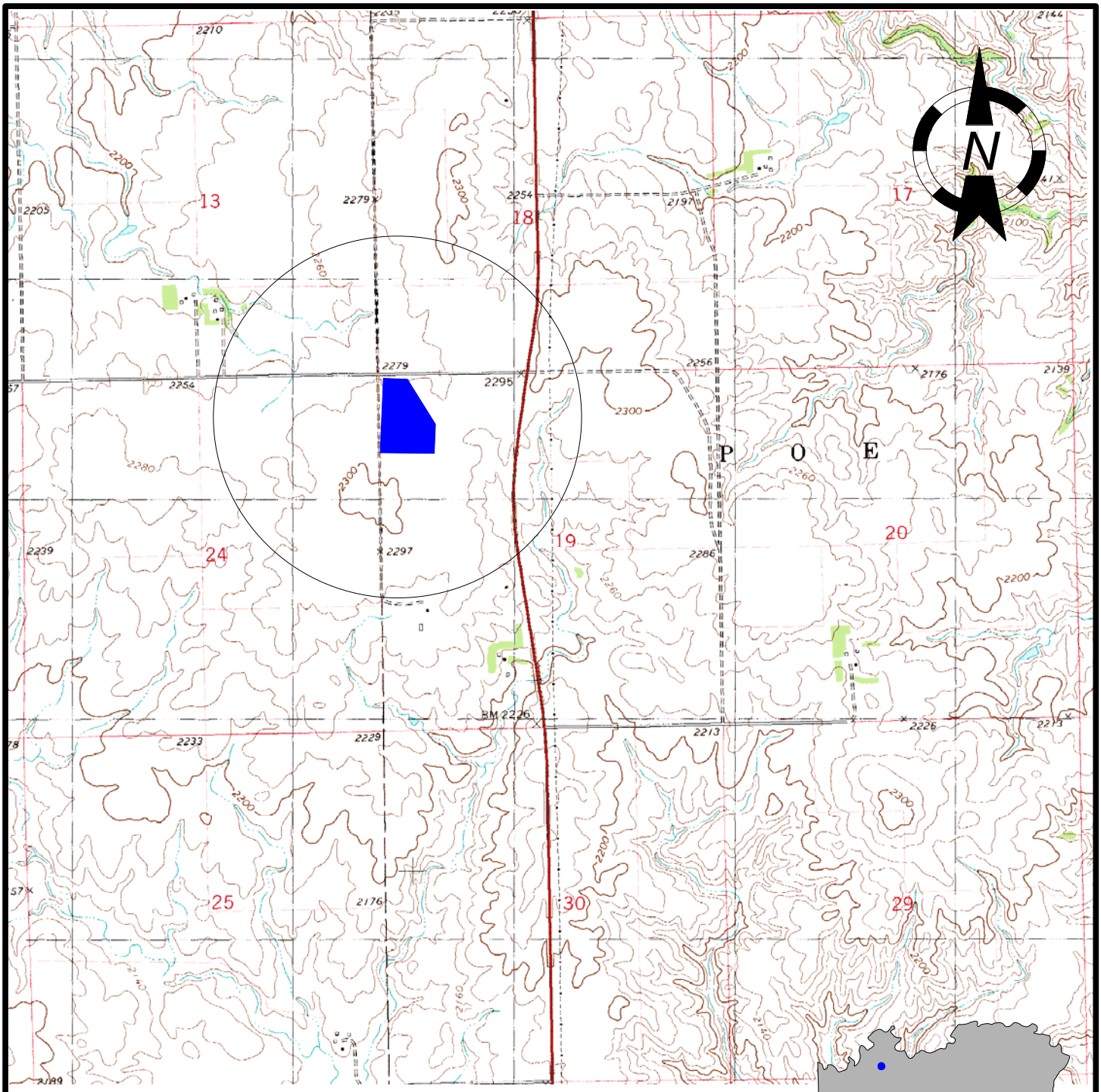
2. The Trinity Community Clinic is the second closest hospital located about 17.4 miles north of the Alexander Crude Oil Terminal in Williston, ND. ***This is an Emergency/Trauma Center treating higher "Level II" trauma.***

Address: 1321 West Dakota Parkway
Williston, ND 58801
PH: (800) 735-4940

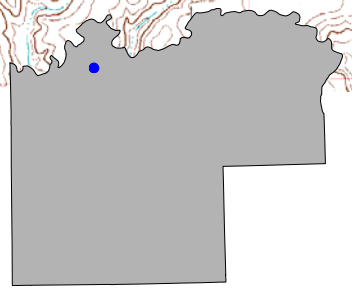
Directions: Head east toward Co. Rd 16/39th St NW for 0.4 miles. Turn left onto US-85 N and go north for 12.2 miles. Turn right onto N. Dakota US-2/US-85N/50th St NW and head east for 4.5 miles (this road becomes W. Dakota Pkwy). The hospital will be on your right-hand side past 9th avenue.

Arrival Route of Emergency Personnel/Equipment

The facility is easily accessed from Williston by heading west on N. Dakota 1804 W/2nd St. W for 4.8 miles and then heading south on US-85 S. The facility is about 17.7 miles from Williston and 10 miles north of the town of Alexander. It is located west of the intersection of US-85 and County Road 16. There are two gates at the facility located on the west fence line: the first gate (Gate 1) can be reached on the northwest side of the facility by making a left on 144th avenue from 39th St. NW (County Road 16). Gate 2 is located south of Gate 1. The planned response time for substantial harm for inland is expected to be 27 hours: 24 hours for arrival plus 3 hours for deployment.



USGS 7.5 minute map
Camp Creek West



General Vicinity
McKenzie County

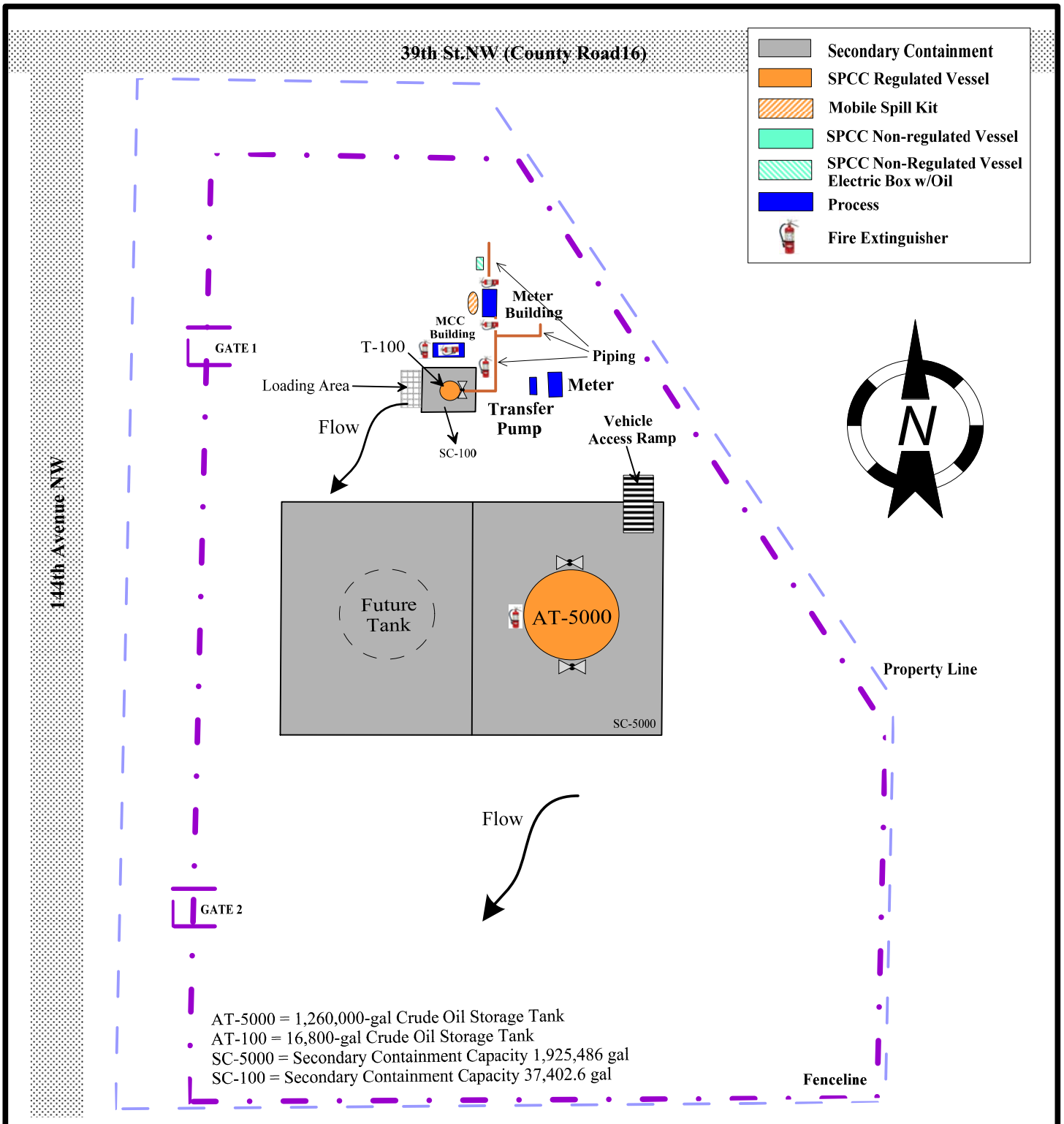
Compliance Partners Inc.
4038 Timberline Rd., Suite 100
Ft. Collins, CO 80525 (970) 206-4443
www.compliance-partners.com

TARGA

Alexander Crude Oil Terminal

General Location Map
Section 19, T 152 N, R 101 W
McKenzie County, ND

PROJECT NAME	FILENAME	SCALE	REVISED	DIAGRAM NUMBER
Targa Alexander COT FRP	Alexander COT loc.srf	1 in = 660 m	3/12/2013	1



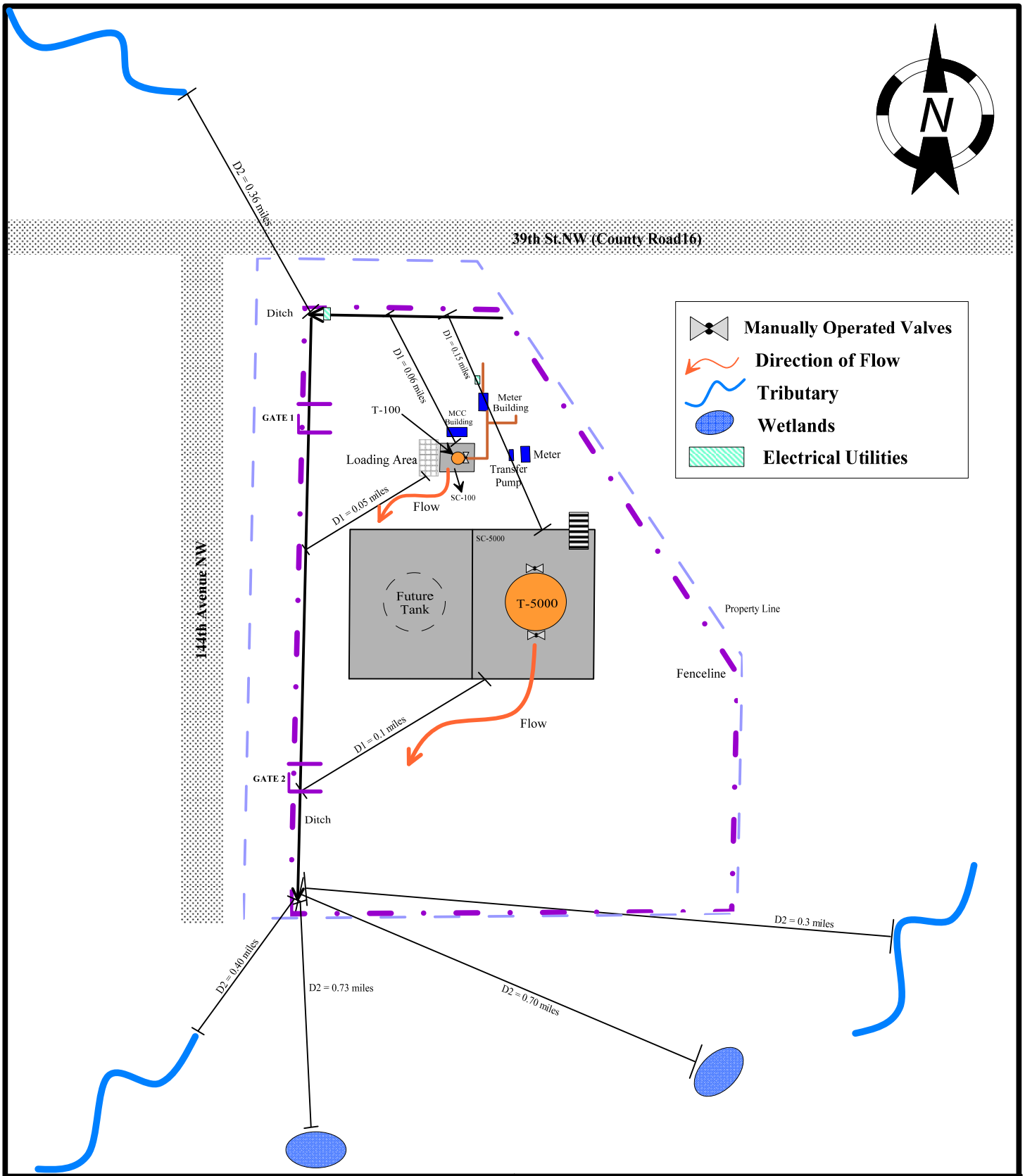
Compliance Partners Inc.
4038 Timberline Rd., Suite 100
Fort Collins, CO 80525 (970) 206-4443
www.compliance-partners.com

TARGA

Alexander Crude Oil Terminal

Site Plan Diagram

PROJECT NAME	FILENAME	SCALE	REVISED	DIAGRAM NUMBER
Targa's Alexander COT FRP	Alexander COT Site Plan.srf	1in = 50 m	3/12/2013	2



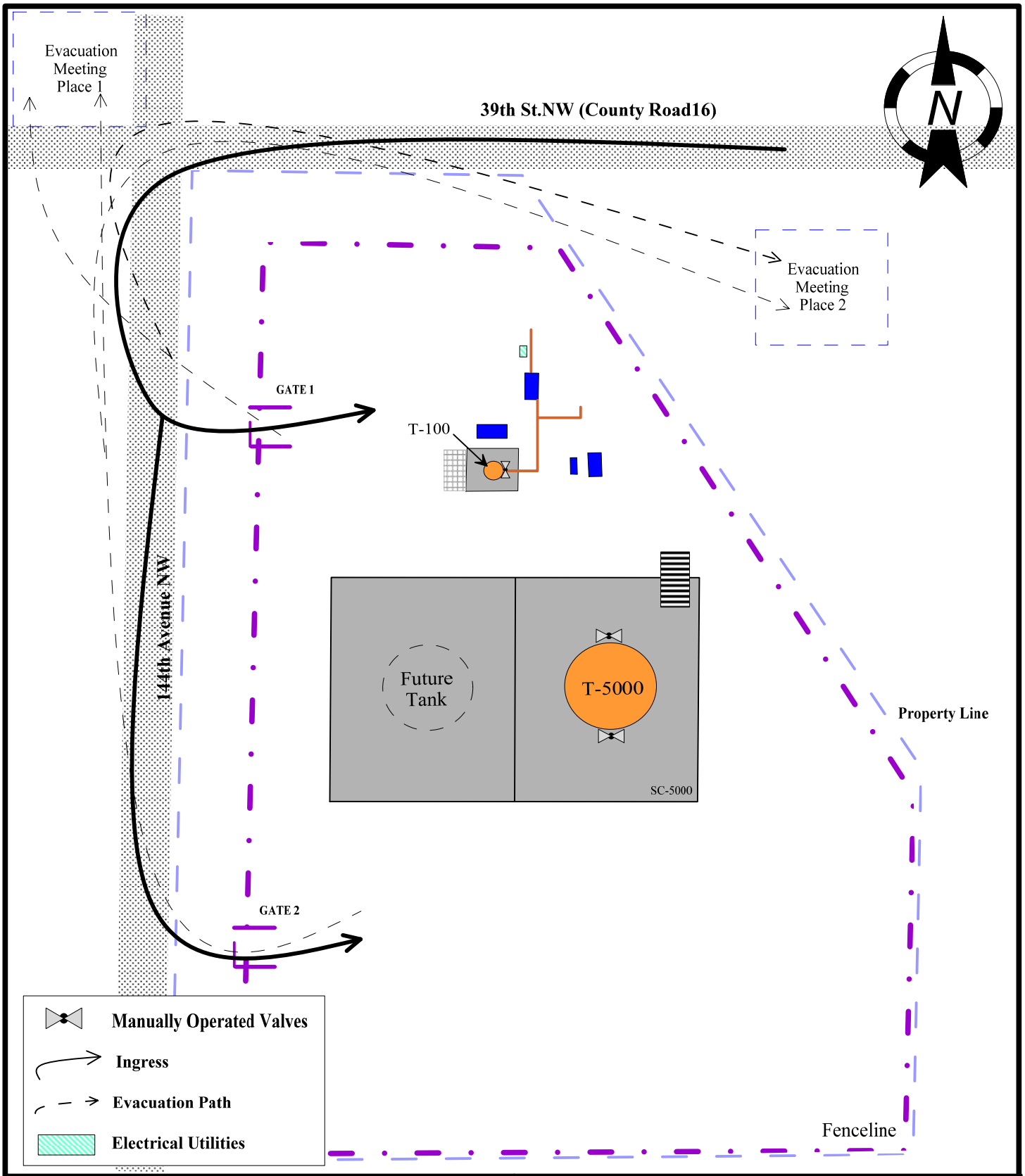
Compliance Partners Inc.
4038 Timberline Rd., Suite 100
Fort Collins, CO 80525 (970) 206-4443
www.compliance-partners.com

TARGA

Alexander Crude Oil Terminal

Site Drainage Diagram

PROJECT NAME	FILENAME	SCALE	REVISED	DIAGRAM NUMBER
Targa's Alexander COT FRP	Alexander COT Site Plan.srf	1in = 50 m	3/12/2013	3



Compliance Partners Inc.
4038 Timberline Rd., Suite 100
Fort Collins, CO 80525 (970) 206-4443
www.compliance-partners.com

TARGA

Alexander Crude Oil Terminal

Site Evacuation Plan

PROJECT NAME	FILENAME	SCALE	REVISED	DIAGRAM NUMBER
Targa's Alexander COT FRP	Alexander COT Site Evac.srf	1in = 50 m	3/12/2013	4

FACILITY RESPONSE PLAN

[§112, App. F Section 1.1]

[40 CFR §112, Appendix F, Section 1.2]

FACILITY INFORMATION FORM

DATE LAST UPDATED: _3/2013__

Facility Name: Alexander Crude Oil Terminal

Classification: Crude Oil Storage and Transportation

Location: Street Address: About 10.0 mile north of Alexander on 39th Street NW (Co. Rd 16)
City: --
State: North Dakota
Zip: 58801
County: McKenzie
Phone Number: (701) 580-5972

Latitude: 47 Degrees 58 Minutes 40.080 Seconds

Longitude: -103 Degrees 40 Minutes 6.240 Seconds

Wellhead Protection Area: There are three domestic wells located within 1 mile of the facility: Two south of the facility and one northeast of the facility (see Diagram 6).

Facility Owner: Targa Resources, LLC

Owner Location: 1939 125th Avenue NW
Watford City, ND 58854

Operator: Same as owner

Date of Oil Storage Start-up: April 2013

Current Operations: Crude oil transportation and storage (NAICS Code: 486110)

Date(s) and Type(s) of Substantial Expansion(s):

February 2013: A site-built, 30,000 bbl floating roof crude oil storage tank (T-5000) was erected east of the facility.

Qualified Individual(s) Contact Information:

1. Name: Mr. Tim Stubstad
   Position: Supervisor Crude Processing
   Emergency Phone No.: (701) 580-5972 (cell)
   Home Address: 35223 CR 127
   Sidney, MT 59270

Work Address: 1939 125th Avenue NW
Watford City, ND 58854
Specific Response Training Experience:
Responsibilities during small-case oil discharge scenario, prevention of discharge, emergency response procedures and emergency equipment handling.

2. Name: Mr. Shawn Rost
Position: North Dakota Operations Manager
Emergency Phone No.: (970) 946-7485 (cell)
(701) 842-3315 (work)
Home Address: 136 Washington Street
Crane, MT 59217
Work Address: 1939 125th Avenue NW
Watford City, ND 58854
Specific Response Training Experience:
Responsibilities during small-case oil discharge scenario, prevention of discharge, emergency response procedures and emergency equipment handling.

Report all spills that may contaminate any U.S. Navigable Waters to the National Response Center (NRC). The NRC will notify the Region 8 Emergency Operation Center (REOC) and the REOC notify a Federal On-Scene Coordinator (FOSC).

[40 CFR §112 Appendix F, Section 1.3(A) (1)]

EMERGENCY NOTIFICATION PHONE LIST

DATE LAST UPDATED __ 3/2013____

Reporter's Name: _____

Date: _____

Facility Name: Alexander Crude Oil Terminal

Owner Name: Targa Badlands, LLC

Facility Identification Number: 486110

Date and Time of Each NRC Notification: _____

	Organization	**Phone Number**
1.	National Response Center (NRC)	1-800-424-8802
2.	Qualified Individual(s):	
	a. Shawn Rost (cell)	1-970-946-7485
	Office	1-701-842-3315
	a. Tim Stubstad (cell)	1-701-580-5972
	Office	1-701-675-2157
3.	Company Response Team: Lee Salazar (Safety Director)	
	a. Daytime	1-713-584-1421
	b. Nighttime	1-713-553-6595
4.	Federal On-Scene Coordinator (OSC) and/or	
	Regional Response Center (RRC)	1-303-349-0661
	Evening Phone (24-hr)	1-303-293-1788
5.	Local Response Team/Fire Department	
	• Watford, McKenzie	1-701-444-2934
	• Alexander Volunteer Fire Department	1-701-828-3352
6.	State Emergency Response Commission (SERC)	1-800-472-2121
	After Hours	1-701-328-9921
7.	State Police	1-701-842-2280
8.	Local Emergency Planning Committee (LEPC/DES)	1-701-328-8100
	ND 24-hr Spill Notification Radio	1-701-328-9921
	Fire Marshall	1-701-328-5555
	Community Emergency Response Team (McKenzie Co)	1-701-444-6853
9.	Local Water Supply System	1-701-328-6409
	ND Dep. of Health/Water Quality Commission	1-701-328-5210
10.	CDOT/Weather Report	1-701-774-2700
11.	Local Television/Radio Station	
	NBC/KUMV-TV	1-701-572-4676
	NBC/KQCD-TV	1-701-483-8231

12. Hospitals
    a. Mercy Medical Center **(701) 774-7400** / 1301 15th Ave. West, Williston, ND 58801
    b. Trinity Community Clinic **(800) 735-4940** / 1321 W Dakota Pkwy, Williston, ND 58801

[40 CFR §112 Appendix F, Section 1.3(A)(2)]

SPILL RESPONSE NOTIFICATION FORM

****Provide to the National Response Center – NRC****

Reporter's Last Name: _____

Reporter's First Name: _____

Reporter's MI: _____

Position: _____

Phone Numbers:

Day: _____

Evening: _____

Company: Targa Resources, LLC

Organization Type: Oil & Gas – Midstream

Address: 1939 125th Avenue

City: Watford City

State: North Dakota

Zip: 58854

Were Materials Discharged?	Yes ☐	No ☐	
Confidential?	Yes ☐	No ☐	
Meeting Federal Obligations to Report?	Yes ☐	No ☐	**Date Called**: _____
Calling for Responsible Party?	Yes ☐	No ☐	**Time Called**: _____

[40 CFR §112 Appendix F, Section 1.3(A)(2)]

INCIDENT DESCRIPTION

Source and/or Cause of Incident: _____

_____

_____

_____

_____

_____

_____

Date of Incident: _____

Time of Incident: _____**AM/PM**

Incident Address/Location: Alexander Crude Oil Terminal

Nearest City: Alexander **State**: North Dakota

County: McKenzie **Zip**: 58801

Distance from City (Miles): 10.0

Direction from City: North **Section**: 19 **Township**: 152N **Range**: 101W

_____ **Borough:** _____

Container Type: AST

Tank Oil Storage Capacity: 1,260,000

Units of Measure: gallons

Facility Oil Storage Capacity (gal): 1,276,800

Facility Latitude: 47 **Degrees** 58 **Minutes** 40.080 **Seconds**

Facility Longitude: -103 **Degrees** 40 **Minutes** 6.240 **Seconds**

MATERIAL

CHRIS Code	Discharged Quantity	Unit Measure	Material Discharged in Water	Quantity	Unit of Measure

[40 CFR §112 Appendix F, Section 1.3(A)(2)]

RESPONSE ACTION

Actions Taken to Correct, Control or Mitigate Incident:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

IMPACT

Number of Injuries: _____ **Number of Deaths**: _____

Were There Evacuations? Yes ☐ No ☐ **If Yes, Number Evacuated?** _____

Was There Any Damage? Yes ☐ No ☐

Damage in Dollars (approximate): _____

Medium Affected: _____

Description: _____

More Information about Medium: _____

_____

_____

_____

[40 CFR §112 Appendix F, Section 1.3(A)(2)]

ADDITIONAL INFORMATION

Any Information Not Noted Elsewhere in the Report:

_____

_____

_____

_____

_____

_____

_____

CALLER NOTIFICATION

EPA? Yes ☐ No ☐

USCG? Yes ☐ No ☐

State? Yes ☐ No ☐

Other? Yes ☐ No ☐ **Describe?** _____

[40 CFR §112 Appendix F, Section 1.3(A)(3)]

FACILITY RESPONSE EQUIPMENT LIST & LOCATION

The facility is equipped with a large mobile spill kit (large tote on wheels) with boom, diapers, etc. located on the northeast side of the facility inside the Meter building. Third party contractors provide resources for spill control and communication resources for medium (>2,100 and <1,260,000 gallons) and worst-case (>1,260,000 gallons) discharge scenarios. See Diagram 2 for equipment location at the facility.

1. **Skimmers/Pumps – Operational Status:** None

   Type: _____ **Model:** _____ **Year** _____

   Number: _____

   Capacity (gal/min): _____

   Daily Effective Recovery Rate: _____

   Storage Location(s): _____

   Date Fuel Last Changed: _____

2. **Boom-Operational Status:** Brand New

   Type: Absorbent **Model:** _____ **Year** **2012**

   Number: 4

   Size/Length (ft): 8' x 10'

   Containment Area (sq. ft.): 80 per boom

   Storage Location: Spill kit, northeast side of facility, inside Meter building

3. **Chemicals Stored (Dispersants listed on EPA's NCP Product Schedule):**

Type	Amount	Date Purchased	Treatment Capacity	Storage Location
None				

- Were the appropriate procedures used to receive approval for use of dispersants in accordance with the NCP (40 CFR 300.910) and the Area Contingency Plan (ACP), where applicable? Yes ☐ No ☐
- On-Scene Coordinator (OSC) Authorizing Use:

Name: N/A State: _____ Date Authorized: _____

4. **Dispersant Dispensing Equipment – Operational Status: _____**

Type and year	Capacity	Storage Location	Response Time (minutes)
None			

5. **Sorbents – Operational Status:** _New & Ready for Use

   Type and Year Purchased: Absorbent socks (2012), Mats Pads (2012), Granular Absorbent (2013)

   Amount: Socks: (10) 3" x 10' and (31) 3" x 48 "/ Mats: (1) 100 count / Granular: (1) 30 lbs.

   A more detailed list can be found as Appendix B

   Absorption Capacity (gal): 10 - 76

   Storage Location(s): _Spill kit, northeast side of facility, inside Meter building

6. **Hand Tools – Operational Status:** __Excellent

Type and year	Quantity	Storage Location
Shovel	1	Per Work Truck
Hand tools	Various	Per Work Truck

7. **Communication Equipment (include Operating Frequency and Channel and/or Cellular Phone Numbers) – Operational Status:** ___Excellent

Type and year	Quantity	Storage Location/Number
Cell phones / new	Various	All operators

8. Fire Fighting and Personnel Protective Equipment – Operational Status: Excellent

Type and year	Quantity	Storage Location
20 lb. ABC and CK fire extinguishers	6	See Diagram 2
Hard Hats & Work Gloves	Provided to each employee	---

9. Other (e.g., Heavy Equipment, Boats and Motors) – Operational Status: _____

Type and year	Quantity	Storage Location
None		

[40 CFR §112, Appendix F, Section 1.3(A)(4)]

RESPONSE EQUIPMENT TESTING/DEPLOYMENT DRILL LOG

Last Inspection or Response Equipment Test Date: _____

Inspection Frequency: _____

Last Deployment Drill Date: _____

Deployment Frequency: _____

Oil Spill Removal Organization Certification (if applicable): _____

_____

[40 CFR §112 Appendix F, Section 1.3(A)(5)]

COMPANY EMERGENCY RESPONSE PERSONNEL

DATE LAST UPDATED __ 3/2013____

Name	Phone	Response Time	Responsibility During Response Action	Response Training/Type
Tim Stubstad	(701) 580-5972	Immediate	Contacting & contracting emergency response organizations; liaison w/on-scene coordinator; access company funds to carry-out emergency response	Emergency Response Training
Shawn Rost	(970) 946-7485	Immediate		

EMERGENCY RESPONSE CONTRACTORS[1]

DATE LAST UPDATED __ 3/2013____

Name*	Phone	Response Time	Contract Responsibility
1. Earthmovers / Strata Corporation (Minot)	Scott Brown: (701) 720-8565 Answering Service: (800) 373-5259	1 hour	Clean-up and communication equipment. Details in Appendix A
2. Garner Environmental Services (Willingston)	(701) 577-1200 (800) 424-1716	1 hour	Clean-up and communication equipment. Details in Appendix A
3. United States Environmental Services	(701) 872-2122	1 hour	Clean-up and communication equipment. Details in Appendix A
4.			
5.			
6.			

1 - Maintain evidence of contracts with response contractor with this form

FACILITY RESPONSE TEAM[2]

DATE LAST UPDATED __ 3/2013 ____

Team Member	Response Time	Phone (Day/Evening)
Tim Stubstad	Immediate	(701) 675-2157 / (701) 580-5972
Shawn Rost	Immediate	(970) 946-7485 / (701) 842-3315
Earth Movers / Strata Corporation	1 hour	Scott Brown (24/7): (701) 720-8565 Emergency Answering Service: (800) 373-5259

2 - These are personnel normally at the facility or primary response contractors

[40 CFR 112 Appendix F, Section 1.3(A)(6) & 1.3.5]

EVACUATION PLAN

If access to whichever gate is limited due to weather conditions, fire, safety concerns, etc., everyone must evacuate the facility through fastest and safest available gate, gather at a meeting place and wait for further directions:

1. All individuals that are at the facility during a spill shall calmly go to **Meeting Place No. 1** on the other side of the dirt road located northwest of Gates 1 and 2.
2. If accessing Meeting Place No. 1 is not feasible, everyone shall go to **Meeting Place No. 2** on the northeast side of the facility.
3. If somebody was injured, contaminated or physically hurt by the event, call 911, stay calm and provide first aid if trained.
4. When exiting the facility, and particularly if there are high winds, observe the wind boots and assess if it safe to stay at Meeting Place 1 or 2 as vapors released by crude oil can be toxic and cause breathing difficulties and/or even unconsciousness. Direct evacuation away from the facility.
5. Perform head counts/roll call to account for personnel.
6. Stay calm and follow instructions given by qualified individual.

There are fire extinguishers located throughout the facility as follows (see Diagram No. 2):

- **Two on the northeast side of the facility one on the north side and one on the south side of the Meter building**
- **Two by the MCC building: one inside and one outside**
- **By crude oil tank AT-5000 on the west side**
- **A portable extinguisher on the northeast of AT-100 berm south of meter building**

IMMEDIATE ACTIONS

<u>On Site Workers</u>:

1. The first priority should be to shut-off ignition sources (i.e., loading truck engine, open flames, electrical circuits) and to contain the spill on site **<u>as long as safety is not compromised</u>**.
2. Attempt to contain the spill by constructing earthen berms/absorbent material at the leading edge of the spill to prevent further advancement or other material available to contain and stop the flow of oil already on the ground. It is critical to try to prevent any spilled product from reaching any waterways, drainages, or drains.
3. If it is safe to do so, locate where in the flow line the leak occurred.
4. Isolate the section where the spill originated and stop the flow of product by plugging or capping the leak at the source if possible.
5. Block civilian access to the facility and warn personnel of event.
6. Notify the Emergency Response Coordinator (ERC) and site manager:

Tim Stubstad (Site Manager)	Shawn Rost (ERC)
(701) 580-5972 (cell)	(970) 946-7485 (cell)
(701) 675-2157 (work)	(701) 842-3315 (work)

7. Personnel involved with a spill event should be prepared to make recommendations on whether additional cleanup materials, equipment or personnel may be necessary.

8. On-site personnel or an approved outside contractor will be assigned to clean up the spill once a spill has been contained.
9. Any liquids present will be pumped or vacuumed into tanks, trucks, or drums for recovery and disposal according to federal and state waste management requirements. Absorbents will be used to remove any liquid.
10. Soil and other solid materials contaminated with petroleum hydrocarbons will be disposed of in accordance with federal and state hazardous and solid waste regulations.

Spill control equipment including absorbent booms, absorbent socks, granular absorbent, absorbent pads, disposal bags, overpack drum and labels are stored at the facility spill kit clearly labeled and readily available in the event of a spill (See Diagram 2). A shovel is carried in the facility operator's vehicle for use in constructing berms and diversions to help mitigate any spill which has occurred.

Reporting Actions:

The site manager and the Emergency Response Coordinator (ERC) should be immediately notified in the event of a spill. On site personnel should provide the following information to the ERC:

1. Any injuries, fires and/or explosions.
2. Location of spill including type of terrain and nearest water feature or drainage feature.
3. Date and time of spill event.
4. Source of spill and its relative location to vulnerable wetlands, rivers, farming, etc.
5. Material discharged.
6. Estimated volume of the spill.
7. Any explosions.
8. Weather conditions (i.e., rain, snow, high winds, temperature)
9. Employee/contractor evacuation.
10. Type of cleanup actions in progress or planned.

Follow-up decisions and contacts with agencies other than county or local emergency response agencies are to remain the function of the Emergency Response Coordinator.

Qualified Individual Duties:

1. Activate alarms and hazard communication systems.
2. Notify all response personnel.
3. Identify the character, exact source, amount and extent of the release and all other items needed for notification.
4. Notify and provide necessary information to the appropriate Federal, State and local authorities with designed response roles, including the National Response Center, State Emergency Response Commission and Local Emergency Planning Committee.
5. Notify the local police/fire department if oil threatens to reach any creeks and rivers to prevent the public from accessing those water sources
6. Cooperate and work closely with the Federal On-scene Coordinator (FOSC).
7. Assess the interaction of the discharged substance with water and/or other substances stored at the facility and notify response personnel at the scene of that assessment.
8. Evaluate the possible hazards to human health and the environment due to the release. This assessment must consider both the direct and indirect effects of the release (i.e., the effects of any

toxic, irritating, or asphyxiating gases that may be generated or the effects of any hazardous surface water runoffs from water or chemical agents used to control fire and heat-induced explosion).

9. Assess and implement prompt spill clean-up operations to contain and remove the substance released.
10. Coordinate rescue and response actions as previously arranged with all response personnel and enact contracts with oil-spill removal entities.
11. Use authority to immediately access company funds to initiate cleanup and spill activities.
12. Direct cleanup activities until properly relieved of this responsibility.
13. Coordinate with appropriate company employees and/or contractors preparing reports and filling out forms documenting the spill.

Nearest Medical Emergency Center

1. Mercy Medical Center is the closest medical facility located about 16.8 miles north of the Alexander Crude Oil Terminal in Williston, ND. ***This is an Emergency/Trauma Center treating lower "Level IV" trauma***.

Address: 1301 15th Avenue W
Williston, ND 58801
PH: (701) 774-7400

Directions: Head east toward Co. Rd 16/39th St NW for 0.4 miles. Turn left onto US-85 N and go north for 12.2 miles. Turn right onto N. Dakota US-2/US-85N/50th St NW and head east for 3.9miles (this road becomes W. Dakota Pkwy). Turn right onto 11th Street W for 0.2 miles. Take the 2nd left onto 15th Avenue W. The hospital will be on your left-hand side before the road curves right.

2. The Trinity Community Clinic is the second closest hospital located about 17.4 miles north of the Alexander Crude Oil Terminal in Williston, ND. ***This is an Emergency/Trauma Center treating higher "Level II" trauma.***

Address: 1321 West Dakota Parkway
Williston, ND 58801
PH: (800) 735-4940

Directions: Head east toward Co. Rd 16/39th St NW for 0.4 miles. Turn left onto US-85 N and go north for 12.2 miles. Turn right onto N. Dakota US-2/US-85N/50th St NW and head east for 4.5 miles (this road becomes W. Dakota Pkwy). The hospital will be on your right-hand side past 9th avenue.

Arrival Route of Emergency Personnel/Equipment

The facility is easily accessed from Williston by heading west on N. Dakota 1804 W/2nd St. W for 4.8 miles and then heading south on US-85 S. The facility is about 17.7 miles from Williston and 10 miles north of the town of Alexander. It is located west of the intersection of US-85 and County Road 16. There are two gates at the facility located on the west fence line: the first gate (Gate 1) can be reached on the northwest side of the facility by making a left on 144th avenue from 39th St. NW (County Road 16). Gate 2 is located south of Gate 1. The planned response time for substantial harm for inland is expected to be 27 hours: 24 hours for arrival plus 3 hours for deployment.

[40 CFR §112, Appendix F, Section 1.4]

HAZARD EVALUATION

Analysis and Identification of Possible Spills and Associated Hazards

There is one (1) 1,260,000 gallon full-contact internal floating roof tank storing crude oil at the east and center of the facility identified as tank AT-5000 and one (1) 16,800 gallon crude oil storage tank located northwest of AT-5000 south of the MCC building. These tanks are brand-new units: AT-5000 is site-built and AT-100 is shop built; AT-5000 was inspected on February 2013 and will be integrity tested on a regular schedule and when material repairs are made in accordance with API-653. AT-100 will be inspected per Targa Integrity Management Plan. AT-5000 is fitted with an earthen berm (secondary containment) split in the middle into two sections by an earthen dividing wall one foot lower than the height of the main berm walls. Another site-built tank of the same size/capacity as AT-5000 is scheduled to be installed within the next 12 months. Targa will update this FRP to incorporate the new tank and submit to EPA before tank is operational. The existing earthen berm enclosing AT-5000 is built to hold the contents of the tank plus precipitation. AT-100 is also fitted with an earthen berm capable of holding the contents of the tank plus precipitation.

If AT-5000 overfills, up to 1,260,000 gallons of crude oil could spill. Spill overflow from this tank will move south-southwest of the facility fence line. Some of the reasons for overflow include, but are not limited to, alarm failure, negligence or tank rupture, piping rupture, etc. The tanks are on average at 90% capacity (i.e., tank filled up to 1.14 MM gallons of crude oil).

All tanks fill and empty by injection; AT-100 contents are also offloaded by tank trucks. The loading area poses risk for spills as well. Targa has implemented Liquids Transfer Procedures to avoid discharge from this area. If recommended Liquids Transfer Procedures are not properly followed, it is predicted that up to 16,800 gallons of crude oil could be released before emergency shut-off valves are engaged. Overflow of spilled liquids will move south-southeast to the secondary containment. Berms and catchment areas volumes are listed below:

Secondary Containment Information				
Containment ID	Type of Containment/Material of Construction	Approximate Containment Capacity (gal)	Location	Associated Tank/Transfer Point
Above Ground Tanks Secondary Containment (SC)				
SC-5000	Soil w/Claymax Liner	1,925,486	East and center of facility	AT-5000
SC-100	Soil w/Claymax Liner	37,403	Center of the facility	AT-100

There are other miscellaneous activities that are either scheduled or performed on an “as needed” basis that can generate a spill including, but not limited to, repair and maintenance of piping, pressure vents, valves, gauges and alarms. Negligence during these maintenance activities can initiate small spill(s) (<2,100 gallons) to bigger spill(s) >2,100 gallons posing a threat to on-site personnel and/or environmentally sensitive areas.

Storm water flows in overland sheet flow away from the bulk storage tanks to the southwest over the facility’s west and south property boundary. Crude oil reaching the tributary feeding to nearby channels or the nearby

wetlands could potentially reach the Missouri river and affect wildlife, as well as surrounding vegetation on the spill path. The thickness of the oil may cause immediate and long term injuries including disruption of feather joins, reduced mobility of small wildlife causing starvation, smothering by diminishing oxygen content in the water and/or coating of life forms on the bottom of the water. These injuries may well prevent wildlife from foraging and escaping predators as well as intoxicate internal organs.

The crude oil is a high viscosity, flammable liquid with a boiling point above ambient temperature and insoluble in water. It will float on water and form a surface slick. Some compounds present in crude oil may be soluble in water which can easily contaminate the surrounding ecosystem. This soluble compound, as well as the crude oil, can be carried through rain, or water used to mitigate fires, permeate through the soil and potentially contaminate groundwater as well as be carried to the surrounding wetlands causing adverse reaction to living creatures that come in contact with the polluted water.

Crude oil is expected to release toxic vapors in the event of a spill. Fumes released by crude oil contain BTEX known to irritate eyes, nose throat, skin cause dizziness and vertigo. In addition, H_2S may be found in crude oil which can cause loss of consciousness even when exposed to low levels in a short period of time.

There are wind socks on the roof-top of AT-5000 and by MCC building. The mean wind direction move west northwest of the facility at ~12.0 mph with the highest wind speed recorded in the 70's mph (per USGS, Williston). These winds are predicted to be similar during the winter and the summer time, speeds sustained longer during the winter time. At 12.0 mph atmospheric stability is predicted to be rather stable where airborne contaminants mix slowly with air. It is important to consider actual daytime and nighttime atmospheric conditions during a spill to assess the risks in real time as stronger winds can keep air contaminants close to ground level.

Because the wind velocity is typically measured 10 meters above surface, the actual distance vapors travel has to be estimated at less than 100% of measured wind speeds but not lower than 50%:

Distance = (Wind Velocity x Time)

It is predicted that vapors released from the crude oil could reach Alexander (the closest community) between 5 and 10 minutes if the wind direction is predominantly southeasterly.

Vulnerability Analysis

The planning distance from tanks to navigable waters/sensitive areas (*see Diagram 3*):
$D1_1$ = AT-5000 north berm edge (SC-5000) is 0.15 miles south of storm drain located by north fence line
$D1_2$ = AT-100 north berm edge (SC-100) is 0.06 miles south of storm drain located by north fence line
$D2_1$ = 0.36 miles to navigable waters/sensitive area (tributary) northwest of the facility

$D1_3$ = AT-100 southwest berm edge (SC-100)/loading area is ~0.06 miles to west storm drain
$D1_4$ = AT-5000 south berm edge (SC-5000) is 0.1 miles to facility storm drain by west fence line
$D2_2$ = There are two wetlands and two tributaries within 1.0 mile from the west facility ditch and south of the facility

The planning distance from loading area to sensitive areas:
$D1_5$ = 0.05 miles to nearest storm drain located by the west fence line
$D2_3$ = 0.36 miles to navigable waters/sensitive area (tributary) northwest of the facility

All the tributaries surrounding the facility are interconnected and lead to the Missouri River. The facility is located ~5.0 miles south of the Missouri River which disembogues to Lake Sakakawea.

Impact Analysis

The following areas/point of interests located nearby the facility could be affected by an unattended discharge:

1. Any spilled fluids from the secondary containment can potentially enter surface sheet flow at a ~1% downgrade slope to the south and southwest contaminating wetlands and tributaries located less than 0.5 miles south of the facility. The tributaries connect through channels to the Missouri River.
2. There are two wetlands and tributaries downslope and south of AT-100 and AT-5000.
3. The Williams County Waterfowl Production Area FWS permanent refugee is located ~10.0 miles northwest of the facility in Williams County, north of the Missouri River.
4. There are four Oil & Gas facility co-located to the north and right across of the Alexander Crude Oil facility and a fifth one just to the northeast.
5. There are two domestic wells less than 0.5 miles south and an industrial well 1.5 miles southwest of the facility.
6. The facility is located ~10-11 miles southwest of the town of Williston (population 16,006) and southeast of the farming town of Trenton (population <300). Both of these towns are edged by the Missouri river. The town of Alexander (population <300) is less than 10 miles south of SC-5000.
7. The Missouri River crosses the State of Montana 17.5 miles west of the facility. Additional considerations need to be taken in the case crude oil come in contact with the Missouri River.

Facility diagrams are included in next Section of this FRP to be used as visual aids during a spill event.

HAZARD IDENTIFICATION TANKS
DATE LAST UPDATED __ 3/2013____

Tank No.	**Substance Stored** (Oil & Hazardous Substance)	**Quantity Stored** (gallons)	**Tank Type/Year**	**Maximum Capacity** (gallons)	**Failure/Cause**
AT-5000*	Crude Oil	1,134,000	Floating Roof Top/2013	1,260,000	Tank overfill, tank rupture, failure due to deterioration

**AT = Above Ground Tank*

HAZARD IDENTIFICATION SECONDARY CONTAINMENTS & LOADING AREA
DATE LAST UPDATED __ 3/2013____

Containment ID*	Substance Stored	Approximate Containment Capacity (gal)	Construction Material	Associated Tank/Transfer Point
Above Ground Tanks Secondary Containment (SC)				
SC-5000	Crude Oil	1,925,486	Soil w/Claymax Liner	AT-5000
SC-100	Crude Oil	37,403	Soil w/Claymax Liner	AT-100

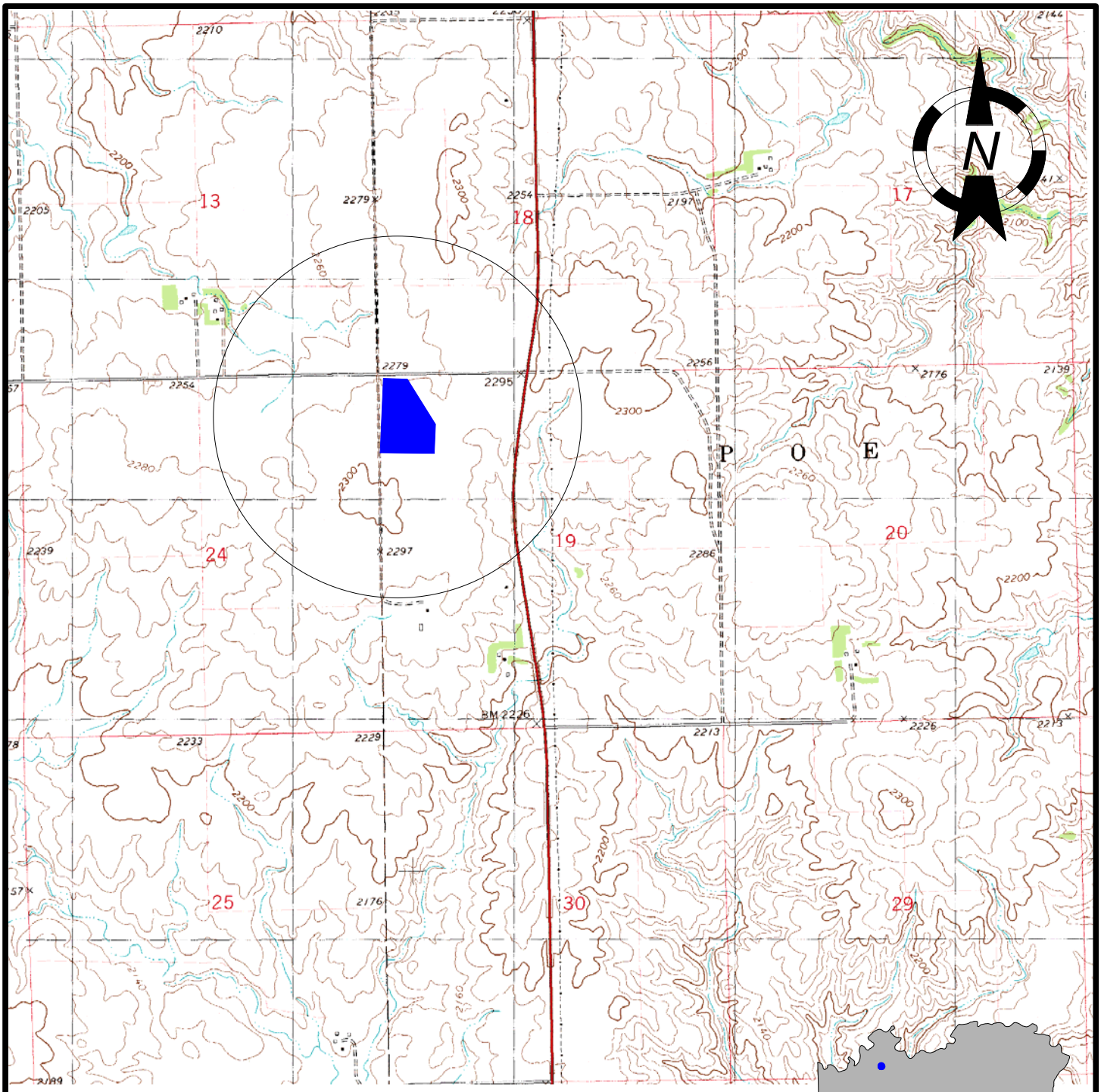
**SC = Secondary Containment*

Facility Reportable Oil Spill History

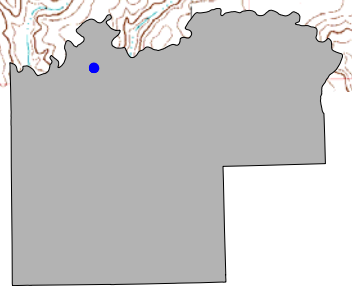
The facility is brand new and does not have a history of reportable or non-reportable oil spills as of March 2013.

[40 CFR §112, Appendix F, Section 1.9]

DIAGRAMS OF FACILITY SITE-PLAN, DRAINAGE AND EVACUATION PLAN



USGS 7.5 minute map
Camp Creek West



General Vicinity
McKenzie County

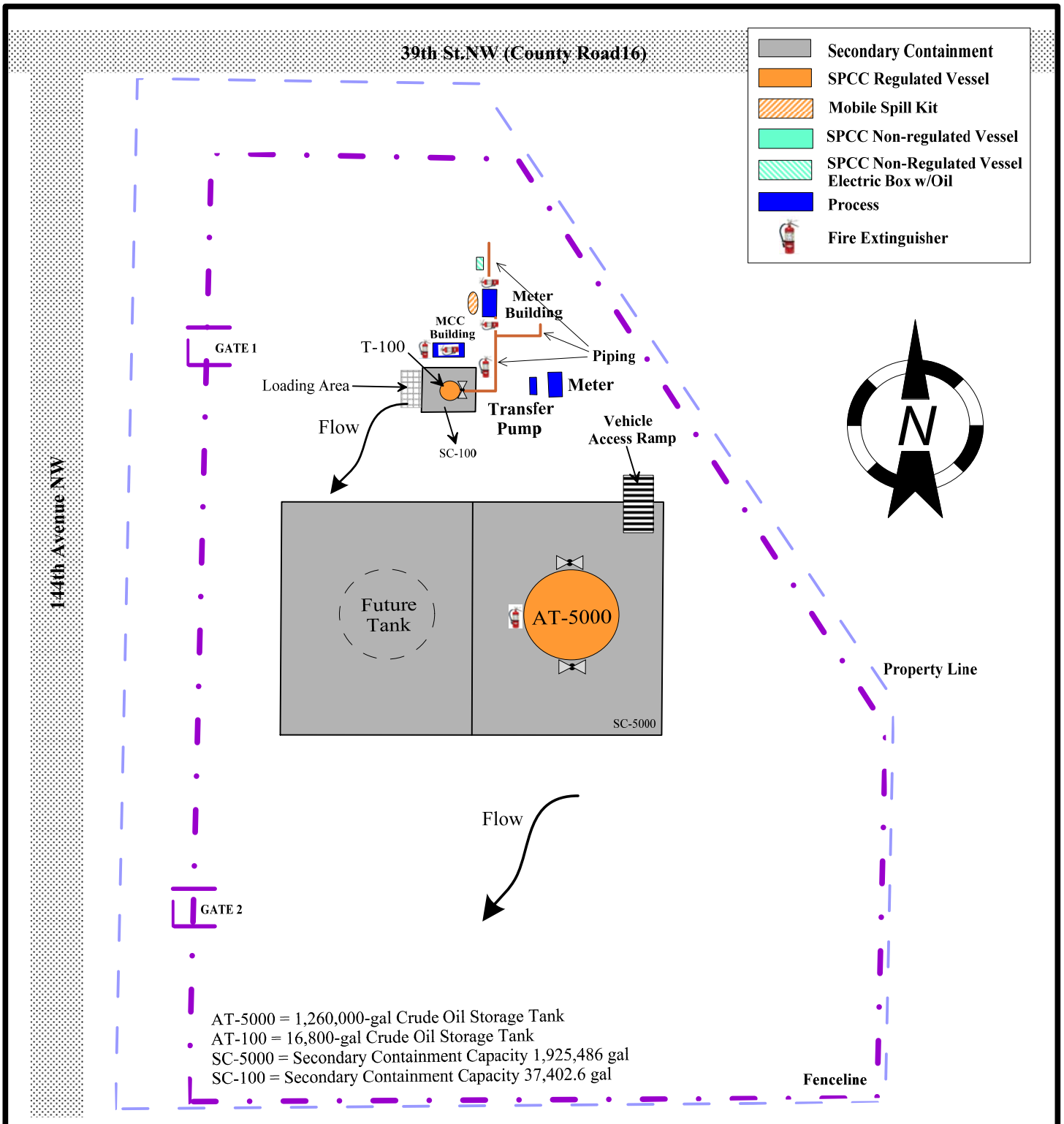
Compliance Partners Inc.
4038 Timberline Rd., Suite 100
Ft. Collins, CO 80525 (970) 206-4443
www.compliance-partners.com

TARGA

Alexander Crude Oil Terminal

General Location Map
Section 19, T 152 N, R 101 W
McKenzie County, ND

PROJECT NAME	FILENAME	SCALE	REVISED	DIAGRAM NUMBER
Targa Alexander COT FRP	Alexander COT loc.srf	1 in = 660 m	3/12/2013	1



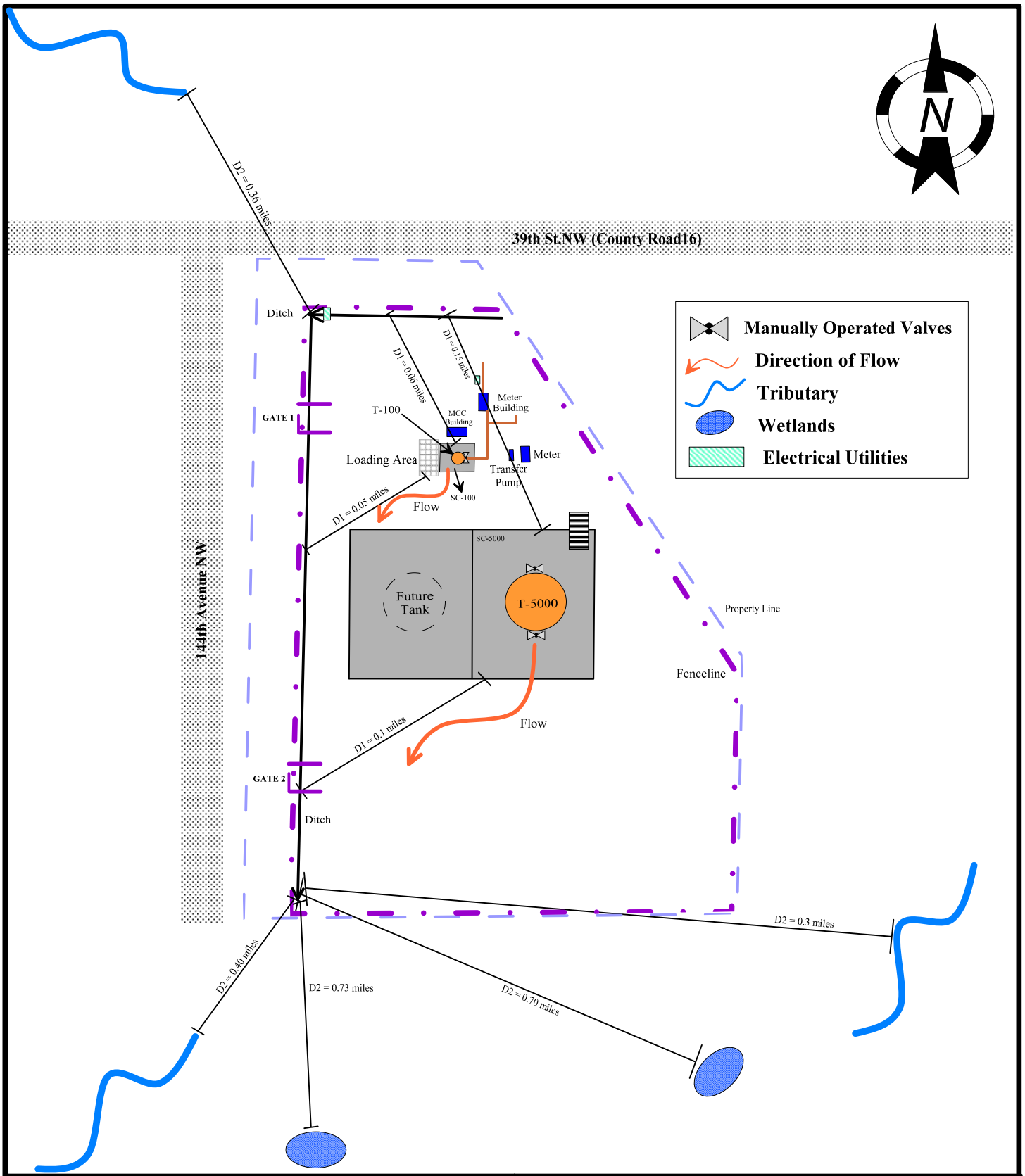
Compliance Partners Inc.
4038 Timberline Rd., Suite 100
Fort Collins, CO 80525 (970) 206-4443
www.compliance-partners.com

TARGA

Alexander Crude Oil Terminal

Site Plan Diagram

PROJECT NAME	FILENAME	SCALE	REVISED	DIAGRAM NUMBER
Targa's Alexander COT FRP	Alexander COT Site Plan.srf	1in = 50 m	3/12/2013	2



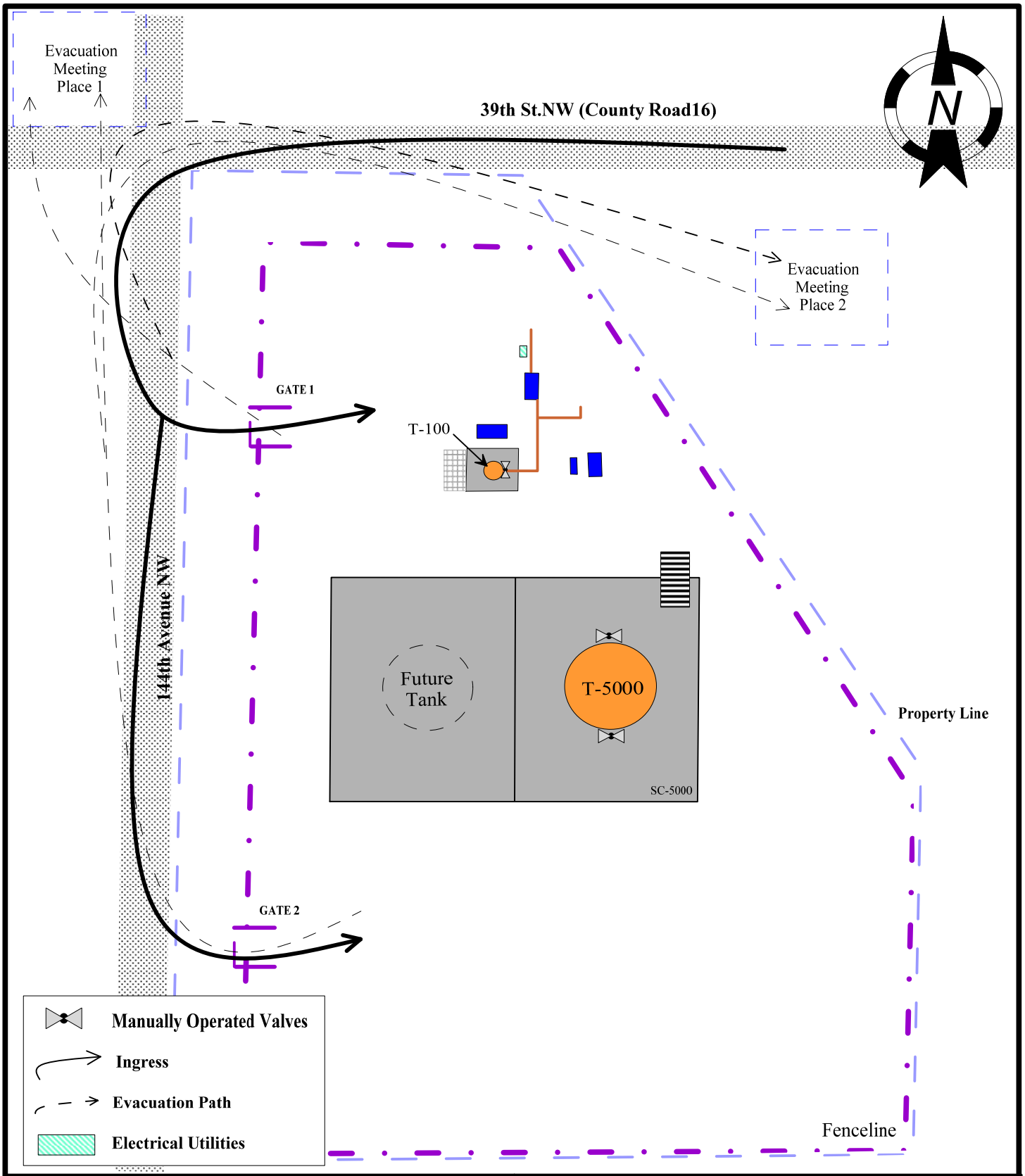
Compliance Partners Inc.
4038 Timberline Rd., Suite 100
Fort Collins, CO 80525 (970) 206-4443
www.compliance-partners.com

TARGA

Alexander Crude Oil Terminal

Site Drainage Diagram

PROJECT NAME	FILENAME	SCALE	REVISED	DIAGRAM NUMBER
Targa's Alexander COT FRP	Alexander COT Site Plan.srf	1in = 50 m	3/12/2013	3



Compliance Partners Inc.
4038 Timberline Rd., Suite 100
Fort Collins, CO 80525 (970) 206-4443
www.compliance-partners.com

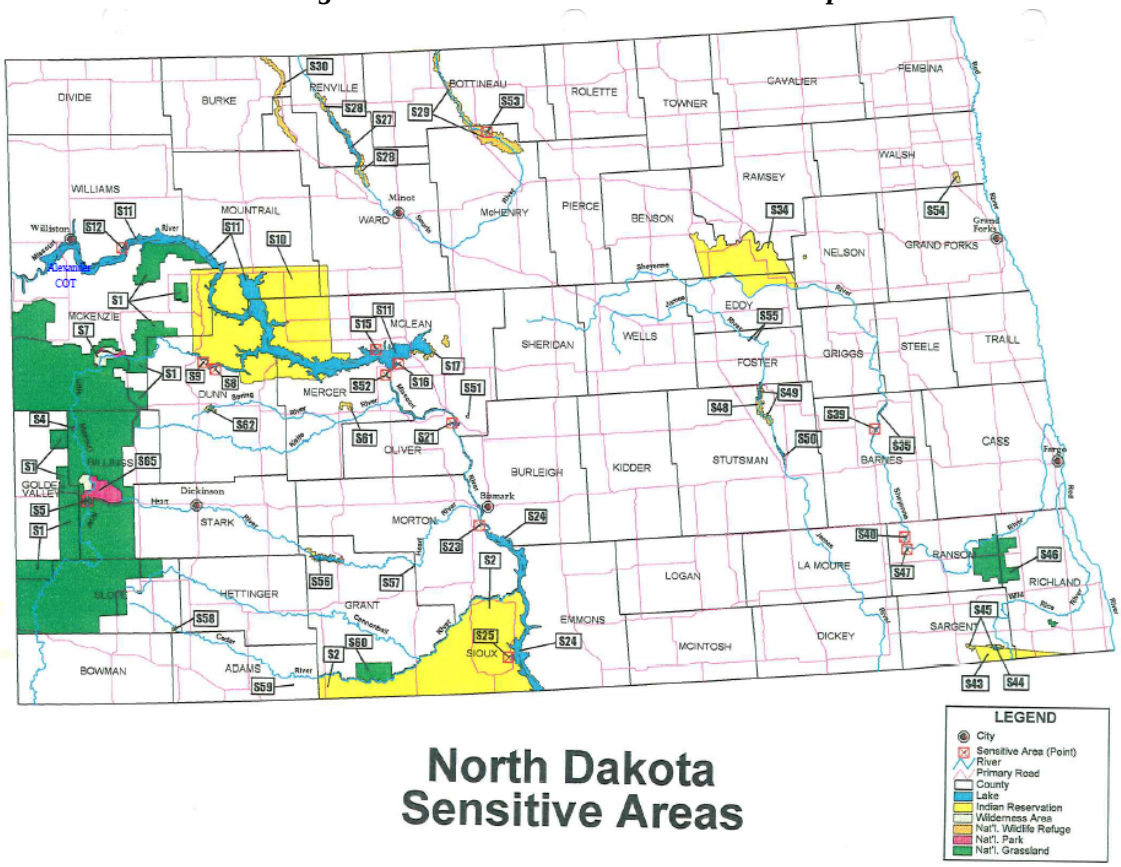
TARGA

Alexander Crude Oil Terminal

Site Evacuation Plan

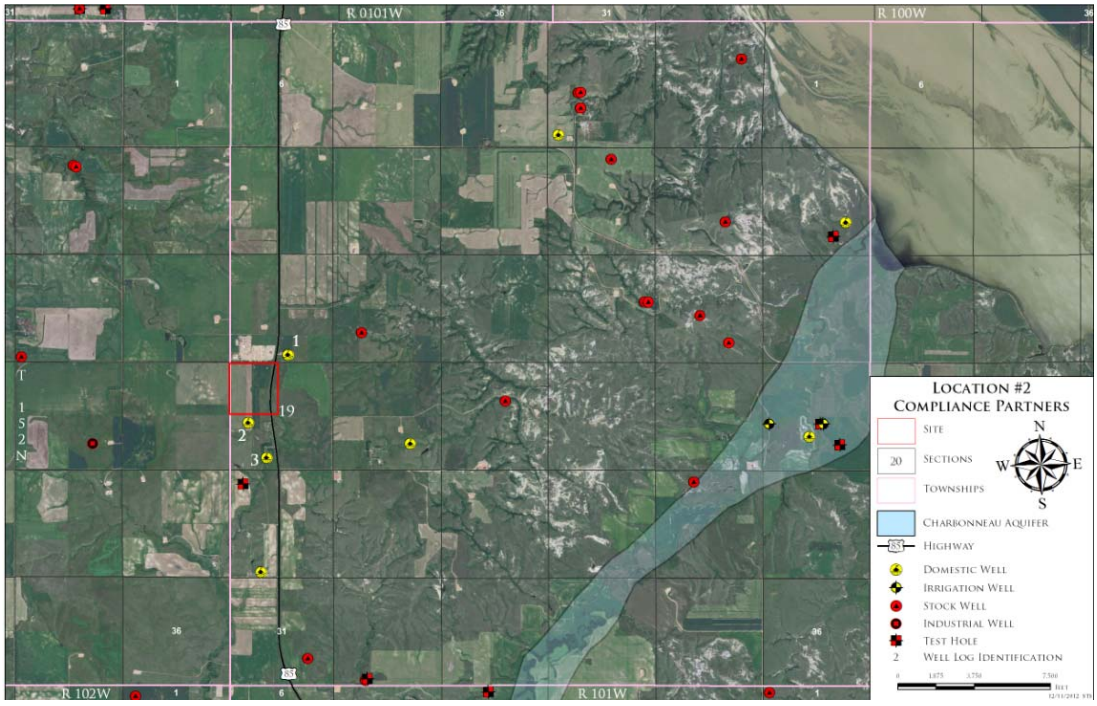
PROJECT NAME	FILENAME	SCALE	REVISED	DIAGRAM NUMBER
Targa's Alexander COT FRP	Alexander COT Site Evac.srf	1in = 50 m	3/12/2013	4

Diagram No. 5: Sensitive Areas Location Map



Sensitive Areas Location Map retrieved from the ND Health Department

Diagram No. 6: Drinking Water Location Map



Map provided by the ND Game and Fish Department

[40 CFR §112, Appendix F, Section 1.5]

RESPONSE ACTIONS FOR VARIOUS DISCHARGE SCENARIOS

The primary objective of oil spill response is to remove as much oil as possible from the spill area as quickly as possible in order to mitigate impact to nearby structures, community, sensitive areas and wildlife habitats.

Small Spills Scenario Analysis

A small discharge is one where <2,100 gallons of crude oil are spilled, can be controlled/stopped without difficulty, does not enter navigable waters, and does not risk the environment, human health, safety or impacts normal activities in the surrounding area and facility operation can be resumed quickly. This type of spill is localized and do not generate fire or explosions. In addition, the fluids do not reach ditches and drainage that can ultimately direct the spill to waters of the United States. There is the potential for small spills to occur during tanker truck loading/unloading and piping maintenance.

Response Action

On site personnel should initiate the following appropriate control and/or containment procedures during or immediately after the above notifications have been made if safe to do so:

1. Block out or turn off all affected equipment.
2. Stop the flow of product by plugging or capping the leak at the source if possible.
3. Contact the Emergency Response Coordinator immediately.
4. Follow instructions of Emergency Response Coordinator to contain spill and inform her/him in the case injuries occur.
5. It is critical to try to prevent any spilled product from reaching any waterways, drainages, or drains. Protect storm drains to prevent spilled fluids to reach them and thus navigable waters.
6. Use absorbent, soil, or other material available to contain and stop the flow of oil already on the ground.
7. The Emergency Response Coordinator must fill out an Incident Report form.

All follow-up decisions and contacts with agencies other than county or local emergency response agencies are to remain the function of the Emergency Response Coordinator.

Medium Spills Scenario Analysis

AT-5000 is equipped with liquid level gauges and alarms to allow liquid level monitoring during a filling operation. Although there is sufficient secondary containment to hold the contents of the tank + precipitation, it is possible that level gauges and alarms fail and filling get out of control. The loading area is also susceptible to spills if proper loading/unloading procedures are not followed. In any of these cases, between 2,100 to 1,260,000 gallons of crude oil can spill, contaminating the facility grounds and adjacent area including the wetlands and intermittent creek located south, southwest and northwest of the facility, if the spill is not tended quickly.

Response Action

Contact the Emergency Response Coordinator immediately. On site personnel should initiate the following appropriate control and/or containment procedures during or immediately after the above notifications have been made if safe to do so:

1. Block out or turn off all affected equipment.
2. Stop the flow of product by shutting off any emergency valves, if possible.
3. Shut-off ignition sources.
4. Inform personnel and implement safety and security procedures (i.e., evacuate).
5. Initiate containment: Use absorbent, soil, or other material available to contain and stop the flow of oil already on the ground.
6. If conditions are deemed to be of hazard to personnel's health or life evacuate the premises immediately.
7. Follow further instructions of Emergency Response Coordinator to contain spill and inform her/him of any injuries.
8. It is critical to try to prevent any spilled product from reaching any waterways, drainages, or drains. Protect storm drains to prevent spilled fluids to reach them and thus navigable waters.
9. The Emergency Response Coordinator fills out an Incident Report form.

All follow-up decisions and contacts with agencies other than county or local emergency response agencies are to remain the function of the Emergency Response Coordinator.

Worst-Case Spills Scenario Analysis

AT-5000 is equipped with liquid level gauges and alarms to allow liquid level monitoring during a filling operation. An unlikely, but potential, worst case scenario could be tank overfill or complete failure/rupture of the tank. Although there is sufficient secondary containment to hold the contents of the tank plus precipitation, it is possible that level gauges and alarms fail and filling get out of control. Although AT-5000 is a brand new unit, failure and rupture of the tank can pose immediate threat to personnel present at the facility. In any of these scenarios, more than 1,260,000 gallons of crude oil can spill, contaminating the facility grounds and adjacent area including the wetlands and intermittent creek located south, southeast and northwest of the facility. Individuals could also become covered by oil if a tank suddenly and catastrophically ruptures. If there are unusual levels of rain and flooding in the area, the situation could quickly aggravate impacting personnel, damaging onsite equipment and the environment. Fumes and toxicity of the crude oil can have detrimental and irreversible health effects, including death.

Response Action

Contact the Emergency Response Coordinator immediately. On site personnel should initiate the following appropriate control and/or containment procedures during or immediately after the above notifications have been made if safety is not compromised:

1. The first priority should be to shut-off ignition sources (i.e., loading truck engine, open flames, electrical circuits) and to contain the spill on site as long as safety is not compromised.
2. Evacuate personnel off the site to designated meeting area if conditions are deemed unsafe (see Diagram 4); perform head count.
3. Attempt to contain the spill by constructing earthen berms/using absorbent material at the leading edge of the spill to prevent further advancement or other material available to contain and stop the flow of oil already on the ground. It is critical to try to prevent any spilled product from reaching any waterways, drainages, or drains.
4. Locate where in the flow line the leak occurred.
5. Isolate the section where the spill originated and stop the flow of product by plugging or capping the leak at the source, if possible.
6. Block civilian access to the facility and warn personnel of event.

7. Personnel involved with a spill event should be prepared to make recommendations on whether additional cleanup materials, equipment or personnel may be necessary.
8. On-site personnel or an approved outside contractor will be assigned to clean up the spill once a spill has been contained.
9. Any liquids present will be pumped or vacuumed into tanks, trucks, or drums for recovery and disposal according to federal and state waste management requirements. Absorbents will be used to remove any liquid.
10. Soil and other solid materials contaminated with petroleum hydrocarbons will be disposed of in accordance with federal and state hazardous and solid waste regulations.

All follow-up decisions and contacts with agencies other than county or local emergency response agencies are to remain the function of the Emergency Response Coordinator.

PART A: WORST CASE DISCHARGE PLANNING VOLUME CALCULATION FOR ONSHORE STORAGE FACILITIES

A-2 Secondary Containment – Multiple Tank Facility

Are *all* aboveground oil storage tanks or groups of aboveground oil storage tanks at the facility *without* adequate secondary containment?

__**N**__ (Y/N)

A.2.1 If the answer is yes, the final worst case discharge planning volume equals the *total aboveground oil storage capacity at the facility.*

(1) FINAL WORST CASE VOLUME: ____ GAL

(2) Do not proceed further.

A.2.2 If the answer is no, calculate the total aboveground oil storage capacity of tanks without adequate secondary containment. If *all* aboveground oil storage tanks or groups of aboveground oil storage tanks at the facility have adequate secondary containment, ENTER "0" (zero).

__0__ GAL

A.2.3 Calculate the capacity of the largest single aboveground oil storage tank within an adequate secondary containment area or the combined capacity of a group of aboveground oil storage tanks permanently manifolded together, whichever is greater, PLUS THE VOLUME FROM QUESTION A.2.2.

FINAL WORST CASE VOLUME: _1,260,000_ GAL

[40 CFR §112, Appendix F, Section 1.6]

DISCHARGE DETECTION SYSTEMS

An employee, contractor or individual that detects a spill of any size from a Targa facility will take immediate actions to minimize, contain and report the discharge, as appropriate. Human welfare is Targa's primary concern and actions shall ensure safety at all times. Please refer to Section 1.3.1 of this FRP.

Discharge Detected by an Individual

1. Immediately notify spill to person in charge of the facility, on-duty field personnel and/or a company representative.
2. Ensure that all ignition sources are shut-off and restrict access to the affected area.
3. Promptly and safely, shut-down activities from spill at the facility that could compromise the safety of individuals, the environment and integrity of equipment.
4. Contact the qualified individual/company response team.
5. If unsafe conditions exist, stay calm and follow procedures to safely evacuate the area (see Diagram 4).
6. Personnel must attempt to contain the spill on site as instructed by qualified individual.
7. Attempts to contain a spill may include, but are not limited to:
    a. Constructing earthen berms or placing other absorbent material at the leading edge of the spill to prevent further spread.
    b. Absorbents will be used to remove any liquid.
    c. Soil and other solid materials contaminated with petroleum hydrocarbons will be disposed of in accordance with federal and state hazardous and solid waste regulations.
8. Outside contractors are called in promptly by the qualified individual (QI) if on-site personnel are not equipped to repair seams, gaskets or lines.
9. Maintain a safety-first attitude throughout the duration of the spill/emergency.

Automated Discharge Detection

1. The tanks are equipped with liquid level gauges and alarms to allow liquid level monitoring during filling.
2. The tanks are also equipped with a level switch for redundancy of the HHL alarm and motor operated valves at the outlet for isolating the tanks in the event of tank failure.
3. The loading area has shutoff valves by the tank connection.

All the automated alarms are checked and tested on a monthly basis and visual inspections are performed during site visits.

Facility Inspection

These procedures are to be followed pending assessment of spill/emergency risk level:

1. Check that drain valves on the storage tank AT-5000 are closed and locked.
2. Clean-up oil leaks at the SPCC-regulated units promptly.

3. Take samples of spilled material following approved procedures and as directed by the qualified individual to ensure the validity and avoid corruption of the sample.
4. On-site personnel will promptly repair any visibly leaking tank seams, gaskets or lines.
5. If a section of buried piping is exposed, carefully inspect it for deterioration.
6. The general condition of items such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces are assessed during these regularly-conducted inspections.
7. Check that piping valves lines that have been deemed plugged or blind-flanged do not exhibit signs of drips or spills.

[40 CFR §112, Appendix F, Section 1.7]

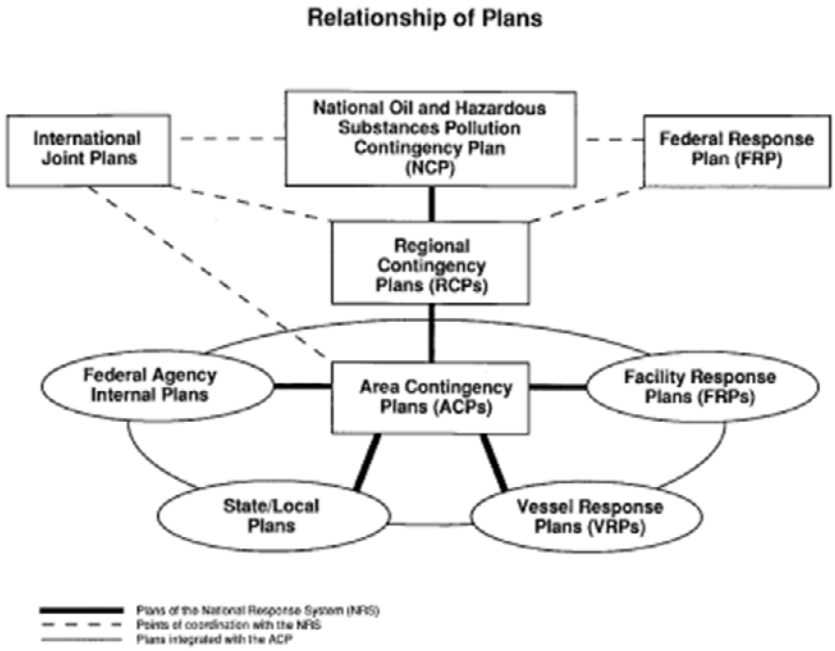
IMPLEMENTATION PROCEDURES

Qualified Individual (QI), along with the emergency response team, shall take all steps necessary to prevent human loss, maintain safety, and constrict the extent of the spill and its affect to the nearby businesses and environment by following these procedures:

1. Determine immediate hazards and initiate evacuation of affected area until a complete hazard assessment has been conducted.
2. Perform an assessment for the probability of explosion, harmful vapors, further structure damage, etc. that could increase adverse effects of spill and to mitigate further human, economic and environmental damage.
3. Notify management, government agencies as well as other facility-related operations that could be impacted by the event:
    a) Minimize other business disruptions
    b) Keep all venture partners and stakeholders informed of mitigation actions and assess their concerns
4. Provide as necessary and mandate the use of appropriate gear (i.e., PPE) and equipment capable of detecting harmful vapors until all emergency procedures have successfully been completed.
5. Initiate investigation of spill area as soon as possible to determine:
    a. Size, description and path of oil spill
    b. Estimated coordinates of reach of spill
    c. Endangered population, sensitive environments and economic areas.
6. Use suitable software to track pollutant dispersion to determine impact, prioritizing protection of humans and sensitive areas.
7. As soon as feasible request on-site qualified personnel to take pictures and videos of area affected by the spill.
8. Recruit Targa's safety and emergency teams in accordance to the severity of the emergency.
9. Access all necessary company funds required to maintain response actions.
10. Conduct pre-arranged tactical and planning meetings along with incident briefings and special purpose meeting, including press conferences, staff and planning meetings.
11. Maintain control over the spill area and/or emergency event by:
    a) Establishing a central command post
    b) Ensure that all necessary entities have been notified and involved in procedures (tribal, local, regional, etc.).
    c) Conducting appropriate equipment and operations shutdown.
    d) Cooperating with local and Federal entities to effectively achieve response efforts (see Figure 6).
    e) Accounting for all personnel and conducting equipment/ facility repairs and inspections
    f) Leading clean-up operations.
    g) Leading and/or appointing appropriate employee to provide regular media and governmental entities briefings.
12. Contain, remove and dispose spilled material by deploying appropriate oil containment boom and dispersants.
13. Ensure all permits and contacts are in place to conduct all disposals and clean up activities.
14. Conduct appropriate cleanup efforts to structures and equipment

15. Recover injured wildlife, establish a reporting hotline and initiate search and rescue operations.
16. Notify appropriate wildlife rescue agencies, including the ND Game & Fish Department and coordinate efforts to provide care for injured wildlife.
17. Minimize other economic impacts including injury claims and damage to private/public properties.

Figure No. 6



[40 CFR §112, Appendix F, Section 1.7.1]

RESPONSE RESOURCES

The response resources (i.e., contractors) are included as Appendix A. Waste disposal will be handled by third part contractors listed in Appendix A and following all applicable Federal and local regulations and accepted waste management procedures. A modified version Appendix E to 40 CFR §112 was used to determine adequate response capability

Part I - Attachment E1

Step (A): Calculate Worst Case Discharge in Barrels (Appendix D) — 30.000

Step (B): Oil Group (Table 3 and Section 1.2 of Appendix E) — 2

Step (C): Operating Area — X Inland

Step (D): Percentages of Oil (Table 2 of Appendix E)

% Lost Nat. Dissip.	% Recovered Floating Oil	% Oil Onshore
10	50	70
(D1)	(D2)	(D3)

Step (E1): On-water Oil Recovery [(D2 x A) / 100)] — 15.000 barrels

Step (E2): On-water Oil Recovery [(D3 x A) / 100)] — 21.000 barrels

Step (F): Emulsification Factor (Table 3 of Appendix E) — 1.8

Step (G): On-water Oil Recovery Resources Mobilization (Table 4 of Appendix E)

0.15	**0.25**	**0.40**
(G1)	(G2)	(G3)

Attachment E1 - Continued

Part II - On Water Oil Recovery Capacity:

Tier 1	Tier 2	Tier 3
4.050 barrels/dav	6.750 barrels/dav	10.800 barrels/dav
(E1 x F x G1)	(E1 x F x G2)	(E1 x F x G3)

Part III

Shoreline Clean-up Volume (bbl)	37.800 barrels
	(E2 x F)

Part IV - Amount Needed to be Contracted for

Tier 1	Tier 2	Tier 3
12.5K barrels/dav	25K barrels/dav	50K barrels/dav
(J1)	(J2)	(J3)

Part V – On-water Amount Needed to be Identified but not Contracted in Advance

Tier 1	Tier 2	Tier 3
8.450	18.250	39.200
(Part II Tier 1 - J1)	(Part II Tier 2 – J2)	(Part II Tier 3 – J3)

[40 CFR §112, Appendix F, Section 1.8]

DESCRIPTION AND RECORDS OF SELF-INSPECTIONS, DRILLS & EXCERCISES AND RESPONSE TRAINING

TANKS INSPECTIONS:
The following list is to be used as guidance during tank inspections, but is not limited to these items:

1. Check tanks for leaks, specifically looking for:

A. Drip marks

B. Discoloration of tanks

C. Puddles containing spilled or leaked material

D. Corrosion

E. Cracks

F. Localized dead vegetation

2. Check foundation for:

A. Cracks

B. Discoloration

C. Puddles containing spilled or leaked material

D. Settling

E. Gaps between tank and foundation

F. Damage caused by vegetation roots

3. Check piping for:

A. Droplets of stored material

B. Discoloration

C. Corrosion

D. Bowing of pipe between supports

E. Evidence of stored material seepage from valves or seals

F. Localized dead vegetation

Tank(s), Foundation(s) & Pipping Inspection Form
ALEXANDER CRUDE OIL TERMINAL

Inspected by: Date:

Inspector Signature:

Fill out for as applicable. Respond Yes or No or N/A . Add comments as necessary.

Units	Leaked fuel/dropplets from tanks or piping?	Corrosion on tanks, piping or associated valves?	Significant discoloration on tanks, piping or associated valves?	Loose valves or fittings?	Structural damage to tanks or piping?	Cracks/Deterioration to tank foundation or support?
AT-5000						
AT-100						
Piping						
Units	**Deterioration of containment walls?**	**Stormwater valves closed (if present)**	**Secondary containment damaged?**	**Debris present inside containment?**	**Level Device Tested and Functioning?**	**Other: odors, change in vegetation, etc?**
AT-5000						
AT-100						
Piping						

[40 CFR §112, Appendix F, Section 1.8.1.2]

RESPONSE EQUIPMENT INSPECTION LOG

Describe each type of response equipment and fill out table below (use section 1.3.2 of the response plan as a checklist).

1. Inventory (item and quantity)
2. Storage location
3. Accessibility (time to access and respond)
4. Operational status/condition
5. Actual use/testing (last test date and frequency of testing)
6. Shelf life (present age, expected replacement date)

Inspector	Date	Comments

[40 CFR §112, Appendix F, Section 1.8.1.2]

SECONDARY CONTAINMENT INSPECTION LOG

1. Dike or berm system.

A. Level of precipitation in dike/available capacity
B. Operational status of drainage valves
C. Dike or berm permeability
D. Debris
E. Erosion
F. Permeability of the earthen floor of diked area
G. Location/status of pipes, inlets, drain-age beneath tanks, etc.

2. Secondary containment

A. Cracks
B. Discoloration
C. Presence of spilled or leaked material (standing liquid)
D. Corrosion
E. Valve conditions

3. Retention and drainage ponds

A. Erosion
B. Available capacity
C. Presence of spilled or leaked material
D. Debris
E. Stressed vegetation

Secondary Containment Inspection Form
ALEXANDER CRUDE OIL TERMINAL

Inspected by: Date:

Inspector Signature:

Fill out for as applicable. Add comments as necessary.

Units	Containment level/available	Drainage valves status	Berm/dike permeability	Debris?	Erosion?	Status of pipes, inlets, drainage beneath
SC-5000 (AT-5000 Secondary Containment)						
SC-100 (AT-100 Secondary Containment)						
Units	**Cracks**	**Discoloration**	**Standing fluids**	**Corrosion?**	**valve(s) conditions?**	**Other (i.e., surrounding area**
SC-5000 (AT-5000 Secondary Containment)						
SC-100 (AT-100 Secondary Containment)						

[40 CFR §112, Appendix F, Section 1.8.2.1]

QUALIFIED INDIVIDUAL NOTIFICATION DRILL LOG

Date: _____

Company: **Targa Badlands, LLC**

Qualified Individual(s): _____

Emergency Scenario: _____

_____

_____

Evaluation: _____

Changes to be Implemented: _____

_____

_____

Timeline for Implementation: _____

_____

[40 CFR §112, Appendix F, Section 1.8.2.2]

SPILL MANAGEMENT TEAM TABLETOP EXERCISE LOG

Date: _____

Company: **Targa Badlands, LLC**

Qualified Individual(s): _____

Emergency Scenario: _____

_____

_____

Evaluation: _____

Changes to be Implemented: _____

_____

_____

Timeline for Implementation: _____

_____

[40 CFR §112, Appendix F, Section 1.8.3]

RESPONSE TRAINING

Internal incident command exercise will be conducted annually and it will include a combination of training in QI notification, emergency procedures for facilities, spill management tabletop exercises and equipment deployment. Tabletop exercises will be conducted at least once every three years. These exercises will be self-evaluated and self-certified. The QI will be tested at least once a year during non-business hours to ensure he/she can be reached during an emergency and that he/she can effectively respond to assigned duties.

External exercises to examine the Targa's response plan and its ability to coordinate with the community include area exercises and unannounced Government-initiated drills.

Un-announced company response team exercises will be conducted to ensure office and field personnel are acquainted with theirs roles and responsibilities in case of an emergency. The entire response team, Targa employees and contractors, will be tested at least annually.

Personnel who will be involved in the use and deployment of spill response equipment will be trained at least once a year. This is to ensure they are competent when operating equipment using the appropriate personal protective equipment (PPE). The exercises will confirm that the equipment is in good working conditions and ready to be deployed. Maintenance will be performed on the equipment during these drills, as needed. At a minimum, skimming, dispersant and booming system, PPE, first aid equipment and technical equipment used to determine spill trajectory analysis will be deployed during these exercises.

Training will observe USGS Training Elements for Oil Spill Response and PREP guidelines as it applies to this facility and performed by certified third party training companies hired by Targa. All records of training are maintained at Targa's North Dakota office in electronic filing system.

[40 CFR §112, Appendix F, Section 1.8.3.1]

PERSONNEL RERSPONSE TRAINING LOG

Name	Response Training/ Date and No. of Hours	Prevention Training/ Date and No. of Hours

[40 CFR §112, Appendix F, Section 1.8.3.2]

DISCHARGE PREVENTION MEETING LOG

Date: _____

Attendees:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Subject/Issue Identified	Required Action	Implementation Date

[40 CFR §112, Appendix F, Section 1.10]

SECURITY

1. The facility is completely fenced with barb wire. The fence is fitted with a system requiring a private access code only known to Targa authorized personnel.
2. Operators carry phone and pagers with them to communicate emergencies.
3. There are two gates that remain locked whenever Targa personnel are not present in the facility.
4. The facility is well equipped with high-rise light poles that provide wide-range of illumination to the facility to aid during nighttime spotting discharges and deter acts of vandalism.
5. All loading connections are fitted with fail-safe devices to avoid spills due to loading activities.
6. The tanks are fitted with liquid level gauges, alarm level switches, and motor-operated valves on outlet for tanks isolations in the event of overfill.

APPENDIX A

Strata Corporation Office Locations

Strata Corporation

1225 South Broadway

Minot, ND 58701

Strata Corporation

1218 42nd St W

Williston, ND 58801

1225 South Broadway
Minot, ND 58701

2013 Construction Rates

EFFECTIVE 2-1-2013

	2013 RATES
EXCAVATORS	
VOLVO 360 (2.5 - 3.5 Yds)	$162.00
VOLVO 330 (2 - 3 Yds)	$156.00
VOLVO 240 (3/4 - 2 Yds)	$139.00
HYDRAULIC JACK HAMMER ATTACHMENT	$25.00
SHAKER BUCKET ATTACHMENT	$25.00
KOMATSU PC 220 LONG REACH EXCAVATOR	$175.00
CAT 420 RUBBER TIRE BACKHOE-LOADER	$120.00
CAT 420 RUBBER TIRE BACKHOE-LOADER / W SNOW BOX	$130.00
VERMEER TRENCHER	$600.00
HYDRO-EXCAVATORS	
HYDRO-EXCAVATORS 12 cy yd	$270.00
HYDRO-EXCAVATORS 6 cy yd	$215.00
LOADERS	
VOLVO L-150 (5 1/2 Yds)	$158.00
VOLVO L-70 E (2 3/4 Yds)	$108.00
VOLVO L70 W/12FT SNOW BOX	$118.00
HYDRAULIC JACK HAMMER ATTACHMENT	$25.00
SHAKER BUCKET ATTACHMENT	$25.00
COMPACTORS	
CA 252 SMOOTH DRUM	$110.00
CA 152 SMOOTH DRUM	$110.00
CA 134 SMOOTH DRUM	$110.00
TRACTOR AND DISC	
JOHN DEERE	$100.00
JOHN DEERE 4450	$103.00
JOHN DEERE 8450	$125.00
WISHECK DISC	$40.00
TRACTOR W/SNOW BLOWER OR MOWER OR GRASS SEEDER	$165.00
SKIDSTEERS	
TRACKED SKIDSTEERS	$102.00
RUBBER TIRE SKIDSTEERS	$92.00
MOWER ATTACHMENT	$10.00
SEEDER ATTACHEMENT	$10.00

TRUCKS	
LOWBOYS	$162.00
SEMI SIDE DUMP	$140.00
TRI AXLE END DUMP	$98.00
WATER TRUCKS (NOT TO INCLUDE WATER)	$105.00
VAC TRUCK	$165.00
SCRAPERS	
TS 14	$170.00
CAT 613 PADDEL WHEEL	$145.00
CAT 627 TWIN ENGINE	$285.00
DOZERS	
CAT D8T	$245.00
CAT D8R	$195.00
CAT D8 N	$170.00
CAT D6 N OR M	$144.00
CAT D6 R	$150.00
JD 650	$134.00
JD 750	$144.00
JD 850	$150.00
KOMATSU D 41	$118.00
KOMATSU D 61	$134.00
MOTOR GRADERS	
CAT 140 H	$142.00
CAT 160 3H	$152.00
SNOW PLOW WING ATTACHEMENT	$15.00
LABOR	
GENERAL LABOR	$52.00
FOREMAN	$72.00
SUPERVISOR	$92.00
HAZMAT LABOR	$57.00
HAZMAT SUPERVISOR	$102.00
OVERTIME LABOR HOURS (Include and Additional $20 per hour)	$20.00
CREW PICKUP TRUCKS	$25.00
VACTRON (W/OPERATOR)	$120.00
COMPACTOR - JUMPING JACKS,WHACKERS, DYNAPACS (W/ OPERATOR)	$75.00
GENERATORS	
SMALL GENERATORS (PER DAY)	$80/Day
LARGE GENERATORS- (ANYTHING OVER 200KW)	$20/Hour or $450/Day
WATER PUMPS	
6" WATER PUMP (PER DAY)	$450.00
4" WATER PUMP (PER DAY)	$250.00
3" WATER PUMP (PER DAY)	$200.00
2" WATER PUMP (PER DAY)	$80.00
GAS MONITORS (PER MAN - PER DAY)	$5.00

HOTELS (PER INDIVIDUAL)	$100.00
LIGHT PLANT (PER DAY)	$125.00
HYDRO MULCH TRAILER (NOT TO INCLUDE MATERIAL)	$150.00
PRESSURE WASHER TRAILER	$150.00
VOLVO OFF ROAD HAULER	$175.00
ADDITIONAL HOURLY CHARGE FOR TRACKED EQUIPMENT WORKING IN SNOW REMOVAL OPERATIONS TO COVER SUBSTANTIAL WEAR ON TRACK AND UNDERCARRIAGE	+$30/Hr
MARK UP ON MATERIALS	10%
HAZMAT SUPPLIES/TRAILERS	
BOOM TRAILER (PER DAY)	$60.00
LAB TRAILER (PER DAY)	$300.00
HAZMAT ER TRAILER (PER DAY)	$200.00
ECM SAMPLES (PER SAMPLE)	$15.00
STATE REPORTING FEE (PER SPILL)	$100.00/Spill
PID Testing (PER TEST) *Individual soil tests will not be charged if lab trailer is on site.	$60.00
Other Supplies and Disposables As Needed Provided from Earthmovers Inventory *To include absorbent pads, oil snares, absorbent booms, disposables and other required items.	10.00%

Emergency Spill Response

Spill response for petroleum hydrocarbon and salt water will be charged at our regular rates for work completed in a normal 50 hour work week. However, a number of these responses require our men and women in the field to work on nights, weekends or require overnight stays. Due to increased compensation for our employees on these responses, Earthmovers reserves the right to assess up to a $20.00 surcharge on all Labor/Equipment hours when necessary.

Earthmovers

Construction Division

Earthmovers 24 Hour Emergency Line

1-800-373-5259

Earthmovers Office #	701-852-4560
Earthmovers Fax #	701-852-9202

Contact List After Initial Report to 24 Hour Response Number

Individual	Title	Cell Phone #
Doug Magnus	Earthmovers General Manager	701-220-7591
Scott Brown	Hazmat Manager	701-720-8565
Russ Kallberg	Hazmat Supervisor	701-720-3972
Justin Lochthowe	Supervisor	701-720-0264
Nathan Routhier	Supervisor	701-500-0331
Peter Richter	Supervisor	701-720-8567
Bill Whethem	Supervisor	701-720-9712
Christ Bauer	Foreman	701-721-6301
Kevin Brown	Foreman	701-720-8564
Jason Frey	Foreman	701-720-8563
Linus Kalenze	Foreman/Mechanic	701-720-5164
Ernie Newman	Foreman	701-509-0122
Tanyor Kendall	Foreman	701-720-6462

Earthmovers

Construction Division

Table 1: Equipment Availability

Earthmovers Available Equipment

24 - L70E Volvo Loaders	1 - Boom Trailer & 1500 Boom Pads
1 - L150 Volvo Loader	1 - Boom Trailer with Boat Motor & 1500 pads
1 - L90 Volvo Loaders	1 - Portable Lab Trailer
1 - Komatsu PC-120 Excavators	Tank Car Gaskets
1 - Komatsu PC-140 Excavators	Oil Sorb
1 - Komatsu PC-150 Excavators	Neutralizing Agents
1 -Volvo Excavator EC210LC	Sorbent Pads (30' x 30') & (15' x 19')
1 - Samsung 210LC-3	Poly & Steel 55 Gallon Drums
6 - Komatsu PC 300L Excavators	Drum Pumps
2 - Volvo EC 210 Excavator	Assorted Draeger Tubes
2 - Volvo EC 240Excavator	2 - Vacuum Trailers - 800 gallons
1 - Volvo EC 290 Excavator	1 - Water Truck
7 - Volvo EC 330 Excavator	15 - Dump Trucks
3 - Volvo EC 360 Excavator	13 - End Dumps
1 - Komatsu 650 Excavator	1 - Fuel Truck
1 - Takeuchi 7B 135 Mini Excavator	4 - Hydro Excavators
1 - Link Belt 4300 Excavator - Grapple	2 - Vacuum Truck - 3000 gallons
1 - Fiat Allis 14C Dozer	3 - Service Trucks
2 - Cat D8N Dozer	50 - Crew Pickup Trucks
1 - Komatsu D41 Dozer	4 - Lowboy Trailer 50 Ton
15 - Skid steers	1 - Phelan 10 Ton Tandem Ax6 Trailer
2 - Cat 140G Motor Grader	18 - Misc. Small Trailers
5 - Terex TS14 Scraper	Drum Handling Equipment
10 - Rollers	Mechanics Tool Sets
1 - Pettibone 705C Crane	Oversized Tool Sets
3" Pumps with hoses	Universal Absorbent Boom
High Pressure Washer	6 - SCBA Respirators
Compressors	1 - Cascade Air System
Generators	Decon Trailer
PID	Midland Tank Car Kit
OVA	Floating Oil Skimmers
LEL Meter	4500' Long Flotation Booms - Oil Absorbent
1 - Mobile Command Center	Portable Oil-Water Separators
Assorted PPE Level A Through D	Patch Kits
3 - 330 Cat Excavators	Rupture Disks

Earthmovers

Construction Division

1 - D-6 Cat Dozer	2 - 650 John Deere Dozer
1 - D-41 Komatsu Dozer	2- 750 John Deere Dozer
1 - D-61 Komatsu Dozer	1 - 850 John Deere Dozer
	2 - 30 Ton Haul Trucks

Targa
Resources, Inc.

1000 Louisiana, Suite 4700
Houston, Texas 77002
713.584.1000
www.targaresources.com

November 8, 2005

<Global MSA Vendor List>

Attention: Targa (Dynegy) Account Manager

As a follow up to the proposed transaction that was announced in August 2005, Targa Resources, Inc. has completed its acquisition of Dynegy Midstream Services. I would like to take this opportunity to introduce you to our company and provide you with some information about your billing procedures.

Headquartered in Houston, Texas with operations around the country, Targa is an integrated natural gas and NGL midstream energy company. We understand the importance of effective and efficient relationships with our vendors and suppliers and, importantly, their role in helping us serve our customers. The company as a whole is committed to a positive and productive business partnership with you – both throughout our near-term transition period and in our everyday approach.

Please note that any accounts that you have in the name of Dynegy Midstream Services, Limited Partnership are to be changed to Targa Midstream Services Limited Partnership. Your contacts for the sales of goods and services and our procurement / contracting processes remain the same. Telephone and fax numbers will change in the future; however, these remain the same until further notice. We do not expect any interruption to our payment or invoicing process. If your invoice is related to a purchase order, please direct it to the address listed below to the attention of Accounts Payable. Please make sure to include the Targa purchase order number on the invoice to assure timely processing.

Our corporate logistics are as follows:

Targa Resources, Inc.
1000 Louisiana Street, Suite 4700
Houston, Texas 77002

Corporate main telephone number is 713.584.1000. My direct dial number is 713.584.1040. Additional information about our company can be found at www.targaresources.com.

We will communicate updates and provide additional contact information as our transition continues. In the meantime, should you have any questions, please don't hesitate to get in touch with your Procurement Representative.

Thank you in advance for your cooperation. We look forward to continuing our relationship with you.

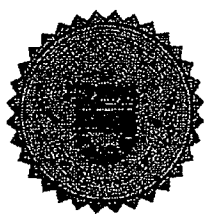
Sincerely,

Michael A. Heim
Executive Vice President and
Chief Operating Officer

Delaware

The First State

I, HARRIET SMITH WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "DYNEGY MIDSTREAM SERVICES, LIMITED PARTNERSHIP", CHANGING ITS NAME FROM "DYNEGY MIDSTREAM SERVICES, LIMITED PARTNERSHIP" TO "TARGA MIDSTREAM SERVICES LIMITED PARTNERSHIP", FILED IN THIS OFFICE ON THE EIGHTH DAY OF NOVEMBER, A.D. 2005, AT 5:04 O'CLOCK P.M.



Harriet Smith Windsor

Harriet Smith Windsor, Secretary of State

2641691 8100

AUTHENTICATION: 4284656

050912841

DATE: 11-09-05

State of Delaware
Secretary of State
Division of Corporations
Delivered 05:12 PM 11/08/2005
FILED 05:04 PM 11/08/2005
SRV 050912841 - 2641691 FILE

CERTIFICATE OF AMENDMENT
TO
CERTIFICATE OF LIMITED PARTNERSHIP
OF
DYNEGY MIDSTREAM SERVICES, LIMITED PARTNERSHIP

Pursuant to Section 17-202 of the Delaware Revised Uniform Limited Partnership Act, the undersigned general partner of Dynegy Midstream Services, Limited Partnership (the "Partnership") desires to amend the Partnership's Certificate of Limited Partnership and for that purpose submits the following Certificate of Amendment.

1. The name of the limited partnership is Dynegy Midstream Services, Limited Partnership.

2. The certificate of limited partnership is hereby amended by striking out Article One thereof and by substituting in lieu of said Article One the following new Article One:

1. *Name*: The name of the limited partnership is "Targa Midstream Services Limited Partnership".

IN WITNESS WHEREOF, the undersigned has executed this Certificate of Amendment as of the 7th day of November, 2005.

TARGA MIDSTREAM GP, LLC,
general partner

By: _____ JRP

Name: Joe Bob Perkins

Title: President

ws1E.tmp

SADDLE BUTTE PIPELINE, LLC

SADDLE BUTTE PIPELINE LLC

MISCELLANEOUS WORK AGREEMENT
DATED: November 28, 2011
AGREEMENT NO: SB 070 - 11

Contractor: Earthmovers

This Miscellaneous Work Agreement ("**Agreement**") is between Saddle Butte Pipeline, LLC ("**Company**"), the address of which is 858 Main Avenue, Suite 301, Durango, Colorado 81301, and Earthmovers ("**Contractor**"), the address of which is 1225 South Broadway, Minot, ND 58701. For and in consideration of the terms of this **Agreement**, the adequacy of which is hereby acknowledged, the parties agree as follows:

1. **Scope and Timing of Work**

A. This **Agreement** covers all work and services (collectively, "**Work**"), if any, **Contractor** is to perform for **Company** pursuant to this **Agreement** and as described in any **Contract Work Order** executed by the parties. Any **Work** to which the parties agree will be described in a **Contract Work Order** or in an amendment to a **Contract Work Order.** Modifications to **Work** described in a **Contract Work Order** will be governed by subsection 1(d) hereof. **Contract Work Orders** will be substantially similar in form to Exhibit A hereto and will provide for **Compensation** (hereinafter defined). Neither party has any obligation to enter into a **Contract Work Order**.

B. **Contractor** is not entitled to do any **Work** unless the parties execute a **Contract Work Order** or amend a **Contract Work Order. Company** has no obligation to use **Contractor** for any work or services.

C. Communications regarding the **Work** will be administered by the **Company** Representative and the **Contractor** Representative, as identified in the **Contract Work Order**. Neither party's representative is authorized to amend any part of this **Agreement** except for the scope of **Work** set forth in the **Contract Work Orders**.

D. **Company** may modify the **Work** by notice to **Contractor** and such modifications shall be binding on **Contractor** upon execution of an amendment to the **Contract Work Order**.

2. Compensation and Payments

A. The amount **Company** is to pay **Contractor** for **Work** is herein referred to as "**Compensation.**" For Time and Material Work, the **Compensation**'s labor and equipment components will be pursuant to the **Contractor**'s schedule of rates attached to the **Contract Work Order**.

B. The **Compensation** constitutes the sole and all-inclusive payment by **Company** for the **Work**. Consistent with the foregoing, **Contractor** shall have full responsibility and liability, and shall bear and pay at its sole expense without any reimbursement from **Company**, for all costs of every nature it incurs in connection with the **Work**, including:

i. labor costs, including salaries, taxes, unemployment and worker's compensation insurance premiums, employee benefits, and all other payments or withholdings required by Law;

ii. materials and utilities; and

iii. all taxes on or measured by **Contractor's** income.

C. **Contractor** shall provide separate invoices for **Work** done during the prior calendar month under each **Contract Work Order**, and all costs shall be itemized in accordance with **Company**'s accounting codes provided in the **Contract Work Order**. **Contractor** shall attach daily work tickets or other documentation of the **Work** satisfactory to **Company** to all invoices. The **Contract Work Order** number shall be clearly shown on all invoices. Invoices shall be submitted to the attention of "Accounts Payable" at the **Company**'s office in Durango, Colorado. Invoices that comply with the requirements of this Section 2(c) shall be paid within thirty (30) days unless Company disputes an invoice. **COMPANY HAS NO OBLIGATION TO PAY ANY OF CONTRACTOR'S INVOICES THAT ARE:**

i. NOT PROPERLY CODED,

ii. NOT CLEARLY MARKED WITH THE CONTRACT WORK ORDER NUMBER, AND

iii. DO NOT ATTACH SUPPORTING PROOF SATISFACTORY TO THE COMPANY OF WORK PERFORMED.

Company may require **Contractor** to resubmit invoices as often as necessary to comply with this Section 2(c).

D. **Company** has no obligation to:

i. pay any invoice submitted more than six (6) months after the **Work** that is the subject of such invoice is completed, nor

ii. accept any **Work** that does not comply with this **Agreement**.

If **Company** pays invoices before the **Work** is completed, no such payment shall constitute acceptance of any **Work** or obligate **Company** to make other partial payments. No use or occupancy by **Company** of any of the **Work** shall be deemed acceptance of any **Work** unless there is final acceptance of the **Work**. Neither final

acceptance nor other acceptance of **Work** nor any payment to **Contractor** shall in any way prevent **Company** from seeking recourse against **Contractor** for a breach of this **Agreement**. No payment, final or otherwise, shall release **Contractor** from any obligations or liabilities hereunder.

E. **Contractor**'s acceptance of final payment shall constitute a full and final release by **Contractor** of **Company** from all Claims and Damages arising out of or otherwise relating to the **Work**, including Claims for:

i. amounts due;

ii. for all things done or materials furnished by **Company** in connection with the Work.

F. **Company**'s liability under this **Agreement** shall not exceed the **Compensation** or the amount otherwise due hereunder, whichever is the lesser, after **Company** has accepted or terminated the **Work**.

3. Term

A. The term of this **Agreement** commences on the date hereof and continues until terminated by either party on at least thirty (30) days notice. Notwithstanding anything herein to the contrary, however:

i. **Contractor** may not terminate this **Agreement** until it completes all **Work** that was commenced during the term, and

ii. **Company** may terminate this **Agreement** as otherwise herein provided.

B. If **Company** believes **Contractor** has breached this **Agreement**, it shall notify **Contractor**. If **Contractor** fails to cure the breach within two (2) days after receiving such notice, then **Company** may terminate the **Work**. If **Company** exercises its right to terminate under this subsection, such right shall be in addition to all other rights **Company** may have against **Contractor** as a result of the breach.

C. If circumstances render **Contractor**'s performance of the **Work** unnecessary or inappropriate for **Company**'s needs, then **Company** may terminate the **Work** by notifying **Contractor**. In that event, **Company** shall pay **Contractor** only for the reasonable value of performance, if any, to **Company** of the **Work** through the date of termination and **Company** shall have no further obligation or liability to **Contractor** under this **Agreement**.

4. Performance of Work

A. **Contractor** shall perform all **Work**: With the quality expected of one who has the knowledge, training, experience, and skills necessary for skillfully performing the **Work**, free from defects in material or workmanship, including:

i. performing the **Work** in a diligent and efficient manner;

ii. exercising precaution for the protection of persons and property and for the maintenance of protective facilities, including taking such safety and health measures, whether or not required by Law, as may be necessary or appropriate for the protection of persons and property; and

iii. cleaning up all refuse, rubbish, scrap, and debris so the **Work** site at all times is safe, neat, and orderly;

a. In accordance with all drawings, plans, and specifications provided by **Company**; and

b. In compliance with all applicable federal, state, or local laws (statutory, judicial, or otherwise), rules, regulations, ordinances, **Permits** (hereinafter defined), and orders (collectively, "**Laws**"), including the following:

(i) While performing **Work** or while on **Company**'s premises, observing all rules or policies that **Company** from time to time may promulgate, including safety policies and drug and alcohol policies. Without limiting the foregoing, for **Work** performed at any **Company** facility that is subject to the requirements of 29 CFR 1910.119 (OSHA Process Safety Management) or 49 CFR 192 Subparts N and G, there shall be compliance with **Company**'s rules and policies.

(ii) **Contractor** shall obtain and maintain in good standing all permits, waivers, consents, authorizations, and licenses (collectively, "**Permits**") from any federal, state, or local commission, bureau, agency, or instrumentality (collectively, "**Governmental Authority**") necessary for performing the **Work** in compliance with all **Laws**. At **Company**'s request, **Contractor** shall confirm to **Company** that all required **Permits** have been obtained, provide a copy of any or all **Permits** to the **Company** Representative, and assign any or all **Permits** to **Company**.

B. Consistent with the other provisions of this **Agreement**, **Contractor** shall be responsible, at its sole cost and expense, for defending against and paying any fines, penalties, or other assessments ("**Penalties**") imposed by any **Governmental Authority** to the extent such **Penalties** are based on a violation of any **Laws** by **Contractor**.

C. **Contractor** warrants, represents, and covenants that it:

i. has the knowledge, training, skills, and experience necessary for performing the Work;

ii. is knowledgeable of all **Laws** applicable to the **Work**; and

iii. will promptly advise **Company** of any actual or anticipated problems in performing the **Work**, and of any Claims for Damages that occur in connection with the **Work**.

D. **Contractor** warrants the **Work** (including all workmanship, equipment, labor and materials furnished by it or on its behalf and used in performing, or made a part of, the **Work**) for one (1) year from and after the date of:

i. final acceptance of the **Work** or,

ii. termination of the **Work** if **Company** terminates the **Work** prior to final acceptance ("**Warranty Period**").

E. Notwithstanding anything herein to the contrary, if **Contractor** is or reasonably should have been aware of any defect in the **Work** (including any of the workmanship, labor, equipment, or materials), then it shall promptly notify **Company**, and the **Warranty Period** shall not begin to run until the latter of the date:

i. of final acceptance of the **Work**,
ii. of termination of the **Work**, or
iii. **Company** learns of the defect.

F. If any defect in the **Work** arises within the **Warranty Period**, **Contractor** shall correct such defect without cost to **Company** within seven (7) days after receipt of notice. If **Contractor** fails to so correct such defect, then **Company** may have such defect corrected at **Contractor**'s expense, and **Contractor** shall reimburse **Company** for such expense within thirty (30) days following receipt of an invoice from **Company**.

G. Upon completion or termination of the **Work**, **Contractor** shall remove all surplus materials, temporary structures, and debris and put the **Work** site in a neat, orderly condition.

H. **Contractor** shall safely protect its personnel, **Work**, and **Company**'s property from injury or loss in connection with the **Work**, including during periods of inclement weather or temporary suspension of **Work**.

I. **Contractor** shall be wholly responsible for performing the **Work**. **Contractor** shall employ such personnel as it deems necessary for performing the **Work**, and shall have sole control over the terms of their employment. All personnel shall be employees of **Contractor**. **Contractor** shall ensure that such employees recognize that they are not employees of **Company**.

J. **Contractor** shall not allow any mechanic's, materialman's, repairman's, employee's, contractor's, operator's and other similar liens or charges arising from work claimed to have been done for or materials claimed to have been furnished to **Contractor** by a subcontractor, vendor, supplier or employee of **Contractor** to attach to the **Company**'s real or personal property interests. **Contractor** shall cause all such liens to be discharged, at **Contractor**'s sole cost and expense, within ten (10) days after **Contractor** receives written demand to discharge said lien from **Company**, by the payment thereof. If **Contractor** shall fail to discharge such lien, **Company** may, at its option and in addition to any other remedy available to it, discharge the same and offset the cost thereof, including reasonable attorneys' fees, from the **Compensation** due to **Contractor**.

5. No Assignment

Contractor shall not assign this **Agreement** without **Company**'s consent, which may be withheld in the sole discretion of **Company**.

6. Status of Contractor

Contractor shall be an independent contractor. Nothing herein or in any course of dealing shall constitute **Contractor** as an employee, agent, or partner of **Company.** Nothing herein shall be deemed to constitute either party the partner of the other. It is not the intention of the parties to create, nor shall this **Agreement** be construed to create, any commercial or other partnership. **Contractor** shall have no capacity to incur debts or obligations on behalf of **Company** or to bind **Company** in any other way, and not represent to any person that it has the authority to do so.

7. Indemnification

A. **Contractor** agrees to and shall release, indemnify, defend and hold **Company Group** (as defined herein) harmless from and against any and all Claims or Damages arising in favor of **Company Group**, **Contractor Group** (as defined herein) or **Contractor Group**'s subcontractors and the employees and agents of **Contractor Group**'s subcontractors for injury or death of any person or for damage to any property arising out of or in connection with the **Work** of **Contractor.**

B. As used herein, "**Claims**" means:

i. rights, claims, demands, causes of action, and legal, administrative, or arbitration proceedings of any nature, that are threatened, asserted, or instituted against a party by any person, regardless of whether arising from injury, death, tort, breach of contract, violation of **Laws**, or otherwise, and regardless of whether a party believes such right, claim, demand, cause of action, or proceeding is justified, and

ii. the incident or event that resulted, or that one could reasonably believe could result, in such a right, claim, demand, cause of action, or proceeding.

C. As used herein, "**Damages**" means losses or damages or other obligations of any and every nature, whether resulting from a Claim or otherwise, including liabilities, costs, penalties (civil or criminal), expenses, judgments, fines, settlements, interest, reasonable attorneys' fees, and other related expenses of every nature.

D. As used herein, "**Company Group**" shall mean:

i. **Company**, its parent, subsidiaries and affiliated or related companies;

ii. its and their working interest owners, co-lessees, co owners, partners, joint operators, customers, joint ventures', if any, and their respective parents, subsidiaries and affiliated or related companies, and

iii. the officers, directors, employees, and consultants of all of the foregoing.

E. As used herein, "**Contractor Group**" shall mean:

i. **Contractor**, its parent, subsidiaries and affiliated or related companies,

ii. its and their co-owners, partners, joint operators, joint ventures', if any, and their respective parents, subsidiaries and affiliated or related companies, and

iii. the officers, directors, employees, and consultants of all of the foregoing.

F. Notwithstanding anything contained in this Agreement to the contrary, and to the maximum extent permitted under law, Company shall release, indemnify, defend and hold Contractor Group harmless from and against any and all Claims resulting from:

i. pollution or contamination of any kind (other than surface spillage of fuels or chemicals emanating from Contractor's Equipment to the extent attributable solely to the negligence of Contractor Group) including, without limitation, the cost of control, removal and clean-up; and/or

ii. any hazardous substance, hazardous material, oil and constituents thereof, or hazardous waste regulated by any federal, state or local law or regulation.

8. Insurance

A. **Contractor** shall maintain at its sole cost insurance coverage of at least the types and amounts:

i. specified in subsection (b), and

ii. required by **Law** to the extent they are of types or coverage in addition to or greater than those specified in subsection (b). A certificate evidencing said minimum coverage shall be promptly delivered to **Company** at its request, but the absence of any request shall not affect **Company**'s rights or **Contractor**'s obligations hereunder. Each insurance policy (and each certificate) shall provide that its cancellation or amendment shall not be valid with respect to **Company**'s rights against **Contractor** or the insurer under such policy until **Company** receives at least ten (10) days written notice of such cancellation or amendment.

B. As provided in subsection (a), **Contractor** shall maintain at its sole cost insurance coverage of at least the types and amounts:

i. Worker's Compensation Insurance required by **Law** for all employees performing any **Work**. If worker's compensation coverage for any particular class of employees is not required by **Law**, **Contractor** nevertheless shall provide adequate employer's liability insurance for the protection of such employees.

ii. Employer's Liability Insurance protecting **Contractor** against common law liability, in the absence of statutory liability, for employee bodily injury or death, with liability limits of at least One Million Dollars ($1,000,000) per claim.

iii. Commercial General Liability Insurance including products/completed operations with liability limits of at least Two Million Dollars ($2,000,000) combined single limit for bodily injury, death, or property damage. This policy shall contain a "separation of insured's" clause, and shall cover, among other risks, the contractual liability assumed under the indemnification provisions set forth herein.

iv. Automobile Liability Insurance including non-owned and hired vehicle coverage with liability limits of at least One Million Dollars ($1,000,000) combined single limit for bodily injury or property damage.

v. Umbrella Liability Insurance with liability limits of at least Five Million Dollars ($5,000,000).

C. Each policy (other than Worker's Compensation) shall be endorsed to act as primary insurance with respect to the **Company Group** and further endorsed to provide, in the **Company**'s favor, a waiver of subrogation rights, and the general liability and automobile liability policies shall be endorsed to name **Company** as an additional insured with respect to the **Work.**

D. The naming of **Company** as an additional insured, the primary status of **Contractor**'s policies of insurance and the waiver of subrogation shall only apply to the risks for which **Contractor** has agreed to assume responsibility and to indemnify or release **Company** under this **Agreement.**

E. If **Contractor** fails to maintain all required insurance during the term, then notwithstanding anything herein to the contrary, **Company** may immediately terminate this **Agreement** or any **Work** without further cost to **Company**.

F. Nothing herein relating to insurance shall in any manner operate as a limitation of **Contractor**'s liability to **Company**.

9. Miscellaneous Provisions

A. Confidentiality. **Company** may provide **Contractor** with confidential and proprietary information (oral or written), including information as to **Company**'s operations, properties, contracts, plans, engineering data, and activities. Such information ("**Information**") is highly confidential, is **Company**'s sole and proprietary property, constitutes trade secrets, and would be provided solely for **Contractor**'s performance of the **Work**. The **Information** shall also include all work in progress,

materials, concepts, evaluations, and interpretations developed by **Contractor** based upon information provided by **Company**. **Contractor** may copy or otherwise reproduce **Information** only for its internal use for performing the **Work**, and shall promptly return all **Information** (including all copies) to **Company** upon completion or termination of the **Work** as to which the **Information** was furnished or developed. Without **Company**'s consent, **Contractor** shall not disclose any of, or anything regarding, the **Information**, or any of the terms of this **Agreement**, which terms shall be treated as confidential.

B. Notices, Consents, Demands, and Other Communications. All notices, approvals, demands, and other communications hereunder ("**Notices**") shall be in writing and shall be given by:

i. personal delivery;

ii. electronic communication, provided the transmitting party has written confirmation of completion of the transmission, or certified mail, return receipt requested, postage prepaid. **Notices** shall be effective and deemed received:

a. on the date of delivery, if by personal delivery, or electronic communication and delivered on or before 3:00 p.m. in the time zone of the recipient on such day; otherwise it shall be deemed to have been delivered on the next business day following delivery, or

b. on the third business day following the date of posting (as evidenced by the postal receipt) if delivered solely by mail. A party may change its address by **Notice** to the other party. **Notices** to the parties shall be sent to:

If to Company:
Saddle Butte Pipeline LLC
858 Main Avenue, Suite 301
Durango, CO 81301
Attention: Brenda Fulkrod
Telephone: (970) 375-3150
Fax No.: (970) 828-2112
E-mail:bfulkrod@sbpipeline.com

If to Contractor:
Earthmovers
1225 South Broadway
Minot, ND 58701
Attention: Shela Bader
Telephone: 701-852-4560
Fax No.: 701-852-9202
E-mail: Shela.Bader@stratacorporation.com

C. Construction of Agreement. The section and other headings contained in this **Agreement** are for reference only. The terms "party" and "parties" refer only to **Company** and **Contractor**. The terms "include," "including," "consistent with the foregoing", or similar terminology shall be construed as meaning without limitation as to the nature or scope of the referenced matters, whether similar or dissimilar to the items described in the text following such terms. The terms "herein" or "hereof," or similar terminology, shall be construed as referring to this **Agreement** rather than only the section in which such term appears. References to subsections shall refer to the section or subsection in which they appear, unless otherwise noted.

D. Entire Agreement. This **Agreement** (which includes any **Contract Work Order** executed by the parties, and any Exhibits or other attachments hereto or

thereto) constitutes the parties' sole understanding and agreement with respect to the subject matter hereof and supersedes all prior negotiations, understandings and agreements, written or oral, between the parties. In the event of any conflict between the provisions contained in the body of this **Agreement** and those contained in any **Contract Work Order** or any attachment to such **Contract Work Order**, the terms and conditions of this **Agreement** shall control.

E. Amendments and Waivers. No amendments, modifications, alterations or waivers of the terms of this **Agreement** shall be binding unless in writing and executed by the parties; provided however, modifications to **Contract Work Orders** will be binding as herein provided.

F. Survival. The parties' warranties, representations, and covenants (including indemnification obligations) that may be applicable following the completion or termination of **Work**, acceptance of **Work**, or termination of this **Agreement** shall survive the completion or termination of **Work**, acceptance of **Work**, or termination of this **Agreement**. Consistent with the foregoing, completion, acceptance, or termination of any **Work** or termination of this **Agreement** shall not relieve either party from any liability or obligation hereunder, whether in the nature of indemnification or otherwise, resulting from acts, omissions, or events occurring prior to such completion, acceptance, or termination.

G. Right of Offset. If a party breaches this **Agreement**, the other party may offset against any amounts owed to such breaching party an amount equal to the Damages suffered as a result of such breach. In the event a breach is found not to have existed, then the amount offset shall be promptly paid to the party.

H. Governing Law. The governing law for this **Agreement** shall be the internal laws of the State of Colorado excluding conflict of laws provision that would apply the laws of another jurisdiction.

IN WITNESS WHEREOF, the parties hereto have caused this **Agreement** to be executed by their duly authorized representatives on the date first above written.

COMPANY:

Saddle Butte Pipeline, LLC

By: _____
By: Brenda L. Fulkrod

Its: Snr. Business Manager

CONTRACTOR:

Earthmovers

By: Doug McGraw S
By: General Manager

Its: _____

GARNER ENVIRONMENTAL SERVICES, INC.
1717 West 13th Street
Deer Park, Texas 77536
Toll Free: (800) 424-1716
Telephone: (281) 930-1200
Fax: (281) 478-0296

RESPONSE EQUIPMENT LISTING

Corporate	Response Equipment Listing	Equipment Listing
Operations		Rev. December, 2011

BOOM TYPE CODE	
F	Fence
FR	Fire
PI	Inflatable (Press)
SI	Inflatable (Self)
MR	Marsh (Upper air chamber with lower water chamber)
R	Round
SB	Weir Boom
OT	Other

END CONNECTOR CODE	
ASTM	ASTM Std (D962-86)
BOLT	Bolt Connector
HP	Hinge & Pin
Z RC	Quick-Connect Z
SNAV	Raised Channel
SLOT	Slide (US Navy)
US1	Slotted Tube
US2	Universal Slide Type 1
OT	Universal Slide Type 2
	Other

BOOM EQUIPMENT

Name of Manufacturer	Model Number	Boom Type Code	Invent Length (feet)	Skirt Size (in.)	Float Size (in.)	End Connector Type Code	Time to Deploy	Storage Location	Owner
Acme Products Co.	OK CORRAL	R	22,000	12	6	Z	6.0	Deer Park	Garner
Acme Products Co.	SUPER-MINI	R	800	4	2.5	BOLT	2.0	Deer Park	Garner
Acme Products Co.	OK CORRAL	R	10,000	12	6	Z	6.0	La Marque	Garner
Acme Products Co.	OK CORRAL	R	800	28	8	Z	1.0	La Marque	Garner
Acme Products Co.	OK CORRAL	R	5,000	12	6	Z	2.5	Port Arthur	Garner
Acme Products Co.	SUPER-MINI	R	100	4	2.5	BOLT	0.5	Port Arthur	Garner
Acme Products Co.	OK CORRAL	R	4000	34	8	Z	2.0	Port Arthur	Garner
Acme Products Co.	OK CORRAL	R	2000	34	8	Z	2.0	Port Arthur	Garner
Acme Products Co.	OK CORRAL	R	10,000	12	6	Z	6.0	Deer Park/ Port Arthur	Garner
Acme Products Co.	MINI-BOOM	R	700	4	2.5	BOLT	1.0	Port Arthur	Garner

Corporate	Response Equipment Listing	Equipment Listing
Operations		Rev. December 2011

COMMUNICATIONS TYPE CODES			
AF	Aviation Frequency	**MF**	Marine Frequency
CP	Cellular Phone	**PAG**	Pager
COM	Command Post	**PHH**	Portable Hand Held
MOD	Computer w/modem	**SSB**	Single Side Band
FAX	Facsimile	**TP**	Telephone
FBS	Fixed Base Station	**OT**	Other

COMMUNICATIONS EQUIPMENT

Name of Manufacturer	Model Number	Comm Type	Nr. of Units	Frequency	Band	Range (miles)	Field Tunable		Storage Location	Owner
							Yes	No		
Motorola	A05J	PAG	20	931.462	FM	150		x	Deer Park	Garner
Motorola	F09LF	CP	40	152.840	FM	200		X	Deer Park	Garner
40' Garner **Command Post**		COM	1					X	Deer Park	Garner
26' Communications Trailer	MCC1	COM	1	931.462			X		La Marque	Garner
Motorola	A05J	PAG	20	931.462	FM	150		X	La Marque	Garner
Motorola	F09LF	PHH	20					X	La Marque	Garner
Motorola	A05J	PAG	12	931.462	FM	150		X	Port Arthur	Garner
Motorola	F09LF	CP	12	152.840	FM	200		X	Port Arthur	Garner

Corporate	Response Equipment Listing	Equipment Listing
Operations		Rev. December 2011

RESPONSE VEHICLES

Name of Manufacturer	Response Vehicle	Number of Units	Wide Load Permit Needed		Storage Location	Owner
			Yes	No		
Wabash	48' Box Vans, Hard Boom Trailers	2		X	Deer Park	Garner
Fruehauf	48' Box Van, Sorbent Boom Trailer	1		X	Deer Park	Garner
Ford/Chevy	Pick-up Truck, 1 ton	20		X	Deer Park	Garner
Sooner	Emergency Response Trailer, 32'	3		X	Deer Park	Garner
Modern Mfg.	Boom Trailer, 20' Gooseneck	4		X	Deer Park	Garner
Containment Sys. & Gooseneck	Emergency Haz-Mat Response Trailers 32' & 24'	2		X	Deer Park	Garner
Falcon	Trailer, 20', Stand-by/Rescue	3		X	Deer Park	Garner
Pace	28' Rescue Standby & Command Post	2		X	Deer Park	Garner
Ford/Chevy	Pick-up Truck, 1 ton	13		X	La Marque	Garner
Garner	Roll-Off Box, 20 yd.;	2		X	La Marque	Garner
Sooner	Emergency Response Trailer, 32'	1		X	La Marque	Garner
Modern Mfg.	Boom Trailer, 20' Gooseneck	3		X	La Marque	Garner
Iron Horse	Boom Trailer, 20 Gooseneck	2		X	La Marque	Garner
Modern Mfg.	Spill Trailer, 16' Lo-Boy	4		X	La Marque	Garner
Modern Mfg.	Spill Trailer, 20'	2		X	La Marque	Garner
Ford	Pick-up Truck, 1 ton	7		X	Port Arthur	Garner
Sooner	Emergency Response Trailer, 32"	1		X	Port Arthur	Garner
Modern Mfg.	Trailer, Spill Response, 16' Lo-Boy	1		X	Port Arthur	Garner
Modern Mfg.	Boom Trailer, Gooseneck, 20'	3		X	Port Arthur	Garner
Gemini Cargo	Trailer, Haz-Mat, 19'	1		X	Port Arthur	Garner
Ford/Chevy	Pick-up Truck, 1 ton (2 Deer Park & 4 Port Arthur)	6		X	Deer Park / Port Arthur	Garner
Modern Mfg.	Spill Trailer, 20' Lo-Boy	2		X	Port Arthur	Garner
Pace American	36' Haz Mat Response Trailer	1		X	Deer Park	Garner
Modern Mfg.	21' Oil Spill Response Trailer (Boat/ Boom/ Sorbent)	1		X	Port Arthur	Garner
Gooseneck	20' Response Trailer (Industrial Response)	1		X	Deer Park	Garner
Modern Mfg.	Boom Trailer, Gooseneck, 20'	2		X	Port Arthur	Garner
	8' Utility Trailers	1		X	Port Arthur	Garner
Sooner	Spill Trailer 32 ' Response	1		X	Port Arthur	Garner

Corporate Operations	Response Equipment Listing	Equipment Listing Rev. December 2011

BOOM EQUIPMENT

Name of Manufacturer	Model Number	Equipment Type	Quantity	Storage Location	Owner
Norfloat	A2	Buoy, Anchor Marker, Inflatable, 18" dia.	25	Deer Park	Garner
Polycord	600x1/4	Rope, Polypropylene, 1/4" x 600'	5	Deer Park	Garner
Polycord	600x1/2	Rope, Polypropylene, 1/2" x 600'	5	Deer Park	Garner
U.S. Anchor Mfg., Inc.	22#	Anchor, Galvanized Steel, 22 lb., Danforth Style	11	Deer Park	Garner
U.S. Anchor Mfg., Inc.	40#	Anchor, Galvanized Steel, 40 lb., Danforth Style	6	Deer Park	Garner
U.S. Anchor Mfg., Inc.	75#	Anchor, Galvanized Steel, 75 lb., Danforth Style	8	Deer Park	Garner
U.S Anchor Mfg. Inc.	100#	Anchor, Galvanized Steel, 100 Lb. Danforth Style	13	Deer Park	Garner
Norfloat	A2	Buoy, Anchor Marker, Inflatable, 18" dia.	25	La Marque	Garner
Polycord	600 x1/4	Rope Polypropylene, 1/4" x 600'	5	La Marque	Garner
Polycord	600 x ½	Rope Polypropylene, 1/2 " x 600'	5	La Marque	Garner
U.S. Anchor Mfg., Inc.	22#	Anchor, Galvanized Steel, 22 lb., Danforth Style	8	La Marque	Garner
U.S. Anchor Mfg., Inc.	40#	Anchor, Galvanized Steel, 40 lb., Danforth Style	5	La Marque	Garner
Norfloat	A2	Buoy, Anchor Marker, Inflatable, 18" dia.	15	Port Arthur	Garner
Polycord	600 x 1/4	Rope Polypropylene 1/4 " x 600 '	5	Port Arthur	Garner
Polycord	600 x 1/2	Rope Polypropylene 1/2 " x 600'	5	Port Arthur	Garner
U.S. Anchor Mfg., Inc.	22 #	Anchor, Galvanized Steel, 22 lb., Danforth Style	12	Port Arthur	Garner
U.S. Anchor Mfg., Inc.	75#	Anchor, Galvanized Steel, 75 lb., Danforth Style	6	Port Arthur	Garner
U.S. Anchor Mfg., Inc.	100#	Anchor, Galvanized Steel, 75 lb., Danforth Style	4	Port Arthur	Garner
Norfloat	A2	Buoy, Anchor Marker, Inflatable, 18" dia.	20	Deer Park	Garner
Polycord	600 x1/4	Rope Polypropylene, 1/4" x 600'	5	Deer Park	Garner
Polycord	600 x ½	Rope Polypropylene, 1/2 " x 600'	5	Deer Park	Garner
U.S. Anchor Mfg., Inc.	22 #	Anchor, Galvanized Steel, 18 lb., Danforth Style	20	Deer Park	Garner
U.S. Anchor Mfg., Inc.	40 #	Anchor, Galvanized Steel, 22 lb., Danforth Style	8	Deer Park	Garner
U.S. Anchor Mfg. Inc.	100 #	Anchor, Galvanized Steel, 100 #, Danforth Style	10	Deer Park	Garner

Corporate Operations	Response Equipment Listing	Equipment Listing Rev. December 2011

AIR MONITORING EQUIPMENT				
Name of Manufacturer	**Miscellaneous Equipment**	**Number of Units**	**Storage Location**	**Owner**
Rae Systems	Q-RAE	4	Deer Park	Garner
Rae Systems	Mini RAE 2000	2	Deer Park	Garner
Rae Systems	Ultra Rae	1	Deer Park	Garner
MSA	5 Star	3	Deer Park	Garner
MSA	Watchman	1	Deer Park	Garner
Arizona Instruments	Jerome X431	2	Deer Park	Garner
Elmer Perkins	Micro FID	1	Deer Park	Garner
Draeger	CMS	2	Deer Park	Garner
Ludlum	Model # 3	2	Deer Park	Garner
MSA	4-Gas Meter	3	La Marque	Garner
Draeger	Accuro Pump	1	La Marque	Garner
Rae	Photo-Ionization Detector	1	La Marque	Garner
	Mercury Vapor Analyzer	1	Deer Park	Garner
	Radiation Monitor	1	Deer Park	Garner
	Solar Radiation Monitor	1	Deer Park	Garner
	Weather Station	2	Deer Park	Garner
	Infrared Thermometer	1	Deer Park	Garner
	GPS Units	2	Deer Park	Garner
Aim	4-Gas Monitor	2	Deer Park	Garner
Draeger	Accuro Pump	2	Deer Park	Garner
Draeger	CMS Meter	1	Deer Park	Garner
Rae	Mini-Rae 2000 Portable VOC Meter	2	Deer Park	Garner
Quest	Single Gas Personal Meter	1	Deer Park	Garner
MSA	Escort Particulate Air Monitor	1	Deer Park	Garner
Sper Scientific	PH Meter	1	Deer Park	Garner
Dexsil	PetroFlag Hydrocarbon Test Kit	1	Deer Park	Garner
Chlorine	AC/ Kit	1	Deer Park	Garner

Corporate Operations	Response Equipment Listing	Equipment Listing Rev. December 2011

	Specialty Equipment			
Name of Manufacturer		**Number of Units**	**Storage Location**	**Owner**
Scott	Self Contained Breathing Apparatus(SCBA) with 12 extra bottles / Scott	12	Deer Park	Garner
Draeger	Self Contained Breathing Apparatus (SCBA) with12 extra bottles / Draeger	12	Deer Park	Garner
	Bezt Valve / Off Loading Valve	2	Deer Park	Garner
	Chorine Emergency Kit A	1	Deer Park	Garner
	Chorine Emergency Kit B	1	Deer Park	Garner
	Chorine Emergency Kit C	1	Deer Park	Garner
	Vacuum Cleaner / Stainless Steel, Mercury, HEPA	2	Deer Park	Garner
	Cameras / Digital	10	Deer Park	Garner
	Confine Space Rescue Kits	3	Deer Park	Garner
	Coppus Blowers	2	Deer Park	Garner
	Air Compressors 11.8 cfm 90 psi	8	Deer Park	Garner
	Drum Crushers / Diesel Power	2	Deer Park	Garner
	Drum Crabber	5	Deer Park	Garner
	Generators	4	Deer Park	Garner
	Scare Guns	3	Deer Park	Garner
	Decontamination Pools 20" x 100'	2	Deer Park	Garner
	Fan, Ventilation 48'	3	Deer Park	Garner
	Artic Cat, Four Wheeler	1	Deer Park	Garner
	Light Stands	5	Deer Park	Garner
	Self Contained Breathing Apparatus (SCBA) with Extra bottles	9	La Marque	Garner
	Air Compressors (Portable)	8	La Marque	Garner
	HEPA Vacuums	3	La Marque	Garner
	Cameras / Digital	3	La Marque	Garner
	Artic Cat, Four Wheeler	2	La Marque	Garner
	Generators	4	La Marque	Garner
	Self Contain Breathing Apparatus (SCBA)	10	Port Arthur	Garner
	Cameras / Digital	1	Port Arthur	Garner

Corporate Operations	Response Equipment Listing	Equipment Listing Rev. December 2011

	Specialty Equipment / Continued			
	Coppus Blowers	1	Port Arthur	Garner
	Air Compressors	3	Port Arthur	Garner
	Generators	1	Port Arthur	Garner
	Scare Guns	4	Port Arthur	Garner
	Pressure Washers	1	Port Arthur	Garner
	Explosion Proof Lights	1	Port Arthur	Garner
	Weed Eaters	1	Port Arthur	Garner
	Chlorine Emergency Kit "C"	1	Deer Park	Garner
	Midland Kit	1	Deer Park	Garner
	Railcar Haz Hammock	1	Deer Park	Garner
	Mercury Vacuum	1	Deer Park	Garner
	Carbon Filter Systems	1	Deer Park	Garner
	Sand Filter Systems	2	Deer Park	Garner
	Wet & Dry Vacuum with HEPA Filter	1	Deer Park	Garner
	100 Watt Explosion Proof Light Sets	2	Deer Park	Garner
	Decon Pools 4' x4' x14' 5"	2	Deer Park	Garner
	Spill Guard 6' x 4' x8"	1	Deer Park	Garner
	Drum Dolly	3	Deer Park	Garner
	3/4 " Core Sampler	1	Deer Park	Garner
	Soil Sampler (boring) Kit	1	Deer Park	Garner
	Self Contained Breathing Apparatus (SCBA)	9	Deer Park	Garner
	Generators (Portable)	3	Deer Park	Garner
	Weed Eaters	5	Deer Park	Garner
	Air Compressors (Portable)	2	Deer Park	Garner
	Light Stand (Portable)	2	Deer Park	Garner
	Coppus Blower	1	Deer Park	Garner
	Chain Saw	1	Deer Park	Garner
	Tank Truck Emergency Transfer Valve	1	Deer Park	Garner
	Artic Cat , Four Wheeler	1	Port Arthur	Garner
	16' Trailer Mounted Steam Cleaner with Tank	1	Port Arthur	Garner
	Air Horn, 6"	1	Deer Park	Garner
	Fan Ventilation, 48"	1	Deer Park	Garner
	Fan Ventilation, 16" Port A Cool with water Mister	1	Deer Park	Garner

Corporate Operations	Response Equipment Listing	Equipment Listing Rev. December 2011

	Digital Cameras	4	Deer Park	Garner	

A	Auger/Screw	**D**	Diesel
C	Fire Peristaltic	**E**	Electric
P	Reciprocating	**G**	Gasoline
R	Rotary/Flexible impeller	**H**	Hydraulic
I	Other	**P**	Pneumatic
OT		**OT**	Other

PUMP EQUIPMENT

Name of Manufacturer	Model Number	Pump Type Code	Drive Type Code	Suction/ Discharge Size (inches)	Mfg. Pump Rate (gpm)	Quantity	Storage Location	Owner
Aro/Ingersoll Rand	KO176-44	P	P	1.0	120	2	Deer Park	Garner
Honda	WXT-20	G	I	2.0	180	4	Deer Park	Garner
Yanmar	LD-40/2	D	I	2.0	180	2	Deer Park	Garner
Honda	WXT-30	G	I	3.0	275	1	Deer Park	Garner
Wilden	Model M	P	P	3.0	240	5	Deer Park	Garner
Honda	WXT-20	G	I	2.0	180	3	La Marque	Garner
Yanmar	LD-40/2	D	I	2.0	180	5	La Marque	Garner
Wilden	Model M	OT	P	3.0	240	7	La Marque	Garner
Acme Products Co., Inc.	FS-150A	G	I	1.5	275	1	Port Arthur	Garner
Honda	WXT-20	G	I	2.0	180	6	Port Arthur	Garner
Yanmar	LD-40/3	D	I	2.0	200	2	Port Arthur	Garner
Versa-Matic		OT	P	2.0	140	1	Deer Park	Garner
Versa-Matic		OT	P	1.5	140	1	Deer Park	Garner
Honda	EPT2	G	I	3.0	275	1	Deer Park	Garner
Wisconsin/Multi Quip		D	I	3.0	185	1	Deer Park	Garner
Yamada	POLY	P	P	3.0	200	1	Deer Park	Garner
Various		D	I	2.0	200	5	Deer Park	Garner
Various		G	I	2.0	190	2	Deer Park	Garner
Versa-Matic	STAINLESS	P	P	2.0	140	2	Deer Park	Garner

Corporate	Response Equipment Listing	Equipment Listing
Operations		Rev. December 2011

RESPONSE BOAT TYPE CODES		TRANPORTATION METHOD CODES	
BAY	Bay Waters	NT	Normal Trailer
JB	Jon Boat	WO	Water Only
LFB	Large Flat Bottom	WL	Wide load Trailer
OFF	Offshore	OT	Other
PRO	Protected Waters		
TC	Towing Capable		
OT	Other		

RESPONSE BOATS

Name of Manufacturer	Model Number	Boat Type Code	Horse Power	Normal Crew Size	Length / Beam	Draft Limit	Number of Boats	Transport Method Code	Storage Location	Owner
Alumacraft	12	PRO	0	1	12	1'	2	NT	Deer Park	Garner
Custom Flat	1650	JB	25	2	16'	1'	4	NT	Deer Park	Garner
Custom Flat	20	LFB	40	2	20' / 6'	2'	1	NT	Deer Park	Garner
Custom Build	30	BAY	300	3	30' / 8'	2'	1	NT	Deer Park	Garner
Alumaweld	1650	JB	25	3	16' / 6'	1'	4	NT	La Marque	Garner
Custom Boat Mfg.	1649R	JB	30	2	16' / 6'	2'	1	NT	La Marque	Garner
Alumaweld	24	JB	40	2	24' / 6	1.6	1	NT	La Marque	Garner
Broadhead	24	BAY	150	3	24' / 8'	2'	1	NT	La Marque	Garner
Alumaweld	1650	JB	25	2	16' / 6'	1'	5	NT	Port Arthur	Garner
Alumaweld	20	BAY	40	2	20' / 0'	2'	1	NT	Port Arthur	Garner
Alumaweld	1450	JB	25	2	14' / 0"	2"	1	NT	Port Arthur	Garner
Lobell	28'	BAY	200	3	28' / 8'	2'	1	NT	Port Arthur	Garner
Silver Ships	30'	BAY	400	3	30' / 8'	2	1	NT	Deer Park	Garner
Custom Boat Mfg.	1650	JB	25	2	16' / 6'	1'	6	NT	Deer Park	Garner
Duracraft	21'	LFB	40	3	21' / 6'	1'	1	NT	Deer Park	Garner
Pirogue	12'	OT	0	1	12' / 2"	3"	2	NT	Deer Park	Garner
Various	12'	JB	25	1	12' / 3"	1'	2	NT	Deer Park	Garner

Corporate	Response Equipment Listing	Equipment Listing
Operations		Rev. December 2011

SKIMMER TYPE CODES			
FS	Floating Suction	**HIP**	Hydrodynamic Inclined Plane
IV	Induced Vortex	**OB**	Oleophilic Belt
OD	Oleophilic Disk	**OR**	Oleophilic Rod
PW	Paddle-Wheel	**SK**	Sock
W	Weir	**OT**	Other

SKIMMER EQUIPMENT

Name of Manufacturer	Model Number	Skimmer Type Code	Number of Units	Mfg. Recovery Rate (gpm)	Hose Size Suction/Discharge (inches)	Time to Deploy	Storage Location	Owner
Acme Products Co., Inc.	FS400ASK-39T	W	3	275	3.0	1.5	Deer Park	Garner
Douglas Engineering	4200SH Skim-Pak	FS	2	5 - 68	2.0	5	Deer Park	Garner
Crucial Inc.	1D18P-23	OT	3	25	2.0	.5	Deer Park	Garner
Crucial Inc.	1D18P-36	OT	5	36	2.0	.5	Deer Park	Garner
Marco	Sidewinder 14	OB	1	70	3.0	.5	Deer Park	Garner
Crucial Inc.	VSP-3"	W	2	550	3.0	1.5	Deer Park	Garner
Crucial Inc.	RF-Floating Head	W	1	200	3.0	1	Deer Park	Garner
Desmi	Mini Max	W	1	220	3.0	1	La Marque	Garner
Acme Products Co., Inc.	FS400ASK-39T	W	1	275	3.0	1.0	La Marque	Garner
Crucial Inc.	1D18P-23	OT	3	25	2.0	.5	La Marque	Garner
Acme Products Co., Inc.	FS400ASK-39T	W	1	275	3.0	.5	Port Arthur	Garner
Crucial Inc.	1D18P-36	OT	3	25	2.0	.5	Port Arthur	Garner
Elastec	Double Drum	OT	1	60	2.0	.5	Port Arthur	Garner
Douglas Engineering	4200SH Skim-Pak	FS	2	5 - 68	2.0	.5	Deer Park	Garner
Marco	Sidewinder 14	OB	1	70	3.0	.5	Deer Park	Garner
Marco	Harbor 28	OB	1	70	2.0	.5	Deer Park	Garner
Elastec	Mini Max, 20"	OT	1	20	2.0	1.	Deer Park	Garner

Corporate	Response Equipment Listing	Equipment Listing
Operations		Rev. December 2011

PU	Portable Vacuum Pump Units	D	Diesel
SS	Super Sucker	E	Electric
VT	Vacuum Truck	G	Gasoline
OT	Other	H	Hydraulic
		P	Pneumatic
		OT	Other

VACUUM SYSTEM EQUIPMENT

Name of Manufacturer	Model Number	System Type Code	Drive Type Code	Suction (inches)	Number of Units	Mfg. Recovery Rate (gpm)	Storage Capacity (gallon)	Hose Invent (feet)	Storage Location	Owner
Safety Vac	449222	OT	D	14	1	40	150	200	Deer Park	Garner
Keith/Huber	LN8000	VT	D	27.0	6	80	3000	3200	La Marque	Garner
Ford	Meyers	OT	D		2	80	3000	500	La Marque	Garner
Super Products & Guzzler	5027	SS	D	27.0	1	450	3000	500	La Marque	Garner
Keith/Huber	LN8000	VT	D	27.0	1	80	3000	500	Port Arthur	Garner

Corporate	Response Equipment Listing	Equipment Listing
Operations		Rev. December 2011

SORBENT TYPE CODE		COMPOSITION CODE	
B	Boom	M	Mineral
PAD	Pad	NO	Natural
PT	Particulate	S	Organic
ST	Sheet	OT	Synthetic
SW	Sweep		Other
OT	Other		

SORBENTS

Name of Manufacturer	Model Number	Sorbent Type Code	Composition Type Code	Normal Inventory	Special Appl. Equip. Needed		Special Rcvg. Equip. Needed		Storage Location	Owner
					Yes	No	Yes	No		
Crucial, Inc.	OS-15	OT	S	1000		X		X	Deer Park	Garner
Complete Environmental Products	GES-P100	PAD	S	1000		X		X	Deer Park	Garner
Complete Environmental Products	GES-P200	PAD	S	250		X		X	Deer Park	Garner
Complete Environmental Products	GES-EP100	PAD	S	500		X		X	Deer Park	Garner
Complete Environmental Products	GES-P50	PAD	S	150		X		X	Deer Park	Garner
Complete Environmental Products	GES-B510	B	S	300		X		X	Deer Park	Garner
Complete Environmental Products	GES-B810	B	S	500		X		X	Deer Park	Garner
Complete Environmental Products	GES-R144	ST	S	150		X		X	Deer Park	Garner
Complete Environmental Products	GES-SW100	SW	S	300		X		X	Deer Park	Garner
Complete Environmental Products	GES-PART25	PT	S	10		X		X	Deer Park	Garner
Crucial, Inc.	OS-15	OT	S	150		X		X	La Marque	Garner
Complete Environmental Products	GES-P00	PAD	S	250		X		X	La Marque	Garner
Complete Environmental Products	GES-P200	PAD	S	100		X		X	La Marque	Garner
Complete Environmental Products	GES-P50	PAD	S	100		X		X	La Marque	Garner
Complete Environmental Products	GES-B510	B	S	100		X		X	La Marque	Garner
Complete Environmental Products	GES-B810	B	S	125		X		X	La Marque	Garner
Complete Environmental Products	GES-R144	ST	S	125		X		X	La Marque	Garner
Complete Environmental Products	GES-SW100	SW	S	150		X		X	La Marque	Garner
Complete Environmental Products	GES-PART25	P	S	10		X		X	La Marque	Garner

Corporate Operations	Response Equipment Listing	Equipment Listing Rev. December 2011

SORBENTS

Name of Manufacturer	Model Number	Sorbent Type Code	Composition Type Code	Normal Inventory	Special Appl. Equip. Needed		Special Rcvg. Equip. Needed		Storage Location	Owner
					Yes	No	Yes	No		
Crucial, Inc.	OS-15	OT	S	150		X		X	Port Arthur	Garner
Complete Environmental Products	GES-P100	PAD	S	100		X		X	Port Arthur	Garner
Complete Environmental Products	GES-P200	PAD	S	75		X		X	Port Arthur	Garner
Complete Environmental Products	GES-B510	B	S	100		X		X	Port Arthur	Garner
Complete Environmental Products	GES-B810	B	S	50		X		X	Port Arthur	Garner
Complete Environmental Products	GES-R144	ST	S	25		X		X	Port Arthur	Garner
Complete Environmental Products	GES-SW100	SW	S	50		X		X	Port Arthur	Garner
Crucial, Inc.	OS-15	OT	S	250		X		X	Deer Park	Garner
Complete Environmental Products	GES-P100	PAD	S	325		X		X	Deer Park	Garner
Complete Environmental Products	GES-P200	PAD	S	200		X		X	Deer Park	Garner
Complete Environmental Products	GES-EP100	PAD	S	500		X		X	Deer Park	Garner
Complete Environmental Products	GES-B510	B	S	100		X		X	Deer Park	Garner
Complete Environmental Products	GES-B810	B	S	150		X		X	Deer Park	Garner
Complete Environmental Products	GES-R144	ST	S	50		X		X	Deer Park	Garner
Complete Environmental Products	GES-SW100	SW	S	100		X		X	Deer Park	Garner

MASTER SERVICES AGREEMENT

THIS MASTER SERVICES AGREEMENT ("Agreement") is made and entered into effective July 15, 2008 ("Effective Date"), by and between Targa Resources LLC, a Delaware limited liability company ("Targa"), on behalf of itself and its Affiliates, and **Garner Environmental Services, Inc.** ("Contractor" and, together with Targa, each a "Party" and together the "Parties"). Capitalized terms not otherwise defined have the meaning set forth in Exhibit "A".

COMMERCIAL TERMS AND CONDITIONS

1. SCOPE OF AGREEMENT/PURCHASE ORDERS FOR SERVICES

A. Purchase Orders.

i. Contractor shall provide Services to Targa and its Affiliates during the Term of this Agreement as agreed upon in each Purchase Order. Subject to Section 1.A.ii below, each request for Services shall be made by Targa or the applicable Affiliate in writing pursuant to a Purchase Order in the form attached hereto as Exhibit "B" ("Purchase Order"). Contractor shall provide the Services set forth in the Purchase Order on such terms as shall be mutually agreed upon therein. Contractor's acceptance of a Purchase Order shall be accomplished by Contractor's execution of such Purchase Order or the commencement of the Services specified in such Purchase Order, whichever occurs first. All Purchase Orders, and Contractor's performance of Services thereunder, are subject to the terms and conditions of this Agreement, including the General Terms and Conditions set forth in Exhibit "A." This Agreement shall control in the event of any ambiguity, conflict or inconsistency between this Agreement and the Purchase Order.

ii. In the event of an emergency causing an immediate or imminent threat to Targa's Facilities, operations, personnel or other Persons, Targa may issue a verbal Purchase Order to Contractor. In such event, Targa shall promptly submit a written Purchase Order following the issuance of any such verbal Purchase Order. Contractor's commencement of Services under such verbal Purchase Order shall indicate acceptance of such Purchase Order.

B. No Minimum Commitment. Nothing herein shall obligate Targa to request Services from Contractor and Contractor shall be compensated only for such Services as Contractor actually performs at the request of Targa via a Purchase Order.

C. Targa Affiliates' Right to Purchase. Each Targa Affiliate shall have the right to issue a Purchase Order for Services subject to the terms of this Agreement.

D. Special Provisions. Special provisions applicable to the Services performed outside of the State of Texas are set forth in Exhibit "D".

2. COMPENSATION, PAYMENTS AND INVOICING

A. Compensation. As compensation for the satisfactory performance of the Services, Targa shall pay Contractor based on a Time and Materials payment method. Targa shall pay and reimburse Contractor in accordance with the Rate Schedule attached as Exhibit "F" attached hereto and incorporated herein for all purposes as if fully copied at length.

3. INVOICING AND PAYMENT

A. Invoicing. Contractor shall submit monthly invoices to Targa for Services performed in the name of the Targa Affiliate as identified in the upper left-hand corner of each Purchase Order. Each invoice (i) shall identify the Purchase Order number and shall include sufficient line item detail for Targa to reasonably verify the basis of the charges, including the Services performed and applicable quantities and pricing, and (ii) shall be accompanied by any supporting information or documentation reasonably requested by Targa. Invoices submitted for Fees and Expenses charged on an hourly basis shall be supported by documents, time sheets or work tickets showing description, date and location of Services performed and the names of employees

and hours each worked. Invoices submitted for Fees and Expenses charged as allowable expenses shall be supported by copies of the actual receipts forming the basis of reimbursement.

B. Payment. Payment terms are net thirty (30) days from Targa's receipt of an invoice unless otherwise specified in the Purchase Order. In the event of a dispute regarding any invoice submitted by Contractor, (i) all amounts not disputed shall be paid by Targa as required by this Section 3, (ii) Targa shall promptly notify Contractor of such dispute, and (iii) payment of any withheld and disputed amount shall be made within ten (10) days following resolution of the dispute.

4. INSURANCE

During the Term of this Agreement (or for such longer period required in Exhibit "C"), Contractor, at its sole cost and expense, shall procure and maintain, and shall require its Subcontractors to procure and maintain, insurance coverage with the minimum coverages, levels, limits and conditions set forth in Exhibit "C". Contractor's liability under this Agreement, or otherwise at law, shall not be limited by the amount or type of insurance required under this Agreement.

5. TERM OF AGREEMENT/TERM OF PURCHASE ORDERS

Except as otherwise provided herein, this Agreement shall commence on the Effective Date and shall remain in effect for an initial period of one (1) year (the "Initial Term"). Thereafter, it will automatically renew on a year to year basis and remain in effect until terminated by either Party in accordance with the applicable termination provisions of this Agreement (each renewal being a "Renewal Term"). Purchase Orders shall commence and continue in effect until final completion of the Services or termination by Targa in accordance with the applicable termination provisions of this Agreement.

6. NOTICES

Statements and reports required of Contractor hereunder shall be addressed to the individual designated on the particular Purchase Order. Invoices and Notices required of the Parties herein shall be addressed to the address set forth below.

7. ENTIRE AGREEMENT

This Agreement, together with all Exhibits referenced herein and Purchase Orders executed by the Parties, constitutes the entire agreement between the Parties in relation to the Services and supersedes all prior agreements, understandings and commitments, whether oral or in writing, between the Parties. This Agreement may not be amended or modified in any manner except by a written document signed by both Parties that expressly amends this Agreement. All additional and/or conflicting terms and conditions that may appear on Contractor written documents including delivery tickets, service order tickets, daily time sheets, invoices or any other document shall be null and void, and either party's signature on any written document containing conflicting terms shall not constitute either party's consent to any terms or conditions set forth in such document.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their duly authorized officers as of the date set forth below.

Accepted and Agreed to: **Garner Environmental Services, Inc.**	Accepted and Agreed to: **Targa Resources LLC**
By: Otis Chambers	By: J.S. Hopson
Printed Name: Otis Chambers	Printed Name: J.S. Hopson
Title: Executive Vice President	Title: Senior Vice President-Operations & Engineering
Date: 07-17-08	Date: 7/28/08

Address for Notices: **1717 W. 13th Street** **Deer Park, Texas 77536** Attention: Contracts Administrator Facsimile No.: 281.479.0283 Phone No. 281.930.1200 Contractor's Federal Tax ID Number or SSN: 760134613 Incorporation Status: Incorporated (X); Not Incorporated ( ) Contractor's State License No. _____ (where required by Applicable Law)	**Address for Notices:** 1000 Louisiana, Suite 4300 Houston, TX 77002 Attention: Procurement & Supply Chain Mgmt. Facsimile No. 713-584-1514 Phone No. 713-584-1116 **Address for Invoices:** 1000 Louisiana, Suite 4300 Houston, TX 77002 Attention: Accounts Payable Facsimile No. 713-584-1130 Phone No. 713-584-1344 Targa's Federal Tax ID Number: 14-1904332

UNITED STATES ENVIRONMENTAL SERVICES
Industrial | Response & Remediation | Maritime

EMERGENCY RESPONSE EQUIPMENT LIST

24-Hour Emergency Number: 888-279-9930

COMPANY HEADQUARTERS ***24-Hour Emergency Numbers:*** ***888-279-9930 (or) 504-279-9930*** 365 Canal Street, Suite 2520 New Orleans, Louisiana 70130 Fax: 504-566-8309	***BEACH, NORTH DAKOTA*** ***24-Hour Emergency Numbers:*** ***701-872-2122*** 16950 Thelen Road Beach, North Dakota 58621
BATON ROUGE, LOUISIANA ***24-Hour Emergency Numbers:*** ***888-267-4901 (or) 225-673-4200*** 6338 Highway 73 Geismar, Louisiana 70734 Fax: 225-677-9549	***NEW ORLEANS, LOUISIANA*** ***24-Hour Emergency Numbers:*** ***504-279-9934*** 2809 East Judge Perez Drive Meraux, Louisiana 70075 Fax: 504-279-7756
VENICE, LOUISIANA ***24-Hour Emergency Number:*** ***504-534-2744*** 42156 Hwy. 23 South Venice, Louisiana 70091 Fax: 504-534-7042	***SHREVEPORT, LOUISIANA*** ***24-Hour Emergency Number:*** ***318-861-0880*** 9435 St. Vincent Avenue Shreveport, Louisiana 71106
JACKSON, MISSISSIPPI ***24-Hour Emergency Number:*** ***601-372-3232*** 1075 Mendell Davis Drive Jackson, Mississippi 39272 Fax: 601-372-3356	***BILOXI, MISSISSIPPI*** ***24-Hour Emergency Number:*** ***228-396-3866*** 13032 Highway 67 North Biloxi, Mississippi 39532 Fax: 228-396-3836
LITTLE ROCK, ARKANSAS ***24-Hour Emergency Number:*** ***501-945-0092*** 261 Newman Drive N Little Rock, Arkansas 72117 Fax: 501-945-0202	***MEMPHIS, TENNESSEE*** ***24-Hour Emergency Numbers:*** ***866-281-3232 (or) 662-280-3232*** 1855 Veterans Drive Southaven, Mississippi 38671 Fax: 662-280-3011
BIRMINGHAM, ALABAMA ***24-Hour Emergency Number:*** ***205-663-8737*** 228 Regency Park Alabaster, Alabama 35007 Fax: 205-663-4404	***MOBILE, ALABAMA*** ***24-Hour Emergency Number:*** ***251-662-3500*** 3750 Halls Mill Road Mobile, Alabama 36693 Fax: 251-662-3400
LAREDO, TEXAS ***24-Hour Emergency Number:*** ***877-398-9911*** 4401 Highway 359, Suite 1 Laredo, Texas 78046 Fax: 956-722-9914	***HOUSTON, TEXAS*** ***24-Hour Emergency Number:*** ***281-867-4100*** 950 Seaco Ave. Deer Park, Texas 77536 Fax: 281-867-4101

RESPONSE EQUIPMENT (Meraux, Louisiana and Service Locations)

Containment Boom, Meraux, Louisiana

Qty (ft.)	Model	Size	Description
6000	River	18"	Quick Connect, 100 ft. sections, 22 oz. Fabric
1000	Miniboom	10"	Quick Connect, 50 ft. sections, 22 oz. Fabric

Vacuum Trucks & Skimmers (*Effective Daily Recovery Capacity, Derated to 20% Efficiency per NVIC 7-92), Meraux, Louisiana

Qty.	Type	EDRC* (Barrels)	Description
1	Goo Gobbler	770	30" Aluminum Cylinder Skimmer
1	Goo Gobbler	616	24" Aluminum Cylinder Skimmer
1	Pelican	240	24" Aluminum Weir Skimmer
5	Vacuum Truck	500	70-Barrel Capacity

Temporary Storage Capacity, Meraux, Louisiana (Minimum in Inventory)

Qty.	Type	Capacity	Description
3	Salvage Drums	85 Gal.	Steel
3	Overpack Drums	95 Gal.	Poly
3	Open Top Drums	55 Gal.	Steel
3	Open Top Drums	55 Gal.	Poly

Vessels and Motors, Meraux, Louisiana

Qty.	Type	Size, ft.	HP	MPH	Range, Mi.	Lbs.	Crew Size
1	Fast Response Vessel	28	2-150	35	175	2,000	4
2	Fast Response Vessel	26	2-150	35	175	2,000	4
1	Fast Response Vessel	24	2-115	35	150	1,750	4
1	Fast Response Vessel	18	90	30	150	1,500	4
12	Jon Boats	16	25	25	30	1,000	2

Transportation Equipment, Meraux, Louisiana

Qty.	Description	Qty.	Description
20	Pick-up Trucks	2	28' Boom Trailer
2	20' Oil Spill Response Trailer	4	All Terrain Vehicles with Trailers
2	12' Oil Spill Response Trailer	1	38' Gooseneck Trailer

Supplies, Consumable, Meraux, Louisiana (Minimum in Inventory)

Qty.	Description	Qty.	Description
100	Boxes, Oil Snare	7	100-count Absorbent Pads
250	8" Absorbent Boom	100	Oil Snare Rope
250	5" Absorbent Boom	1	5 Gal. pail of Micro Blaze
2	Buckets of Absorbent	4	Bundle of Pads Chemical
2	Small Bags of Vermiculite	2	Bundle of Pads Oil
1	Bucket of Citric Acid		

Personal Protective Equipment, Meraux, Louisiana

Qty.	Description	Qty.	Description
8	Level A Suits	72	Pair, PVC Gloves
248	NexGen Suits	72	Pair, Nitrile Gloves
72	Level B Suit, CPF2	74	Pair, Silver Shield Gloves
72	Level B Suit, CPF3	74	Pair, Silver Shield Booties
50	Pair, Butyl Gloves	74	Latex Booties
14	Boxes, Inner Gloves	12	Pair, Neoprene Gloves
4	Sets of Bunker Gear	12	Pairs, Cotton Gloves
12	Rain Suits	12	Pairs, Leather Work Gloves
4	Size 15 Level A Outer Boots	4	Harness, Full Body

Respiratory Protective Equipment, Meraux, Louisiana

Qty.	Description	Qty.	Description
4	SCBA 60 Minute	5	Boxes of GME P-100 type Cartridges (6ea.) 30 total
4	60 Minute Spare Air Bottles	5	Boxes of Mersorb Cartridges
5	Air Purifying Respirators		

RESPONSE EQUIPMENT (Meraux, Louisiana and Service Locations)

Safety Equipment, Meraux, Louisiana

Qty.	Description	Qty.	Description
6	Combustible Gas Detector/4-Gas Meter	2	Benzene Meter

Pumps and Miscellaneous Supplies, Meraux, Louisiana

Qty.	Description	Qty.	Description
1	2" Poly Chem Air Diaphragm	1	Wheel Barrow Portable Air Compressor
1	1" Poly Chem Air Diaphragm	200	Ft, 2" Acid/Chemical Hose w/Stainless Steel Fittings w/Straine
1	2" Stainless Steel Air Diaphragm	200	Ft, 2" Acid /Chemical Hose with Poly Fittings with Strainers
1	2" Gasoline Trash Pump	100	Ft, 1" Acid/Chemical Hose with Poly Fittings with Strainers
1	2" Aluminum Air Diaphragm	100	Ft, 2" Petroleum Hose with Strainers
1	1" Aluminum Air Diaphragm	100	Ft, 1" Petroleum Hose with Strainers
1	Betts Evacuator Valve	100	Ft, 2" Discharge Hose with Strainers
1	Dewalt 6500 kW Generator	1	2" Double Diaphragm Poly Pump w/Teflon/Viton Elastomers
1	Pressure Washer 2600 psi w/ ext. rod	1	2" Double Diaphragm S.S. Pump w/Teflon/Viton Elastomers
1	Rebuilt Kit for Diaphragm Pumps	1	1" Double Diaphragm Aluminum Pump
8	Cans of Foam (for plugging & patching)	1	Regulator for Diaphragm Pump w/Water Condensate Filter
1	Wooden Plug and Wedge Kit (Cedar Shakes)	1	2" Wash Pump w/Related Fitting/Hose for Suction and Discharge
1	Plug Compound	100	Ft, 1" Hose w/Aluminum Fittings
2	A & E Patch Kit	100	Ft, 1 1/2" Rag Hose with Strainers
1	Trident Quick Frame Magnetic Patch		

Comprehensive supply of stainless steel and polyethylene fittings, valves, nipples, bushings, reducers and couplings.

Communications, Meraux, Louisiana

Qty.	Description	Qty.	Description
27	VHF Hand Held	30	Cellular Telephones with nationwide coverage
1	Motorola, 851-855 MHz Command Base		

River Front, Dock Barge, Marrero, Louisiana

Qty.	Description
600	Feet, 18" Containment boom

20' x 8' x 3' Twin Engine Deck Boats, Mississippi River, Louisiana

Qty.	Location
1	Marrero, Louisiana, LMR Mile 96
1	Harvey, Louisiana, LMR Mle 95
1	New Orleans, Louisiana, LMR Mile 90

Hazardous Materials Response Trailers, Three units - 16', Chalmette, Algiers and Jefferson, Louisiana

Qty.	Description	Qty.	Description
4	55 Gallon Open Top Drums	3	55 Gallon Closed Top Drums
3	Bales, 5" Absorbent Boom	4	Bales, Absorbent Pads
1	Generator	3	Rolls, 6 Mil Visquene
2	Rolls, 6 Mil Pollution Bags	2	Transfer Pump
2	Cases, Protective Clothing	1	85 Gallon Recovery Drum
6	Gallons, Citra-Solv PCB Cleaner	1	Weed eater/Fuel Can
20	Boxes, Clor-N-Oil Test Kits	15	"Patch and Plug" Kits

Response Equipment Storage Boxes, Mississippi River, Algiers, Louisiana

Qty.	Description	Qty.	Description
300	Feet, 18" Containment boom	25	Gallons, Sea Wash Cleaner
5	55 Gallon Open Top Drums	25	Gallons, VC Degreaser
15	Bales, 8" Absorbent Boom	2	2.5 Gallon Chemical Sprayer
9	100' Absorbent Sweep		PPE - Coveralls, gloves
25	Bales, 100 Sorbent Pads	1	Roll, Sorbent Matting

RESPONSE EQUIPMENT (Meraux, Louisiana and Service Locations)

Response Equipment Storage Boxes, two (2) units - Harvey and Belle Chasse, Louisiana

Qty.	Description	Qty.	Description
5	55 Gallon Open Top Drums	25	Gallons, Sea Wash Cleaner
15	Bales, 8" Absorbent Boom	25	Gallons, VC Degreaser
9	100' Absorbent Sweep	2	2.5 Gallon Chemical Sprayer
25	Bales, 100 Sorbent Pads		PPE - Coveralls, gloves
300	Feet, 18" Containment Boom (Client owned)		

20 Ft. Emergency Response Equipment Trailer, Hahnville, Louisiana

Qty.	Description	Qty.	Description
500	Feet, 18" Containment Boom		PPE - Poly-Coated Tyvek Suits
15	Bales, 5" Absorbent Boom	4	Doz. PVC Gloves
30	Bales, 100 Sorbent Pads	4	95-Gallon Poly. Overpack Spill Kits

20 Ft. Emergency Response Equipment Boxes, Two (2), Amelia, Louisiana

Qty.	Description	Qty.	Description
500	Feet, 18" Containment Boom		PPE - Poly-Coated and White Tyvek, gloves
6	55 Gallon Open Top Drums	25	Bales, 100 Sorbent Pads
15	Bales, 8" Absorbent Boom		Rolls of Pollution Bags, 20-Gallon Pollution Cans

Emergency Response Equipment, Conex Box, 20' x 8' x 8', Fourchon, Louisiana

Qty.	Description	Qty.	Description
25	40' Bags of 8" Sorbent Boom		PPE - Poly-Coated Tyvek and White Tyvek
25	40' Bags of 5" Sorbent Boom	25	Bundles of Sorbent Pads
25	Bundles of Sorbent Pads	20	Rolls of Sorbent Rolls

20 Ft. Emergency Response Equipment Trailer, Lafitte, Louisiana

Qty.	Description	Qty.	Description
1,000	Feet, 18" Containment Boom	21	Bales, Sorbent Pads
2	Jon Boats, 18' with 25 HP engine	1	Gas Centrifugal Pump with Washing Setup
10	Bales, 8" Sorbent Boom		PPE - Coveralls, gloves

RESPONSE EQUIPMENT (Geismar, Louisiana and Service Locations)

Containment Boom, Geismar, Louisiana

Qty. (ft.)	Model	Size	Description
1,000	River	18"	Quick Connect,100 ft. sections, 22 oz. Fabric

Vacuum Trucks & Skimmers (*Effective Daily Recovery Capacity, Derated to 20% Efficiency per NVIC 7-92), Geismar ,Louisiana

Qty.	Type	EDRC* (Barrels)	Description
1	Pelican	240	24" Aluminum Weir Skimmer
1	Vacuum Truck	500	80-Barrel Capacity

Temporary Storage Capacity, Geismar ,Louisiana (Minimum in Inventory)

Qty.	Type	Capacity	Description
10	Overpack Drums	95 Gal.	Polyethylene
10	Overpack Drums	85 Gal.	Steel
25	Open Top Drums	55 Gal.	

Vessels and Motors, Geismar, Louisiana

Qty.	Type	Size, ft.	HP	MPH	Range, Mi.	Lbs.	Crew Size
3	Jon Boats	16	25	25	30	1,000	2

Transportation Equipment, Geismar, Louisiana

Qty.	Description	Qty.	Description
6	Stake Trucks	1	32' HazMat Response Trailer/Chemical Transfer Unit
18	Pick-up Trucks	1	20' Equipment Trailer for Hydrocarbon Spills
2	4-WD ATVs with trailer	1	24' Remediation/Construction Trailer
1	20' Boom Trailer	1	12' Remediation/Construction Trailer
1	32' Industrial Division Trailer	1	20' Industrial Division Trailer

Supplies, Consumable, Geismar, Louisiana (Minimum in Inventory)

Qty.	Description	Qty.	Description
25	Bales, Absorbent Boom	40	Bags, Absorbent Particulate
50	Bales, Absorbent Pads	15	Boxes, Oil Snare

Personal Protective Equipment, Geismar, Louisiana

Qty.	Description	Qty.	Description
6	Level A Suits	36	Pair, PVC Gloves
40	NexGen Suits	48	Pair, Nitrile Gloves
24	Level B Suit, CPF2	12	Pair, Silver Shield Gloves
32	Level B Suit, CPF3	12	Pair, Silver Shield Booties
40	Poly-Coated Tyvek Suits	20	Latex Booties
6	Bunker Gear (used for fire fighting)	500	Pair, Inner Gloves

Respiratory Protective Equipment, Geismar, Louisiana

Qty.	Description
8	MSA Self-Contained Breathing Apparatus
8	MSA 60-Minute Spare Bottles
20	MSA Ultra Twin Respirators, Full Face

Safety Equipment, Geismar, Louisiana

Qty.	Description	Qty.	Description
1	4 Gas Passport with Chlorine Sensor	1	LEL/O_2/H_2S Meter
2	Draeger Pump	2	Rae Entryrae
2	Multi Rae Plus 4-Gas with PID	1	MSA Passport
1	ITX Multi Gas with Chlorine	1	Industrial Scientific
1	Jerome Meter	1	HazCat Kit
3	MSA Orion 4 Gas		

RESPONSE EQUIPMENT (Geismar, Louisiana and Service Locations)

Pumps and Miscellaneous Equipment, Geismar, Louisiana

Qty.	Description	Qty.	Description
1	3" Poly Chem Air Diaphragm	150	Feet, 3" Acid/Chemical Hose with Stainless Steel Fittings with Strainers
2	2" Poly Chem Air Diaphragm	150	Feet, 2" Acid/Chemical Hose with Stainless Steel Fittings with Strainers
2	1" Poly Chem Air Diaphragm	150	Feet, 1" Acid/Chemical Hose with Stainless Steel Fittings with Strainers
4	3" Stainless Steel Air Diaphragm	150	Feet, 2" Acid/Chemical Hose with Poly Fittings with Strainers
2	2" Stainless Steel Air Diaphragm	150	Feet, 1" Acid/Chemical Hose with Poly Fittings with Strainers
4	2" Gasoline Trash Pump	150	Feet, 2" Petroleum Hose with Strainers
1	3" Diesel Pump	100	Feet, 1" Petroleum Hose with Strainers
1	2" Aluminum Air Diaphragm	100	Feet, 2" Discharge Hose with Strainers
2	1" Aluminum Air Diaphragm	100	Feet, 1 1/2" Rag Hose with Strainers
1	Lutz Chemical Pump	1	Midland Capping Kit
2	Betts Evacuator Valve	1	Chlorine "C" Kit
1	O Ring Kit	1	Haz-Hammock
1	Iso Container Conversion Kit	1	A & E Patch Kit
1	6500 kW Generator	1	Trident Quick Frame Magnetic Patch
1	4000-watt Light Tower	1	Wheel Barrow Portable Air Compressor
1	5000-lb. Fork Lift and Pallet Jack	1	185 CFM Air Compressor
1	Drill Kit for Drilling Tankers	3	Lid Lock Dome Clamps
2	Nitrogen Cylinders with Nitrogen Purge Kit	50	Feet, 3/16 Stainless Steel Pressure hose With Related Fittings
200	Feet, No. 2 Ground wire with clamps	1	Chain Saw
4	Copper Coated Grounding Rods	1	Mercury Vacuum

Comprehensive supply of stainless steel and polyethylene fittings, valves, nipples, brushings, reducers, and couplings.

Communications, Geismar, Louisiana

Qty.	Type	Frequency	Range, Mi.	Description
8	Motorola Hand-Held	851-866 MHz	20-30	Intrinsically Safe
25	Cellular Telephones		Nationwide	Hand Held
3	GPS Units			Hand Held
5	Digital Cameras			
3	Lazer Heat Guns			

Heavy Equipment, Geismar, Louisiana

Qty.	Description
3	Bobcat Skid Steer
2	Volvo Excavator
1	Mini Excavator
5	Bobcat MT 52 Dingo
1	4-Wheel Drive John Deere Extended Hoe with Front-Loader

Industrial Equipment, Geismar, Louisiana

Qty.	Description	Qty.	Description
2	10,000/20,000 psi Hydro Blaster	2	4,000 psi Hot/Cold Water Pressure Washer
1	3D Nozzel with Attachments		

Remediation/Construction Equipment, Geismar, Louisiana

Qty.	Description	Qty.	Description
1	20" Toolbox (Miscellaneous Hand Tools)	1	Threading Oiler
1	4-Point Cable Harness	1	Rigid Pipe Vise
1	2" Pneumatic Diaphragm Pump with hoses	5	Miscellaneous Pipe Wrenches (up to 48")
1	3,000 psi Pressure Washer	1	Dewalt 18V Cordless Drill, Circular Saw, Reciprocating Saw, and Work Light
4	15-Ton Shackle	1	Tap and Die Set
1	15-Ton Swivel	1	True RMS Digital Multimeter with miscellaneous electrical tools
1	Venturi Blower	1	5KW Dewalt Generator
4	10-Ton Shackle	3	3" x 20' Nylon Slings
2	10-Ton Hooks		

Comprehensive supply of hand tools, sorbent materials, placards, PPE, and other miscellaneous supplies.

RESPONSE EQUIPMENT (Venice, Louisiana and Service Locations)

Containment Boom, Venice, Louisiana

Qty. (ft.)	Model	Size	Description
10,000	River	18"	Quick Connect, 100 ft. sections, 22 oz. Fabric

Vacuum Trucks & Skimmers (*Effective Daily Recovery Capacity, Derated to 20% Efficiency per NVIC 7-92), Venice, Louisiana

Qty.	Type	EDRC* (Barrels)	Description
1	Goo Gobbler	240	24" Aluminum Cylinder Skimmer
1	Drum Skimmer Gobbler	480	Mounted on 9' x 17' Platform, 5L Diesel Pump, 1600 GPH, 500 gal. Storage Capacity
1	Crucial	240	24" Aluminum Weir Skimmer

Temporary Storage Capacity, Venice, Louisiana (Minimum in Inventory)

Qty.	Type	Capacity	Description
20	Open Top Drum	55 Gal.	

Vessels and Motors, Venice, Louisiana

Qty.	Type	Size, ft.	HP	MPH	Range, Mi.	Lbs.	Crew Size
1	Fast Response Vessel	30	2 - 200	35	150	2,500	4
2	Fast Response Vessel	26	2-115	35	150	2,000	4
8	Jon Boats	16	25	25	30	1,000	2

Transportation Equipment, Venice, Louisiana

Qty.	Description	Qty.	Description
1	Pick-up Trucks	1	20' Boom Trailer
1	20' Emergency Response Trailer	1	53' Van (Boom) Trailer

Supplies, Consumable, Venice, Louisiana (Minimum in Inventory)

Qty.	Description	Qty.	Description
350	Bales, Sorbent Pads	250	Bales, 5" Sorbent Boom
250	Bales, 8" Sorbent Boom	25	Bags, Floor Dry

Safety Equipment, Venice, Louisiana

Qty.	Description	Qty.	Description
1	Combustible Gas Detector/4-Gas Meter		

Pumps and Miscellaneous Supplies, Venice, Louisiana

Qty.	Description	Qty.	Description
2	2" Diesel Pump	6	2" Gas Pump
4	Wheel Barrow Portable Air Compressor	2	Scare Gun with Propane Bottle

Communications, Venice, Louisiana

Qty.	Type	Frequency	Range, Mi.	Description
3	Cellular Telephone		Nationwide	Hand Held

RESPONSE EQUIPMENT (Shreveport, Louisiana and Service Locations)

Containment Boom, Shreveport, Louisiana

Qty. (ft.)	Model	Size	Description
2,000	River	18"	Quick Connect, 100 ft. sections, 22 oz. Fabric
500	Miniboom (Creek)	6"	Quick Connect, 50 ft. sections, 22 oz. Fabric

Vacuum Trucks & Skimmers (*Effective Daily Recovery Capacity, Derated to 20% Efficiency per NVIC 7-92), Shreveport, LA

Qty.	Type	EDRC* (Barrels)	Description
1	Vacuum Truck	500	80-Barrel Capacity, Stainless Steel
1	King Vac	500	80-Barrel Capacity, Carbon Steel
1	Crucial	240	36" Drum Skimmer

Temporary Storage Capacity, Shreveport, Louisiana (Minimum in Inventory)

Qty.	Type	Capacity	Description
5	Overpack Drums	95 Gal.	Polyethylene
10	Overpack Drums	85 Gal.	Steel
50	Open Top Drums	55 Gal.	Steel
30	Open Top Drums	55 Gal.	Polyethylene
40	Closed Top Drums	55 Gal.	Steel
30	Closed Top Drums	55 Gal.	Polyethylene

Vessels and Motors, Shreveport, Louisiana

Qty.	Type	Size, ft.	HP	MPH	Range, Mi.	Lbs.	Crew Size
1	Fast Response Vessel	24'	150	35	175	1,750	4
1	Work Boat	16'	25	25	30	1,000	2

Transportation Equipment, Shreveport, Louisiana

Qty.	Description	Qty.	Description
3	Pick-up Trucks	1	20' Equipment Trailer
1	Trailer/Chemical Transfer Unit with	1	24' Oil Spill Response Trailer
1	24' Enclosed Response Trailer		

Supplies, Consumable, Shreveport, Louisiana (Minimum in Inventory)

Qty.	Description	Qty.	Description
192	Oil Pads	40	5" Oil Sorbent Boom 40"
20	Snare on Rope 50' section	10	Bags, Vermiculite
60	Bags, Oil-Gator	20	Bags, Hydrated Lime
42	Bales, Chemical Pads	40	Bags, FloorDri
100	Micro-Blaze Gallons		

Personal Protective Equipment, Shreveport, Louisiana

Qty.	Description	Qty.	Description
4	Level A Suits, DuPont Tychem	72	Pair, Nitrile Gloves
4	Fully-Encap. Level B suits, CPF 3 & 4	72	Pair, Neoprene Gloves
96	Level B Suits, CPF 3	20	Pair, SilverShield Gloves
84	Level B Suits, CPF 2	20	Pair, SilverShield Boot Covers
136	NexGen Suits	6	Pair, Rubber Boot Covers
99	NexGen Suits PVC Coated	1300	Pair, Nitrile Inner Gloves
4	Thermopro, Flash and Chemical protection		

Respiratory Protective Equipment, Shreveport, Louisiana

Qty.	Description
4	MSA Self-Contained Breathing Apparatus (SCBA), 60 minutes, including 12 NFPA-Compliant SCBAs
2	Hip-Mounted Breathing Air Units
6	Air-Purifying Respirators

RESPONSE EQUIPMENT (Shreveport, Louisiana and Service Locations)

Safety Equipment, Shreveport, Louisiana

Qty.	Description	Qty.	Description
2	Photoionization Detector (PID)	1	Colormetric Tube Pumps with tubes

Pumps and Miscellaneous Equipment, Shreveport, Louisiana

Qty.	Description	Qty.	Description
1	Stainless Steel Betts Valve	2	2" Stainless Steel Air Diaphragm Pump, Viton Elastomers
1	Nitrogen Purge System for Chemical Transfers	1	2" Stainless Steel Air Diaphragm Pump, Teflon Elastomers
100	Feet, 2" Teflon Chemical Transfer Hose	1	1" Polypropylene Air Diaphragm Pump, Viton Elastomers
1	Coppus Blower	1	2" Polypropylene Air Diaphragm Pump, Viton Elastomers
180	Feet, 2" U.H.M.W.P. Chemical Transfer Hose	4	2" Gas Wash Pump
80	Feet, 1" U.H.M.W.P. Chemical Transfer Hose	1	2" Sightglass
1	Magnetic Patch	1	Pressure Washer-Hot Water, trailer-mounted, self-contained
1	Midland Kit	1	Haz-Hammock
2	6,600-Watt Generator	1	185 CFM Air Compress 185 CFM Air Compressor
Comprehensive supply of stainless steel and polyethylene fittings, valves, nipples, bushings, reducers and couplings.			

Communications, Shreveport, Louisiana

Qty.	Type	Frequency	Range, Mi.	Description
4	Motorola Hand-Held			Intrinsically Safe
3	Cellular Telephone		Nationwide	Hand Held
3	GPS Units			Hand Held
1	Lazar Temperature Guns			
3	Digital Cameras			

RESPONSE EQUIPMENT (Jackson, Mississippi and Service Locations)

Containment Boom Jackson, Mississippi

Qty. (ft.)	Model	Size	Description
2,000	River	18"	Quick Connect, 100 ft. sections, 22 oz. Fabric
400	Miniboom	10	Quick Connect, 50 ft. sections, 22 oz. Fabric

Vacuum Trucks & Skimmers (*Effective Daily Recovery Capacity, Derated to 20% Efficiency per NVIC 7-92), Jackson, MS

Qty.	Type	EDRC* (Barrels)	Description
1	Vacuum Truck	500	70-Barrel Capacity, Stainless Steel
1	King-Vac	500	70-Barrel Capacity
1	Guzzler	500	60-Barrel Capacity
1	Goo Gobbler	616	24" Aluminum Cylinder Skimmer with Hydraulic Pack
1	Goo Gobbler	616	24" Aluminum Cylinder Skimmer with Pneumatic Pack

Temporary Storage Capacity, Jackson, Mississippi (Minimum in Inventory)

Qty.	Type	Capacity	Description
15	Overpack Drums	95 Gal.	Polyethylene
30	Overpack Drums	85 Gal.	Steel
100	Open Top Drums	55 Gal.	Steel
36	Open Top Drums	55 Gal.	Polyethylene
36	Closed Top Drums	55 Gal.	Steel
18	Closed Top Drums	55 Gal.	Polyethylene
4	Storage Tanks	1,100 Gal.	Polyethylene
1	Skid-Mounted Tank	5,000 Gal.	Steel
1	Tote-Container	250 Ga.	Polyethylene

Vessels and Motors, Jackson, Mississippi

Qty.	Type	Size, ft.	HP	MPH	Range, Mi.	Lbs.	Crew Size
1	Fast Response Vessel	20	2 - 88	60	150	2,500	6
1	Work Boat	18	90	40	40	1,250	4
1	Work Boat	16	25	25	30	1,000	2
1	Work Boat	14	15	25	30	350	2
3	Work Boat	12				150	2

Transportation Equipment, Jackson, Mississippi

Qty.	Description	Qty.	Description
18	Pick-up Trucks	1	36' HazMat Response Trailer/Chemical Transfer Unit with
1	6,000-Gallon Stainless Steel Tanker	1	53' Command/Communications Trailer
2	20' Equipment Trailer	1	53' Bunkhouse Trailer
1	16' Equipment Trailer with sides	1	32' Mobile Command Post with Field Laboratory
1	16' Oil Spill Response Trailer	1	Traffic Control Trailer with Traffic Control Equipment
1	25' Equipment Trailer with hydraulic crane	1	PPE Trailer
3	25' Gooseneck Equipment Trailer	2	25' Equipment Trailer
1	36' Response Trailer	1	18' Equipment Trailer
2	4-WD ATVs	1	8' Equipment Trailer
4	Over the Road Trucks with Roll Off Frames		

Supplies, Consumable, Jackson, Mississippi (Minimum in Inventory

Qty.	Description	Qty.	Description
50	Bales, Sorbent Pads	10	Bags, Vermiculite
25	Bags, 8" Sorbent Boom, 40'	50	Bales, Fiberperl / Cell-u-Sorb
30	Bags, Citric Acid	25	Bags, Hydrated Lime
150	Bags, Oil-Gator	25	Bags, FloorDri
25	Bales, Chemical Pads	10	Micro-Blaze
25	Bags, Ferrous Sulfate		

Personal Protective Equipment, Jackson, Mississippi

Qty.	Description	Qty.	Description
12	Level A Suits, DuPont Tychem	200	Pair, Nitrile Gloves
1	Level A Suit Tester	200	Pair, Neoprene Gloves
20	Fully-Encap. Level B suits, CPF 3 & 4	50	Pair, SilverShield Gloves
100	Level B Suits, CPF 3	50	Pair, SilverShield Boot Covers
150	Level B Suits, CPF 2	50	Pair, Rubber Boot Covers
250	NexGen Suits	1,000	Pair, Nitrile Inner Gloves

RESPONSE EQUIPMENT (Jackson, Mississippi and Service Locations)

Breathing Air Trailer, Jackson, Mississippi

Qty.	Description
12	High Pressure (6,000 psi) Grade-D Breathing Air Cylinders

Respiratory Protective Equipment, Jackson, Mississippi

Qty.	Description
1	Breathing Air Trailer (Grade D) consisting of 12 6,000 PSI Cylinders
9	MSA Self-Contained Breathing Apparatus (SCBA), 60 minutes, including 12 NFPA-Compliant SCBAs
7	Hip-Mounted Breathing Air Units
30	Air-Purifying Respirators

Safety Equipment, Jackson, Mississippi

Qty.	Description	Qty.	Description
1	Blast Shield with Remotely-Operated Drill Press	400	Chemical-Specific Colorimetric Detector Tubes
2	HazCat Kit	1	Hydrogen Cyanide Detector
1	Portable Weather Station	1	Ammonia Detector
1	Random Aerosol Monitor (RAM)	1	Vented Exhaust Hood, Portable
3	Photoionization Detector (PID)	12	Mustang Flotation Jackets
1	Flame Ionization Detector (FID)	8	Mustang Survival/Flotation Suits
1	Lumex Portable Mercury Vapor Analyzer	1	Passport
4	Colormetric Tube Pumps	2	MSA Watchman
2	Entry Rae 4-Gas Meter	3	Radiological Survey Meter (NORM)
1	Guardian Biological Agent Detector		

Pumps, Transfer and Miscellaneous Equipment, Jackson, Mississippi

Qty.	Description	Qty.	Description
1	Stainless Steel Betts Valve	1	3" Stainless Steel Vane Pump
1	Vac-U-Max Stainless Steel Drum Pump	1	LPG / Anhydrous Ammonia Pump
1	Corken Compressor (Chlorine)	1	4,300-Watt Generator
1	Nitrogen Purge System for Chemical Transfers	2	2" Stainless Steel Air Diaphragm Pump, Viton Elastomers
1	3" Flare Stack	1	2" Stainless Steel Air Diaphragm Pump, Teflon Elastomers
320	Feet, 2" Stainless Steel LPG / Anhydrous	3	1" Polypropylene Air Diaphragm Pump, Viton Elastomers
	Ammonia Transfer Hose	2	2" Polypropylene Air Diaphragm Pump, Viton Elastomers
140	Feet, 2" Resistoflex Chemical Hose	4	2" Gas Wash Pump
220	Feet, 2" Teflon Chemical Transfer Hose	4	1" Wash Pump
3	Coppus Blower	3	1 1/2"High Pressure Washer Pump
150	Feet, 2" U.H.M.W.P. Chemical Transfer Hose	2	3" Gas Trash Pump
150	Feet, 1" U.H.M.W.P. Chemical Transfer Hose	4	2" Aluminum Air Diaphragm Pump
100	Feet, 2" Chemical Transfer Hose with Poly Fittings	1	60 kw Generator
200	Feet, 1" Monel Chlorine Transfer Hose	1	Carbon Filter Unit 2000lb. Capacity
300	Feet, Hydraulic Hose	2	Biological Fogging Units
1	Magnetic Patch	1	21.7 hp Hydraulic Power Pack
1	Chlorine "C" Kit	6	2" 1000 P.S.I. Stainless Steel Shutdown Valves
1	6,600-Watt Generator	1	Remote Emergency Shutdown System (3 shutdown locations)
30	3¼ " Acme Brass Adapters	2	2" Sightglass, backflow valves
1	185 CFM Air Compressor	1	High-Pressure Steam Cleaner
1	Butterworth	1	Portable Light Tower 4000-Watt
1	Explosion-Proof Lighting	1	2" Kynar Versamatic Diaphragm Pump
1	40 KVA Generator	2	7,200-Watt Generators
1	Haz-Hammock	2	Pressure Washer-Hot Water, trailer-mounted, self-contained

Comprehensive supply of stainless steel and polyethylene fittings, valves, nipples, bushings, reducers and couplings

Communications and Electronics, Jackson, Mississippi

Qty.	Type	Frequency	Range, Mi.	Description
12	Motorola Hand-Held	851-866 MHz	5	Intrinsically Safe
25	Cellular Telephone		Nationwide	Hand Held
10	GPS Units			Hand Held
2	Lazar Temperature Guns			
10	Digital Cameras			

RESPONSE EQUIPMENT (Jackson, Mississippi and Service Locations)

Mercury Spill Equipment and Supplies, Jackson, Mississipp

Qty.	Description	Qty.	Description
2	Mercury Vacuum	25	Pounds, Mercury Granular Absorbent
15	Gallons, Mercon Solution	10	Mercury Indicator Powder

Heavy Equipment, Jackson, Mississippi

Qty.	Description
2	4-Wheel Drive Cat Rubber-Tire Backhoe with Extend-a-hoe Attachment
1	Catepillar 320 Track hoe
1	Catepillar D5M Bull Dozer
1	Catepillar Skid Steer (bob cat)
1	Mini Excavator
1	Sheep's foot compactor (60" drum)
1	18 Yard tandem dump truck
1	End-Dump Trailer
1	2,000 gallon water truck
1	Tractor trailer with lo-boy

Firefighting Equipment and Supplies, Jackson, Mississippi

Qty.	Description	Qty.	Description
1	Akron 536 Cellar Nozzle	1	Firefighting Trailer with foam capability and 2,500 GPM pump
1	Akron 911 Oscillating Monitor with Nozzle	1	Firefighting Trailer with foam capability and 1,100 GPM pump
1	Akron 3443 Quick-Attack Monitor	1	Firefighting Support Trailer
1	Portable Monitor	18	NFPA-Compliant Firefighting Turnout/Bunker Gear
500	Feet, 3" LDH (Supply Line) Fire Hose	10	DuPont Tychem® CPF Thermo Pro (chemical and fire-resistant, level
500	Feet, 5" LDH (Supply Line) Fire Hose		B suits)
200	Gallons, AFFF and High-Expansion Foam	8	NFPA-Compliant Self-Contained Breathing Apparatus (SCBA)
115	Gallons, X-TRA High Expansion Foam	8	Spare Bottles of Air
1	K-12 Abrasive Saw	2	350-lb. Wheeled Purple K Fire Extinguishers
1	2,100-Gallon Water Tank, Portable	6	20-lb. Cartridge Purple K Fire Extinguishers
120	Feet, 6" Suction Hose with Camlock Fittings	4	30-lb. Metal X Fire Extinguishers
1	1/2" 95 GPM in-line Foam Eductor	1	Tempest PPV Fan, Gasoline
2	2 1/2" in-line Foam Eductor	1	500 GPM Self Educting Foam Master Stream Nozzle
2	750 Cu/min 25 GPM Hi-Ex Foam Nozzle w/Eductor	1	1000 GPM Self Educting Foam Master Stream Nozzle
1	Smoke Ejector	4	1 1/2" Turbojet Nozzle w/ Pistol Grip
2	2 1/2" X (2) 1 1/2" Gated Wye	1	Elkart Chief Nozzle
1	(2)2 1/2" x 5" Storz Outlet Siamese Clappered	3	Turbojet Fog Nozzle
1	Water Thief w/(2) 1 1/2" x (1) 2 1/2"	1	6" Nercyrt Nozzle
1	LDH Manifold 5" Storz x (4) 2 1/2"	1	3" Piercing Nozzle
1	LDH Manifold 5" Storz x (3) 2 1/2"	1	Stacked Tips Set for Monitor
2	2 1/2" NH Gated Valve	1	250 GPM Medium Expansion 2 1/2" Nozzle
1	2 1/2" Double Female Adapter	6	6" x 20" Suction Hose w/ Camlock Fittings
1	2 1/2" Double Male Adapter	1	6" Basket Strainer
4	6" Female nh x 5" Storz Adapter	1	6" Floating Strainer
1	5" Female nh x 5" Storz Adaptor	1	2100 Gal. Portable/Folding Water Tank
3	4 1/2" Female nh x 5" Storz Adapter	1	Gasoline PPV Fan
2	2 1/2 nhf x 5" Storz Adapter	1	Stokes Stretcher w/Floatation Kit
1	Herbert LDH Hose Clamp	1	Long Hand Board (Plastic)
1	Eyewash Station	1	Sled
1	First Aid Kit	1	Confined Space Rescue Kit
1	Fire Boss, twin agent (AFFF Foam and PKP Extinguishing Agents)		
1	Darley Hercules Portable Fire Pump, rated at 575 GPM		
6	Radios		

Comprehensive supply of ladders, tools and accessories, including Akron turbojet nozzles, flathead axes, pike poles, etc.

RESPONSE EQUIPMENT (Jackson, Mississippi and Service Locations)

Traffic Control Equipment, Jackson, Mississippi

Qty.	Description	Qty.	Description
1	Solar Powered Arrow Board	4	Roadwork Ahead Signs
1	Truck with flashing lights	4	Right/Left Lane Closed One Mile Signs
1	24' Foot Equipment Trailer	4	Right/Left Lane Closed One-Half Mile Signs
2	Stop and Slow Flagger Paddles with 6' Staff	2	Right/Left Lane Closed 1500 Feet Signs
10	Personnel Clip On Flashing Lights	4	Lane Diversion/ Lane Ends Signs
4	Flaggers Flags	2	Reduced Speed Ahead Signs
8	Blinking Lights	2	Speed Limit 60 Signs
12	Flagman's Reflective Vests	2	One Lane Road Ahead Signs
50	Traffic Control Cones	2	Be Prepared to Stop Signs
70	Tires (to keep barrels in place)	2	Flagman Ahead Signs
180	Feet, Traffic Control Interlocking Barricades	2	Shoulder Work Signs
10	Tripod Sign Stands	2	End Road Work Signs
20	H Style Sign Stands	1	Speeding Fines Doubled When Workers Are Present Sign
4	Lighted Hand Wands	4	Blank MPH Signs
60	Traffic Control Barrels	1	Road Closed Authorized Personnel Only Sign
2	Exit Signs	1	Right Shoulder Closed w/Next xx Miles Plaque
2	Yield Signs	1	Right Shoulder Closed w/xx Feet Plaque
2	Road Work One Mile Signs	1	Left Shoulder Closed w/Next xx Miles Plaque
		1	Left Shoulder Closed w/xx Feet Plaque

RESPONSE EQUIPMENT (Memphis, Tennessee and Service Locations)

Containment Boom, Memphis, Tennessee

Qty. (ft.)	Model	Size	Description
3,000	River	18"	Quick Connect, 100 ft. sections, 22 oz. Fabric
500	Large Creek	15"	Quick Connect, 100 ft. sections, 22 oz. Fabric
300	Large Creek	12"	Quick Connect, 50 ft. sections, 22 oz. Fabric
850	Miniboom (Creek)	6"	Quick Connect, 50 ft. sections, 22 oz. Fabric

Vacuum Trucks & Skimmers (*Effective Daily Recovery Capacity, Derated to 20% Efficiency per NVIC 7-92), Memphis, Tenn

Qty.	Type	EDRC* (Barrels)	Description
1	Vacuum Truck	500	80-Barrel Capacity, Stainless Steel
1	Vacuum Truck	500	80-Barrel Capacity, Carbon Steel
2	Crucial	240	36" Drum Skimmer

Temporary Storage Capacity, Memphis, Tennessee (Minimum in Inventory)

Qty.	Type	Capacity	Description
8	Overpack Drums	95 Gal.	Polyethylene
8	Overpack Drums	85 Gal.	Steel
25	Open Top Drums	55 Gal.	Polyethylene
30	Open Top Drums	55 Gal.	Steel
2	Portable Tank	1,000 Gal.	Polyethylene

Vessels and Motors, Memphis, Tennessee

Qty.	Type	Size, ft.	HP	MPH	Range, Mi.	Lbs.	Crew Size
1	Work Boat	24	2 - 115	50	70 to 80	1,000	4
2	Work Boat	16	25	20	30 to 40	800	2
5	Work Boat	14	9.9	20	30 to 40	800	2
3	Work Boat	12	9.9	20	30 to 40	800	2
1	Work Boat	28	2-200	50	70 to 80	1,000	4
1	Marco Skimmer	28	2-115	30	70 to 80	1,000	4

Transportation Equipment, Memphis, Tennessee

Qty.	Description	Qty.	Description
7	Pick-up Trucks	1	25' Equipment Trailer with hydraulic crane
1	20' Equipment Trailer (Enclosed)	1	20' Oil Spill Response Trailer
1	16' Landscape Trailer with sides	1	16' Oil Spill Response Trailer
1	20' Equipment Trailer with sides	1	16' Enclosed PPE Trailer
1	18' Equipment Trailer w/ Bumper Pull (10,000 lbs.)		
1	36' HazMat Response Trailer/Chemical Transfer Unit with Command Center		

Supplies, Consumable, Memphis, Tennessee (Minimum in Inventory)

Qty.	Description	Qty.	Description
120	Bales, Sorbent Pads	12	Bags, Vermiculite
180	Bales, Chemical Pads	180	Bales, Oil Pads
60	Bales, 5" Sorbent Boom	8	Bags, Cell-U-Sorb
25	Bags, Citric Acid	25	Bags, Sodium Bicarbonate
180	Bags, Oil-Gator	75	Pails, 5-Gallon, Micro Blaze
25	Bags, Hydrated Lime	56	Bags, Soda Ash

RESPONSE EQUIPMENT (Memphis, Tennessee and Service Locations)

Personal Protective Equipment, Memphis, Tennessee

Qty.	Description	Qty.	Description
6	Fully-Encapsulating Level A Suits	144	Pair, Nitrile Gloves
1	Level A Suit Tester	12	Pair, Butyl Gloves
60	Level B Suits, Kappler CPF 3	12	Boxes, Nitrile Inner Gloves
60	Level B Suits, Kappler CPF 2	50	Pair, Latex Boot Covers
125	NexGen (Kappler) Suits	24	Pair, SilverShield Gloves
144	Pair, PVC Gloves	24	Pair, SilverShield Foot Covers
24	Leather Work Gloves	8	Size 15 Level "A" Outer Boots
5	Sets of Bunker Gear	12	Rain Suits
5	USCG Type V Exposure Suits	4	USCG Type III Float Coats
250	Poly Tyvek Suits		

Respiratory Protective Equipment, Memphis, Tennessee

Qty.	Description
1	MSA Self-Contained Breathing Apparatus
2	MSA SCBA Spare Bottles (30-minute)
4	Hip-Mounted Breathing Air Units
4	Scott Self-Contained Breathing Apparatus
4	Scott SCBA Spare Bottles (60-minute)
600	Feet, MSA Hard Line for Breathing Air
10	Boxes, GME P-100 type Cartridges (6 ea.)
6	Boxes, MersorbCartridges
15	Air-Purifying Respirators

Safety Equipment, Memphis, Tennessee

Qty.	Description	Qty.	Description
1	Combustible Gas Detector/4-Gas Meter	1	Colorimetric Tube Draeger Pump
2	MultiRae / 5-Gas PID	1	Ph Meter
1	UltraRae - Benzene Specific	40	H2S Meters
1	EntryRae / 5-Gas PID	1	Radiation Survey Meter
1	Haz Cat Kit	1	Handheld Weather Station
2	Colorimetric Tube MSA Pump & assortment of detector tubes		

Pumps and Miscellaneous Equipment, Memphis, Tennessee

Qty.	Description	Qty.	Description
140	Ft, 2" Teflon (TFPE) Chemical Transfer Hose	2	3" Aluminum Air Diaphragm Pump
120	Ft, 1" Chemflex Chemical Transfer Hose	1	Chlorine C Kit
250	Feet, 2" Petroleum Hose	1	Haz-Hammock
500	Feet, 3" Petroleum Hose	2	Copper Coated Grounding Rods
2	2" Trash Pumps	1	2" Wash Pump
1	3" Trash Pump	2	Lutz Electric Hydrocarbon Pump
8	Manual Hydrocarbon Pumps	2	High Pressure Rail Car Test Kit
2	Pressure washer 2600 psi	1	20k Hydroblaster
1	Magnetic Patch Kit		
1	25 lb. Bottle LPG for Flare		
3	Rebuild Kits		
1	Self-Contained Steam Cleaner, Trailer Mounted		
1	2" Stainless Steel Air Diaphragm Pump, Viton Elastomers		
1	2" Stainless Steel Air Diaphragm Pump, Teflon Elastomers		
2	1" Polypropylene Air Diaphragm Pump, Viton Elastomers		
1	2" Polypropylene Air Diaphragm Pump, Viton Elastomers		

Communications, Memphis, Tennessee

Qty.	Type	Frequency	Range, Mi.	Description
5	Vertex Hand-Held	151-158 MHz	2-5	Intrinsically Safe
4	Marine Hand-Held/Mobile	Marine Band	2-5	Uniden
16	Cellular Telephone		Nationwide	Hand Held

RESPONSE EQUIPMENT (Little Rock, Arkansas and Service Locations)

Containment Boom, Little Rock, Arkansas

Qty. (ft.)	Model	Size	Description
1,000	River	18"	Quick Connect, 100 ft. sections, 22 oz. Fabric
200	Miniboom	6"	Quick Connect, 50 ft. sections, 22 oz. Fabric

Vacuum Trucks & Skimmers (*Effective Daily Recovery Capacity, Derated to 20% Efficiency per NVIC 7-92), Little Rock, Arkansas

Qty.	Type	EDRC* (Barrels)	Description
1	Guzzler	500	70-Barrel Capacity
2	Goo Gobbler	500	48" Double-Barrel Skimmer

Temporary Storage Capacity, Little Rock, Arkansas (Minimum in Inventory)

Qty.	Type	Capacity	Description
7	Totes	250 Gallon	Poly
3	Portable Tanks	500 Gallon	Poly
10	Open Top Drums	55 Gallon	Steel
15	Open Top Drums	55 Gallon	Poly
1	Over Pack	95 Gallon	Poly

Vessels and Motors, Little Rock, Arkansas

Qty.	Type	Size, ft.	HP	MPH	Range, Mi.	Lbs.	Crew Size
1	Work Boat	16	25	20	30 to 40	800	2

Transportation Equipment, Little Rock, Arkansas

Qty.	Description	Qty.	Description
11	Pick-up Trucks	2	20' Gooseneck Trailer
1	16' Bumper Utility Trailer	1	16' Oil Spill T
1	24' HazMat Response Trailer	1	Hotsy Trailer Mounted Press Washer

Supplies, Consumable, Little Rock, Arkansas (Minimum in Inventory)

Qty.	Description	Qty.	Description
50	Bales Sorbent Pads	2	Pails Absorbent (floor dry)
20	Bales Chemical Pads	20	Bags Hydrated Line
10	Bales 5" Sorbent Boom	10	Bags Sodium Bicarbonate
10	Bags Citric Acid	10	Bags Sodium Bisulfite
40	Bags Oil-Gator	1	55 Gallon Drum Micro Blaze

Personal Protective Equipment, Little Rock, Arkansas

Qty.	Description	Qty.	Description
4	Level A Suits	24	Pair, Nitrile Gloves
24	Level B Suits, Kappler CPF 3	24	Pair, PVC Gloves
24	Level B Suits, Kappler CPF 2	4	Boxes, Nitrile Inner Gloves
48	NexGen (Kappler) Suits	24	Pair, Latex Boot Covers
24	Pair, SilverShield Gloves	4	Size 15 Level "A" Outer Boots

Respiratory Protective Equipment, Little Rock, Arkansas

Qty.	Description
4	MSA Self-Contained Breathing Apparatus
4	Scott SCBA Spare Bottles (60-minute)
5	Boxes of GME P-100 type Cartridges (6 ea.) 30 total
13	Air-Purifying Respirators

Safety Equipment, Little Rock, Arkansas

Qty.	Description
1	Haz Cat Kit
1	Combustible Gas Detector/4-Gas Meter
6	Portable Eye Wash
14	Fire Extinguishers
1	AED
14	First Aid Kit

RESPONSE EQUIPMENT (Little Rock, Arkansas and Service Locations)

Pumps and Miscellaneous Equipment, Little Rock, Arkansas

Qty.	Description	Qty.	Description
40'	Feet, 1" Chemical Hose w/S.S. Fittings	1	Regulator for Diaphragm Pump w/ Water Condensate Filter
80'	Feet, 2" Chemical Hose w/S.S. Fittings	1	Stainless Steel Fitting Box
100'	1" Hose w/ Aluminum Fittings	1	Haz-Hammock
1	2" Double Diaphragm S.S. Pump	1	2" Double Diaphragm Poly Pump
2	1" Double Diaphragm Poly Pump	1	3" Trash Pump
1	O-Ring Kit	2	Portable Generator 5500
2	Portable Air Compressors	1	A-E Kit
Comprehensive supply of stainless steel and polyethylene fittings, valves, nipples, bushings, reducers and couplings.			

Communications, Little Rock, Arkansas

Qty.	Type	Frequency	Range, Mi.	Description
14	Cellular Telephone		Nationwide	Hand Held

Heavy Equipment, Little Rock, Arkansas

Qty.	Description
1	Komatsu Mini Excavator
1	90 HP Tractor and Bush Hog
1	Catepillar Skid Steer (bob cat)

RESPONSE EQUIPMENT (Mobile, Alabama and Service Locations)

Containment Boom, Mobile, Alabama

Qty. (ft.)	Model	Size	Description
800	ACME, Miniboom	10"	Quick Connect, 50 ft. sections, 22 oz. Fabric
5,000	ACME, River	18"	Quick Connect, 100 ft. sections, 22 oz. Fabric

Vacuum Trucks & Skimmers (*Effective Daily Recovery Capacity, Derated to 20% Efficiency per NVIC 7-92), Mobile, Alabama

Qty.	Type	EDRC* (Barrels)	Description
1	Vacuum Truck	500	70-Barrel Capacity, Stainless Steel
1	Tri-axle Roll Off Truck		60,000-Pound Capacity Hoist System with Auto Tarp
1	Goo Gobbler	616	24" Aluminum Cylinder Skimmer with Pneumatic Tank
2	Skim Pack	300	
1	OTR with Roll Off Frame		

Temporary Storage Capacity, Mobile, Alabama (Minimum in Inventory)

Qty.	Type	Capacity	Description
1	Poly Storage Tank	3,000 Gal.	Designed for Chemical Storage
1	Poly Storage Tank	300 Gal.	Designed for Chemical Storage
1	Skid-Mounted Tank	1,000 Gal.	Steel
2	Skid-Mounted Tank	500 Gal.	Steel
125	Open Top Drum	55 Gal.	Steel and Poly
20	Overpack Drum	95 Gal.	Steel
10	Overpack Drum	85 Ga.	Polyethylene

Vessels and Motors, Mobile, Alabama

Qty.	Type	Size, ft.	HP	MPH	Range, Mi.	Lbs.	Crew Size
1	Fast Response Vessel	26	300	50	250	5,500	6
1	Fast Response Vessel	20	115	57	100	1,800	4
1	Response Vessel	18	50	35	30	1,000	3
1	Work Boat	16	25	30	50	1,300	2

Transportation Equipment, Mobile, Alabama

Qty.	Description	Qty.	Description
11	Pick-up Truck	1	Stake Body Truck with Hydraulic Crane
4	4-WD ATV	1	26' Hazardous Materials/Chemical Transfer Trailer
1	12' ATV Trailer	1	21' Emergency Response/Oil Spill Trailer
1	20' Equipment Trailer	1	16' Confined Space/High Angle Rescue Trailer
1	18' Equipment Trailer	1	14' Enclosed Drum Transport Trailer
1	18' Equipment Trailer with sides	1	10,000 psi Hydro Blaster
1	20' Boom Trailers		

Supplies, Consumable, Mobile, Alabama (Minimum in Inventory

Qty.	Description	Qty.	Description
100	Bales, Absorbent Pads	30	Boxes, Absorbent Oil Snare
60	Bales, Absorbent Boom, 5"	20	Bales, Absorbent Chemical Boom, 6"
100	Bags, Oil Gator	20	Bags, Absorbent Vermiculite
30	Bags, Citric Acid	25	Bales, Chemical Pads
20	Micro-Blaze	50	Bags, Cell-U-Sorb
20	Bales, Oil Sweep	20	Bags, Sodium Bicarbonate

Personal Protective Equipment, Mobile, Alabama

Qty.	Description	Qty.	Description
8	Fully-Encapsulating Level A Suits	144	Pair, Nitrile Gloves
30	Level B Suits, Kappler CPF 3	120	Pair, Neoprene Gloves
60	Level B Suits, Kappler CPF 2	500	Pair, Nitrile Inner Gloves
6	Firefighter Bunker Gear	100	Pair, Latex Boot Covers
500	NexGen (Kappler) Suits	30	Pair, SilverShield Gloves
2	USCG Type V Exposure Suits	4	USCG Type III Float Coats

RESPONSE EQUIPMENT (Mobile, Alabama and Service Locations)

Respiratory Protective Equipment, Mobile, Alabama

Qty.	Description
4	High Pressure (6,000 psi) Grade-D Breathing Air Cylinders
10	MSA Self-Contained Breathing Apparatus
6	MSA SCBA Spare Bottles (60-minute)
2	Hip-Mounted Breathing Air Units
4	MSA Breathing Air
300	Feet, MSA Hard Line for Breathing Air
20	Air-Purifying Respirators

Safety Equipment, Mobile, Alabama

Qty.	Description	Qty.	Description
1	Combustible Gas Detector/4-Gas Meter	1	Colorimetric Tube Draeger Pump
1	Combustible Gas Detector/5-Gas PID	1	Colorimetric Tube MSA Pump & assortment of detector tubes
1	Radiation Survey Meter	1	Ammonia Detector
1	Haz-Cat Kit	10	H2S Detector

Pumps and Miscellaneous Equipment, Mobile, Alabama

Qty.	Description	Qty.	Description
1	3" Stainless Steel Air Diaphragm Pump	1	SS Betts Emergency Unloading Valve
1	2" Polypropylene Air Diaphragm Pump	1	1" Simmer Petroleum Pump
3	2" Stainless Steel Air Diaphragm Pump	2	3" Wash Pump
2	1" Stainless Chem Air Diaphragm Pump	6	2" Wash Pump
2	1" Polypropylene Air Diaphragm Pump	1	Nonsparking Tool Kit
100	Feet, 2" Petroleum Transfer Hose, Brass Fittings	1	2D Butterworth
100	Feet, 2" Acid/Chemical Hose, Stainless Fittings	1	2" Sightglass, Backflow Valves
10	Decontamination Pool	1	Chlorine "A" Kit
2	High-Pressure Steam Cleaner	1	Nitrogen Purge System for Chemical Transfers
1	225 Amps, 6,000 Watts Miller Welding Machine	1	185 CFM Air Compressor
1	Recovery Winch and Harness	1	Chlorine "B" Kit
2	Wheel Barrow Portable Air Compressor	1	Chlorine "C" Kit
1	Set, "Lid Loc" Dome Clamps	100	Feet, 2" Acid/Chemical Hose, Polypropylene Fittings
	Explosion Proof Lighting	1	5,000-Watt Generator
Comprehensive supply of stainless steel and polyethylene fittings, valves, nipples, bushings, reducers and couplings.			

Communications, Mobile, Alabama

Qty.	Type	Frequency	Range, Mi.	Description
12	Motorola Hand Held		> 100	MPKA Hand Held
15	Cellular Telephone		Nationwide	Hand Held
2	Satellite Phone/Radio		Unlimited	Portable
8	GPS Units			Hand Held
6	Digital Cameras			

Industrial Equipment, Mobile, Alabama

Qty.	Description	Qty.	Description
1	10,000 psi Hydro Blaster	1	4,000 psi Hot/Cold Water Pressure Washer
2	Bulldog Pumps	2	3,500 Cold Water Pressure Washer
1	2D Butterworth Nozzle with attachments	1	Venturi Blower and Copus Blower

Containment Boom, Biloxi, Mississippi

Qty. (ft.)	Model	Size	Description
2,000	ACME, River	18"	Quick Connect, 100 ft. sections, 22 oz. Fabric

Temporary Storage Capacity, Biloxi, Mississippi (Minimum in Inventory)

Qty.	Type	Capacity	Weight (lbs.)	Description
1	Poly Storage Tank	300 Gal.		Designed for chemical storage
5	Close Top Drums	55 Gal.		Steel
2	Overpack Drum	95 Gal.	50	Steel
1	Overpack Drum	95 Gal.	50	Poly
1	Overpack Drum	30 Gal.		Poly

RESPONSE EQUIPMENT (Mobile, Alabama and Service Locations)

Vessels and Motors, Biloxi, Mississippi

Qty.	Type	Size, ft.	HP	MPH	Range, Mi.	Lbs.	Crew Size
1	Work Boat	16	25	25	30	1,000	2

RESPONSE EQUIPMENT (Mobile, Alabama and Service Locations)

Transportation Equipment, Biloxi, Mississippi

Qty.	Description	Qty.	Description
3	Pick-up Truck	2	16' Emergency Response Trailer

Supplies, Consumable, Biloxi, Mississippi (Minimum in Inventory)

Qty.	Description	Qty.	Description
36	Bales, Absorbent Pads	30	Boxes, Absorbent Oil Snare
24	Bales, Absorbent Boom, 5"	20	Bales, Absorbent Chemical Boom, 6"
20	Bales, Oil Sweep	50	Bags, Absorbent Particulate

Personal Protective Equipment, Biloxi, Mississippi

Qty.	Description	Qty.	Description
20	Level B Suits, Kappler CPF 2	20	Pair, Neoprene Gloves
30	NexGen (Kappler) Suits	20	Pair, Rubber Boot Covers

Safety Equipment, Biloxi, Mississippi

Qty.	Description	Qty.	Description
1	Combustible Gas Detector/4-Gas Meter	1	HazCat Kit
1	Photoionization Detector (PID)		

Communications, Biloxi, Mississippi

Qty.	Type	Frequency	Range, Mi.	Description
2	Cellular Telephone		Nationwide	Hand Held
3	GPS Units			Hand Held
2	Digital Cameras			

Pumps and Miscellaneous Equipment, Biloxi, Mississippi

Qty.	Description
1	1" Aluminum Air Diaphragm Pump
1	1" Polypropylene Air Diaphragm Pump
1	2" Wash Pump
1	5,000-Watt Generator

RESPONSE EQUIPMENT (Birmingham, Alabama and Service Locations

Containment Boom, Birmingham, Alabama

Qty. (ft.)	Model	Size	Description
2,500	River	18"	Quick Connect, 100 ft. sections, 22 oz. Fabric

Vacuum Trucks & Skimmers (*Effective Daily Recovery Capacity, Derated to 20% Efficiency per NVIC 7-92), Birmingham, Alabama

Qty.	Type	EDRC* (Barrels)	Description
1	Stainless Vacuum Truck	500	80-Barrel Capacity

Temporary Storage Capacity, Birmingham, Alabama (Minimum in Inventory

Qty.	Type	Capacity	Description
5	Overpack Drums	95 Gal.	Polyethylene
10	Open Top Drums	55 Gal.	Polyethylene
20	Open Top Drums	55 Gal.	Steel

Vessels and Motors, Birmingham, Alabama

Qty.	Type	Size, ft.	HP	MPH	Range, Mi.	Lbs.	Crew Size
2	Jon Boat	16	20	20	20	750	4

Transportation Equipment, Birmingham, Alabama

Qty.	Description	Qty.	Description
3	Pick-up Trucks	1	20' Equipment Trailer with sides
1	16' HazMat/Oil Spill Response Trailer	1	36' Hazmat/Oil Spill Response Trailer
1	20' Equipment Trailer		

Supplies, Consumable, Birmingham, Alabama (Minimum in Inventory

Qty.	Description	Qty.	Description
10	Bales, Sorbent Pads	10	Bags, Vermiculite
10	Bales, Chemical Pads	20	Bags, Oil Dry
10	Bales, 5" Sorbent Boom	30	Bags, Cell-U-Sorb
20	Bags, Citric Acid	30	Bags, Sodium Bicarbonate
30	Bags, Lime	20	Bags, Soda Ash
60	Bags, Oil-Gator		

Personal Protective Equipment, Birmingham, Alabama

Qty.	Description	Qty.	Description
4	Fully-Encapsulating Level A Suits	144	Pair, Nitrile Gloves
30	Level B Suits, Kappler CPF 3	120	Pair, Neoprene Gloves
60	Level B Suits, Kappler CPF 2	500	Pair, Nitrile Inner Gloves
60	NexGen (Kappler) Suits	100	Pair, Latex Boot Covers
30	Pair, SilverShield Gloves	2	Size 15 Level A Outer Boots

Respiratory Protective Equipment, Birmingham, Alabama

Qty.	Description
4	MSA Self-Contained Breathing Apparatus
4	MSA SCBA Spare Bottles (60-minute)
2	Hip-Mounted Breathing Air Units
4	MSA Breathing Air
600	Feet, MSA Hard Line for Breathing Air
5	Boxes of Mersorb Cartridges
6	Air-Purifying Respirators

Safety Equipment, Birmingham, Alabama

Qty.	Description	Qty.	Description
1	Combustible Gas Detector/4-Gas Meter	1	Colorimetric Tube Draeger Pump
1	Combustible Gas Detector/5-Gas PID	1	Colorimetric Tube MSA Pump & assortment of detector tubes

RESPONSE EQUIPMENT (Birmingham, Alabama and Service Locations

Pumps and Miscellaneous Equipment, Birmingham, Alabama

Qty.	Description	Qty.	Description
200	Ft, 2" UHMWP Chemical Transfer Hose	1	2" Stainless Steel Air Diaphragm Pump, Viton & Teflon Elastomers
20	Ft, 1" Chemflex Chemical Transfer Hose	2	2" Polypropylene Air Diaphragm Pump, Viton Elastomers
60	Feet, 4" Petroleum Hose	1	1" Aluminum Air Diaphragm Pump, Viton Elastomers
200	Feet, 2" Petroleum Hose	1	2" Polypropylene Air Diaphragm Pump, Teflon Elastomers
1	3" Trash Pumps	2	Rebuild Kits for 2"
2	2" Trash Pump	100	Feet, Chemical Hose with Poly Fittings 20' Sections
1	Regulator for Diaphragm Pump	1	Flare and Kit
1	Nitrogen Regulator	1	Compressed Air Regulator
1	1" Air Dryer with Cowfoot Fittings	1	Haz-Hammock
1	Chlorine C Kit	1	Pressure Relief Device - O Ring Kit
1	A-E Patch Kit	2	50' Fire hose With Cam Lock Fittings
Comprehensive supply of stainless steel and polyethylene fittings, valves, nipples, bushings, reducers and couplings.			

Communications, Birmingham, Alabama

Qty.	Type	Frequency	Range, Mi.	Description
6	Cellular Telephone		Nationwide	Hand Held

RESPONSE EQUIPMENT (Houston, Texas and Service Locations)

Containment Boom, Houston, Texas

Qty. (ft.)	Model	Size	Description
5,000	River	20"	Quick Connect, 100 ft. sections, 22 oz. Fabric
500	Creek	6"	

Vacuum Trucks & Skimmers (*Effective Daily Recovery Capacity, Derated to 20% Efficiency per NVIC 7-92), Houston, Texas

Qty.	Type	EDRC* (Barrels)	Description
2	Vacuum Truck	500	70-Barrel Capacity
1	Goo Gobbler	616	24" Aluminum Cylinder Skimmer with Hydraulic Pack
1	Guzzler Air Mover	70	

Temporary Storage Capacity, Houston, Texas (Minimum in Inventory)

Qty.	Type	Capacity	Description
19	Overpack Drums	95 Gal.	Polyethylene
19	Overpack Drums	85 Gal.	Steel
40	Open Top Drums	55 Gal.	Polyethylene
40	Open Top Drums	55 Gal.	Steel

Vessels and Motors, Houston, Texas

Qty.	Type	Size, ft.	HP	MPH	Range, Mi.	Lbs.	Crew Size
1	Fast Response Boat	26	2 - 150	55	60	5,000	6
4	Work Boat	16	25	25	15	1,000	2

Transportation Equipment, Houston, Texas

Qty.	Description	Qty.	Description
13	Pick-up Trucks	3	20' Flatbed Gooseneck Trailer
1	70 BBL Vac Truck (Freightliner)	1	20' Equipment / Utility Trailer
1	32' Chemical Transfer Trailer	2	20' Boom Trailer
2	24' HazMat Response Trailer	1	24' Demolition Trailer with Office
1	16' Oil Spill Trailer	1	28' Flatbed Gooseneck Trailer
1	24' Marine Response Trailer	1	Roll off Trailer
1	Semi Tractor	1	40' Mobile Command Trailer

Supplies, Consumable, Houston, Texas (Minimum in Inventory)

Qty.	Description	Qty.	Description
100	Bales, Sorbent Pads	100	Bales, Chemical Pads
100	Bags, 8" Sorbent Boom, 40'	150	Bags, Oil Snare

Personal Protective Equipment, Houston, Texas

Qty.	Description	Qty.	Description
10	Level A Suits	40	Poly Coated Tyvek Suits
40	NexGen Suits	40	Level B Suite, CPF3
40	Level B Suits, CPF2	50	Latex Booties
500	Pair, Inner Gloves	80	Pair, PVC Gloves
120	Pair, Nitrile Gloves	20	Pair, Silver Shield Gloves
20	Pair, Silver Shield Booties		

Respiratory Protective Equipment, Houston, Texas

Qty.	Description
8	MSA Self Contained Breathing Apparatus with 60 Minute Bottles
8	MSA 60 Minute Spare Bottles
20	MSA Ultra Twin Respirators, Full Face

RESPONSE EQUIPMENT (Houston, Texas and Service Locations)

Safety Equipment, Houston, Texas

Qty.	Description	Qty.	Description
3	Combustible Gas Detector/4-Gas Meter	3	Photoionization Detector
1	Radiation Survey Meter		

Pumps and Miscellaneous Equipment, Houston, Texas

Qty.	Description	Qty.	Description
1	3" Poly Chem Air Diaphragm Pump	200	Feet, 2" Acid/Chemical Hose with Poly Fittings
3	2" Stainless Steel Chemical Air Diaphragm Pump	200	Feet, 1" Acid/Chemical Hose with Poly Fittings
3	2" Poly Chem Air Diaphragm Pump	100	Feet, 3" Acid/Chemical Hose with Stainless Fittings
2	1" Stainless Steel Chemical Air Diaphragm Pump	200	Feet, 2" Acid/Chemical Hose with Stainless Fittings
2	1" Poly Chem Air Diaphragm Pump	400	Feet, 1" Acid/Chemical Hose with Stainless Fittings
1	Blackmer 2" Stainless Steel Vein Pump	100	Feet, 2" Discharge Hose with Strainers
7	2" Gasoline Trash Pump	500	Feet, 1 1/2" Rag Hose with Strainers
1	2" Diesel Trash Pump	1	North Star 13,500 kW Generator
400	Feet, 2" Petroleum Hose with Strainers	2	Wheel Barrow Portable Air Compressor
100	Feet, 1" Petroleum Hose with Strainers	3	Drum Dolly
1	6000 kW Generator	1	3500 kW Generator
2	Dewalt 6500 kW Generator	1	Drum Lifting Device, Drum Sling
Comprehensive supply of stainless steel and polyethylene fittings, valves, nipples, bushings, reducers and couplings.			

Communications, Houston, Texas

Qty.	Type	Frequency	Range, Mi.	Description
6	Motorola Hand-Held	851-866 MHz	5	Intrinsically Safe
20	Cellular Telephones		Nationwide	Hand Held

Heavy Equipment, Houston, Texas

Qty.	Description	Qty.	Description
1	Track hoe - Volvo 210	1	Mini Excavator - Kubota

Thermal Oxidizer, Houston, Texas

Qty.	Description
1	1000 SCFM Self-Contained, Portable Thermal Oxidizer with 300 feet of 4" Stainless Hose

RESPONSE EQUIPMENT (Laredo, Texas and Service Locations)

Temporary Storage Capacity, Laredo, Texas (Minimum in Inventory)

Qty.	Type	Capacity	Description
10	Overpack Drums	95 Gal.	Polyethylene
5	Overpack Drums	85 Gal.	Steel
12	Open Top Drums	55 Gal.	Polyethylene
10	Open Top Drums	55 Gal.	Steel

Transportation Equipment, Laredo, Texas

Qty.	Description	Qty.	Description
2	Pick-up Trucks	2	28' HazMat Response Trailer/Chemical Transfer Unit
1	24' Equipment Trailer	1	18' Equipment Trailer

Supplies, Consumable, Laredo, Texas (Minimum in Inventory)

Qty.	Description	Qty.	Description
10	Bales, Sorbent Pads	24	Bags, FloorDri
2	Bags, 8" Sorbent Boom, 40'	12	Micro-Blaze
12	Bags, Citric Acid		
2	Bags, Hydrated Lime		
10	Bales, Chemical Pads		

Personal Protective Equipment, Laredo, Texas

Qty.	Description	Qty.	Description
3	Level A Suits, DuPont Tychem	120	Pair, Nitrile Gloves
20	Level B Suits, CPF 3	120	Pair, Neoprene Gloves
20	Level B Suits, CPF 2	150	Pair, Rubber Boot Covers
60	NexGen Suits	1,000	Pair, Nitrile Inner Gloves

Respiratory Protective Equipment, Laredo, Texas

Qty.	Description
3	Scott Self-Contained Breathing Apparatus
5	Air-Purifying Respirators

Safety Equipment, Laredo, Texas

Qty.	Description	Qty.	Description
1	Combustible Gas Detector/4-Gas Meter with PID	120	Chemical-Specific Colorimetric Detector Tubes
1	Colorimetric Tube Drager Pump		

Pumps and Miscellaneous Equipment, Laredo, Texas

Qty.	Description	Qty.	Description
160	Feet, 2" U.H.M.W.P. Chemical Transfer Hose	1	Stainless Steel Air Diaphragm Pump, Viton Elastomers
60	Feet, 1" U.H.M.W.P. Chemical Transfer Hose	1	2" Polypropylene Air Diaphragm Pump, Viton Elastomers
100	Feet, 2" Petroleum Hose	1	1" Polypropylene Air Diaphragm Pump, Viton Elastomers

Comprehensive supply of stainless steel and polyethylene fittings, valves, nipples, bushings, reducers and couplings.

Communications and Electronics, Laredo, Texas

Qty.	Type	Frequency	Range, Mi.	Description
3	Cellular Telephone		Nationwide	Hand Held
2	GPS Units			Hand Held
3	Digital Cameras			

Industrial Equipment, Laredo, Texas

Qty.	Description	Qty.	Description
1	2,200 psi Pressure Washer		

RESPONSE EQUIPMENT (Beach, North Dakota and Service Locations)

Containment Boom, Beach, North Dakota

Qty. (ft.)	Model	Size	Description
10,000	River	18"	Quick Connect, 100 ft. sections, 22 oz. Fabric
1,500	Miniboom	6"	Quick Connect, 50 ft. sections, 22 oz. Fabric

Vacuum Trucks & Skimmers (*Effective Daily Recovery Capacity, Derated to 20% Efficiency per NVIC 7-92), Beach, ND

Qty.	Type	EDRC* (Barrels)	Description
2	Crucial		36" Drum Skimmer

Temporary Storage Capacity, Beach, North Dakota (Minimum in Inventory)

Qty.	Type	Capacity	Description
5	Overpack Drums	95 Gal.	Polyethylene
10	Overpack Drums	85 Gal.	Steel
50	Open Top Drums	55 Gal.	Steel
20	Open Top Drums	55 Gal.	Polyethylene
30	Closed Top Drums	55 Gal.	Steel
20	Closed Top Drums	55 Gal.	Polyethylene

Vessels and Motors, Beach, North Dakota

Qty.	Type	Size, ft.	HP	MPH	Range, Mi.	Lbs.	Crew Size
1	Fast Response Vessel	20	150	60	150	2,500	6
2	Work Boat	16	25	25	30	1,000	2

Transportation Equipment, Beach, North Dakota

Qty.	Description	Qty.	Description
3	Pick-up Trucks	1	24' Oil Spill Response Trailer
1	20' Equipment Trailer	1	20' Enclosed Response Trailer

Supplies, Consumable, Beach, North Dakota (Minimum in Inventory)

Qty.	Description	Qty.	Description
192	Oil Pads	40	5" Oil Sorbent Boom 40"
20	Snare on Rope 50' section	10	Bags, Vermiculite
10	Bags, Citric Acid	10	Bags, Hydrated Lime
120	Bags, Oil-Gator	40	Bags, FloorDri
42	Bales, Chemical Pads	100	Micro-Blaze Gallons

Personal Protective Equipment, Beach, North Dakota

Qty.	Description	Qty.	Description
48	Level B Suits, CPF 3	72	Pair, Nitrile Gloves
48	Level B Suits, CPF 2	72	Pair, PVC Coated Globes
136	NexGen Suits	6	Pair, Rubber Boot Covers
99	NexGen Suits PVC Coated	1300	Pair, Nitrile Inner Gloves

Respiratory Protective Equipment, Beach, North Dakota

Qty.	Description
2	MSA Self-Contained Breathing Apparatus (SCBA), 60 minutes, including 12 NFPA-Compliant SCBAs
2	Hip-Mounted Breathing Air Units
6	Air-Purifying Respirators

Safety Equipment, Beach, North Dakota

Qty.	Description	Qty.	Description
2	Photoionization Detector (PID)		

RESPONSE EQUIPMENT (Beach, North Dakota)

Pumps and Miscellaneous Equipment, Beach, North Dakota

Qty.	Description	Qty.	Description
1	Nitrogen Purge System for Chemical Transfers	2	2" Stainless Steel Air Diaphragm Pump, Viton Elastomers
1	Nitrogen Purge System for Chemical Transfers	1	1" Polypropylene Air Diaphragm Pump, Viton Elastomers
1	Coppus Blower	1	2" Polypropylene Air Diaphragm Pump, Viton Elastomers
180	Feet, 2" U.H.M.W.P. Chemical Transfer Hose	4	2" Gas Wash Pump
80	Feet, 1" U.H.M.W.P. Chemical Transfer Hose	1	2" Sightglass
	Magnetic Patch	1	Pressure Washer-Hot Water, trailer-mounted, self-contained
	Midland Kit	1	185 CFM Air Compress 185 CFM Air Compressor
2	6,600-Watt Generator		
Comprehensive supply of stainless steel and polyethylene fittings, valves, nipples, bushings, reducers and couplings.			

Communications, Beach, North Dakota

Qty.	Type	Frequency	Range, Mi.	Description
4	Motorola Hand-Held			Intrinsically Safe
3	Cellular Telephone		Nationwide	Hand Held
3	GPS Units			Hand Held
1	Lazar Temperature Guns			
3	Digital Cameras			

DEMOLITION EQUIPMENT (All Service Locations)

Heavy Equipment, Houston, Texas

Qty.	Description
1	Track hoe - Komatsu PC300LS
1	LaBounty MSD-70 Shear attachment for PC300
1	Track hoe - Linkbelt 330
1	Genesis 600 MagnumR- Shear attachment for Linkbelt 330
2	4-Wheel Drive Cat Rubber-Tire Backhoe with Extend-a-hoe Attachment
1	Catepillar 320 Track hoe
1	Catepillar D5M Bull Dozer
1	Catepillar Skid Steer (bob cat)
1	Linkbelt 130 Excavator
1	Grapple attachment for PC 300
1	18 Yard tandem dump truck
1	2,000 gallon water truck
1	Tractor trailer with lo-boy
1	4-Wheel Drive Rubber-Tire Backhoe
1	15 Yard tandem dump truck
1	24' Pindle hitch lowboy trailer

Contract #ESA-3401

ENVIRONMENTAL SERVICES AGREEMENT

DYNEGY MIDSTREAM SERVICES, LIMITED PARTNERSHIP ("COMPANY"), with an office at 1000 Louisiana, Ste. 5800, Houston, TX 77002, and United States Environmental Services, LLC **("CONTRACTOR")** with an office at 2809 Judge Perez Dr., Meraux, LA 70075, agree as of August 20, 2001, as follows:

1. It is anticipated that from time to time during the term of this Agreement, **COMPANY** will request **CONTRACTOR** to provide personnel, equipment and facilities necessary to perform environmental emergency response services with respect to spills, leaks and other releases of substances, and to provide other services as set forth in Paragraph 3 of this Agreement (the "**SERVICES**").

   Requests for **SERVICES** which vary the terms of this Agreement or are at rates or prices other than the On File Rates (as defined in Paragraph 2 herein) may only be placed in a written order signed by COMPANY substantially in the form of the sample "MSA Release Order" attached to this Agreement.

   A request for SERVICES may be made pursuant to the terms of this Contract by **COMPANY** or by any of the entities listed in Attachment 1 to this Agreement. **CONTRACTOR** agrees that upon receipt of a written or verbal request for SERVICES or MSA Release Order from any of the entities listed in Attachment 1 to this Agreement, this Agreement shall then serve as the agreement between **CONTRACTOR** and the entity making such request, such entity that made the request shall be the "**COMPANY**" hereunder for purposes of such request, and this Agreement shall not be construed as a guaranty of the requesting entity's payment or performance obligations hereunder by either NGC Corporation or any of its subsidiaries other than the entity making the request. **COMPANY** may, from time to time, amend Attachment 1 to add or delete legal entities authorized to request SERVICES under this Agreement and such amendment shall be effective as of the date shown on the new Attachment 1 provided that same is delivered to **CONTRACTOR** within 30 days after such effective date. If such a new Attachment 1 is delivered to **CONTRACTOR** more than 30 days after the effective date stated therein, it shall only be binding on **CONTRACTOR** upon receipt of notice of such amendment from **COMPANY**.

   CONTRACTOR may agree to perform the **SERVICES** or advise **COMPANY** it does not desire to perform the requested **SERVICES**. If **CONTRACTOR** agrees to perform the **SERVICES,** such **SERVICES** shall be performed in a lawful, safe and prudent manner under the terms of this Agreement, and as specified in any MSA Release Order. If **CONTRACTOR** does not desire to perform the requested **SERVICES, CONTRACTOR** shall make every reasonable effort to refer **COMPANY** to appropriate individuals and organizations. This Agreement shall not obligate **COMPANY** to request **SERVICES** from **CONTRACTOR,** nor obligate **CONTRACTOR** to agree to perform such **SERVICES.**

2. **CONTRACTOR** shall be compensated for **SERVICES** in accordance with **CONTRACTOR'S** published schedule of rates which is on file in the **COMPANY'S** office on the date **SERVICES** are initially requested (**"ON FILE RATES"**). The **ON FILE RATES** in effect on the date of this

Agreement are set forth in Exhibit A hereto. **CONTRACTOR** shall submit to **COMPANY** by the end of each calendar month in which **CONTRACTOR** provides **SERVICES** a statement for the compensation payable as a result of **SERVICES** provided during such month. The statement shall be in quadruplicate, and shall be itemized in such form, and accompanied by such supporting documents, as may be specified from time to time by **COMPANY**. Such compensation shall be the full compensation due to **CONTRACTOR** and shall include all taxes, wages, cost of any type and profits that are incidental to **CONTRACTOR'S** performance of the **SERVICES** unless applicable law specifically provides for direct payment by **COMPANY**. **COMPANY** shall pay to **CONTRACTOR** the amount payable under such statement by check mailed within thirty (30) days of receipt of the statement.

3. The **SERVICES** which **CONTRACTOR** may be requested to perform include, without limitation, the following:

   (i) the transportation, storage, treatment, disposal or recycling of waste or other secondary materials;

   (ii) the prompt arrival by **CONTRACTOR** at the location of a spilled, leaked or otherwise released substance;

   (iii) the containment, neutralization, decontamination, recovery, cleanup and repackaging of the substance; and

   (iv) site restoration.

   The particular **SERVICES** requested of **CONTRACTOR** at a given location shall be detailed in **COMPANY'S** request. The request, manifest or other documents provided by **COMPANY** to **CONTRACTOR** shall also describe the material involved with the **SERVICES**. **CONTRACTOR** agrees to provide **SERVICES** upon verbal request relating to spills on an as-called basis, twenty-four (24) hours per day, seven (7) days per week for the term of this Agreement.

4. **CONTRACTOR** shall perform the **SERVICES** in a lawful, safe, diligent and workmanlike manner and take all necessary precautions to protect persons and property from damage or injury. If **SERVICES** are to be undertaken on **COMPANY** premises, **CONTRACTOR** shall comply with **COMPANY'S** safety procedures. **CONTRACTOR** is and shall perform under this Agreement as an independent contractor and as such shall have and maintain exclusive control and direction over all its employees, agents, subcontractors, and operations. **CONTRACTOR**, its subcontractors or anyone employed thereby shall not be, act as, purport to act as or be deemed to be **COMPANY'S** agent, representative, employee or servant. **CONTRACTOR** assumes full and exclusive responsibility for payment of all compensation, benefits, premiums, contributions, payroll taxes, and other taxes now or hereafter required by any law or regulation as to all personnel engaged in the performance of this Agreement.

5. When **CONTRACTOR** is requested to perform **SERVICES**, **CONTRACTOR** shall advise **COMPANY** the specific timing and methods it will use in connection with its performance hereunder.

Upon completion of **SERVICES**, **CONTRACTOR** shall leave the area clean and free of all tools, equipment, waste and rubbish.

6. **CONTRACTOR** warrants that the equipment and facilities provided by it to perform **SERVICES** are suitable to perform such **SERVICES** and that all personnel are properly trained. **CONTRACTOR** acknowledges that it is aware of and understands the hazardous nature of the substances which may be involved with the **SERVICES** and the risks which are presented to persons, property and the environment. **CONTRACTOR** shall perform all **SERVICES** hereunder in full compliance with all applicable governmental laws, regulations, orders and official statements of policy. **CONTRACTOR** warrants that if **CONTRACTOR** owns or controls the facility to which waste or other materials will be delivered, the facility will be licensed and permitted to receive, treat, store and/or dispose of such waste or other materials. **CONTRACTOR** shall obtain **COMPANY'S** consent prior to the use of any treatment, storage, disposal or recycling facility; substances received by **CONTRACTOR** hereunder shall not be diverted without the written consent of **COMPANY**. **CONTRACTOR** shall make its own determination as to the precautions appropriate for any substance, but **CONTRACTOR** shall accept **COMPANY'S** determination in a given situation that a substance is to be managed as a hazardous waste and handle it accordingly, whether or not that particular substance meets the definition of hazardous waste under applicable laws and regulations.

7. If **SERVICES** include transportation of substances, **CONTRACTOR** agrees to instruct all truck drivers as to the proper procedures to be used and the precautions to be followed in handling the substance and transporting it. **CONTRACTOR** shall use an appropriate manifest system which meets all Department of Transportation, United States Environmental Protection Agency and other applicable legal requirements. **CONTRACTOR** warrants that it is duly licensed to receive the substance which is the subject of any agreed upon request for **SERVICES**, and that the drivers supplied by **CONTRACTOR** will be fully trained, authorized, equipped and licensed and the trucks supplied will be equipped and licensed to carry any such substance, in accordance with all applicable hazardous substance or waste industry safety precautions and all applicable federal, state or local laws and regulations. All trucks and other equipment used by **CONTRACTOR** for performance of the **SERVICES** shall be in first class operating condition, shall be suitable for the particular **SERVICES** requested and shall be periodically inspected and timely maintained.

8. **CONTRACTOR**, when requested by **COMPANY**, shall provide **COMPANY** with copies of all documents relating to the **SERVICES**, including the handling, transportation, storage, treatment and disposal of material hereunder and related licenses and permits issued by governmental authorities and correspondence and applications relating thereto. **CONTRACTOR** shall notify **COMPANY** if (a) **CONTRACTOR** is served with notice of significant violation of any law, regulation, permit or license which relates to **SERVICES**; (b) proceedings are commenced which could lead to revocation of permits or licenses which relate to **SERVICES**; (c) permits, licenses or other government authorizations relating to **SERVICES** are revoked; (d) litigation is commenced against **CONTRACTOR** which could affect the **SERVICES**; or (e) **CONTRACTOR** becomes aware that its equipment or any facilities which are used or proposed to be used are not in compliance, or may fail to comply in the future, with applicable laws or regulations.

9. **COMPANY**, without in any way relieving **CONTRACTOR** of its obligations and without assuming any responsibility, may also at its expense inspect and test the equipment, procedures and facilities

used or proposed for use by **CONTRACTOR** for **SERVICES**. If the **COMPANY** should determine that the equipment, procedures or facilities are unsafe or otherwise inappropriate, **COMPANY** may suspend performance of requested **SERVICES** until the condition is fully corrected. If this condition is not fully corrected within a reasonable time, the **COMPANY** may terminate this Agreement and/or its request for **SERVICES**.

10. **COMPANY** MAKES NO WARRANTY, EXPRESSED OR IMPLIED, IN FACT OR BY LAW, WHETHER OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE OR OTHERWISE, concerning any materials with respect to which **COMPANY** may request **SERVICES** other than the following: **COMPANY** warrants that it has title, free of any claim or encumbrance by others, to any such material, and that **COMPANY** is under no legal restraint which would prohibit transfer of title and delivery of any such material by **COMPANY** to **CONTRACTOR**. **COMPANY** also warrants that to the best of **COMPANY'S** knowledge, based on reasonable information, investigation and belief, the material either will have the composition and characteristics described in **COMPANY'S** request for **SERVICES**, or in the manifest or other documents given to and accepted by **CONTRACTOR**, or, if nonconforming, the material will not significantly increase either the nature or extent of the hazard or risk undertaken by **CONTRACTOR** in agreeing to perform the **SERVICES** or be such that the agreed upon facilities can no longer be legally used or agreed upon **SERVICES** be legally performed. It is understood that **COMPANY** cannot and does not warrant that material will be absolutely free of unidentified contaminants. **CONTRACTOR** shall notify **COMPANY** within forty-eight (48) hours of the discovery of material in breach of the foregoing warranties. If the material is in **CONTRACTOR'S** possession, the parties shall promptly agree upon a lawful manner of disposition which will properly protect **CONTRACTOR** from the increased hazard or risk referred to above but at the lowest cost practical under the circumstances. **COMPANY** shall reimburse **CONTRACTOR** for the net costs necessarily so incurred.

Title and Risk of Loss. Title and risk of loss with respect to material that **CONTRACTOR** agrees to handle, store, treat, recycle or dispose of shall pass from **COMPANY** as follows:

(a) In the event **COMPANY** assumes responsibility for transporting the material to the storage, treatment, recycling or disposal facility, title and risk of loss with respect to the material shall be and remain with **COMPANY** until the material is accepted by **CONTRACTOR**.

(b) In the event **CONTRACTOR** or a third party (whether paid by **COMPANY** or **CONTRACTOR**) assumes responsibility for transporting the material to the storage, treatment, recycling or disposal facility, title and risk of loss with respect to the material shall be and remain with **COMPANY** until the material is loaded into transporting trucks or rail cars provided by or at the request of **CONTRACTOR**, at which time title and risk of loss shall pass to **CONTRACTOR**.

Sampling and Analysis. Before accepting material from **COMPANY**, **CONTRACTOR** may require satisfactory completion of the following quality assurance procedures. These procedures include the following:

(a) Pre-shipment. Prior to shipments, **COMPANY** will, at **CONTRACTOR'S** request, complete a pre-qualification application for all material to be processed. The pre-qualification application and a representative sample of the proposed material will be reviewed and

analyzed by **CONTRACTOR** to determine whether the material meets specifications. If the material meets specifications, **CONTRACTOR** will allow the material to be shipped.

(b) Arrival. Every load of material that arrives at **CONTRACTOR'S** facility will be inspected and its physical characteristics analyzed to ensure that the material is the same as the material contained in the pre-shipment sample. In addition, representative grab samples of material may be taken from each truck or rail car load and tested to determine if it conforms to the warranty made by **COMPANY** in Section 10. Containers will be examined for structural integrity and counted and compared with the number reported on the incoming shipment.

Sampling and Analysis Methods and Procedures. The sampling and testing by **CONTRACTOR** shall be performed in accordance with methods and procedures equivalent to the Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods SW846.

Acceptance of Material. If on arrival at the designated facility the shipment is found not to be materially different from the pre-shipment sample and conforms with the warranty made by **COMPANY** in Section 10, the shipment shall be deemed accepted.

Revocation of Acceptance. In the event that after a load of material is accepted by **CONTRACTOR**, all or any portion of the material in the load is determined by **CONTRACTOR** to not be in conformance with the warranty made by **COMPANY** in Section 10, **CONTRACTOR** may revoke acceptance of the material by giving written notice to **COMPANY** which shall include the reasons for revocation and supporting analytical data. A revocation of acceptance shall operate to re-vest title, risk of loss and all other incidents of ownership in and to the rejected material in **COMPANY** effective as of the date **CONTRACTOR** gives notice to **COMPANY** of such revocation.

Obligations With Respect to Rejected Material. Material transported to **CONTRACTOR'S** facility that is not accepted by **CONTRACTOR**, and material accepted by **CONTRACTOR** and subsequently rejected in accordance with the foregoing provisions, shall be prepared for lawful disposition by agreement of the parties. Pending agreement on disposition **CONTRACTOR** shall retain possession of the material. If retaining possession of the material causes **CONTRACTOR** to be in violation of the law, **CONTRACTOR** shall immediately notify **COMPANY** both verbally and in writing and if an agreement as to lawful disposition cannot be reached promptly, **CONTRACTOR** may send the materials to an interim storage facility. **COMPANY** shall pay **CONTRACTOR** all reasonable expenses and charges (including demurrage charges) incurred by **CONTRACTOR** for handling, loading, preparing, transporting or storing any material rejected in accordance with this Agreement.

11. Notwithstanding any provision in this Agreement to the contrary, **CONTRACTOR** shall defend, indemnify and save harmless **INDEMNITEES** from and against any and all claims, fines, loss, damage, liability for injury to or death of any person (including an employee of **CONTRACTOR** as an **INDEMNITEE**) or for loss of or damage to property, including reasonable attorneys' fees related to the foregoing, which arise out of the past, current or future operations at **CONTRACTOR'S** facility or which relates to environmental contamination or pollution at **CONTRACTOR'S** facility. **CONTRACTOR'S** facility as used herein includes but is not limited to all property contiguous with the units at which **COMPANY'S** materials are received, handled, stored, processed or disposed under this Agreement. This indemnification shall apply regardless of whether any such claim, fine, loss, damage or liability arises in connection with action by a government entity, private party or citizen group **AND SHALL APPLY WHETHER OR NOT AN INDEMNITEE WAS OR IS CLAIMED**

TO BE NEGLIGENT, WHETHER OR NOT LIABILITY WITHOUT FAULT IS IMPOSED OR SOUGHT TO BE IMPOSED ON AN INDEMNITEE OR WHETHER OR NOT AN INDEMNITEE ARRANGED OR IS CLAIMED TO HAVE ARRANGED FOR THE DISPOSAL OF HAZARDOUS SUBSTANCES OR TO HAVE CONTRIBUTED TO THE HANDLING, STORAGE, TREATMENT, TRANSPORTATION OR DISPOSAL OF SOLID OR HAZARDOUS WASTE AT CONTRACTOR'S FACILITY. THIS ADDITIONAL INDEMNIFICATION SHALL NOT APPLY WHERE SUCH CLAIM, FINE, LOSS, DAMAGE OR LIABILITY IS THE RESULT OF THE SOLE NEGLIGENCE OR WILLFUL MISCONDUCT OF AN INDEMNITEE.

12. (a) CONTRACTOR's Indemnities: CONTRACTOR shall defend, indemnify and hold harmless COMPANY, its parent corporation, subsidiaries, affiliates, co-owners, partners and joint venturers and its and all of their officers, directors, agents, employees and invitees (hereinafter referred to collectively as "Company Indemnitees") as follows:

(i) CONTRACTOR's fault or negligence: except as to matters within the scope of (a)(ii) or (b)(ii) below, CONTRACTOR shall defend, indemnify and hold the COMPANY Indemnitees harmless from and against all liabilities, costs, expenses, damages, claims, suits and demands, whether or not there be any basis in law or in fact for same (collectively hereinafter referred to in this Article 12 as "Claims"), arising out of or related to injury to, illness or death of any person and loss of or damage to any property occurring in connection with or from the performance or nonperformance of this Agreement to the extent of CONTRACTOR's fault or negligence;

(ii) **CONTRACTOR'S EMPLOYEES, AGENTS AND PROPERTY: (THE FOLLOWING PROVISIONS DO NOT APPLY TO SERVICES RENDERED WITHIN THE JURISDICTION OF THE COURTS OF THE STATE OF LOUISIANA AND WHICH ARE OF THE TYPES DESCRIBED IN LOUISIANA REVISED STATUTES SECTION 9:2780, ET SEQ., OR ITS SUCCESSORS) CONTRACTOR SHALL UNCONDITIONALLY INDEMNIFY AND HOLD THE COMPANY INDEMNITEES HARMLESS FROM AND AGAINST ALL CLAIMS FOR INJURY TO ANY SUBCONTRACTOR, SERVANT, AGENT, OR EMPLOYEE OF CONTRACTOR (INCLUDING, BUT NOT LIMITED TO BODILY INJURY, ILLNESS, DISEASE, DEATH, OR LOSS OF SERVICES, PROPERTY OR WAGES) OR ANY PROPERTY LOSS OR DAMAGE SUFFERED BY CONTRACTOR, OR ANY OF ITS SUBCONTRACTORS, SERVANTS, AGENTS OR EMPLOYEES, REGARDLESS OF WHETHER OR NOT ANY SUCH CLAIM SHALL ARISE IN WHOLE OR IN PART FROM ANY SOLE OR CONCURRENT NEGLIGENCE OR LIABILITY WITHOUT FAULT ON THE PART OF ANY COMPANY INDEMNITEE. CONTRACTOR SHALL DEFEND ANY AND ALL SUCH CLAIMS AT ITS SOLE EXPENSE AND SHALL BEAR ALL OTHER COSTS AND EXPENSES RELATED THERETO, BUT MAY INVESTIGATE, NEGOTIATE AND SETTLE ANY SUCH CLAIM AS IT DEEMS EXPEDIENT.**

The liability of CONTRACTOR under the indemnity and hold harmless provisions of this Agreement, or otherwise at law, shall not be limited to or by the insurance CONTRACTOR is required to provide under this Agreement.

(b) COMPANY's Indemnities: COMPANY shall defend, indemnify and hold harmless CONTRACTOR and its officers, directors, agents and employees (hereinafter collectively referred to as the "Contractor Indemnitees") as follows:

(i) COMPANY's fault or negligence: except as to matters within the scope of (a)(ii) or (b)(ii), COMPANY shall defend, indemnify and hold the CONTRACTOR Indemnitees harmless from and against all Claims arising out of or related to injury to, illness or death of any person and loss of or damage to any property occurring in connection with or from the performance or nonperformance of this Agreement to the extent of COMPANY's fault or negligence;

(ii) **COMPANY'S EMPLOYEES, AGENTS AND PROPERTY: (THE FOLLOWING PROVISIONS DO NOT APPLY TO SERVICES RENDERED WITHIN THE JURISDICTION OF THE COURTS OF THE STATE OF LOUISIANA AND WHICH ARE OF THE TYPES DESCRIBED IN LOUISIANA REVISED STATUTES SECTION 9:2780, ET SEQ., OR ITS SUCCESSORS) COMPANY SHALL UNCONDITIONALLY INDEMNIFY AND HOLD THE CONTRACTOR INDEMNITEES HARMLESS FROM AND AGAINST ALL CLAIMS FOR INJURY TO ANY SUBCONTRACTOR, SERVANT, AGENT, OR EMPLOYEE OF COMPANY (INCLUDING, BUT NOT LIMITED TO BODILY INJURY, ILLNESS, DISEASE, DEATH, OR LOSS OF SERVICES, PROPERTY OR WAGES) OR ANY PROPERTY LOSS OR DAMAGE SUFFERED BY COMPANY, OR ANY OF ITS CONTRACTORS, SERVANTS, AGENTS OR EMPLOYEES, REGARDLESS OF WHETHER OR NOT ANY SUCH CLAIM SHALL ARISE IN WHOLE OR IN PART FROM ANY SOLE OR CONCURRENT NEGLIGENCE OR LIABILITY WITHOUT FAULT ON THE PART OF ANY CONTRACTOR INDEMNITEE. COMPANY SHALL DEFEND ANY AND ALL SUCH CLAIMS AT ITS SOLE EXPENSE AND SHALL BEAR ALL OTHER COSTS AND EXPENSES RELATED THERETO, BUT MAY INVESTIGATE, NEGOTIATE AND SETTLE ANY SUCH CLAIM AS IT DEEMS EXPEDIENT.**

(iii) Emission and Releases: Except as to claims that are within the scope of CONTRACTOR's indemnity in Paragraph 12(a)(ii) above, any Claims arising from the actual or threatened dispersal, discharge, escape, release, or saturation of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids, gases, or any other materials, irritants, contaminants, or pollutants in or into the atmosphere or on, onto, upon, in, or into the surface or subsurface of soil, water or water course, objects, or any tangible or intangible matter, abated or not.

(c) The indemnities in this Agreement cover recovery of all expenses which may be incurred by the Indemnitee including attorney's fees and costs. The indemnities in this agreement are limited to the extent necessary to comply with any applicable state or federal law and this Agreement is deemed to be amended so as to comply with those laws to the extent their requirements are at variance with these terms and conditions.

13. 13. CONTRACTOR agrees to procure and maintain, and shall require its subcontractors to procure and maintain, insurance coverage with insurance companies licensed to do business in the state where

the work will be performed and which carry a rating of A- VI or better as shown in the most current issue of A.M. Best's Key Rating Guide, under forms of policies satisfactory to COMPANY, in the kinds and amounts as set forth below:

(a) Worker's Compensation Insurance, including occupational disease coverage, in accordance with the benefits afforded by the statutory worker's compensation acts applicable to the state, territory or district of hire, supervision or place of accident and including, when applicable, full coverage for maritime obligations, the United States Longshoremen's and Harbor Worker's Compensation Act, Outer Continental Shelf Lands Act, the Jones Act, and Death On The High Seas Act. (Sole proprietorships with no employees falling within the jurisdiction of any statutory worker's compensation act must so certify to COMPANY in writing.)

(b) Employer's Liability Insurance in an amount not less than $500,000 each accident, $500,000 disease each employee and $500,000 disease policy limit, except for offshore work or other work entailing maritime or U.S. Longshoremen's and Harbor Worker's Compensation Act obligations, in which case limits shall be carried of not less than $1,000,000 each accident, $1,000,000 disease each employee and $1,000,000 disease policy limit.

(c) Commercial General Liability Insurance with a single limit of liability for bodily injury or property damage of $1,000,000, such coverage to include products/completed operations liability, explosion, collapse and underground damage liability (xcu), contractual liability covering the obligations assumed by CONTRACTOR under this Agreement and sudden and accidental pollution liability with respect to CONTRACTOR and its contractors and subcontractors.

(d) Automobile Liability Insurance covering all owned, non-owned and hired motor vehicles used in the performance of this contract, with limits of not less than $1,000,000 combined single limit.

(e) Excess liability insurance with limits of not less than $2,000,000 per occurrence and in the aggregate providing additional limits of insurance to the coverage described in paragraphs (b),(c) and (d) above.

(f) Aircraft Liability Insurance covering all owned, non-owned, or hired aircraft used in connection with the performance of this Contract with limits of not less than $5,000,000 per occurrence; protection and indemnity (d & I) insurance including excess collision liability with a minimum limit of $5,000,000 per occurrence as well as hull and machinery insurance, including full collision liability, in an amount equal to the fair market value of each vessel that is owned and/or chartered by CONTRACTOR and used in connection with the performance of this Agreement.

(g) If CONTRACTOR will be providing any kind of design and/or construction services, a Payment and Performance Bond may be required based on COMPANY'S review of CONTRACTOR's financial strength.

IT IS UNDERSTOOD AND AGREED THAT THE INSURANCE REQUIREMENTS SET FORTH IN THIS SECTION SHALL IN NO WAY LIMIT CONTRACTOR'S LIABILITY UNDER THIS AGREEMENT NOR SHALL THEY BE CONSTRUED TO BE THE ULTIMATE TYPES AND AMOUNTS OF INSURANCE CONTRACTOR SHOULD

MAINTAIN TO ADEQUATELY COVER ITSELF FROM THE HAZARDS OF ITS OCCUPATION.

It is further expressly agreed by CONTRACTOR that any and all premiums and deductibles in the above insurance policies shall be assumed by, for the account of and at CONTRACTOR's sole risk.

All policies of insurance referred to herein, with the exception of Workers' Compensation and Employer's Liability, shall name Dynegy Inc. its subsidiaries and affiliates as an Additional Insured with respect to the SERVICES provided under this Agreement. Further, all of the above insurance policies shall contain provisions that no cancellation or material change shall become effective except on thirty (30) days written notice to COMPANY.

All policies of insurance referred to herein must be written on an Occurrence Basis and endorsed to be Primary to any other insurance policies carried by COMPANY with respect to CONTRACTORS operations. CONTRACTOR shall provide to COMPANY a certified copy of any and all applicable insurance policies upon request by COMPANY. Upon renewal of insurance policies, CONTRACTOR must provide new Certificates of Insurance to COMPANY prior to policy expiration. COMPANY must be notified by CONTRACTOR immediately upon knowledge of possible damage claims that might cause a reduction below seventy-five percent (75%) of any aggregate limit of any policy.

Except where prohibited by law, all policies of insurance pertaining to the **SERVICES** provided under this Contract which are procured, held or maintained by CONTRACTOR and each of its subcontractors whether required by this Agreement or not, shall be endorsed to provide that the Underwriters or Insurers waive any and all rights of subrogation against the Company Indemnitees.

Prior to commencing work under this Agreement, CONTRACTOR shall provide to COMPANY certificates of insurance for itself and each of its subcontractors signed by an authorized representative evidencing the coverages, limits, endorsements and extensions required herein.

14. **CONTRACTOR** and its subcontractors and vendors, if any, shall maintain true and correct records in connection with their **SERVICES** and all transactions related thereto and shall retain all such records for at least thirty-six (36) months after the end of the calendar year in which **SERVICES** are performed. The **COMPANY** may from time to time, and at any time after the date of **SERVICES** and until twenty-four (24) months after the end of the calendar year in which **SERVICES** are performed, make an audit of all records of **CONTRACTOR** and its subcontractors and vendors in connection with all matters relating to **CONTRACTOR'S** performance of **SERVICES**, including but not limited to reimbursable costs and expenses. Such audit may also cover **CONTRACTOR'S** procedures and controls with respect to the costs and expenses to be reimbursed. Upon completion of this audit **COMPANY** shall pay **CONTRACTOR** any compensation due **CONTRACTOR** hereunder as shown by the audit. Any amount by which the total payment by **COMPANY** to **CONTRACTOR** exceeds the amount due **CONTRACTOR** as shown by the audit shall be returned to the **COMPANY**.

15. No director, employee or agent of **CONTRACTOR** or of any subcontractor or vendor of **CONTRACTOR** shall give or receive any commission, fee, rebate, gift or entertainment of significant cost or value in connection with **SERVICES** or enter into any business arrangement with any director, employee or agent of **COMPANY** or NGC Corporation or any subsidiary or affiliate of NGC

Corporation without **COMPANY'S** prior written agreement. **CONTRACTOR** shall promptly notify **COMPANY** of any violation of this section, and any consideration received as a result of such violation shall be paid over or credited to **COMPANY**. Additionally, if any violation of this section occurring prior to the date of this Agreement or the rendering of **SERVICES** hereunder resulted directly or indirectly in **COMPANY'S** consent to enter into this Agreement with **CONTRACTOR** or an **MSA RELEASE ORDER**, **COMPANY** may, at **COMPANY'S** sole option, terminate this Agreement or the **MSA RELEASE ORDER** at any time and, notwithstanding any other provision of this Agreement or **MSA RELEASE ORDER**, pay no compensation or reimbursement to **CONTRACTOR** whatsoever for any **SERVICES** performed after the date of termination. Any representative(s) authorized by **COMPANY** may audit any and all records of **CONTRACTOR** and any such subcontractor or vendor of Contractor in connection with **SERVICES** and all transactions related thereto for the sole purpose of determining whether there has been compliance with this section. **CONTRACTOR** shall assist **COMPANY** in making the above audits, and shall require all subcontractors and vendors to require, in all agreements in connection with **SERVICES**, the agreement of the parties to the provisions of this section.

16. **CONTRACTOR** shall promptly pay to **COMPANY** all costs and reasonable attorneys' fees in any legal action brought against **CONTRACTOR** based on a breach of this Agreement in which **COMPANY** prevails; **COMPANY** shall promptly pay to **CONTRACTOR** all costs and reasonable attorneys' fees in any legal action brought against **COMPANY** based on a breach of this Agreement in which **CONTRACTOR** prevails.

17. Neither this Agreement or a request for **SERVICES** nor money due **CONTRACTOR** hereunder shall be assigned, subcontracted or transferred in whole or in part by **CONTRACTOR**, voluntarily or by operation of law, except with the prior written consent of **COMPANY**, and any attempt to do so without such written consent shall be void.

18 In order for **CONTRACTOR** to perform **SERVICES** under this Agreement it may be necessary for **COMPANY** to disclose to **CONTRACTOR**, or **CONTRACTOR** may otherwise acquire, **COMPANY'S** confidential business or technical information (**"INFORMATION"**). **CONTRACTOR** will receive and maintain in confidence all **INFORMATION** and will prevent the disclosure of **INFORMATION** to others. **CONTRACTOR** will not use **INFORMATION** for any purpose other than the performance of **SERVICES** for **COMPANY**.

INFORMATION and all other work product developed by **CONTRACTOR** under this Agreement shall be **COMPANY'S** property and may be used, disclosed, or transferred by **COMPANY** in any manner it finds appropriate. Any and all such work product shall be turned over to **COMPANY** upon request or upon completion or termination of the **SERVICES**. **CONTRACTOR** will hold the same in confidence and neither disclose the same to others nor use the same for any purpose other than the performance of **SERVICES** for **COMPANY**. All inventions, discoveries, and improvements, patentable and unpatentable, that are made or conceived by **CONTRACTOR'S** personnel arising out of **SERVICES** performed under this Agreement, including all patent rights therein and all copyrights in materials related thereto, both domestic and foreign, shall belong to, and shall be assigned by such personnel to **COMPANY** or its designee. **CONTRACTOR** and/or **CONTRACTOR'S** personnel shall promptly and fully disclose all such inventions, discoveries and improvements to **COMPANY** and shall cooperate with **COMPANY** or its nominee as may be reasonably required in order to obtain

patent protection therefore, including the signing of assignments of inventions and patent rights therein, and the signing of any property affidavits, declarations, patent applications and the like. The general preparation and prosecution of patent applications shall be handled by **COMPANY** or its nominee, at **COMPANY'S** own expense. During such preparation and prosecution, **CONTRACTOR** and/or **CONTRACTOR'S** personnel shall be consulted only on technical features that may arise.

The provisions of Section 18 shall not apply to any portion of **INFORMATION**: (a) which was developed by **CONTRACTOR** and in **CONTRACTOR'S** possession prior to **CONTRACTOR'S** first receipt thereof directly or indirectly from **COMPANY**; (b) which is now or hereafter becomes through no act or failure to act on **CONTRACTOR'S** part generally available on a non-confidential basis to the petroleum or chemical industries; (c) which was heretofore or hereafter furnished to **CONTRACTOR** by others as a matter of right without restriction on disclosure; or (d) which is required by law to be publicly disclosed by **CONTRACTOR**; provided, however, that the occurrence of (a) or (b) or (c) above shall not be construed as granting any rights, express or implied, under any patents or otherwise. Information shall not be deemed to be within one of the foregoing exceptions if it is merely embraced by more general information available on a non-confidential basis or in your possession. In addition, any combination of features shall not be deemed to be within the foregoing exceptions unless the combination itself and its principle of operation are embraced by corresponding information which is within one of the foregoing exceptions.

CONTRACTOR warrants that each of its employees, agents, and subcontractors who participate in the performance of **SERVICES** or who have access to **INFORMATION** are obligated in a manner consistent with this section. The obligations of this section shall survive the termination of any request for **SERVICES** and the termination of this Agreement.

19. Unless this Agreement is exempted by federal law, rule, regulation or order, the following clauses contained in the Code of Federal Regulations are incorporated herein by reference: 48 C.F.R. Section 52.222-35 (Disabled and Vietnam Veterans); 48 C.F.R. Section 52.222-36 (Handicapped Workers); 48 C.F.R. Section 52.222-26 (Equal Opportunity); 48 C.F.R. Section 52.219-8 and 52.219-9 (Utilization of Small and Small Disadvantaged Business Concerns); 48 C.F.R. Section 52.219-13 (Utilization of Women-Owned Business Concerns) and 48 C.F.R. Section 52.223-3 (Hazardous Material Identification and Material Safety Data). Without limiting the generality of any other provision of this Agreement, **CONTRACTOR** also agrees (i) to comply with all the requirements of 48 C.F.R. Section 52.223-2 relating to Section 114 of the Clean Air Act, as amended (42 U.S.C. 1857, et seq., as amended by Pub. L. 91-604) and Section 308 of the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq., as amended by Pub. L. 92-500), respectively, relating to inspection, monitoring, entry, reports, and information, as well as other requirements specified in Section 114 and Section 308 of the Air Act and the Water Act, respectively, and all regulations and guidelines issued thereunder before the award of this contract; (ii) that no portion of the work required by this Agreement will be performed in a facility listed on the Environmental Protection Agency List of Violating Facilities on the date when a request for **SERVICES** is made unless and until the EPA eliminates the name of such facility or facilities from such listing; (iii) to use its best efforts to comply with clean air standards and clean water standards at the facility in which the **SERVICES** are being performed; and (iv) to insert the substance of the provisions of this clause into any nonexempt subcontract, including this paragraph. Unless previously provided, if the value of this Agreement exceeds $10,000, **CONTRACTOR** shall provide a Certificate of Nonsegregated Facilities to **COMPANY**.

CONTRACTOR warrants that none of its employees or employees of its subcontractors who provide **SERVICES** to **COMPANY** pursuant to this Agreement are unauthorized aliens as defined in the Immigration Reform Control Act of 1986, as amended and in regulations issued thereunder.

20. This Agreement is subject to the terms and conditions of **COMPANY'S** Illegal Drugs, Alcohol, and Firearms Policy.

21. This Agreement shall be in effect for one calendar year from the date written in the initial paragraph, and shall continue thereafter for successive one-year periods. Notwithstanding the foregoing, either party may terminate this Agreement at any time, with or without cause, upon thirty (30) days prior written notice to the other party. Sections 11, 12, 13, 14 and 18 shall survive the termination of this Agreement.

22. **CONTRACTOR** acknowledges that **COMPANY** may, without obligation to **CONTRACTOR**, enter into agreements with others for the same or similar services to those covered by this Agreement. This Agreement does not terminate other agreements existing between **COMPANY** and **CONTRACTOR**.

23. The waiver by one party of any breach or default hereunder by the other party shall not operate or be construed as a waiver by that party of any other or subsequent breach or default. If any provision hereof is found to be illegal, invalid, or unenforceable, for any reason, such finding shall not affect the other provisions hereof.

24. All notices which are given or required to be given pursuant to this Agreement shall be hand-delivered or mailed postage-paid by registered or certified mail, return receipt requested, as follows:

COMPANY	Dynegy Midstream Services, Limited Partnership 1000 Louisiana, Suite 5800 Houston, Texas 77002 Attention: Arna Sethna
CONTRACTOR	United States Environmental Services, L.L.C. P. O. Box 949 Meraux, LA 70075 Attn: Barry Thibodeaux

Notwithstanding the foregoing, the parties may agree to designate a different contact and/or address and thereafter all notices shall be directed as indicated therein.

25. **ALLOCATION OF RISK**

CONTRACTOR and COMPANY acknowledge that, prior to the start of this Agreement, CONTRACTOR has not generated, handled, stored, treated, transported, disposed of, or in any way whatsoever taken responsibility for any toxic or hazardous substance or other material found, identified, or as yet unknown at the any work site. CONTRACTOR and COMPANY further acknowledge and understand that the valuation, management, and other actions involving toxic or hazardous substances that may be undertaken as part of the Services to be performed by CONTRACTOR, including subsurface excavation or sampling, entails uncertainty and risk of injury or damage. CONTRACTOR and COMPANY further acknowledge and understand that CONTRACTOR has not been retained to serve as an insurer of the safety for any work site of the COMPANY, third parties, or the public.

COMPANY acknowledges that the discovery of certain conditions and/or taking of preventative measures relative to these conditions may result in a reduction of the COMPANY's property value. Accordingly, COMPANY waives any claim against CONTRACTOR and agrees to indemnify, defend, and hold harmless CONTRACTOR and its subcontractors, consultants, agents, officers, directors, and employees from any claim or liability for injury or loss allegedly arising from procedures associated with environmental site assessment (ESA) activities or the discovery of actual or suspected hazardous materials or conditions, except to the extent resulting from, in whole or in part, any act or omission of CONTRACTOR or subcontractor, their representatives, agents, employees, and invitees.

COMPANY releases CONTRACTOR from any claim for damages resulting from or arising out of any pre-existing environmental conditions at the site where the work is being performed which was not directly or indirectly caused by and did not result from, in whole or in part, any act or omission of CONTRACTOR or subcontractor, their representatives, agents, employees, and invitees.

If, while performing the Services set forth in any description, pollutants are discovered that pose unanticipated or extraordinary risks, it is hereby agreed that the Services, schedule, and costs will be reconsidered and that this Agreement shall immediately become subject to re-negotiation or termination. COMPANY further agrees that such discovery of unanticipated hazardous risks may require CONTRACTOR to take immediate measures to protect health and safety or report such discovery as may be required by law or regulation. COMPANY shall promptly notify CONTRACTOR upon discovery of such risks. COMPANY, however, hereby authorizes CONTRACTOR to take all measures CONTRACTOR believes necessary to protect CONTRACTOR and COMPANY personnel and the public. Furthermore, COMPANY agrees to compensate CONTRACTOR for any additional costs associated with such measures.

CONTRACTOR and COMPANY agree that the apportionment of the risk of loss and other limitations set forth in the Allocation of Risk provisions of this Agreement are essential terms of this Agreement and a condition of CONTRACTOR's willingness to perform the Services.

26. The following exhibits are attached hereto and hereby made a part hereof:

Exhibit A - Contractor's Price List.

27. This Agreement, including the Exhibit(s) hereto, comprises the entire agreement between **CONTRACTOR** and **COMPANY**, and there are no other agreements, understandings, promises or conditions, oral or written, express or implied, concerning the subject matter of this Agreement. This Agreement shall not be modified or terminated except by written instrument signed by authorized representatives of the parties hereto.

28. **THIS AGREEMENT SHALL BE PERFORMED, INTERPRETED AND ENFORCED IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, NOTWITHSTANDING ANY CHOICE OF LAW PROVISIONS OR RULES WHICH MAY REQUIRE OR PERMIT THE APPLICATION OF THE LAW OF ANOTHER JURISDICTION. HARRIS COUNTY, TEXAS SHALL BE THE FORUM FOR ANY LITIGATION OR ARBITRATION RELATED TO THIS AGREEMENT.**

29. **EACH OF THE PARTIES HERETO SPECIFICALLY ACKNOWLEDGES AND AGREES (1) THAT IT HAS A DUTY TO READ THIS AGREEMENT AND THAT IT IS CHARGED WITH NOTICE AND KNOWLEDGE OF THE TERMS HEREOF, AND (2) THAT IT HAS IN FACT READ THIS AGREEMENT AND IS FULLY INFORMED AND HAS FULL NOTICE AND KNOWLEDGE OF THE TERMS, CONDITIONS AND EFFECTS OF THIS AGREEMENT. EACH PARTY HERETO FURTHER AGREES THAT IT WILL NOT CONTEST THE VALIDITY OR ENFORCEABILITY OF ANY PROVISION OF THIS AGREEMENT ON THE BASIS THAT THE PARTY HAD NO NOTICE OR KNOWLEDGE OF SUCH PROVISION OR THAT SUCH PROVISION IS NOT "CONSPICUOUS".**

CONTRACTOR	COMPANY
UNITED STATES ENVIRONMENTAL SERVICES, LLC	**DYNEGY MIDSTREAM SERVICES, LIMITED PARTNERSHIP**
By: Barry J. Thibodeaux	BY: A.H. Sethna
NAME: BARRY J. THIBODEAUX	NAME: (A.H. Sethna)
TITLE: PRESIDENT	NAME:
DATE: AUG. 27, 2001	DATE: August 20, 2001

H:\winword\esa\3422

APPENDIX B

Orange Spill Kit Inventory

Specifications

Fluids Absorbed:

Oils, Coolants, Solvents & Water

Absorbency:

Up to 76 gal.

Spill Volume:

50 - 79 gal.

Lift-out Basket:

No

Outdoor Storage:

Yes

UN Rated:

No

UV Resistant:

Yes

Wheels:

8" No Flat

Sold as:

1 each

Weight:

267 lbs.

per Pallet:

1

Composition:

Box - Polyethylene w/ 8" Pneumatic Wheels
Mat - Polypropylene
Socks - Polypropylene & Magnesium Aluminosilicate

Includes:

1 - 48" L x 31" W x 41.75" H PIG® Storage Chest (BOX405-OR)

10 - 3" x 10' PIG® BLUE Absorbent Socks (PIG202)

31 - 3" x 48" PIG® BLUE Absorbent Socks (4048)

154 - PIG® Universal Mat Pads (MAT203) Specifications

Fluids Absorbed:

Oils, Coolants, Solvents & Water

Absorbency:

Up to 76 gal.

Spill Volume:

50 - 79 gal.

Lift-out Basket:

No

Outdoor Storage:

Yes

UN Rated:

No

UV Resistant:

Yes

Wheels:

8" No Flat

Sold as:

1 each

Weight:

267 lbs.

per Pallet:

1

Composition:

Box - Polyethylene w/ 8" Pneumatic Wheels
Mat - Polypropylene
Socks - Polypropylene & Magnesium Aluminosilicate

Includes:

1 - 48" L x 31" W x 41.75" H PIG® Storage Chest (BOX405-OR)

10 - 3" x 10' PIG® BLUE Absorbent Socks (PIG202)

31 - 3" x 48" PIG® BLUE Absorbent Socks (4048)

154 - PIG® Universal Mat Pads (MAT203)

112 - PIG® Wipers (WIP310)

15 - Temporary Disposal Bags and Ties (BAG201-L)

6 - Tamperproof Labels (LBL100)

1 - Instruction Manual

Pigalog® Page Number:

Page 105

Facility Response Plan

Johnson's Corner Crude Oil Terminal

10/29/2014

Prepared for:

TARGA

2680 109th Ave NW
Watford City, ND, McKenzie County
North Dakota, 58854

Table of Contents

BASIC FACILITY INFORMATION

General Information

Applicability of Substantial Harm

EMERGENCY RESPONSE ACTION PLAN

Qualified Individual Contact Information 2

Emergency Notification Phone List 3

Spill Response Notification Form 4

Facility Response Equipment List & Location 5-7

Response Equipment Testing/Deployment Drill Log 8

Facility Response Team 9

Evacuation Plan 10

Immediate Actions

Onsite Workers 11

Onsite Workers Reporting Actions 11

Qualified Individuals Duty 12

Nearest Medical Emergency Center 12

Arrival Route of Emergency Personnel/Equipment 12

Facility's Diagrams

Facility Location Map 14
Site Plan Diagram 15
Site Drainage Plan 16
Site Evacuation Plan 17

FACILITY RESPONSE PLAN

Facility Information Form 19-20

Emergency Notification Phone List 21

Spill Response Notification Form 22

Incident Description 23

Response Action 24

Additional Information 25

Facility Response Equipment List & Location 26-28

Response Equipment Testing/Deployment Drill Log 29

Company Emergency Response Team, Contractors & Facility Response Team 30-31

Evacuation Plan & Immediate Actions

Onsite Workers 32-33

Onsite Workers Reporting Actions 33

Qualified Individuals Duty 33-34

Nearest Medical Emergency Center 34

Arrival Route of Emergency Personnel/Equipment 35

Hazard Evaluation 36-38

Diagrams

Diagram 1 – General Location Map 40
Diagram 2 – Site Plan Diagram 41
Diagram 3 – Site drainage Plan 42
Diagram 4 – Site Evacuation 43
Diagram 5 – Sensitive Areas Location 44
Diagram 6 – Drinking Water Location 44

Response Actions for Various Discharge Scenarios

Small Spill Scenarios Analysis 45
Medium Spill Scenario Analysis 45-46
Worst-case Spill Scenarios Analysis 46-48

Discharge Detection Systems 49-50

Implementation Procedures 51-52

Response Resources 53-54

Description of Records of Self-Inspections, Drills and Exercises and Response Training 55

Response Equipment Inspection Log 56

Secondary Containment Inspection Log 57

Qualified Individual Notification Drill Log 58

Spill Management Team Tabletop Exercise Log 59

Response Training 60

Personnel Response Training Log 61

Discharge Prevention Meeting Log 62

Security 63

Appendices:

Appendix A – Emergency Response Contractors Information

Appendix B – Spill Kit Inventory

Appendix C – PREP Log Sheet

BASIC FACILITY INFORMATION

[40 CFR §112, Appendix F Section 2.0]

GENERAL INFORMATION [40 CFR §112 Appendix F, Section 2.0]

Owner/Operator of Facility Name: Targa Badlands, LLC

Facility Name: Johnson Crude Oil Terminal

Facility Address: 2680 109th Ave NW, Keene, ND, McKenzie County, North Dakota, 58847

City, State, and U.S. Zip: North Dakota, 58847

Facility Phone Number: (701) 675-2157

Latitude: 47 Degrees 48 Minutes 6 Seconds

Longitude: -102 Degrees 55 Minutes 9 Seconds

Dun/Bradstreet Number: TBD/TBD

Largest Above Ground Oil Storage Tank Capacity: 840,000 gallons

Number of Above Ground Oil Storage Tanks: 2

North American Industrial Classification System: 486110

Maximum Oil Storage Capacity: 1,680,000 gallons

Worst Case Oil Discharge Amount: 1,680,000 gallons

Facility Distance to Navigable Waters: ___0-¼ mile **X** ¼- ½ mile ___½ - 1 mile___>1 mile

APPLICABILITY OF SUBSTANTIAL HARM [40 CFR §112 Attachment C-I]

1. Does the facility transfer oil over-water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

   Yes _____ No __X__

2. Does the facility have a total oil storage capacity greater than or equal to 1 million (1,000,000) gallons *and*, within any storage area, does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation?

   Yes _____ No __X__

3. Does the facility have a total oil storage capacity greater than or equal to 1 million (1,000,000) gallons and is the facility located at a distance (as calculated using the appropriate formula in Appendix C or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?

   Yes __X__ No _____

4. Does the facility have a maximum storage capacity of oil greater than or equal to one million (1,000,000) gallons *and* is the facility located at a distance such that a discharge from the facility would shut down a public drinking water intake?

   Yes _____ No __X__

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill 2 in an amount greater than or equal to 10,000 gallons within the last 5 years??

   Yes _____ No __X__

CERTIFICATION OF SUBSTANTIAL HARM DETERMINATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining information, I believe that the submitted information is true, accurate, and complete.

Targa Badlands, LLC

Signature: _____ Printed Name: J S Hopson

Title: 3rd VP ENG & OPS Date: 3/21/13

EMERGENCY RESPONSE ACTION PLAN

[40 CFR §112, Appendix F Section 1.1]

QUALIFIED INDIVIDUAL(S) CONTACT INFORMATION

1. Name: Mr. Tim Stubstad - Supervisor Crude Processing
   Emergency Phone No.: (701) 580-5972 (cell)
   (701) 675-2157 (office)

   Specific Response Training Experience:
   Small-case oil discharge scenario responsibilities, prevention of discharge, emergency response procedures and emergency equipment handling.

2. Name: Mr. David Low - North Dakota Operations Manager
   Emergency Phone No.: (701) 300-1206 (cell)
   (701) 842-3315 (work)

   Specific Response Training Experience:
   Responsibilities during small-case oil discharge scenario, prevention of discharge, emergency response procedures and emergency equipment handling.

EMERGENCY NOTIFICATION PHONE LIST

Organization	Phone Number
1. National Response Center (NRC)	**(800) 424-8802**
2. Qualified Individual(s):	
a. Tim Stubstad (cell)	**(701) 580-5972**
Office	**(701) 675-2157**
b. David Low (cell)	**(701) 300-1206**
Office	**(701) 842-3315**
3. Company Response Team: Lee Salazar (Safety Director)	
a. Daytime	**(713) 584-1421**
b. Nighttime	**(713) 553-6595**
4. Federal On-Scene Coordinator (OSC) and/or	
Regional Response Center (RRC)	**(303) 349-0661**
Evening Phone (24-hr)	**(303) 293-1788**
5. Local Response Team/Fire Department	
• Watford, McKenzie	**(701) 444-2934**
• Alexander Volunteer Fire Department	**(701) 828-3352**
6. State Emergency Response Commission (SERC)	**(800) 472-2121**
After Hours	**(701) 328-9921**
7. State Police	**(701) 842-2280**
8. Local Emergency Planning Committee (LEPC)	(**701) 328-8100**
Fire Marshall	**(701) 328-5555**
Community Emergency Response Team (McKenzie Co)	**(701) 444-6853**
24-hr North Dakota D State Radio	**(701) 328-9921**
9. Local Water Supply System	**(701) 328-6409**
ND Dep. of Health/Water Quality Commission	**(701) 328-5210**
10. CDOT/Weather Report	**(701) 774-2700**
11. Local Television/Radio Station	
NBC/KUMV-TV	**(701) 572-4676**
NBC/KQCD-TV	**(701) 483-8231**

12. Hospitals
    a. McKenzie Co. Hospital **(701) 842-3000** / 516 N. Main St., Watford City, ND 58854
    b. Trinity Community Clinic **(701) 627-2990** / 604 1st Street, New Town, ND 58763

SPILL RESPONSE NOTIFICATION FORM

Provide to the National Response Center – NRC

Reporter's Last Name: _____

Reporter's First Name: _____

Reporter's Middle Name Initial: _____

Position: _____

Phone Numbers:

Day: _____

Evening: _____

Company: _Targa Badlands, LLC_____

Organization Type: _Oil & Gas – Midstream_____

Address: 1939 125th Avenue NW_____

City: _Watford City_____

State: _North Dakota_____

Zip: _58854_____

Were Materials Discharged?	Yes ☐	No ☐	
Confidential?	Yes ☐	No ☐	
Meeting Federal Obligations to Report?	Yes ☐	No ☐	**Date Called**: _____
Calling for Responsible Party?	Yes ☐	No ☐	**Time Called**: _____

FACILITY RESPONSE EQUIPMENT LIST & LOCATION

The facility is equipped with a large mobile spill kit (large tote on wheels) with boom, diapers, etc. located on the northeast side of the facility: (1) south of VCU by control box and (2) by loading area. Third party contractors provide resources for spill control and communication resources for medium (>16,800 and <168,000 gallons) and worst-case (168,000 gallons) discharge scenarios. See Diagram 2 for equipment location at the facility.

1. **Skimmers/Pumps – Operational Status:** None

   Type: _____ **Model:** _____ **Year** _____

   Number: _____

   Capacity (gal/min): _____

   Daily Effective Recovery Rate: _____

   Storage Location(s): _____

   Date Fuel Last Changed: _____

2. **Boom-Operational Status:** Brand New

   Type: Absorbent **Model:** _____ **Year** 2012

   Number: 4

   Size/Length (ft): 8’ x 10’

   Containment Area (sq. ft.): 80 per boom

   Storage Location: Spill kit, northwest side of facility, south of VCU and spill kits by loading area

3. **Chemicals Stored (Dispersants listed on EPA’s NCP Product Schedule):**

Type	Amount	Date Purchased	Treatment Capacity	Storage Location
None				

- Were the appropriate procedures used to receive approval for use of dispersants in accordance with the NCP (40 CFR 300.910) and the Area Contingency Plan (ACP), where applicable? Yes ☐ No ☐
- On-Scene Coordinator (OSC) Authorizing Use:

Name: N/A State: _____ Date Authorized: _____

4. **Dispersant Dispensing Equipment – Operational Status: _____**

Type and year	Capacity	Storage Location	Response Time (minutes)
None			

5. **Sorbents – Operational Status:** New & Ready for Use

Type and Year Purchased: Absorbent socks (2012), Mats Pads (2012), Granular Absorbent (2013)

Amount: Socks: (10) 3" x 10' and (31) 3" x 48 "/ Mats: (6) 100 count / Granular: (2) 30 lbs. /each

A more detailed list can be found as Appendix B

Absorption Capacity (gal): 10 - 76

Storage Location(s): Spill kit, northwest side of facility, south of VCU and spill kits by loading area

6. **Hand Tools – Operational Status: _____**

Type and year	Quantity	Storage Location
Shovel	1	Per Work Truck
Hand tools	Various	Per Work Truck

7. **Communication Equipment (include Operating Frequency and Channel and/or Cellular Phone Numbers) – Operational Status: _____**

Type and year	Quantity	Storage Location/Number
Cell phones / new	Various	All operators
Motorola XPR6350	6	Office Channel 1

8. Fire Fighting and Personnel Protective Equipment – Operational Status: _____

Type and year	Quantity	Storage Location
20 lb. ABC and CK fire extinguishers	13	See Diagram 2
Hard Hats & Work Gloves	Provided to each employee	---

9. Other (e.g., Heavy Equipment, Boats and Motors) – Operational Status: _____

Type and year	Quantity	Storage Location
None		

RESPONSE EQUIPMENT TESTING/DEPLOYMENT DRILL LOG

Last Inspection or Response Equipment Test Date: _____

Inspection Frequency: _____

Last Deployment Drill Date: _____

Deployment Frequency: _____

Oil Spill Removal Organization Certification (if applicable): _____

_____

_____

_____

_____

_____

_____

FACILITY RESPONSE TEAM

DATE LAST UPDATED: __10/2014____

Team Member	Response Time	Phone (Day/Evening)
Tim Stubstad	2 hour	(701) 675-2157 / (701) 580-5972
David Low	1 hour	(701) 300-1206 / (701) 842-3315
Earth Movers / Strata Corporation	1 hour	Scott Brown (24/7): (701) 720-8565 Emergency Answering Service: (800) 373-5259

EVACUATION PLAN

If access to whichever gate is limited due to weather conditions, fire, safety concerns, etc., everyone must evacuate the facility through fastest and safest available gate, gather at a meeting place and wait for further directions:

1. All individuals that are at the facility during a spill shall calmly go to **Meeting Place No. 1** on the other side of the dirt road located just outside Gate 1 and Gate 2 by the northwestern fence line.
2. If accessing Gates 1 and 2 is difficult or unsafe, everyone shall go to **Meeting Place No. 2** southwest of the crude oil tanks through Gate 3 which is in the middle and west side of facility fence.
3. If somebody was injured, contaminated or physically hurt by the event, call 911, stay calm and provide first aid if trained.
4. There is a fourth gate located between the pigging station and east of tank AT-200. This exit gate shall be used only if all other gates fail to open and the spill did not originate by AT-200 and AT-210 area. Because crude oil will flow south-southeast of the facility over the location of this gate.
5. If use of Gate 4 is the only safe and feasible option, attempt to safely reach Meeting Place 1 or 2 or Alternate Meeting Place 1.
6. When exiting the facility, and particularly if there are high winds, observe the wind boots and assess if it safe to stay at Meeting Place 1 or 2 as vapors released by crude oil can be toxic and cause breathing difficulties and/or even unconsciousness. Direct evacuation efforts and personnel to **Alternate Evacuation Meeting Place 1**.
7. Perform head counts/roll call to account for personnel.
8. Stay calm and follow instructions given by qualified individual.

There are fire extinguishers located throughout the facility as follows:

- One at the east end and one on the west end of the middle loading rack
- On the northeast side of the facility: one in the pump building and one on the electrical panel
- Six on the northwest side: two in MCC building, three in the office and one in the BOC building
- By each tank (AT-200 and AT-210) on the west side (See Diagram No. 2)
- East of AT-200 on the north and south ends of the pigging station
- 1 in sample building (in the pump and meter area shown on diagram 2)
- 1 in relay building (in the pump and meter area shown on diagram 2)
- 2 at the EOG truck loading rack

IMMEDIATE ACTIONS

Onsite Workers

1. The first priority should be to shut-off ignition sources (i.e., loading truck engine, open flames, electrical circuits) and to contain the spill on site **as long as safety is not compromised**.
2. Attempt to contain the spill by constructing earthen berms/absorbent material at the leading edge of the spill to prevent further advancement or other material available to contain and stop the flow of oil already on the ground. It is critical to try to prevent any spilled product from reaching any waterways, drainages, or drains.
3. If it is safe to do so, locate where in the flow line the leak occurred.
4. Isolate the section where the spill originated and stop the flow of product by plugging or capping the leak at the source if possible.
5. Block civilian access to the facility and warn personnel of event.
6. Notify the Emergency Response Coordinator (ERC) and site manager:

Tim Stubstad (Site Manager)	David Low (ERC)
(701) 580-5972 (cell)	(701) 300-1206 (cell)
(701) 675-2157 (work)	(701) 842-3315 (work)

7. Personnel involved with a spill event should be prepared to make recommendations on whether additional cleanup materials, equipment or personnel may be necessary.
8. On-site personnel or an approved outside contractor will be assigned to clean up the spill once a spill has been contained.
9. Any liquids present will be pumped or vacuumed into tanks, trucks, or drums for recovery and disposal according to federal and state waste management requirements. Absorbents will be used to remove any liquid.
10. Soil and other solid materials contaminated with petroleum hydrocarbons will be disposed of in accordance with federal and state hazardous and solid waste regulations.

Spill control equipment including absorbent booms, absorbent socks, granular absorbent, absorbent pads, and disposal bags and labels are stored in the facility spill kit clearly labeled and readily available in the event of a spill (see Diagram 2). A shovel is carried in the facility operator's vehicle for use in constructing berms and diversions to help mitigate any spill which has occurred.

Onsite Workers Reporting Actions

The site manager and the Emergency Response Coordinator (ERC) should be immediately notified in the event of a spill. On site personnel should provide the following information to the ERC:

1. Any injuries, fires and/or explosions.
2. Location of spill including type of terrain and nearest water feature or drainage feature.
3. Date and time of spill event.
4. Source of spill and its relative location to vulnerable wetlands, rivers, farming, etc.
5. Material discharged.
6. Estimated volume of the spill.
7. Any explosions.
8. Weather conditions (i.e., rain, snow, high winds, temperature)
9. Employee/contractor evacuation.

10. Type of cleanup actions in progress or planned.

Follow-up decisions and contacts with agencies other than county or local emergency response agencies are to remain the function of the Emergency Response Coordinator.

Qualified Individual Duties

1. Activate alarms and hazard communication systems.
2. Notify all response personnel.
3. Identify the character, exact source, amount and extent of the release and all other items needed for notification.
4. Notify and provide necessary information to the appropriate Federal, State and local authorities with designed response roles, including the National Response Center, State Emergency Response Commission and Local Emergency Planning Committee.
5. Notify the local police/fire department if oil threatens to reach any creeks and rivers to prevent the public from accessing those water sources
6. Cooperate and work closely with the Federal On-scene Coordinator (FOSC).
7. Assess the interaction of the discharged substance with water and/or other substances stored at the facility and notify response personnel at the scene of that assessment.
8. Evaluate the possible hazards to human health and the environment due to the release. This assessment must consider both the direct and indirect effects of the release (i.e., the effects of any toxic, irritating, or asphyxiating gases that may be generated or the effects of any hazardous surface water runoffs from water or chemical agents used to control fire and heat-induced explosion).
9. Assess and implement prompt spill clean-up operations to contain and remove the substance released.
10. Coordinate rescue and response actions as previously arranged with all response personnel and enact contracts with oil-spill removal entities.
11. Use authority to immediately access company funds to initiate cleanup and spill activities.
12. Direct cleanup activities until properly relieved of this responsibility.
13. Coordinate with appropriate company employees and/or contractors preparing reports and filling out forms documenting the spill.

Nearest Medical Emergency Center

1. The McKenzie County Hospital is the closest hospital located about 18.1 miles west of the Johnson Crude Terminal in Watford City, ND. ***This is an Emergency/Trauma Center treating lower "Level V" trauma.***

Address: 516 North Main
Watford City, ND 58854
PH: (701) 842-3000

Directions: Head west on N. Dakota 73E (it becomes N. Dakota 23E past Johnson's Corner intersection) for 17.9 miles. Turn right on North Main St. and head north for about 0.1 miles. The hospital will be on your right-hand side past 5th avenue.

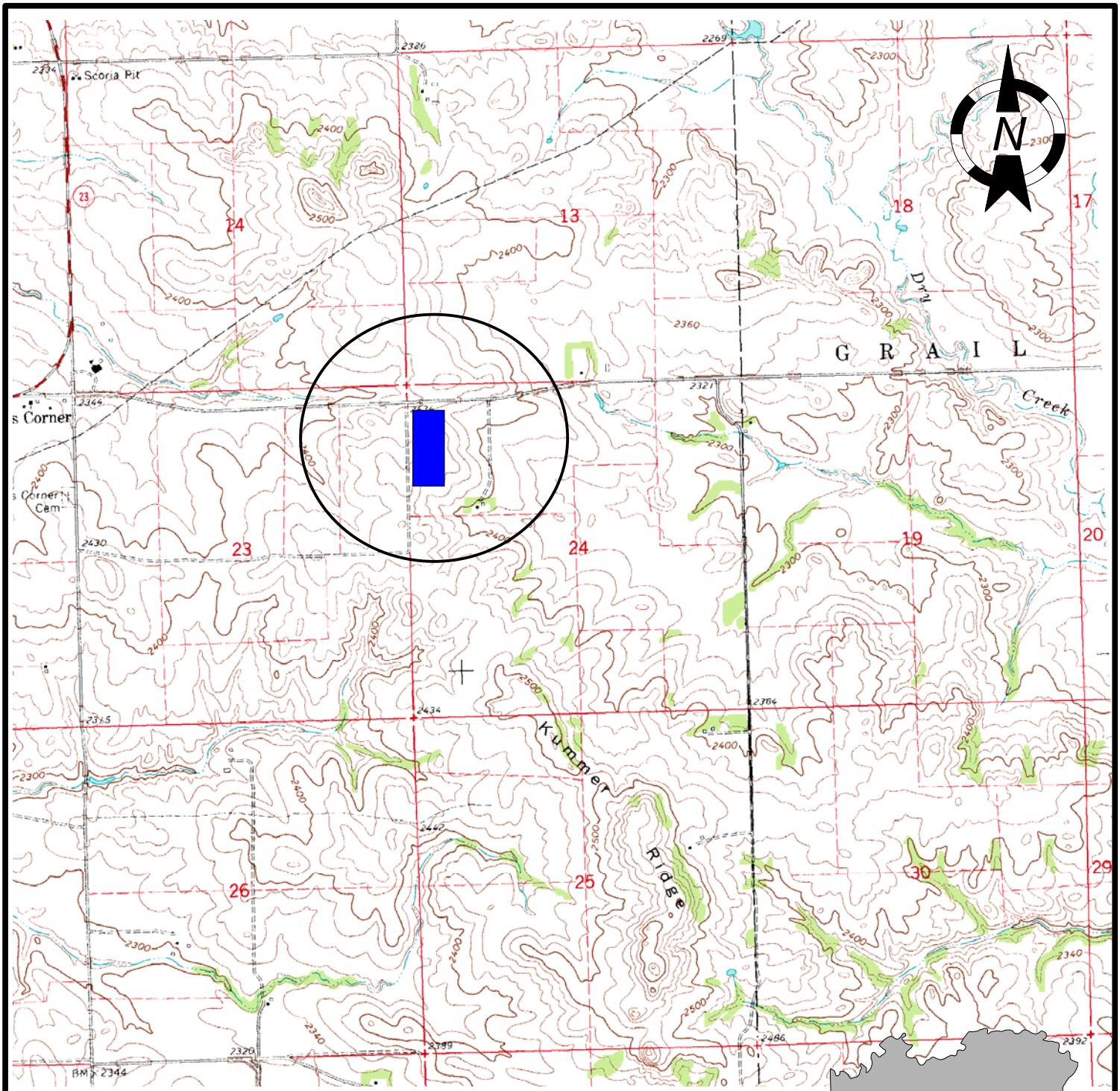
2. Trinity Community Clinic is the second closest medical facility located about 34.8 miles northeast of the Johnson Crude Terminal in New Town, ND. ***This is an Emergency/Trauma Center treating higher "Level II" trauma***.

Address: 604 1st Street
New Town, ND 58763
PH: (701) 627-2990

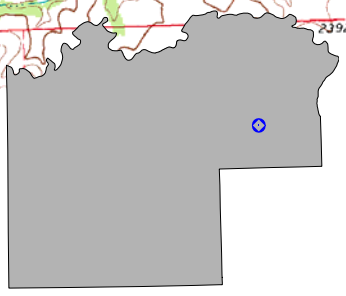
Directions: Head west on N. Dakota 73W (it becomes N. Dakota 23E at Johnson's Corner intersection) for ~1.1 miles. Turn right on N. Dakota 23E and head north for about 13 miles and then veer right (east) and continue on N. Dakota 23E for another 20.8 miles. Turn left on 5th Avenue E for about 128 feet and take first right onto 1st Street N for about 7 feet. Hospital will be on your left-hand side on the corner of 1st and 5th Avenue.

Arrival Route of Emergency Personnel/Equipment

The facility is easily accessed from Watford City by heading east on N. Dakota 23E which becomes N. Dakota 73E at Johnson's Corner. The facility is about ~ 1.1 miles east of Johnson's corner. The first facility gate (Gate 1) can be reached on the northwestern corner of the facility on the west side. Gates 2 and 3 are located south of Gate 1. The planned response time for substantial harm for inland is expected to be 27 hours: 24 hours for arrival plus 3 hours for deployment.



USGS 7.5-Minute Maps
Johnson's Corner



General Vicinity
McKenzie County

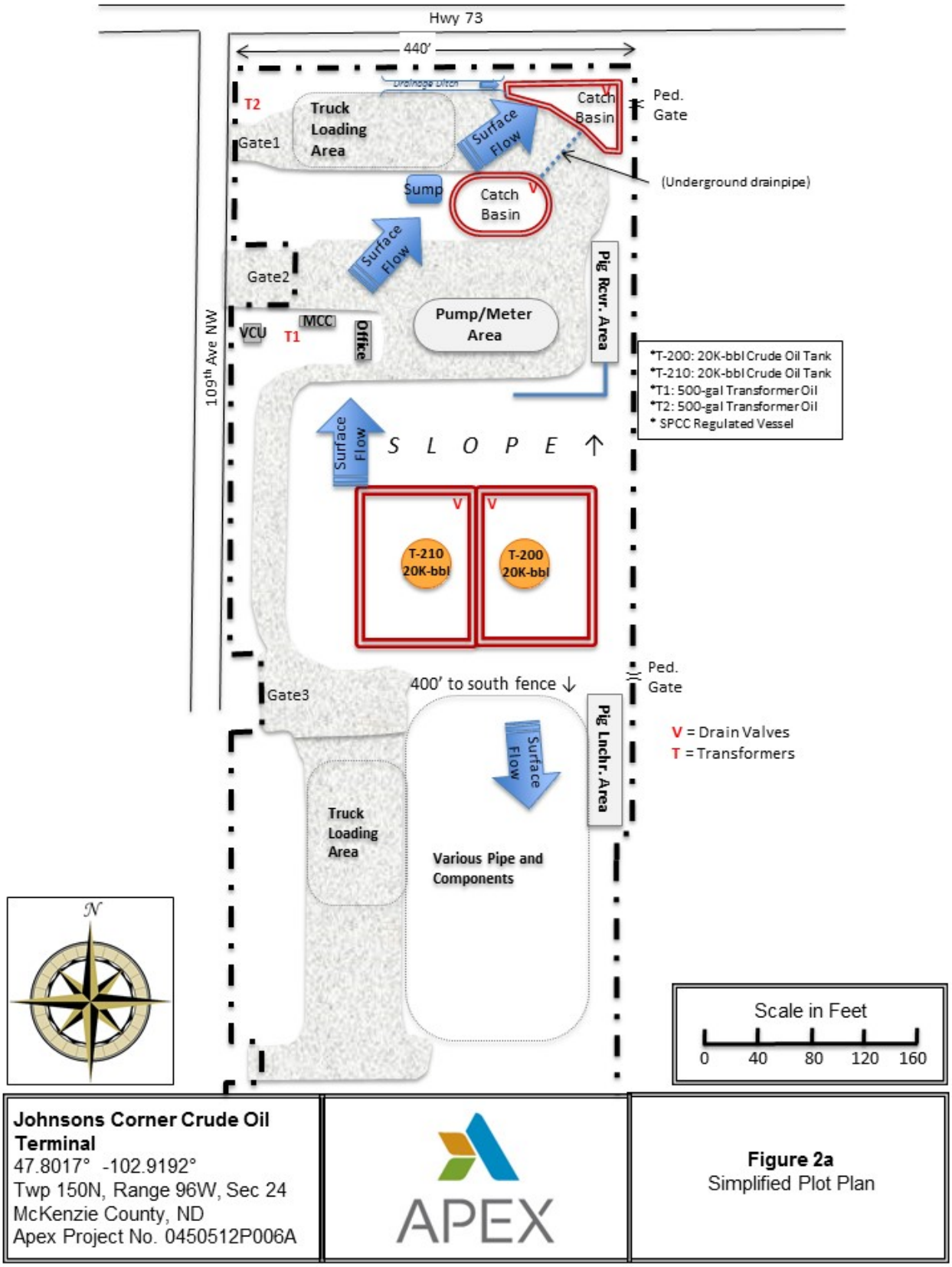
Compliance Partners Inc.
4038 Timberline Rd., Suite 100
Fort Collins, CO 80525 (970) 206-4443
www.compliance-partners.com

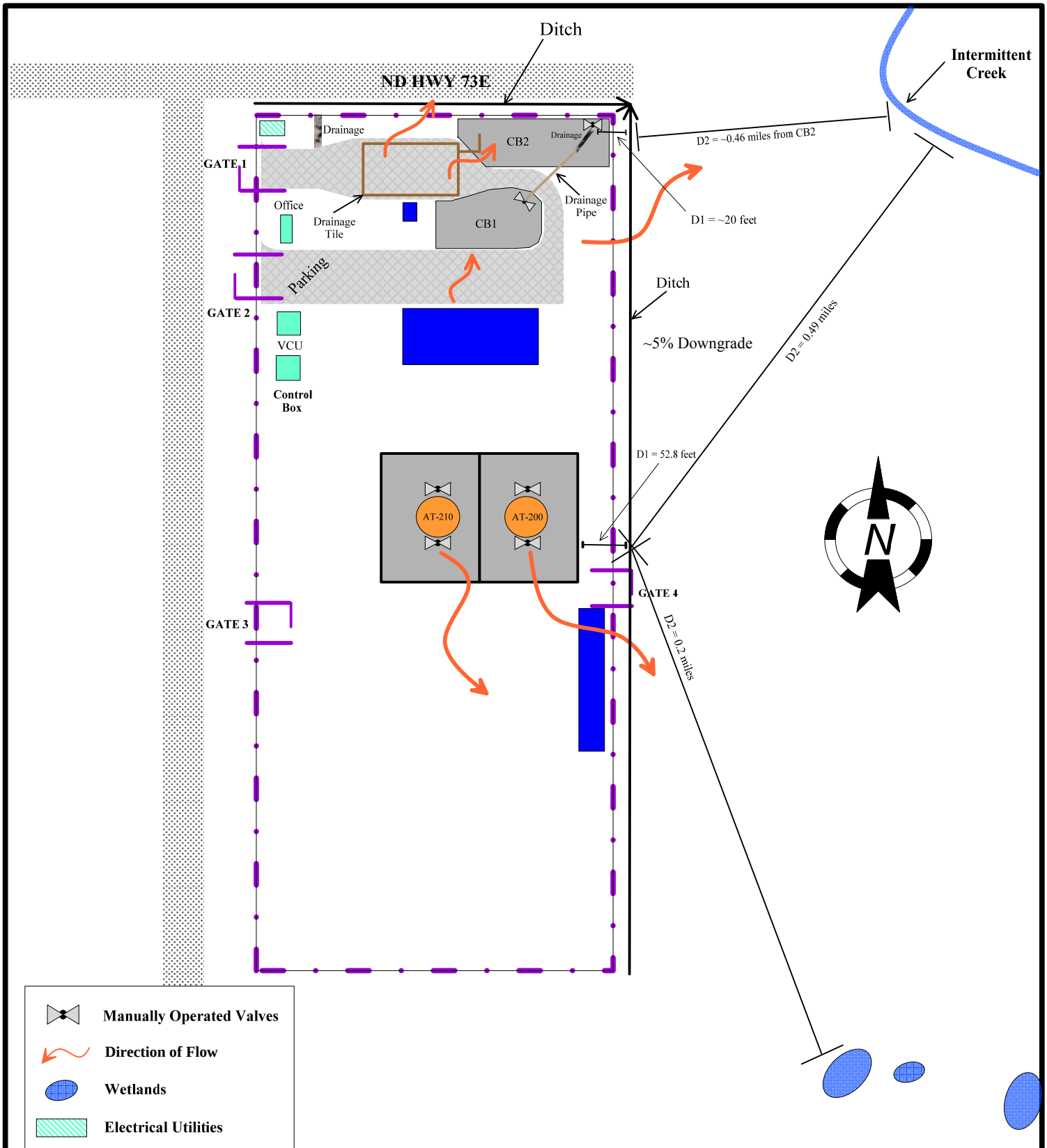
TARGA

Johnson's Corner Crude Oil Terminal

General Location Map
Sec. 24, T150N, R96W
McKenzie County, ND

PROJECT NAME	FILENAME	SCALE	REVISED	DIAGRAM NUMBER
SBP: Crude Terminal	Johnson's CCT Loc.srf	1 in = 690 m	2/5/2013	1


Hwy 73
440'
Drainage Ditch
T2
Truck Loading Area
Gate1
Surface Flow
Catch Basin
V
Ped. Gate
(Underground drainpipe)
Sump
Catch Basin
V
Surface Flow
Gate2
Pig Rcvr. Area
109th Ave NW
VCU
T1
MCC
Office
Pump/Meter Area
*T-200: 20K-bbl Crude Oil Tank
*T-210: 20K-bbl Crude Oil Tank
*T1: 500-gal Transformer Oil
*T2: 500-gal Transformer Oil
* SPCC Regulated Vessel
Surface Flow
S L O P E ↑
V
V
T-210 20K-bbl
T-200 20K-bbl
Ped. Gate
400' to south fence ↓
Gate3
Pig Lnchr. Area
V = Drain Valves
T = Transformers
Surface Flow
Truck Loading Area
Various Pipe and Components
N
Scale in Feet
0 40 80 120 160
Johnsons Corner Crude Oil Terminal
47.8017° -102.9192°
Twp 150N, Range 96W, Sec 24
McKenzie County, ND
Apex Project No. 0450512P006A
APEX
Figure 2a
Simplified Plot Plan



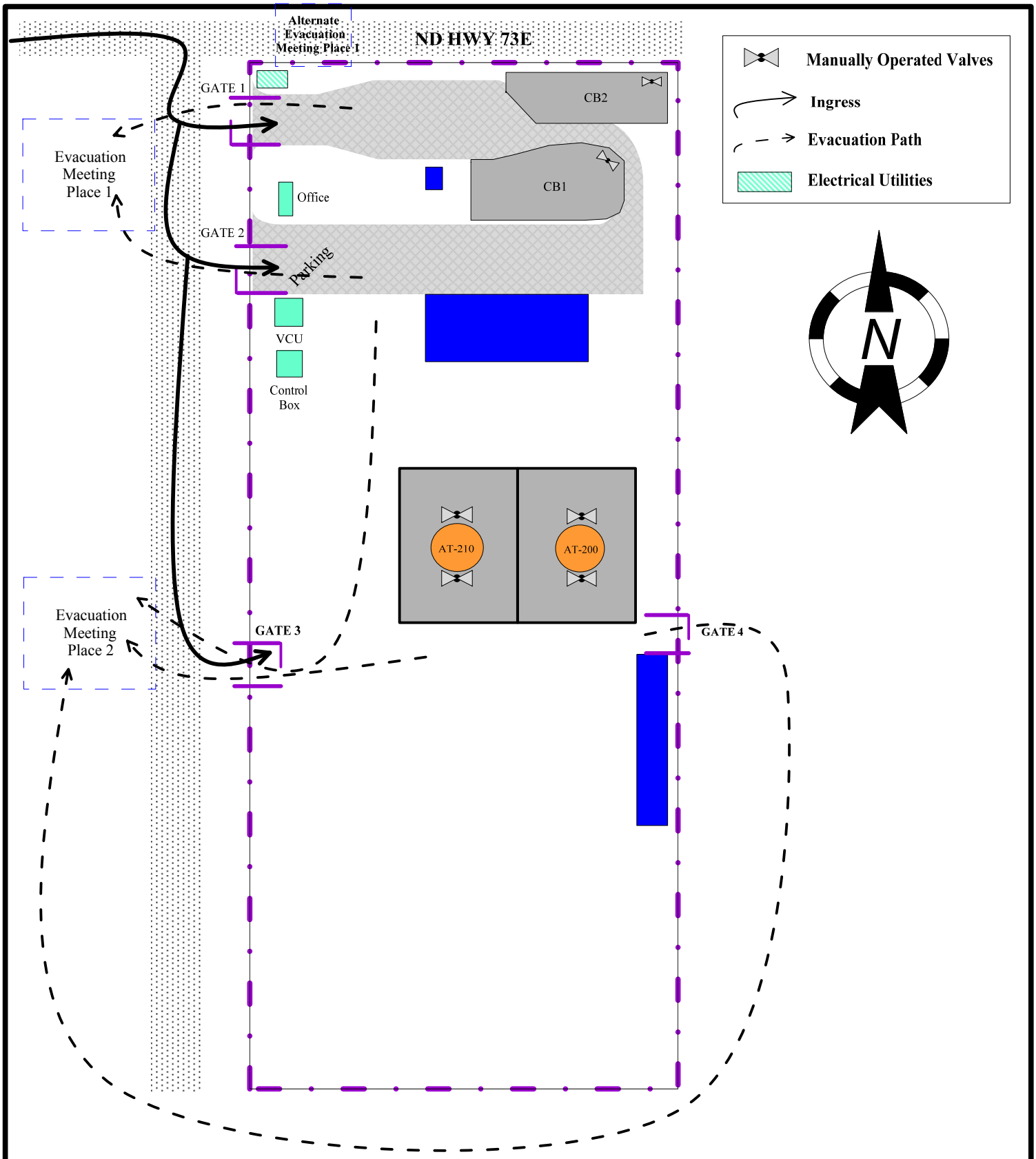
Compliance Partners Inc.
4038 Timberline Rd., Suite 100
Fort Collins, CO 80525 (970) 206-4443
www.compliance-partners.com

TARGA

Johnson's Corner Crude Oil Terminal

Site Drainage Plan

PROJECT NAME	FILENAME	SCALE	REVISED	DIAGRAM NUMBER
Targa: FRPCrudeTerminal	Johnson's CCT Loc.srf	1 in = 45 m	2/5/2013	3



Compliance Partners Inc.
4038 Timberline Rd., Suite 100
Fort Collins, CO 80525 (970) 206-4443
www.compliance-partners.com

TARGA

Johnson's Corner Crude Oil Terminal

Site Evacuation Plan

PROJECT NAME	FILENAME	SCALE	REVISED	DIAGRAM NUMBER
Targa: FRPCrudeTerminal	Johnson's CCT Loc.srf	1 in = 45 m	2/5/2013	4

FACILITY RESPONSE PLAN

[§112, App. F Section 1.1]

[40 CFR §112, Appendix F, Section 1.2]

FACILITY INFORMATION FORM

DATE LAST UPDATED: 2/2013

Facility Name: Johnson's Corner Crude Oil Terminal

Classification: Crude Oil Storage and Transportation

Location: Street Address: 2680 109th Ave NW
City: Watford City,
State: North Dakota
Zip: 58854
County: McKenzie
Phone Number: (701) 675-2157

Latitude: 47 Degrees 48 Minutes 6 Seconds

Longitude: -102 Degrees 55 Minutes 9 Seconds

Wellhead Protection Area: There is one domestic well for a non-community located 1.1 miles northwest of the facility. The facility does not drain to this wellhead.

Facility Owner: Targa Resources, LLC

Owner Location: 1939 125th Avenue NW
Watford City, ND 58854

Operator: Same as owner

Date of Oil Storage Start-up: August 12, 2011

Current Operations: Crude oil transportation and storage (NAICS Code: 486110)

Date(s) and Type(s) of Substantial Expansion(s):

2013: A second, site-built, 20,000 bbl crude oil storage tank (AT-210) was erected west of existing 20,000 bbl AT-200 oil storage tank

2015: An 80,000 bbl crude oil storage tank is planned to begin construction.

Qualified Individual(s) Contact Information:

1. Name: Mr. Tim Stubstad
   Position: Supervisor Crude Processing
   Emergency Phone No.: (701) 580-5972 (cell)
   Home Address: 35223 CR 127
   Sidney, MT 59270

Work Address: 1939 125th Avenue NW
Watford City, ND 58854
Specific Response Training Experience:
Responsibilities during small-case oil discharge scenario, prevention of discharge, emergency response procedures and emergency equipment handling.

2. Name: Mr. David Low
Position: North Dakota Operations Manager
Emergency Phone No.: (701) 300-1206 (cell)
(701) 842-3315 (work)
Home Address: 505 Creekside St SE
Watford City ND 58854
Work Address: 1939 125th Avenue NW
Watford City, ND 58854
Specific Response Training Experience:
Responsibilities during small-case oil discharge scenario, prevention of discharge, emergency response procedures and emergency equipment handling.

Report all spills that may contaminate any U.S. Navigable Waters to the National Response Center (NRC). The NRC will notify the Region 8 Emergency Operation Center (REOC) and the REOC notify a Federal On-Scene Coordinator (FOSC).

[40 CFR §112 Appendix F, Section 1.3(A) (1)]

EMERGENCY NOTIFICATION PHONE LIST

DATE LAST UPDATED __ 2/2013____

Reporter's Name: _____

Date: _____

Facility Name: _Johnson's Crude Oil Terminal_____

Owner Name: _Targa Badlands, LLC_____

Facility Identification Number: __486110_____

Date and Time of Each NRC Notification: _____

	Organization	**Phone Number**
1.	National Response Center (NRC)	1-800-424-8802
2.	Qualified Individual(s):	
	a. Tim Stubstad (cell)	1-701-580-5972
	Office	1-701-675-2157
	b. David Low (cell)	1-970-946-7485
	Office	1-701-842-3315
3.	Company Response Team: Lee Salazar (Safety Director)	
	c. Daytime	1-713-584-1421
	d. Nighttime	1-713-553-6595
4.	Federal On-Scene Coordinator (OSC) and/or	
	Regional Response Center (RRC)	1-303-349-0661
	Evening Phone (24-hr)	1-303-293-1788
5.	Local Response Team/Fire Department	
	• Watford, McKenzie	1-701-444-2934
	• Alexander Volunteer Fire Department	1-701-828-3352
6.	State Emergency Response Commission (SERC)	1-800-472-2121
	After Hours	1-701-328-9921
7.	State Police	1-701-842-2280
8.	Local Emergency Planning Committee (LEPC/DES)	1-701-328-8100
	ND 24-hr Spill Notification Radio	1-701-328-9921
	Fire Marshall	1-701-328-5555
	Community Emergency Response Team (McKenzie Co)	1-701-444-6853
9.	Local Water Supply System	1-701-328-6409
	ND Dep. of Health/Water Quality Commission	1-701-328-5210
10.	CDOT/Weather Report	1-701-774-2700
11.	Local Television/Radio Station	
	NBC/KUMV-TV	1-701-572-4676
	NBC/KQCD-TV	1-701-483-8231

12. Hospitals
    a. McKenzie Co. Hospital **(701) 842-3000** / 516 N. Main St., Watford City, ND 58854
    b. Trinity Community Clinic **(701) 627-2990** / 604 1st Street, New Town, ND 58763

[40 CFR §112 Appendix F, Section 1.3(A)(2)]

SPILL RESPONSE NOTIFICATION FORM

****Provide to the National Response Center – NRC****

Reporter's Last Name: _____

Reporter's First Name: _____

Reporter's MI: _____

Position: _____

Phone Numbers:

Day: _____

Evening: _____

Company: Targa Badlands, LLC

Organization Type: Oil & Gas – Midstream

Address: 1939 125th Avenue

City: Watford City

State: North Dakota

Zip: 58854

Were Materials Discharged?	Yes ☐	No ☐	
Confidential?	Yes ☐	No ☐	
Meeting Federal Obligations to Report?	Yes ☐	No ☐	**Date Called**: _____
Calling for Responsible Party?	Yes ☐	No ☐	**Time Called**: _____

[40 CFR §112 Appendix F, Section 1.3(A)(2)]

INCIDENT DESCRIPTION

Source and/or Cause of Incident: _____

_____

_____

_____

_____

_____

_____

Date of Incident: _____

Time of Incident: _____**AM/PM**

Incident Address/Location: Johnson Crude Oil Terminal

Nearest City: Watford City **State**: North Dakota

County: McKenzie **Zip**: 58854

Distance from City (Miles): 17.2

Direction from City: East **Section**: 24 **Township**: 150N **Range**: 96W

Borough: _____

Container Type: AST

Tank Oil Storage Capacity: _____

Units of Measure: gallons

Facility Oil Storage Capacity (gal): 1,680,000

Facility Latitude: 47 **Degrees** 48 **Minutes** 6 **Seconds**

Facility Longitude: -102 **Degrees** 55 **Minutes** 9 **Seconds**

MATERIAL

CHRIS Code	Discharged Quantity	Unit Measure	Material Discharged in Water	Quantity	Unit of Measure

[40 CFR §112 Appendix F, Section 1.3(A)(2)]

RESPONSE ACTION

Actions Taken to Correct, Control or Mitigate Incident:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

IMPACT

Number of Injuries: _____ **Number of Deaths**: _____

Were There Evacuations? Yes ☐ No ☐ **If Yes, Number Evacuated?** _____

Was There Any Damage? Yes ☐ No ☐

Damage in Dollars (approximate): _____

Medium Affected: _____

Description: _____

More Information about Medium: _____

_____

_____

_____

[40 CFR §112 Appendix F, Section 1.3(A)(2)]

ADDITIONAL INFORMATION

Any Information Not Noted Elsewhere in the Report:

_____

_____

_____

_____

_____

_____

_____

CALLER NOTIFICATION

EPA? Yes ☐ No ☐

USCG? Yes ☐ No ☐

State? Yes ☐ No ☐

Other? Yes ☐ No ☐ **Describe?** _____

[40 CFR §112 Appendix F, Section 1.3(A)(3)]

FACILITY RESPONSE EQUIPMENT LIST & LOCATION

The facility is equipped with a large mobile spill kit (large tote on wheels) with boom, diapers, etc. located on the northeast side of the facility: (1) south of VCU by control box and (2) by loading area. Third party contractors provide resources for spill control and communication resources for medium (>16,800 and <168,000 gallons) and worst-case (168,000 gallons) discharge scenarios. See Diagram 2 for equipment location at the facility.

1. **Skimmers/Pumps – Operational Status:** None

   Type: _____ **Model:** _____ **Year** _____

   Number: _____

   Capacity (gal/min): _____

   Daily Effective Recovery Rate: _____

   Storage Location(s): _____

   Date Fuel Last Changed: _____

2. **Boom-Operational Status:** Brand New

   Type: Absorbent **Model:** _____ **Year** 2012

   Number: 4

   Size/Length (ft): 8" x 10'

   Containment Area (sq. ft.): 80 per boom

   Storage Location: Spill kit, northwest side of facility, south of VCU and spill kits by loading area

3. **Chemicals Stored (Dispersants listed on EPA's NCP Product Schedule):**

Type	Amount	Date Purchased	Treatment Capacity	Storage Location
None				

- Were the appropriate procedures used to receive approval for use of dispersants in accordance with the NCP (40 CFR 300.910) and the Area Contingency Plan (ACP), where applicable? Yes ☐ No ☐
- On-Scene Coordinator (OSC) Authorizing Use:

Name: N/A State: _____ Date Authorized: _____

4. **Dispersant Dispensing Equipment – Operational Status: _____**

Type and year	Capacity	Storage Location	Response Time (minutes)
None			

5. **Sorbents – Operational Status:** New & Ready for Use

   Type and Year Purchased: Absorbent socks (2012), Mats Pads (2012), Granular Absorbent (2013)

   Amount: Socks: (10) 3" x 10' and (31) 3" x 48 "/ Mats: (6) 100 count / Granular: (2) 30 lbs. /each

   A more detailed list can be found as Appendix B

   Absorption Capacity (gal): 10 - 76

   Storage Location(s): Spill kit, northwest side of facility, south of VCU and spill kits by loading area

6. **Hand Tools – Operational Status: _____**

Type and year	Quantity	Storage Location
Shovel	1	Per Work Truck
Hand tools	Various	Per Work Truck

7. **Communication Equipment (include Operating Frequency and Channel and/or Cellular Phone Numbers) – Operational Status: _____**

Type and year	Quantity	Storage Location/Number
Cell phones / new	Various	All operators
Motorola XPR6350	6	Office Channel 1

8. Fire Fighting and Personnel Protective Equipment – Operational Status: _____

Type and year	Quantity	Storage Location
20 lb. ABC and CK fire extinguishers	13	See Diagram 2
Hard Hats & Work Gloves	Provided to each employee	---

9. Other (e.g., Heavy Equipment, Boats and Motors) – Operational Status: _____

Type and year	Quantity	Storage Location
None		

[40 CFR §112, Appendix F, Section 1.3(A)(4)]

RESPONSE EQUIPMENT TESTING/DEPLOYMENT DRILL LOG

Last Inspection or Response Equipment Test Date: _____

Inspection Frequency: _____

Last Deployment Drill Date: _____

Deployment Frequency: _____

Oil Spill Removal Organization Certification (if applicable): _____

_____

[40 CFR §112 Appendix F, Section 1.3(A)(5)]

COMPANY EMERGENCY RESPONSE PERSONNEL

DATE LAST UPDATED __ 11/2014____

Name	Phone	Response Time	Responsibility During Response Action	Response Training/Type
Tim Stubstad	(701) 580-5972	2 hours	Contacting & contracting emergency response organizations; liaison w/on-scene coordinator; access company funds to carry-out emergency response	Emergency Response Training
David Low	(701) 300-1206	1 hour		

EMERGENCY RESPONSE CONTRACTORS[1]

DATE LAST UPDATED __ 11/2014____

Name*	Phone	Response Time	Contract Responsibility
1. Earthmovers / Strata Corporation (Minot)	Scott Brown: (701) 720-8565 Answering Service: (800) 373-5259	1 hour	Clean-up and communication equipment. Details in Appendix A
2. Garner Environmental Services (Willingston)	(701) 577-1200 (800) 424-1716	1 hour	Clean-up and communication equipment. Details in Appendix A
3.			
4.			
5.			

1 - Maintain evidence of contracts with response contractor with this form

FACILITY RESPONSE TEAM[2]

DATE LAST UPDATED __ 2/2013 ____

Team Member	Response Time	Phone (Day/Evening)
Tim Stubstad	Immediate	(701) 675-2157 / (701) 580-5972
David Low	Immediate	(701) 300-1206 / (701) 842-3315
Earth Movers / Strata Corporation	1 hour	Scott Brown (24/7): (701) 720-8565 Emergency Answering Service: (800) 373-5259

2 - These are personnel normally at the facility or primary response contractors

[40 CFR 112 Appendix F, Section 1.3(A)(6) & 1.3.5]

EVACUATION PLAN

If access to whichever gate is limited due to weather conditions, fire, safety concerns, etc., everyone must evacuate the facility through fastest and safest available gate, gather at a meeting place and wait for further directions:

1. All individuals that are at the facility during a spill shall calmly go to **Meeting Place No. 1** on the other side of the dirt road located just outside Gate 1 and Gate 2 by the northwestern fence line.
2. If accessing Gates 1 and 2 is difficult or unsafe, everyone shall go to **Meeting Place No. 2** southwest of the crude oil tanks through Gate 3 which is in the middle and west side of facility fence.
3. If somebody was injured, contaminated or physically hurt by the event, call 911, stay calm and provide first aid if trained.
4. There is a fourth gate located between the pigging station and east of tank AT-200. This exit gate shall be used only if all other gates fail to open and the spill did not originate by AT-200 and AT-210 area. Because crude oil will flow south-southeast of the facility over the location of this gate.
5. If use of Gate 4 is the only safe and feasible option, attempt to safely reach Meeting Place 1 or 2 or Alternate Meeting Place 1.
6. When exiting the facility, and particularly if there are high winds, observe the wind boots and assess if it safe to stay at Meeting Place 1 or 2 as vapors released by crude oil can be toxic and cause breathing difficulties and/or even unconsciousness. Direct evacuation efforts and personnel to **Alternate Evacuation Meeting Place 1**.
7. Perform head counts/roll call to account for personnel.
8. Stay calm and follow instructions given by qualified individual.

There are fire extinguishers located throughout the facility as follows:

- **One at the east end and one on the west end of the middle loading rack**
- **On the northeast side of the facility: one in the pump building and one on the electrical panel**
- **Six on the northwest side: two in MCC building, three in the office an done in the BOC building**
- **By each tank (AT-200 and AT-210) on the west side (See Diagram No. 2)**
- **East of AT-200 on the north and south ends of the pigging station**
- **One in the sample building**
- **1 in relay building (in the pump and meter area shown on diagram 2)**
- **2 at the EOG truck loading rack**

IMMEDIATE ACTIONS

On Site Workers:

1. The first priority should be to shut-off ignition sources (i.e., loading truck engine, open flames, electrical circuits) and to contain the spill on site **as long as safety is not compromised**.
2. Attempt to contain the spill by constructing earthen berms/absorbent material at the leading edge of the spill to prevent further advancement or other material available to contain and stop the flow of oil already on the ground. It is critical to try to prevent any spilled product from reaching any waterways, drainages, or drains.
3. If it is safe to do so, locate where in the flow line the leak occurred.
4. Isolate the section where the spill originated and stop the flow of product by plugging or capping the leak at the source if possible.
5. Block civilian access to the facility and warn personnel of event.

6. Notify the Emergency Response Coordinator (ERC) and site manager:

Tim Stubstad (Site Manager)	David Low (ERC)
(701) 580-5972 (cell)	(701) 300-1206 (cell)
(701) 675-2157 (work)	(701) 842-3315 (work)

7. Personnel involved with a spill event should be prepared to make recommendations on whether additional cleanup materials, equipment or personnel may be necessary.
8. On-site personnel or an approved outside contractor will be assigned to clean up the spill once a spill has been contained.
9. Any liquids present will be pumped or vacuumed into tanks, trucks, or drums for recovery and disposal according to federal and state waste management requirements. Absorbents will be used to remove any liquid.
10. Soil and other solid materials contaminated with petroleum hydrocarbons will be disposed of in accordance with federal and state hazardous and solid waste regulations.

Spill control equipment including absorbent booms, absorbent socks, granular absorbent, absorbent pads, and disposal bags and labels are stored in the facility spill kit clearly labeled and readily available in the event of a spill (See Diagram 2). A shovel is carried in the facility operator's vehicle for use in constructing berms and diversions to help mitigate any spill which has occurred.

Reporting Actions:

The site manager and the Emergency Response Coordinator (ERC) should be immediately notified in the event of a spill. On site personnel should provide the following information to the ERC:

1. Any injuries, fires and/or explosions.
2. Location of spill including type of terrain and nearest water feature or drainage feature.
3. Date and time of spill event.
4. Source of spill and its relative location to vulnerable wetlands, rivers, farming, etc.
5. Material discharged.
6. Estimated volume of the spill.
7. Any explosions.
8. Weather conditions (i.e., rain, snow, high winds, temperature)
9. Employee/contractor evacuation.
10. Type of cleanup actions in progress or planned.

Follow-up decisions and contacts with agencies other than county or local emergency response agencies are to remain the function of the Emergency Response Coordinator.

Qualified Individual Duties:

1. Activate alarms and hazard communication systems.
2. Notify all response personnel.
3. Identify the character, exact source, amount and extent of the release and all other items needed for notification.

4. Notify and provide necessary information to the appropriate Federal, State and local authorities with designed response roles, including the National Response Center, State Emergency Response Commission and Local Emergency Planning Committee.
5. Notify the local police/fire department if oil threatens to reach any creeks and rivers to prevent the public from accessing those water sources
6. Cooperate and work closely with the Federal On-scene Coordinator (FOSC).
7. Assess the interaction of the discharged substance with water and/or other substances stored at the facility and notify response personnel at the scene of that assessment.
8. Evaluate the possible hazards to human health and the environment due to the release. This assessment must consider both the direct and indirect effects of the release (i.e., the effects of any toxic, irritating, or asphyxiating gases that may be generated or the effects of any hazardous surface water runoffs from water or chemical agents used to control fire and heat-induced explosion).
9. Assess and implement prompt spill clean-up operations to contain and remove the substance released.
10. Coordinate rescue and response actions as previously arranged with all response personnel and enact contracts with oil-spill removal entities.
11. Use authority to immediately access company funds to initiate cleanup and spill activities.
12. Direct cleanup activities until properly relieved of this responsibility.
13. Coordinate with appropriate company employees and/or contractors preparing reports and filling out forms documenting the spill.

Nearest Medical Emergency Center

1. The McKenzie County Hospital is the closest hospital located about 18.1 miles west of the Johnson Crude Terminal in Watford City, ND. ***This is an Emergency/Trauma Center treating lower "Level V" trauma.***

Address: 516 North Main
Watford City, ND 58854
PH: (701) 842-3000

Directions: Head west on N. Dakota 73E (it becomes N. Dakota 23E past Johnson's Corner intersection) for 17.9 miles. Turn right on North Main St. and head north for about 0.1 miles. The hospital will be on your right-hand side past 5th avenue.

2. Trinity Community Clinic is the second closest medical facility located about 34.8 miles northeast of the Johnson Crude Terminal in New Town, ND. ***This is an Emergency/Trauma Center treating higher Level "II" trauma****.*

Address: 604 1st Street
New Town, ND 58763
PH: (701) 627-2990

Directions: Head west on N. Dakota 73W (it becomes N. Dakota 23E at Johnson's Corner intersection) for ~1.1 miles. Turn right on N. Dakota 23E and head north for about 13 miles and then veer right (east) and continue on N. Dakota 23E for another 20.8 miles. Turn left on 5th Avenue E for about 128 feet and take first right onto 1st Street N for about 7 feet. Hospital will be on your left-hand side on the corner of 1st and 5th Avenue.

Arrival Route of Emergency Personnel/Equipment

The facility is easily accessed from Watford City by heading east on N. Dakota 23E which becomes N. Dakota 73E at Johnson's Corner. The facility is about ~ 1.1 miles east of Johnson's corner. The first facility gate (Gate 1) can be reached on the northwestern corner of the facility on the west side. Gates 2 and 3 are located south of Gate 1. The planned response time for substantial harm for inland is expected to be 27 hours: 24 hours for arrival plus 3 hours for deployment.

[40 CFR §112, Appendix F, Section 1.4]

HAZARD EVALUATION

Analysis and Identification of Possible Spills and Associated Hazards

There are two (2) 840,000 gallon full-contact internal floating roof tanks storing crude oil at the center of the facility identified as tanks AT-200 and AT-210. Since these tanks are manifolded together, up to 1,680,000 gallons of crude oil could spill (worst case scenario). These tanks are brand-new units built on-site; AT-200 was inspected on March 10, 2011 and will be integrity tested on a regular schedule and when material repairs are made in accordance with API-653. Inspection on AT-210 will be carried out before it is put in service and following API-653. Tank AT-200 is located in the middle of the facility near the eastern fence line; tank T-210 is adjacent and west of AT-200. Both tanks are fitted with an earthen berm (secondary containment) split in the middle into two sections by an earthen dividing wall one foot lower than the height of the main berm walls. The existing earthen berm enclosing both tanks is built to hold the contents of each tank plus precipitation.

The tank truck loading/unloading area poses risk for spills as well. The loading/unloading area is fitted with two earthen catchment basins capable of storing between 8,000 to 9,600 gallons of crude oil which have manually-operated valves to release rain/snow accumulation. If recommended Liquids Transfer Procedures are not properly followed, it is predicted that up to 9,600 gallons of crude oil could be released before emergency shut-off valves are engaged. Overflow of spilled liquids will move north-northeast to either of the two catchment basins. Berms and catchment areas volumes are listed below:

Secondary Containment Information				
Containment ID	Type of Containment/Material of Construction	Approximate Containment Capacity (gal)	Location	Associated Tank/Transfer Point
Above Ground Tanks Secondary Containment (SC)				
SC-200	Earthen berm/soil with lower earthen wall dividing each tank containment	1,761,660 (includes lower dividing berm wall)	East and center of facility	AT-200
SC-210			Center of the facility	AT-210
Transfer Point Catchment Areas/Basins (CB)				
CB 1	Soil	9,600	Northeast of facility, south of CB 2	Loading Area
CB 2	Soil	8,000	Northeast corner of facility	Loading Area

There are other miscellaneous activities that are either scheduled or performed on an “as needed” basis that can generate a spill including, but not limited to, repair and maintenance of piping, pressure vents, valves, gauges and alarms. Negligence during these maintenance activities can initiate small spill(s) (<2,100 gallons) to bigger spill(s) >2,100 gallons posing a threat to on-site personnel and/or environmental sensitive areas.

Storm water flows in overland sheet flow away from the centrally located storage tanks either to the south over the facility’s southeastern property boundary or to the north over the facility’s northeastern property boundary.

Crude oil reaching the tributary feeding to intermittent creek or the nearby wetlands could affect wildlife, as well as surrounding vegetation. The thickness of the oil may cause immediate and long term injuries including disruption of feather joins, reduced mobility of small wildlife causing starvation, smothering by diminishing oxygen content in the water and/or coating of life forms on the bottom of the water. These injuries may well prevent wildlife from foraging and escaping predators as well as intoxicate internal organs.

The crude oil is a high viscosity, flammable liquid with a boiling point above ambient temperature and insoluble in water. It will float on water and form a surface slick. Some compounds present in crude oil may be soluble in water which can easily contaminate the surrounding ecosystem. This soluble compound, as well as the crude oil, can be carried through rain, or water used to mitigate fires, permeate through the soil and potentially contaminate groundwater as well as be carried to the surrounding wetlands causing adverse reaction to living creatures that come in contact with the polluted water.

Crude oil is expected to release toxic vapors in the event of a spill. Fumes released by crude oil contain BTEX known to irritate eyes, nose throat, skin cause dizziness and vertigo. In addition, H_2S may be found in crude oil which can cause loss of consciousness even when exposed to low levels in a short period of time.

There are wind socks on the roof-tops of both AT-200 and AT-210, by Gate 1 and the VRU. The mean wind direction move west northwest of the facility at ~12.0 mph with the highest wind speed recorded in the 70's mph (per USGS, Williston). These winds are predicted to be similar during the winter and the summer time, speeds sustained longer during the winter time. At 12.0 mph atmospheric stability is predicted to be rather stable where airborne contaminants mix slowly with air. It is important to consider actual daytime and nighttime atmospheric conditions during a spill to assess the risks in real time as stronger winds can keep air contaminants close to ground level.

Because the wind velocity is typically measured 10 meters above surface, the actual distance vapors travel has to be estimated at less than 100% of measured wind speeds but not lower than 50%:

Distance = (Wind Velocity x Time)

It is predicted that vapors released from the crude oil could reach Johnson's Corner (the closest business/ community) between 5 and 10 minutes.

Vulnerability Analysis

The planning distance from tanks to sensitive areas:
$D1_1$ = AT-200 berm edge (SC-200) is 52.8 feet to nearest storm drain located by the east fence line
$D2_1$ = 0.2 miles to navigable waters/sensitive area (wetland) southeast of AT-200
$D2_2$ = 0.49 miles to navigable waters/sensitive area (intermittent creek) northeast of AT-200
$D2_3$ = 0.3 miles to second navigable waters/sensitive area (wetland) southeast of AT-200
$D2_4$ = 0.4 miles to third navigable waters/sensitive area (wetland) southeast of AT-200

The planning distance from loading area to sensitive areas:
$D1_1$ = Catchment Basin drainage pipe (CB2) is ~20 feet to nearest storm drain located by the east fence line
$D2_1$ = 0.46 miles to navigable waters/sensitive area (intermittent creek) northeast of CB2

Impact Analysis

1. Any spilled fluids from the secondary containment can potentially enter surface sheet flow at a 5% downgrade slope to the east and contaminate an intermittent creek less than 0.5 miles northeast of the facility which runs eight miles before reaching a waterway connected to Fort Berthold Indian Reservation and the Missouri River.
2. There are three wetlands downslope and southeast of AT-200 and AT-210.
3. About 5.8 miles northeast of the facility there are National Grasslands in the Blue Buttes area.
4. There are businesses establishment at Johnson's corner located at the intersection of 73E and 23E, about 1.1 miles west of the facility.
5. There is a non-community water system located at Johnson's corner, 1.1 miles west of the facility.
6. There are two domestic wells about ~0.4 miles northeast and a third one ~0.58 southeast of the facility.
7. The facility is also located 6.0 miles to the Fort Berthold Indian Reservation plot line.
8. There are no other communities, schools, institutions, etc. of human or economic importance near the facility.

Facility diagrams are included in next Section of this FRP to be used as visual aids during a spill event.

HAZARD IDENTIFICATION TANKS
DATE LAST UPDATED __2/2013____

Tank No.	**Substance Stored** (Oil & Hazardous Substance)	**Quantity Stored** (gallons)	**Tank Type/Year**	**Maximum Capacity** (gallons)	**Potential Failure/Cause**
AT-200*	Crude Oil	756,000	Floating Roof Top/2011	840,000	Tank overfill, tank rupture, failure due to deterioration
AT-210*	Crude Oil	756,000	Floating Roof Top/2012	840,000	

**AT = Above Ground Tank*

HAZARD IDENTIFICATION SECONDARY CONTAINMENTS & LOADING AREA
DATE LAST UPDATED __2/2013____

Containment ID*	**Substance Stored** (Oil & Hazardous Substance)	Quantity Stored (gal)	Associated Unit	Potential Failure/Cause
Above Ground Tanks Secondary Containment (SC)				
SC-200	Crude Oil	1 to 1,761,660 (includes lower dividing berm wall)	AT-200 and AT-210	Manual draining valves left opened/ Not drained on time-overflow due to severe weather conditions
SC-210				
Transfer Point Catchment Areas/Basins (CB)				
CB 1	Crude Oil	1 to 9,600	Loading Area	Manual draining valves left opened/ Not drained on time-overflow due to severe weather conditions
CB 2	Crude Oil	1 to 8,000		

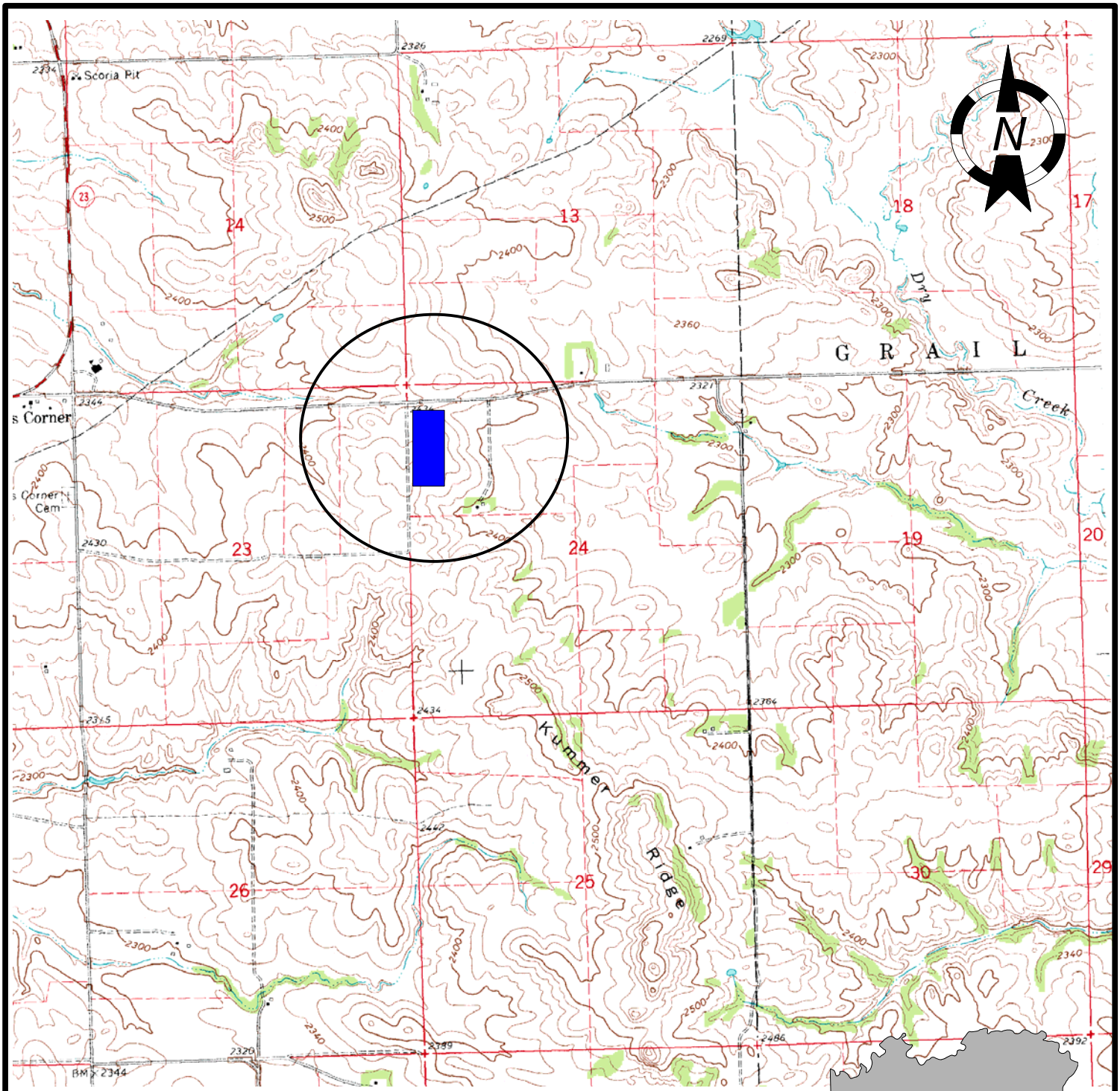
**SC = Secondary Containment; CB = Catchment Basin*

Facility Reportable Oil Spill History

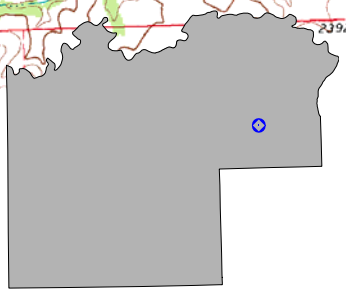
The facility does not have a history of reportable or non-reportable oil spills as of November 2014.

[40 CFR §112, Appendix F, Section 1.9]

DIAGRAMS OF FACILITY SITE-PLAN, DRAINAGE AND EVACUATION PLAN



USGS 7.5-Minute Maps
Johnson's Corner



General Vicinity
McKenzie County

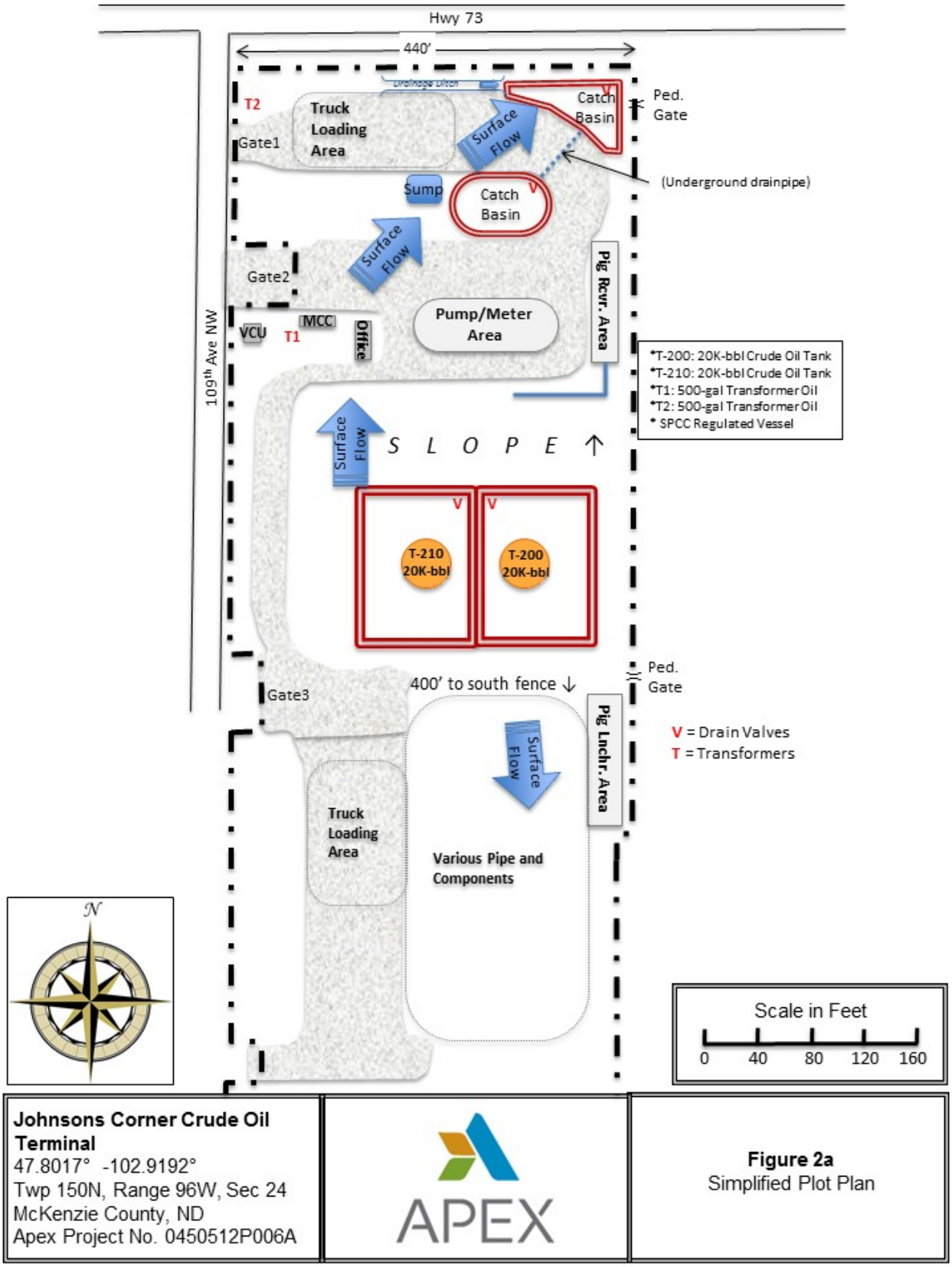
Compliance Partners Inc.
4038 Timberline Rd., Suite 100
Fort Collins, CO 80525 (970) 206-4443
www.compliance-partners.com

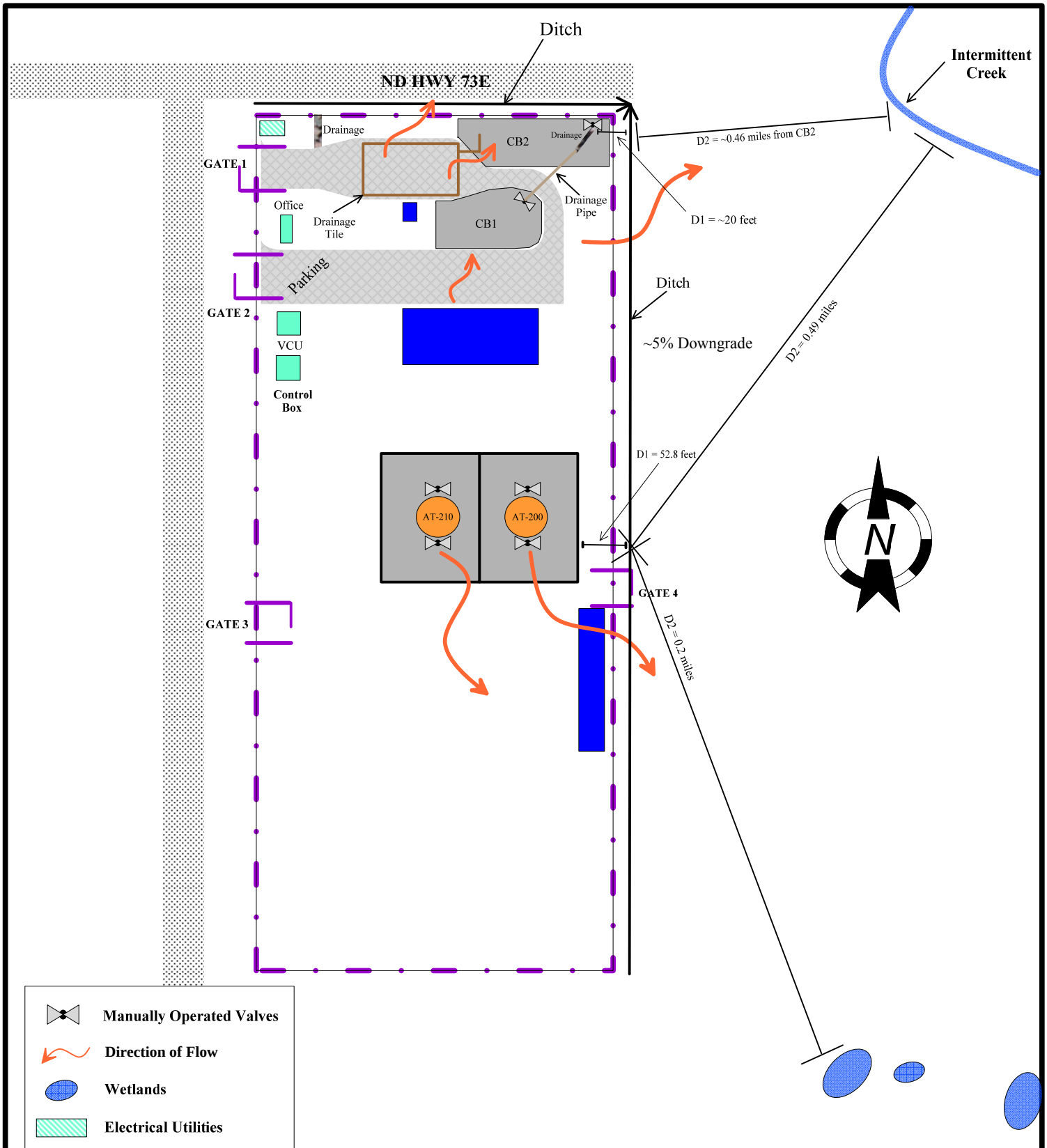
TARGA

Johnson's Corner Crude Oil Terminal

General Location Map
Sec. 24, T150N, R96W
McKenzie County, ND

PROJECT NAME	FILENAME	SCALE	REVISED	DIAGRAM NUMBER
SBP: Crude Terminal	Johnson's CCT Loc.srf	1 in = 690 m	2/5/2013	1


Hwy 73
440'
Drainage Ditch
T2
Truck Loading Area
Gate1
Surface Flow
Catch Basin
V
Ped. Gate
(Underground drainpipe)
Sump
Catch Basin
V
Surface Flow
Gate2
Pig Rcvr. Area
109th Ave NW
VCU
T1
MCC
Office
Pump/Meter Area
*T-200: 20K-bbl Crude Oil Tank
*T-210: 20K-bbl Crude Oil Tank
*T1: 500-gal Transformer Oil
*T2: 500-gal Transformer Oil
* SPCC Regulated Vessel
Surface Flow
S L O P E ↑
V
V
T-210 20K-bbl
T-200 20K-bbl
Ped. Gate
400' to south fence ↓
Gate3
Pig Lnchr. Area
V = Drain Valves
T = Transformers
Surface Flow
Truck Loading Area
Various Pipe and Components
N
Scale in Feet
0 40 80 120 160
Johnsons Corner Crude Oil Terminal
47.8017° -102.9192°
Twp 150N, Range 96W, Sec 24
McKenzie County, ND
Apex Project No. 0450512P006A
APEX
Figure 2a
Simplified Plot Plan



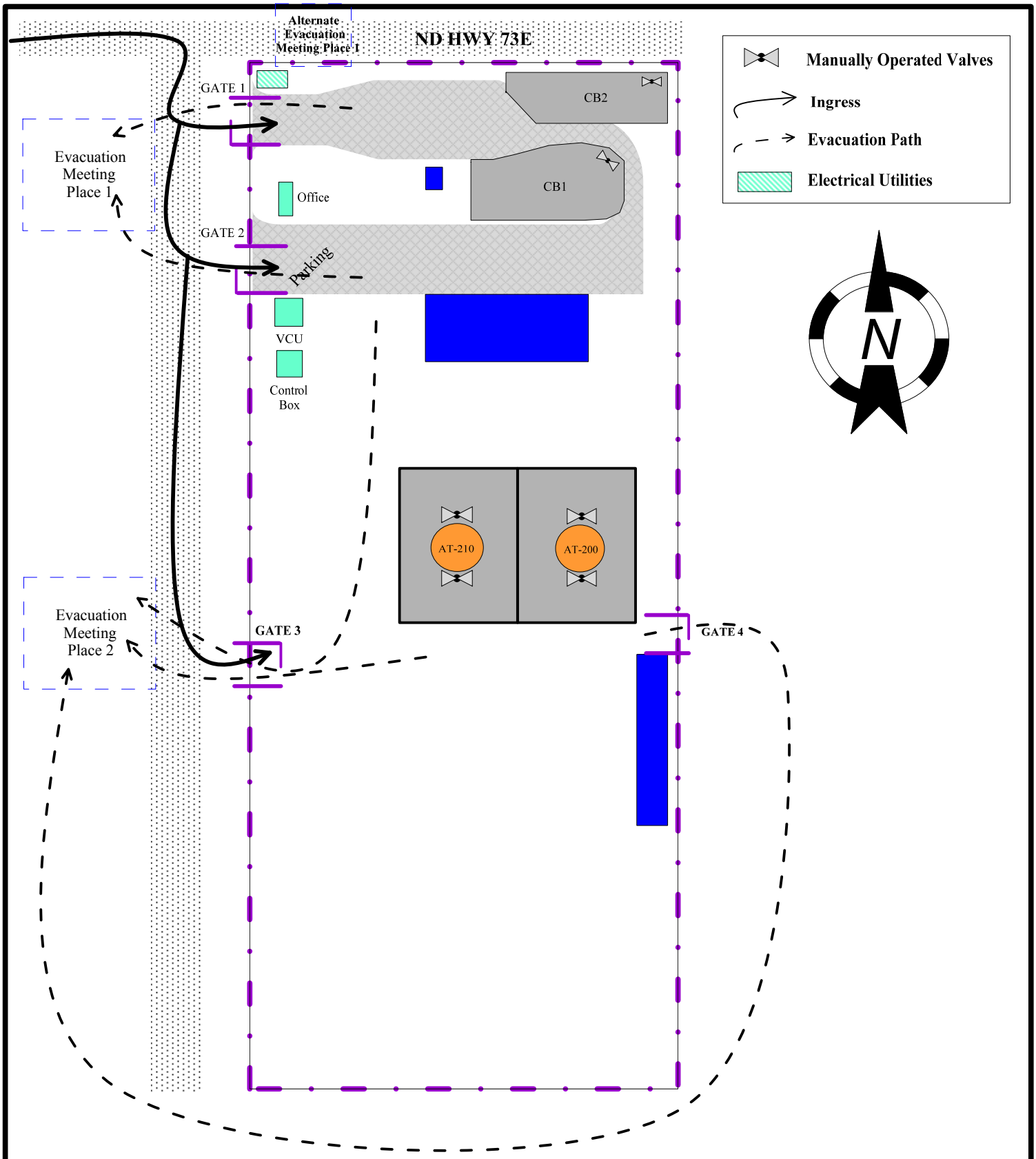
Compliance Partners Inc.
4038 Timberline Rd., Suite 100
Fort Collins, CO 80525 (970) 206-4443
www.compliance-partners.com

TARGA

Johnson's Corner Crude Oil Terminal

Site Drainage Plan

PROJECT NAME	FILENAME	SCALE	REVISED	DIAGRAM NUMBER
Targa: FRPCrudeTerminal	Johnson's CCT Loc.srf	1 in = 45 m	2/5/2013	3



Compliance Partners Inc.
4038 Timberline Rd., Suite 100
Fort Collins, CO 80525 (970) 206-4443
www.compliance-partners.com

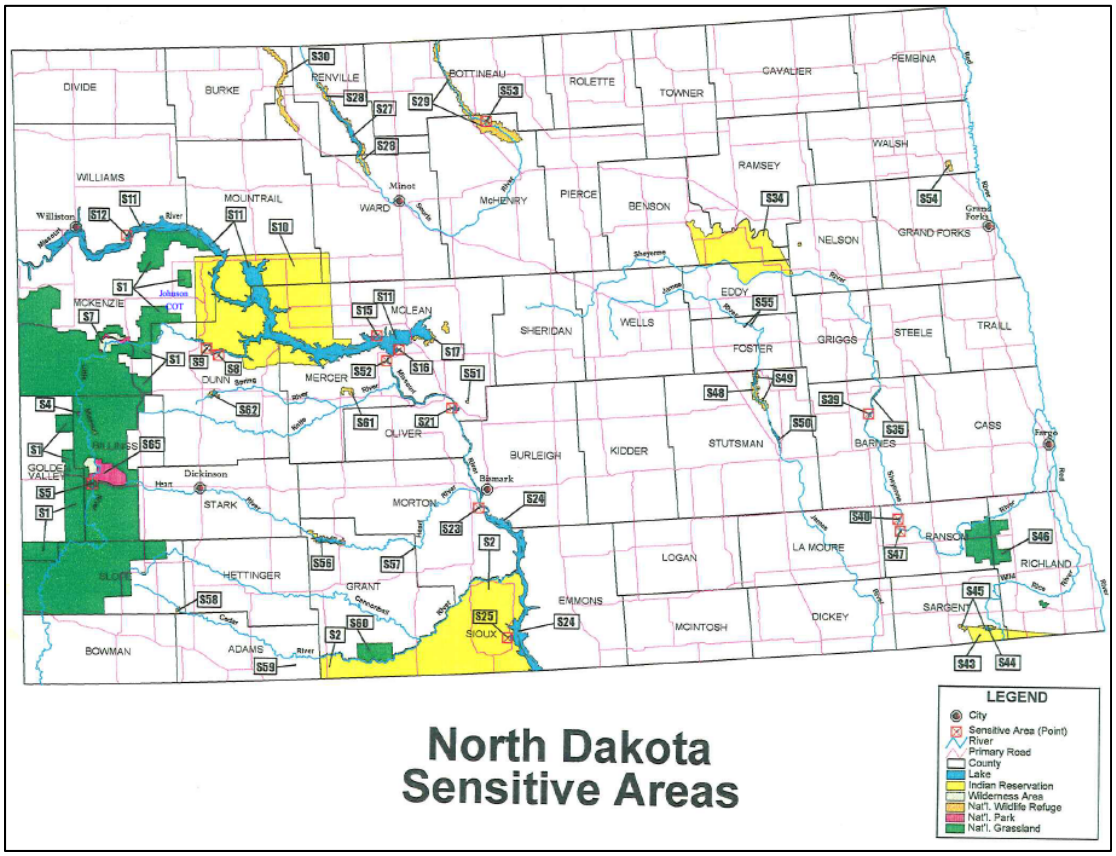
TARGA

Johnson's Corner Crude Oil Terminal

Site Evacuation Plan

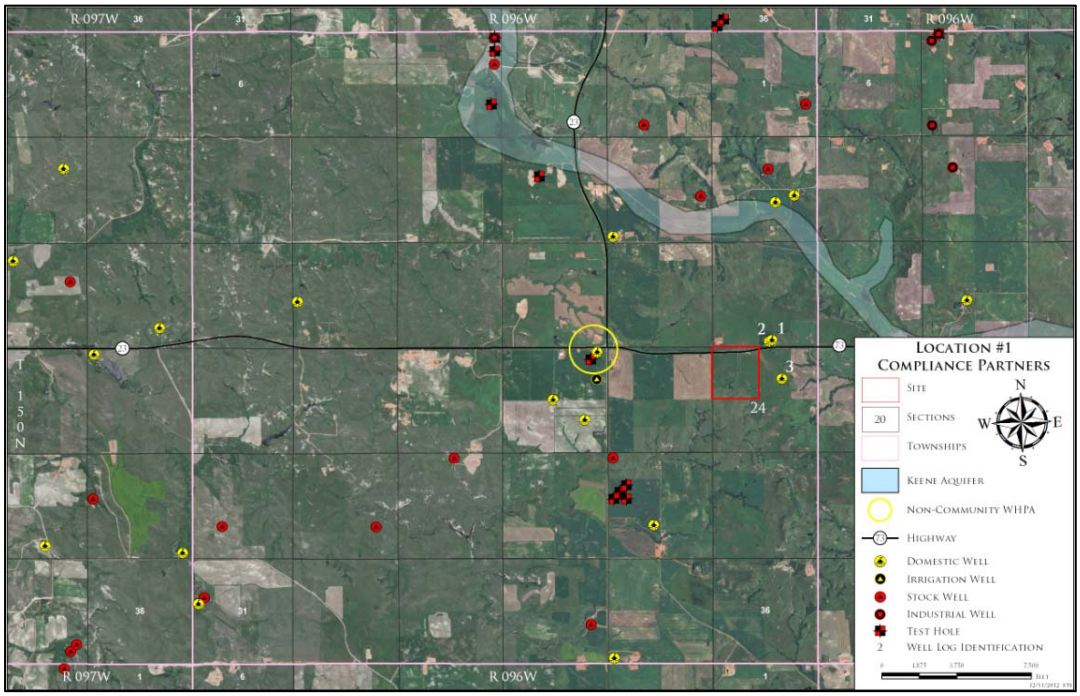
PROJECT NAME	FILENAME	SCALE	REVISED	DIAGRAM NUMBER
Targa: FRPCrudeTerminal	Johnson's CCT Loc.srf	1 in = 45 m	2/5/2013	4

Diagram No. 5: Sensitive Areas Location Map



Sensitive Areas Location Map retrieved from the ND Health Department

Diagram No. 6: Drinking Water Location Map



Map provided by the ND Game and Fish Department

[40 CFR §112, Appendix F, Section 1.5]

RESPONSE ACTIONS FOR VARIOUS DISCHARGE SCENARIOS

The primary objective of oil spill response is to remove as much oil as possible from the spill area as quickly as possible in order to mitigate impact to nearby structures, community, sensitive areas and wildlife habitats.

Small Spills Scenario Analysis

A small discharge is one where <16,800 gallons of crude oil are spilled, can be controlled/stopped without difficulty, does not enter navigable waters, and does not risk the environment, human health, safety or impacts normal activities in the surrounding area and facility operation can be resumed quickly. This type of spill is localized and do not generate fire or explosions. In addition, the fluids do not reach ditches and drainage that can ultimately direct the spill to waters of the United States. There is the potential for small spills to occur during tanker truck loading/unloading and piping maintenance.

Response Action

On site personnel should initiate the following appropriate control and/or containment procedures during or immediately after the above notifications have been made if safe to do so:

1. Block out or turn off all affected equipment.
2. Stop the flow of product by plugging or capping the leak at the source if possible.
3. Contact the Emergency Response Coordinator immediately.
4. Follow instructions of Emergency Response Coordinator to contain spill and inform her/him in the case injuries occur.
5. It is critical to try to prevent any spilled product from reaching any waterways, drainages, or drains. Protect storm drains to prevent spilled fluids to reach them and thus navigable waters.
6. Use absorbent, soil, or other material available to contain and stop the flow of oil already on the ground.
7. The Emergency Response Coordinator must fill out an Incident Report form.

All follow-up decisions and contacts with agencies other than county or local emergency response agencies are to remain the function of the Emergency Response Coordinator.

Medium Spills Scenario Analysis

AT-200 and AT-210 are manifolded together and are equipped with liquid level gauges and alarms to allow liquid level monitoring during a filling operation. Although there is sufficient secondary containment to hold the contents of each tank + precipitation, it is possible that level gauges and alarms fail and filling get out of control. The loading area is also susceptible to spills if proper loading/unloading procedures are not followed. In any of these cases, between 16,800 to 168,000 gallons of crude oil can spill, contaminating the facility grounds and adjacent area including the wetlands and intermittent creek located southeast and northeast of the facility, respectively, if the spill is not tended quickly.

Response Action

Contact the Emergency Response Coordinator immediately. On site personnel should initiate the following appropriate control and/or containment procedures during or immediately after the above notifications have been made if safe to do so:

1. Block out or turn off all affected equipment.
2. Stop the flow of product by shutting off any emergency valves, if possible.
3. Shut-off ignition sources.
4. Inform personnel and implement safety and security procedures (i.e., evacuate).
5. Initiate containment: Use absorbent, soil, or other material available to contain and stop the flow of oil already on the ground.
6. If conditions are deemed to be of hazard to personnel's health or life evacuate the premises immediately.
7. Follow further instructions of Emergency Response Coordinator to contain spill and inform her/him of any injuries.
8. It is critical to try to prevent any spilled product from reaching any waterways, drainages, or drains. Protect storm drains to prevent spilled fluids to reach them and thus navigable waters.
9. The Emergency Response Coordinator fills out an Incident Report form.

All follow-up decisions and contacts with agencies other than county or local emergency response agencies are to remain the function of the Emergency Response Coordinator.

Worst-Case Spills Scenario Analysis

AT-200 and AT-210 are manifolded together and each equipped with liquid level gauges and alarms to allow liquid level monitoring during a filling operation. An unlikely, but potential, worst case scenario could be tank overfill or complete failure/rupture of one tank battery. Although there is sufficient secondary containment to hold the contents of each tank plus precipitation, it is possible that level gauges and alarms fail and filling gets out of control. Although AT-200 and AT-210 are brand new units, failure and rupture of a tank can pose immediate threat to personnel present at the facility. In any of these scenarios, more than 1,680,000 gallons of crude oil can spill, contaminating the facility grounds and adjacent area including the wetlands and intermittent creek located southeast and northeast of the facility. Individuals could also become covered by oil if a tank suddenly and catastrophically ruptures. If there are unusual levels of rain and flooding in the area, the situation could quickly aggravate impacting personnel, damaging onsite equipment and the environment. Fumes and toxicity of the crude oil can have detrimental and irreversible health effects, including death.

Response Action

Contact the Emergency Response Coordinator immediately. On site personnel should initiate the following appropriate control and/or containment procedures during or immediately after the above notifications have been made if safety is not compromised:

1. The first priority should be to shut-off ignition sources (i.e., loading truck engine, open flames, electrical circuits) and to contain the spill on site as long as safety is not compromised.
2. Evacuate personnel off the site to designated meeting area if conditions are deemed unsafe (see Diagram 4); perform head count.
3. Attempt to contain the spill by constructing earthen berms/using absorbent material at the leading edge of the spill to prevent further advancement or other material available to contain and stop the flow of oil already on the ground. It is critical to try to prevent any spilled product from reaching any waterways, drainages, or drains.
4. Locate where in the flow line the leak occurred.
5. Isolate the section where the spill originated and stop the flow of product by plugging or capping the leak at the source, if possible.
6. Block civilian access to the facility and warn personnel of event.

7. Personnel involved with a spill event should be prepared to make recommendations on whether additional cleanup materials, equipment or personnel may be necessary.
8. On-site personnel or an approved outside contractor will be assigned to clean up the spill once a spill has been contained.
9. Any liquids present will be pumped or vacuumed into tanks, trucks, or drums for recovery and disposal according to federal and state waste management requirements. Absorbents will be used to remove any liquid.
10. Soil and other solid materials contaminated with petroleum hydrocarbons will be disposed of in accordance with federal and state hazardous and solid waste regulations.

All follow-up decisions and contacts with agencies other than county or local emergency response agencies are to remain the function of the Emergency Response Coordinator.

40 CFR §112 - APPENDIX D

PART A: WORST CASE DISCHARGE PLANNING VOLUME CALCULATION FOR ONSHORE STORAGE FACILITIES

A-2 Secondary Containment – Multiple Tank Facility

Are *all* aboveground oil storage tanks or groups of aboveground oil storage tanks at the facility *without* adequate secondary containment?

__N__ (Y/N)

A.2.1 If the answer is yes, the final worst case discharge planning volume equals the *total aboveground oil storage capacity at the facility.*

(1) FINAL WORST CASE VOLUME: ____ GAL

(2) Do not proceed further.

A.2.2 If the answer is no, calculate the total aboveground oil storage capacity of tanks without adequate secondary containment. If *all* aboveground oil storage tanks or groups of aboveground oil storage tanks at the facility have adequate secondary containment, ENTER "0" (zero).

__0__ GAL

A.2.3 Calculate the capacity of the largest single aboveground oil storage tank within an adequate secondary containment area or the combined capacity of a group of aboveground oil storage tanks permanently manifolded together, whichever is greater, PLUS THE VOLUME FROM QUESTION A.2.2.

FINAL WORST CASE VOLUME: __1,680,000__ GAL

[40 CFR §112, Appendix F, Section 1.6]

DISCHARGE DETECTION SYSTEMS

An employee, contractor or individual that detects a spill of any size from a Targa facility will take immediate actions to minimize, contain and report the discharge, as appropriate. Human welfare is Targa's primary concern and actions shall ensure safety at all times. Please refer to Section 1.3.1 of this FRP.

Discharge Detected by an Individual

1. Immediately notify spill to person in charge of the facility, on-duty field personnel and/or a company representative.
2. Ensure that all ignition sources are shut-off and restrict access to the affected area.
3. Promptly and safely, shut-down activities from spill at the facility that could compromise the safety of individuals, the environment and integrity of equipment.
4. Contact the qualified individual/company response team.
5. If unsafe conditions exist, stay calm and follow procedures to safely evacuate the area (see Diagram 4).
6. Personnel must attempt to contain the spill on site as instructed by qualified individual.
7. Attempts to contain a spill may include, but are not limited to:
    a. Constructing earthen berms or placing other absorbent material at the leading edge of the spill to prevent further spread.
    b. Absorbents will be used to remove any liquid.
    c. Soil and other solid materials contaminated with petroleum hydrocarbons will be disposed of in accordance with federal and state hazardous and solid waste regulations.
8. Outside contractors are called in promptly by the qualified individual (QI) if on-site personnel are not equipped to repair seams, gaskets or lines.
9. Maintain a safety-first attitude throughout the duration of the spill/emergency.

Automated Discharge Detection

1. The tanks are equipped with liquid level gauges and alarms to allow liquid level monitoring during filling.
2. The tanks are also equipped with a level switch for redundancy of the HHL alarm and motor operated valves at the outlet for isolating the tanks in the event of tank failure.
3. The loading area has shutoff valves by the tank connection.

All the automated alarms are checked and tested on a monthly basis and visual inspections are performed during site visits.

Facility Inspection

These procedures are to be followed pending assessment of spill/emergency risk level:

1. Check that drain valves on the storage tanks AT-200 and AT-210 are closed and locked.
2. Clean-up oil leaks at the SPCC-regulated units promptly.

3. Take samples of spilled material following approved procedures and as directed by the qualified individual to ensure the validity and avoid corruption of the sample.
4. On-site personnel will promptly repair any visibly leaking tank seams, gaskets or lines.
5. If a section of buried piping is exposed, carefully inspect it for deterioration.
6. The general condition of items such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces are assessed during these regularly-conducted inspections.
7. Check that piping valves lines that have been deemed plugged or blind-flanged do not exhibit signs of drips or spills.

[40 CFR §112, Appendix F, Section 1.7]

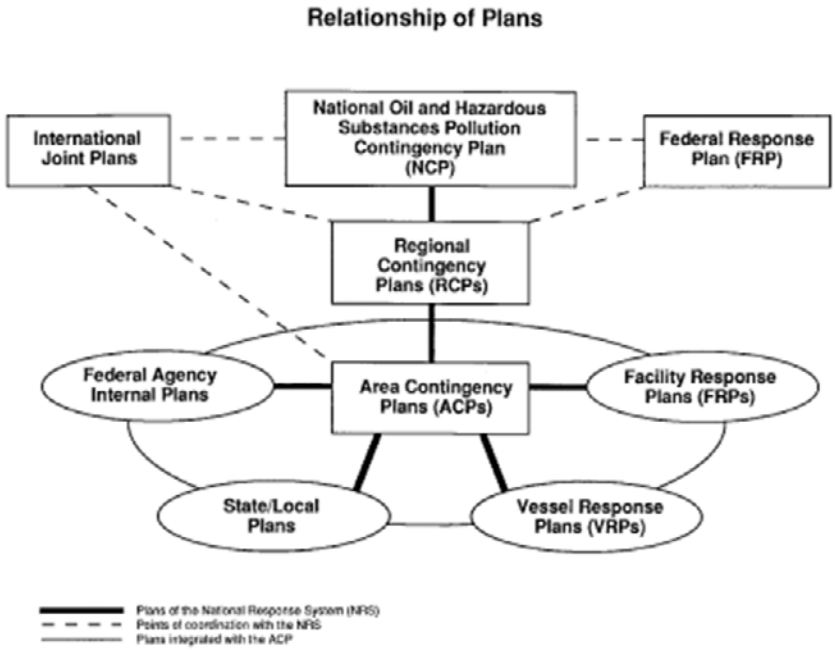
IMPLEMENTATION PROCEDURES

Qualified Individual (QI), along with the emergency response team, shall take all steps necessary to prevent human loss, maintain safety, and constrict the extent of the spill and its affect to the nearby businesses and environment by following these procedures:

1. Determine immediate hazards and initiate evacuation of affected area until a complete hazard assessment has been conducted.
2. Perform an assessment for the probability of explosion, harmful vapors, further structure damage, etc. that could increase adverse effects of spill and to mitigate further human, economic and environmental damage.
3. Notify management, government agencies as well as other facility-related operations that could be impacted by the event:
    a) Minimize other business disruptions
    b) Keep all venture partners and stakeholders informed of mitigation actions and assess their concerns
4. Provide as necessary and mandate the use of appropriate gear (i.e., PPE) and equipment capable of detecting harmful vapors until all emergency procedures have successfully been completed.
5. Initiate investigation of spill area as soon as possible to determine:
    a. Size, description and path of oil spill
    b. Estimated coordinates of reach of spill
    c. Endangered population, sensitive environments and economic areas.
6. Use suitable software to track pollutant dispersion to determine impact, prioritizing protection of humans and sensitive areas.
7. As soon as feasible request on-site qualified personnel to take pictures and videos of area affected by the spill.
8. Recruit Targa's safety and emergency teams in accordance to the severity of the emergency.
9. Access all necessary company funds required to maintain response actions.
10. Conduct pre-arranged tactical and planning meetings along with incident briefings and special purpose meeting, including press conferences, staff and planning meetings.
11. Maintain control over the spill area and/or emergency event by:
    a) Establishing a central command post
    b) Ensure that all necessary entities have been notified and involved in procedures (tribal, local, regional, etc.).
    c) Conducting appropriate equipment and operations shutdown.
    d) Cooperating with local and Federal entities to effectively achieve response efforts (see Figure 6).
    e) Accounting for all personnel and conducting equipment/ facility repairs and inspections
    f) Leading clean-up operations.
    g) Leading and/or appointing appropriate employee to provide regular media and governmental entities briefings.
12. Contain, remove and dispose spilled material by deploying appropriate oil containment boom and dispersants.
13. Ensure all permits and contacts are in place to conduct all disposals and clean up activities.
14. Conduct appropriate cleanup efforts to structures and equipment

15. Recover injured wildlife, establish a reporting hotline and initiate search and rescue operations.
16. Notify appropriate wildlife rescue agencies, including the ND Game & Fish Department and coordinate efforts to provide care for injured wildlife.
17. Minimize other economic impacts including injury claims and damage to private/public properties.

Figure No. 6



[40 CFR §112, Appendix F, Section 1.7.1]

RESPONSE RESOURCES

The response resources (i.e., contractors) are included as Appendix A. Waste disposal will be handled by third part contractors listed in Appendix A and following all applicable Federal and local regulations and accepted waste management procedures. A modified version Appendix E to 40 CFR §112 was used to determine adequate response capability

Part I - Attachment E1

Step (A): Calculate Worst Case Discharge in Barrels (Appendix D) — 40.000

Step (B): Oil Group (Table 3 and Section 1.2 of Appendix E) — 2

Step (C): Operating Area — X Inland

Step (D): Percentages of Oil (Table 2 of Appendix E)

% Lost Nat. Dissip.	% Recovered Floating Oil	% Oil Onshore
10	50	70
(D1)	(D2)	(D3)

Step (E1): On-water Oil Recovery [(D2 x A) / 100)] — 20.000 barrels

Step (E2): On-water Oil Recovery [(D3 x A) / 100)] — 28.000 barrels

Step (F): Emulsification Factor (Table 3 of Appendix E) — 1.8

Step (G): On-water Oil Recovery Resources Mobilization (Table 4 of Appendix E)

0.15	**0.25**	**0.40**
(G1)	(G2)	(G3)

Attachment E1 - Continued

Part II - On Water Oil Recovery Capacity:

Tier 1	Tier 2	Tier 3
5.400 barrels/dav	9.000 barrels/dav	14.400 barrels/dav
(E1 x F x G1)	(E1 x F x G2)	(E1 x F x G3)

Part III

Shoreline Clean-up Volume (bbl)	50.400 barrels
	(E2 x F)

Part IV - Amount Needed to be Contracted for

Tier 1	Tier 2	Tier 3
12.5K barrels/dav	25K barrels/dav	50K barrels/dav
(J1)	(J2)	(J3)

Part V – On-water Amount Needed to be Identified but not Contracted in Advance

Tier 1	Tier 2	Tier 3
7.100	16.000	35.600
(Part II Tier 1 - J1)	(Part II Tier 2 – J2)	(Part II Tier 3 – J3)

[40 CFR §112, Appendix F, Section 1.8]

DESCRIPTION AND RECORDS OF SELF-INSPECTIONS, DRILLS & EXCERCISES AND RESPONSE TRAINING

TANKS INSPECTIONS:
The following list is to be used as guidance during tank inspections, but is not limited to these items:

1. Check tanks for leaks, specifically looking for:

A. Drip marks

B. Discoloration of tanks

C. Puddles containing spilled or leaked material

D. Corrosion

E. Cracks

F. Localized dead vegetation

2. Check foundation for:

A. Cracks

B. Discoloration

C. Puddles containing spilled or leaked material

D. Settling

E. Gaps between tank and foundation

F. Damage caused by vegetation roots

3. Check piping for:

A. Droplets of stored material

B. Discoloration

C. Corrosion

D. Bowing of pipe between supports

E. Evidence of stored material seepage from valves or seals

F. Localized dead vegetation

Tank(s), Foundation(s) & Pipping Inspection Form
JOHNSON'S CORNER CRUDE OIL TERMINAL

Inspected by: Date:

Inspector Signature:

Fill out for as applicable. Respond Yes or No or N/A . Add comments as necessary.

Units	Leaked fuel/dropplets from tanks or piping?	Corrosion on tanks, piping or associated valves?	Significant discoloration on tanks, piping or associated valves?	Loose valves or fittings?	Structural damage to tanks or piping?	Cracks/Deterioration to tank foundation or support?
AT-200						
AT-210						
Piping						
Units	**Deterioration of containment walls?**	**Stormwater valves closed (if present)**	**Secondary containment damaged?**	**Debris present inside containment?**	**Level Device Tested and Functioning?**	**Other: odors, change in vegetation, etc?**
AT-200						
AT-210						
Piping						

[40 CFR §112, Appendix F, Section 1.8.1.2]

RESPONSE EQUIPMENT INSPECTION LOG

Describe each type of response equipment and fill out table below (use section 1.3.2 of the response plan as a checklist).

1. Inventory (item and quantity)
2. Storage location
3. Accessibility (time to access and respond)
4. Operational status/condition
5. Actual use/testing (last test date and frequency of testing)
6. Shelf life (present age, expected replacement date)

Inspector	Date	Comments

[40 CFR §112, Appendix F, Section 1.8.1.2]

SECONDARY CONTAINMENT INSPECTION LOG

1. Dike or berm system.

A. Level of precipitation in dike/available capacity
B. Operational status of drainage valves
C. Dike or berm permeability
D. Debris
E. Erosion
F. Permeability of the earthen floor of diked area
G. Location/status of pipes, inlets, drain-age beneath tanks, etc.

2. Secondary containment

A. Cracks
B. Discoloration
C. Presence of spilled or leaked material (standing liquid)
D. Corrosion
E. Valve conditions

3. Retention and drainage ponds

A. Erosion
B. Available capacity
C. Presence of spilled or leaked material
D. Debris
E. Stressed vegetation

Secondary Containment Inspection Form
JOHNSON'S CORNER CRUDE OIL TERMINAL

Inspected by: Date:

Inspector Signature:

Fill out for as applicable. Add comments as necessary.

Units	Containment level/available capacity	Drainage valves status	Berm/dike permeability	Debris?	Erosion?	Status of pipes, inlets, drainage beneath tanks?
CB1						
CB2						
SC-5000 (AT-5000 Secondary Containment)						
SC-100 (AT-100 Secondary Containment)						
Units	**Cracks**	**Discoloration**	**Standing fluids**	**Corrosion?**	**Valve(s) Conditions?**	**Other (i.e., surrounding area condition)**
CB1						
CB2						
SC-5000 (AT-5000 Secondary Containment)						
SC-100 (AT-100 Secondary Containment)						

[40 CFR §112, Appendix F, Section 1.8.2.1]

QUALIFIED INDIVIDUAL NOTIFICATION DRILL LOG

Date: _____

Company: **Targa Badlands, LLC**

Qualified Individual(s): _____

Emergency Scenario: _____

_____

_____

Evaluation: _____

Changes to be Implemented: _____

_____

_____

Timeline for Implementation: _____

_____

[40 CFR §112, Appendix F, Section 1.8.2.2]

SPILL MANAGEMENT TEAM TABLETOP EXERCISE LOG

Date: _____

Company: **Targa Badlands, LLC**

Qualified Individual(s): _____

Emergency Scenario: _____

_____

_____

Evaluation: _____

Changes to be Implemented: _____

_____

_____

Timeline for Implementation: _____

_____

[40 CFR §112, Appendix F, Section 1.8.3]

RESPONSE TRAINING

Internal incident command exercise will be conducted annually and it will include a combination of training in QI notification, emergency procedures for facilities, spill management tabletop exercises and equipment deployment. Tabletop exercises will be conducted at least once every three years. These exercises will be self-evaluated and self-certified. The QI will be tested at least once a year during non-business hours to ensure he/she can be reached during an emergency and that he/she can effectively respond to assigned duties.

External exercises to examine the Targa's response plan and its ability to coordinate with the community include area exercises and unannounced Government-initiated drills.

Un-announced company response team exercises will be conducted to ensure office and field personnel are acquainted with theirs roles and responsibilities in case of an emergency. The entire response team, Targa employees and contractors, will be tested at least annually.

Personnel who will be involved in the use and deployment of spill response equipment will be trained at least once a year. This is to ensure they are competent when operating equipment using the appropriate personal protective equipment (PPE). The exercises will confirm that the equipment is in good working conditions and ready to be deployed. Maintenance will be performed on the equipment during these drills, as needed. At a minimum, skimming, dispersant and booming system, PPE, first aid equipment and technical equipment used to determine spill trajectory analysis will be deployed during these exercises.

Training will observe USGS Training Elements for Oil Spill Response and PREP guidelines as it applies to this facility and performed by certified third party training companies hired by Targa. All records of training are maintained at Targa's North Dakota office in electronic filing system.

[40 CFR §112, Appendix F, Section 1.8.3.1]

PERSONNEL RERSPONSE TRAINING LOG

Name	Response Training/ Date and No. of Hours	Prevention Training/ Date and No. of Hours

[40 CFR §112, Appendix F, Section 1.8.3.2]

DISCHARGE PREVENTION MEETING LOG

Date: _____

Attendees:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Subject/Issue Identified	Required Action	Implementation Date

[40 CFR §112, Appendix F, Section 1.10]

SECURITY

1. The facility is completely fenced with barb wire. The fence is fitted with a system requiring a private access code only known to Targa authorized personnel.
2. The facility is manned 24/7 and there are phone and pagers available at the facility's office to communicate emergencies.
3. There are four gates that remain locked whenever Targa personnel are not present in the facility or afterhours.
4. Emergency cut-off controls are located by the office.
5. The facility is well equipped with high-rise light poles that provide wide-range of illumination to the facility to aid during nighttime spotting discharges and deter acts of vandalism.
6. All loading connections are fitted with fail-safe devices to avoid spills due to loading activities.
7. The tanks are fitted with liquid level gauges, alarm level switches, and motor-operated valves on outlet for tanks isolations in the event of overfill.

APPENDIX A

Strata Corporation Office Locations

Strata Corporation

1225 South Broadway

Minot, ND 58701

Strata Corporation

1218 42nd St W

Williston, ND 58801

1225 South Broadway
Minot, ND 58701

2013 Construction Rates

EFFECTIVE 2-1-2013

	2013 RATES
EXCAVATORS	
VOLVO 360 (2.5 - 3.5 Yds)	$162.00
VOLVO 330 (2 - 3 Yds)	$156.00
VOLVO 240 (3/4 - 2 Yds)	$139.00
HYDRAULIC JACK HAMMER ATTACHMENT	$25.00
SHAKER BUCKET ATTACHMENT	$25.00
KOMATSU PC 220 LONG REACH EXCAVATOR	$175.00
CAT 420 RUBBER TIRE BACKHOE-LOADER	$120.00
CAT 420 RUBBER TIRE BACKHOE-LOADER / W SNOW BOX	$130.00
VERMEER TRENCHER	$600.00
HYDRO-EXCAVATORS	
HYDRO-EXCAVATORS 12 cy yd	$270.00
HYDRO-EXCAVATORS 6 cy yd	$215.00
LOADERS	
VOLVO L-150 (5 1/2 Yds)	$158.00
VOLVO L-70 E (2 3/4 Yds)	$108.00
VOLVO L70 W/12FT SNOW BOX	$118.00
HYDRAULIC JACK HAMMER ATTACHMENT	$25.00
SHAKER BUCKET ATTACHMENT	$25.00
COMPACTORS	
CA 252 SMOOTH DRUM	$110.00
CA 152 SMOOTH DRUM	$110.00
CA 134 SMOOTH DRUM	$110.00
TRACTOR AND DISC	
JOHN DEERE	$100.00
JOHN DEERE 4450	$103.00
JOHN DEERE 8450	$125.00
WISHECK DISC	$40.00
TRACTOR W/SNOW BLOWER OR MOWER OR GRASS SEEDER	$165.00
SKIDSTEERS	
TRACKED SKIDSTEERS	$102.00
RUBBER TIRE SKIDSTEERS	$92.00
MOWER ATTACHMENT	$10.00
SEEDER ATTACHEMENT	$10.00

TRUCKS	
LOWBOYS	$162.00
SEMI SIDE DUMP	$140.00
TRI AXLE END DUMP	$98.00
WATER TRUCKS (NOT TO INCLUDE WATER)	$105.00
VAC TRUCK	$165.00
SCRAPERS	
TS 14	$170.00
CAT 613 PADDEL WHEEL	$145.00
CAT 627 TWIN ENGINE	$285.00
DOZERS	
CAT D8T	$245.00
CAT D8R	$195.00
CAT D8 N	$170.00
CAT D6 N OR M	$144.00
CAT D6 R	$150.00
JD 650	$134.00
JD 750	$144.00
JD 850	$150.00
KOMATSU D 41	$118.00
KOMATSU D 61	$134.00
MOTOR GRADERS	
CAT 140 H	$142.00
CAT 160 3H	$152.00
SNOW PLOW WING ATTACHEMENT	$15.00
LABOR	
GENERAL LABOR	$52.00
FOREMAN	$72.00
SUPERVISOR	$92.00
HAZMAT LABOR	$57.00
HAZMAT SUPERVISOR	$102.00
OVERTIME LABOR HOURS (Include and Additional $20 per hour)	$20.00
CREW PICKUP TRUCKS	$25.00
VACTRON (W/OPERATOR)	$120.00
COMPACTOR - JUMPING JACKS,WHACKERS, DYNAPACS (W/ OPERATOR)	$75.00
GENERATORS	
SMALL GENERATORS (PER DAY)	$80/Day
LARGE GENERATORS- (ANYTHING OVER 200KW)	$20/Hour or $450/Day
WATER PUMPS	
6" WATER PUMP (PER DAY)	$450.00
4" WATER PUMP (PER DAY)	$250.00
3" WATER PUMP (PER DAY)	$200.00
2" WATER PUMP (PER DAY)	$80.00
GAS MONITORS (PER MAN - PER DAY)	$5.00

HOTELS (PER INDIVIDUAL)	$100.00
LIGHT PLANT (PER DAY)	$125.00
HYDRO MULCH TRAILER (NOT TO INCLUDE MATERIAL)	$150.00
PRESSURE WASHER TRAILER	$150.00
VOLVO OFF ROAD HAULER	$175.00
ADDITIONAL HOURLY CHARGE FOR TRACKED EQUIPMENT WORKING IN SNOW REMOVAL OPERATIONS TO COVER SUBSTANTIAL WEAR ON TRACK AND UNDERCARRIAGE	+$30/Hr
MARK UP ON MATERIALS	10%
HAZMAT SUPPLIES/TRAILERS	
BOOM TRAILER (PER DAY)	$60.00
LAB TRAILER (PER DAY)	$300.00
HAZMAT ER TRAILER (PER DAY)	$200.00
ECM SAMPLES (PER SAMPLE)	$15.00
STATE REPORTING FEE (PER SPILL)	$100.00/Spill
PID Testing (PER TEST) *Individual soil tests will not be charged if lab trailer is on site.	$60.00
Other Supplies and Disposables As Needed Provided from Earthmovers Inventory *To include absorbent pads, oil snares, absorbent booms, disposables and other required items.	10.00%

Emergency Spill Response

Spill response for petroleum hydrocarbon and salt water will be charged at our regular rates for work completed in a normal 50 hour work week. However, a number of these responses require our men and women in the field to work on nights, weekends or require overnight stays. Due to increased compensation for our employees on these responses, Earthmovers reserves the right to assess up to a $20.00 surcharge on all Labor/Equipment hours when necessary.

Earthmovers

Construction Division

Earthmovers 24 Hour Emergency Line

1-800-373-5259

Earthmovers Office #	701-852-4560
Earthmovers Fax #	701-852-9202

Contact List After Initial Report to 24 Hour Response Number

Individual	Title	Cell Phone #
Doug Magnus	Earthmovers General Manager	701-220-7591
Scott Brown	Hazmat Manager	701-720-8565
Russ Kallberg	Hazmat Supervisor	701-720-3972
Justin Lochthowe	Supervisor	701-720-0264
Nathan Routhier	Supervisor	701-500-0331
Peter Richter	Supervisor	701-720-8567
Bill Whethem	Supervisor	701-720-9712
Christ Bauer	Foreman	701-721-6301
Kevin Brown	Foreman	701-720-8564
Jason Frey	Foreman	701-720-8563
Linus Kalenze	Foreman/Mechanic	701-720-5164
Ernie Newman	Foreman	701-509-0122
Tanyor Kendall	Foreman	701-720-6462

Earthmovers

Construction Division

Table 1: Equipment Availability

Earthmovers Available Equipment

24 - L70E Volvo Loaders	1 - Boom Trailer & 1500 Boom Pads
1 - L150 Volvo Loader	1 - Boom Trailer with Boat Motor & 1500 pads
1 - L90 Volvo Loaders	1 - Portable Lab Trailer
1 - Komatsu PC-120 Excavators	Tank Car Gaskets
1 - Komatsu PC-140 Excavators	Oil Sorb
1 - Komatsu PC-150 Excavators	Neutralizing Agents
1 -Volvo Excavator EC210LC	Sorbent Pads (30' x 30') & (15' x 19')
1 - Samsung 210LC-3	Poly & Steel 55 Gallon Drums
6 - Komatsu PC 300L Excavators	Drum Pumps
2 - Volvo EC 210 Excavator	Assorted Draeger Tubes
2 - Volvo EC 240Excavator	2 - Vacuum Trailers - 800 gallons
1 - Volvo EC 290 Excavator	1 - Water Truck
7 - Volvo EC 330 Excavator	15 - Dump Trucks
3 - Volvo EC 360 Excavator	13 - End Dumps
1 - Komatsu 650 Excavator	1 - Fuel Truck
1 - Takeuchi 7B 135 Mini Excavator	4 - Hydro Excavators
1 - Link Belt 4300 Excavator - Grapple	2 - Vacuum Truck - 3000 gallons
1 - Fiat Allis 14C Dozer	3 - Service Trucks
2 - Cat D8N Dozer	50 - Crew Pickup Trucks
1 - Komatsu D41 Dozer	4 - Lowboy Trailer 50 Ton
15 - Skid steers	1 - Phelan 10 Ton Tandem Ax6 Trailer
2 - Cat 140G Motor Grader	18 - Misc. Small Trailers
5 - Terex TS14 Scraper	Drum Handling Equipment
10 - Rollers	Mechanics Tool Sets
1 - Pettibone 705C Crane	Oversized Tool Sets
3" Pumps with hoses	Universal Absorbent Boom
High Pressure Washer	6 - SCBA Respirators
Compressors	1 - Cascade Air System
Generators	Decon Trailer
PID	Midland Tank Car Kit
OVA	Floating Oil Skimmers
LEL Meter	4500' Long Flotation Booms - Oil Absorbent
1 - Mobile Command Center	Portable Oil-Water Separators
Assorted PPE Level A Through D	Patch Kits
3 - 330 Cat Excavators	Rupture Disks

Earthmovers

Construction Division

1 - D-6 Cat Dozer	2 - 650 John Deere Dozer
1 - D-41 Komatsu Dozer	2- 750 John Deere Dozer
1 - D-61 Komatsu Dozer	1 - 850 John Deere Dozer
	2 - 30 Ton Haul Trucks

Targa
Resources, Inc.

1000 Louisiana, Suite 4700
Houston, Texas 77002
713.584.1000
www.targaresources.com

November 8, 2005

<Global MSA Vendor List>

Attention: Targa (Dynegy) Account Manager

As a follow up to the proposed transaction that was announced in August 2005, Targa Resources, Inc. has completed its acquisition of Dynegy Midstream Services. I would like to take this opportunity to introduce you to our company and provide you with some information about your billing procedures.

Headquartered in Houston, Texas with operations around the country, Targa is an integrated natural gas and NGL midstream energy company. We understand the importance of effective and efficient relationships with our vendors and suppliers and, importantly, their role in helping us serve our customers. The company as a whole is committed to a positive and productive business partnership with you – both throughout our near-term transition period and in our everyday approach.

Please note that any accounts that you have in the name of Dynegy Midstream Services, Limited Partnership are to be changed to Targa Midstream Services Limited Partnership. Your contacts for the sales of goods and services and our procurement / contracting processes remain the same. Telephone and fax numbers will change in the future; however, these remain the same until further notice. We do not expect any interruption to our payment or invoicing process. If your invoice is related to a purchase order, please direct it to the address listed below to the attention of Accounts Payable. Please make sure to include the Targa purchase order number on the invoice to assure timely processing.

Our corporate logistics are as follows:

Targa Resources, Inc.
1000 Louisiana Street, Suite 4700
Houston, Texas 77002

Corporate main telephone number is 713.584.1000. My direct dial number is 713.584.1040. Additional information about our company can be found at www.targaresources.com.

We will communicate updates and provide additional contact information as our transition continues. In the meantime, should you have any questions, please don't hesitate to get in touch with your Procurement Representative.

Thank you in advance for your cooperation. We look forward to continuing our relationship with you.

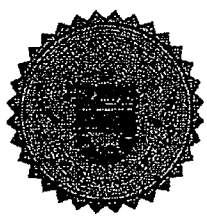
Sincerely,

Michael A. Heim
Executive Vice President and
Chief Operating Officer

Delaware

The First State

I, HARRIET SMITH WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "DYNEGY MIDSTREAM SERVICES, LIMITED PARTNERSHIP", CHANGING ITS NAME FROM "DYNEGY MIDSTREAM SERVICES, LIMITED PARTNERSHIP" TO "TARGA MIDSTREAM SERVICES LIMITED PARTNERSHIP", FILED IN THIS OFFICE ON THE EIGHTH DAY OF NOVEMBER, A.D. 2005, AT 5:04 O'CLOCK P.M.



Harriet Smith Windsor

Harriet Smith Windsor, Secretary of State

2641691 8100

AUTHENTICATION: 4284656

050912841

DATE: 11-09-05

State of Delaware
Secretary of State
Division of Corporations
Delivered 05:12 PM 11/08/2005
FILED 05:04 PM 11/08/2005
SRV 050912841 - 2641691 FILE

CERTIFICATE OF AMENDMENT
TO
CERTIFICATE OF LIMITED PARTNERSHIP
OF
DYNEGY MIDSTREAM SERVICES, LIMITED PARTNERSHIP

Pursuant to Section 17-202 of the Delaware Revised Uniform Limited Partnership Act, the undersigned general partner of Dynegy Midstream Services, Limited Partnership (the "Partnership") desires to amend the Partnership's Certificate of Limited Partnership and for that purpose submits the following Certificate of Amendment.

1. The name of the limited partnership is Dynegy Midstream Services, Limited Partnership.

2. The certificate of limited partnership is hereby amended by striking out Article One thereof and by substituting in lieu of said Article One the following new Article One:

1. *Name*: The name of the limited partnership is "Targa Midstream Services Limited Partnership".

IN WITNESS WHEREOF, the undersigned has executed this Certificate of Amendment as of the 7th day of November, 2005.

TARGA MIDSTREAM GP, LLC,
general partner

By: _____ JRP

Name: Joe Bob Perkins

Title: President

ws1E.tmp

GARNER ENVIRONMENTAL SERVICES, INC.
1717 West 13th Street
Deer Park, Texas 77536
Toll Free: (800) 424-1716
Telephone: (281) 930-1200
Fax: (281) 478-0296

RESPONSE EQUIPMENT LISTING

Corporate	Response Equipment Listing	Equipment Listing
Operations		Rev. December, 2011

BOOM TYPE CODE	
F	Fence
FR	Fire
PI	Inflatable (Press)
SI	Inflatable (Self)
MR	Marsh (Upper air chamber with lower water chamber)
R	Round
SB	Weir Boom
OT	Other

END CONNECTOR CODE	
ASTM	ASTM Std (D962-86)
BOLT	Bolt Connector
HP	Hinge & Pin
Z RC	Quick-Connect Z
SNAV	Raised Channel
SLOT	Slide (US Navy)
US1	Slotted Tube
US2	Universal Slide Type 1
OT	Universal Slide Type 2
	Other

BOOM EQUIPMENT

Name of Manufacturer	Model Number	Boom Type Code	Invent Length (feet)	Skirt Size (in.)	Float Size (in.)	End Connector Type Code	Time to Deploy	Storage Location	Owner
Acme Products Co.	OK CORRAL	R	22,000	12	6	Z	6.0	Deer Park	Garner
Acme Products Co.	SUPER-MINI	R	800	4	2.5	BOLT	2.0	Deer Park	Garner
Acme Products Co.	OK CORRAL	R	10,000	12	6	Z	6.0	La Marque	Garner
Acme Products Co.	OK CORRAL	R	800	28	8	Z	1.0	La Marque	Garner
Acme Products Co.	OK CORRAL	R	5,000	12	6	Z	2.5	Port Arthur	Garner
Acme Products Co.	SUPER-MINI	R	100	4	2.5	BOLT	0.5	Port Arthur	Garner
Acme Products Co.	OK CORRAL	R	4000	34	8	Z	2.0	Port Arthur	Garner
Acme Products Co.	OK CORRAL	R	2000	34	8	Z	2.0	Port Arthur	Garner
Acme Products Co.	OK CORRAL	R	10,000	12	6	Z	6.0	Deer Park/ Port Arthur	Garner
Acme Products Co.	MINI-BOOM	R	700	4	2.5	BOLT	1.0	Port Arthur	Garner

Corporate	Response Equipment Listing	Equipment Listing
Operations		Rev. December 2011

COMMUNICATIONS TYPE CODES			
AF	Aviation Frequency	**MF**	Marine Frequency
CP	Cellular Phone	**PAG**	Pager
COM	Command Post	**PHH**	Portable Hand Held
MOD	Computer w/modem	**SSB**	Single Side Band
FAX	Facsimile	**TP**	Telephone
FBS	Fixed Base Station	**OT**	Other

COMMUNICATIONS EQUIPMENT

Name of Manufacturer	Model Number	Comm Type	Nr. of Units	Frequency	Band	Range (miles)	Field Tunable		Storage Location	Owner
							Yes	No		
Motorola	A05J	PAG	20	931.462	FM	150		x	Deer Park	Garner
Motorola	F09LF	CP	40	152.840	FM	200		X	Deer Park	Garner
40' Garner **Command Post**		COM	1					X	Deer Park	Garner
26' Communications Trailer	MCC1	COM	1	931.462			X		La Marque	Garner
Motorola	A05J	PAG	20	931.462	FM	150		X	La Marque	Garner
Motorola	F09LF	PHH	20					X	La Marque	Garner
Motorola	A05J	PAG	12	931.462	FM	150		X	Port Arthur	Garner
Motorola	F09LF	CP	12	152.840	FM	200		X	Port Arthur	Garner

Corporate	Response Equipment Listing	Equipment Listing
Operations		Rev. December 2011

RESPONSE VEHICLES

Name of Manufacturer	Response Vehicle	Number of Units	Wide Load Permit Needed		Storage Location	Owner
			Yes	No		
Wabash	48' Box Vans, Hard Boom Trailers	2		X	Deer Park	Garner
Fruehauf	48' Box Van, Sorbent Boom Trailer	1		X	Deer Park	Garner
Ford/Chevy	Pick-up Truck, 1 ton	20		X	Deer Park	Garner
Sooner	Emergency Response Trailer, 32'	3		X	Deer Park	Garner
Modern Mfg.	Boom Trailer, 20' Gooseneck	4		X	Deer Park	Garner
Containment Sys. & Gooseneck	Emergency Haz-Mat Response Trailers 32' & 24'	2		X	Deer Park	Garner
Falcon	Trailer, 20', Stand-by/Rescue	3		X	Deer Park	Garner
Pace	28' Rescue Standby & Command Post	2		X	Deer Park	Garner
Ford/Chevy	Pick-up Truck, 1 ton	13		X	La Marque	Garner
Garner	Roll-Off Box, 20 yd.;	2		X	La Marque	Garner
Sooner	Emergency Response Trailer, 32'	1		X	La Marque	Garner
Modern Mfg.	Boom Trailer, 20' Gooseneck	3		X	La Marque	Garner
Iron Horse	Boom Trailer, 20 Gooseneck	2		X	La Marque	Garner
Modern Mfg.	Spill Trailer, 16' Lo-Boy	4		X	La Marque	Garner
Modern Mfg.	Spill Trailer, 20'	2		X	La Marque	Garner
Ford	Pick-up Truck, 1 ton	7		X	Port Arthur	Garner
Sooner	Emergency Response Trailer, 32"	1		X	Port Arthur	Garner
Modern Mfg.	Trailer, Spill Response, 16' Lo-Boy	1		X	Port Arthur	Garner
Modern Mfg.	Boom Trailer, Gooseneck, 20'	3		X	Port Arthur	Garner
Gemini Cargo	Trailer, Haz-Mat, 19'	1		X	Port Arthur	Garner
Ford/Chevy	Pick-up Truck, 1 ton (2 Deer Park & 4 Port Arthur)	6		X	Deer Park / Port Arthur	Garner
Modern Mfg.	Spill Trailer, 20' Lo-Boy	2		X	Port Arthur	Garner
Pace American	36' Haz Mat Response Trailer	1		X	Deer Park	Garner
Modern Mfg.	21' Oil Spill Response Trailer (Boat/ Boom/ Sorbent)	1		X	Port Arthur	Garner
Gooseneck	20' Response Trailer (Industrial Response)	1		X	Deer Park	Garner
Modern Mfg.	Boom Trailer, Gooseneck, 20'	2		X	Port Arthur	Garner
	8' Utility Trailers	1		X	Port Arthur	Garner
Sooner	Spill Trailer 32 ' Response	1		X	Port Arthur	Garner

Corporate Operations	Response Equipment Listing	Equipment Listing Rev. December 2011

BOOM EQUIPMENT

Name of Manufacturer	Model Number	Equipment Type	Quantity	Storage Location	Owner
Norfloat	A2	Buoy, Anchor Marker, Inflatable, 18" dia.	25	Deer Park	Garner
Polycord	600x1/4	Rope, Polypropylene, 1/4" x 600'	5	Deer Park	Garner
Polycord	600x1/2	Rope, Polypropylene, 1/2" x 600'	5	Deer Park	Garner
U.S. Anchor Mfg., Inc.	22#	Anchor, Galvanized Steel, 22 lb., Danforth Style	11	Deer Park	Garner
U.S. Anchor Mfg., Inc.	40#	Anchor, Galvanized Steel, 40 lb., Danforth Style	6	Deer Park	Garner
U.S. Anchor Mfg., Inc.	75#	Anchor, Galvanized Steel, 75 lb., Danforth Style	8	Deer Park	Garner
U.S Anchor Mfg. Inc.	100#	Anchor, Galvanized Steel, 100 Lb. Danforth Style	13	Deer Park	Garner
Norfloat	A2	Buoy, Anchor Marker, Inflatable, 18" dia.	25	La Marque	Garner
Polycord	600 x1/4	Rope Polypropylene, 1/4" x 600'	5	La Marque	Garner
Polycord	600 x ½	Rope Polypropylene, 1/2 " x 600'	5	La Marque	Garner
U.S. Anchor Mfg., Inc.	22#	Anchor, Galvanized Steel, 22 lb., Danforth Style	8	La Marque	Garner
U.S. Anchor Mfg., Inc.	40#	Anchor, Galvanized Steel, 40 lb., Danforth Style	5	La Marque	Garner
Norfloat	A2	Buoy, Anchor Marker, Inflatable, 18" dia.	15	Port Arthur	Garner
Polycord	600 x 1/4	Rope Polypropylene 1/4 " x 600 '	5	Port Arthur	Garner
Polycord	600 x 1/2	Rope Polypropylene 1/2 " x 600'	5	Port Arthur	Garner
U.S. Anchor Mfg., Inc.	22 #	Anchor, Galvanized Steel, 22 lb., Danforth Style	12	Port Arthur	Garner
U.S. Anchor Mfg., Inc.	75#	Anchor, Galvanized Steel, 75 lb., Danforth Style	6	Port Arthur	Garner
U.S. Anchor Mfg., Inc.	100#	Anchor, Galvanized Steel, 75 lb., Danforth Style	4	Port Arthur	Garner
Norfloat	A2	Buoy, Anchor Marker, Inflatable, 18" dia.	20	Deer Park	Garner
Polycord	600 x1/4	Rope Polypropylene, 1/4" x 600'	5	Deer Park	Garner
Polycord	600 x ½	Rope Polypropylene, 1/2 " x 600'	5	Deer Park	Garner
U.S. Anchor Mfg., Inc.	22 #	Anchor, Galvanized Steel, 18 lb., Danforth Style	20	Deer Park	Garner
U.S. Anchor Mfg., Inc.	40 #	Anchor, Galvanized Steel, 22 lb., Danforth Style	8	Deer Park	Garner
U.S. Anchor Mfg. Inc.	100 #	Anchor, Galvanized Steel, 100 #, Danforth Style	10	Deer Park	Garner

Corporate Operations	Response Equipment Listing	Equipment Listing Rev. December 2011

AIR MONITORING EQUIPMENT				
Name of Manufacturer	**Miscellaneous Equipment**	**Number of Units**	**Storage Location**	**Owner**
Rae Systems	Q-RAE	4	Deer Park	Garner
Rae Systems	Mini RAE 2000	2	Deer Park	Garner
Rae Systems	Ultra Rae	1	Deer Park	Garner
MSA	5 Star	3	Deer Park	Garner
MSA	Watchman	1	Deer Park	Garner
Arizona Instruments	Jerome X431	2	Deer Park	Garner
Elmer Perkins	Micro FID	1	Deer Park	Garner
Draeger	CMS	2	Deer Park	Garner
Ludlum	Model # 3	2	Deer Park	Garner
MSA	4-Gas Meter	3	La Marque	Garner
Draeger	Accuro Pump	1	La Marque	Garner
Rae	Photo-Ionization Detector	1	La Marque	Garner
	Mercury Vapor Analyzer	1	Deer Park	Garner
	Radiation Monitor	1	Deer Park	Garner
	Solar Radiation Monitor	1	Deer Park	Garner
	Weather Station	2	Deer Park	Garner
	Infrared Thermometer	1	Deer Park	Garner
	GPS Units	2	Deer Park	Garner
Aim	4-Gas Monitor	2	Deer Park	Garner
Draeger	Accuro Pump	2	Deer Park	Garner
Draeger	CMS Meter	1	Deer Park	Garner
Rae	Mini-Rae 2000 Portable VOC Meter	2	Deer Park	Garner
Quest	Single Gas Personal Meter	1	Deer Park	Garner
MSA	Escort Particulate Air Monitor	1	Deer Park	Garner
Sper Scientific	PH Meter	1	Deer Park	Garner
Dexsil	PetroFlag Hydrocarbon Test Kit	1	Deer Park	Garner
Chlorine	AC/ Kit	1	Deer Park	Garner

Corporate Operations	Response Equipment Listing	Equipment Listing Rev. December 2011

	Specialty Equipment			
Name of Manufacturer		Number of Units	Storage Location	Owner
Scott	Self Contained Breathing Apparatus(SCBA) with 12 extra bottles / Scott	12	Deer Park	Garner
Draeger	Self Contained Breathing Apparatus (SCBA) with12 extra bottles / Draeger	12	Deer Park	Garner
	Bezt Valve / Off Loading Valve	2	Deer Park	Garner
	Chorine Emergency Kit A	1	Deer Park	Garner
	Chorine Emergency Kit B	1	Deer Park	Garner
	Chorine Emergency Kit C	1	Deer Park	Garner
	Vacuum Cleaner / Stainless Steel, Mercury, HEPA	2	Deer Park	Garner
	Cameras / Digital	10	Deer Park	Garner
	Confine Space Rescue Kits	3	Deer Park	Garner
	Coppus Blowers	2	Deer Park	Garner
	Air Compressors 11.8 cfm 90 psi	8	Deer Park	Garner
	Drum Crushers / Diesel Power	2	Deer Park	Garner
	Drum Crabber	5	Deer Park	Garner
	Generators	4	Deer Park	Garner
	Scare Guns	3	Deer Park	Garner
	Decontamination Pools 20" x 100'	2	Deer Park	Garner
	Fan, Ventilation 48'	3	Deer Park	Garner
	Artic Cat, Four Wheeler	1	Deer Park	Garner
	Light Stands	5	Deer Park	Garner
	Self Contained Breathing Apparatus (SCBA) with Extra bottles	9	La Marque	Garner
	Air Compressors (Portable)	8	La Marque	Garner
	HEPA Vacuums	3	La Marque	Garner
	Cameras / Digital	3	La Marque	Garner
	Artic Cat, Four Wheeler	2	La Marque	Garner
	Generators	4	La Marque	Garner
	Self Contain Breathing Apparatus (SCBA)	10	Port Arthur	Garner
	Cameras / Digital	1	Port Arthur	Garner

Corporate Operations	Response Equipment Listing	Equipment Listing Rev. December 2011

	Specialty Equipment / Continued			
	Coppus Blowers	1	Port Arthur	Garner
	Air Compressors	3	Port Arthur	Garner
	Generators	1	Port Arthur	Garner
	Scare Guns	4	Port Arthur	Garner
	Pressure Washers	1	Port Arthur	Garner
	Explosion Proof Lights	1	Port Arthur	Garner
	Weed Eaters	1	Port Arthur	Garner
	Chlorine Emergency Kit "C"	1	Deer Park	Garner
	Midland Kit	1	Deer Park	Garner
	Railcar Haz Hammock	1	Deer Park	Garner
	Mercury Vacuum	1	Deer Park	Garner
	Carbon Filter Systems	1	Deer Park	Garner
	Sand Filter Systems	2	Deer Park	Garner
	Wet & Dry Vacuum with HEPA Filter	1	Deer Park	Garner
	100 Watt Explosion Proof Light Sets	2	Deer Park	Garner
	Decon Pools 4' x4' x14' 5"	2	Deer Park	Garner
	Spill Guard 6' x 4' x8"	1	Deer Park	Garner
	Drum Dolly	3	Deer Park	Garner
	3/4 " Core Sampler	1	Deer Park	Garner
	Soil Sampler (boring) Kit	1	Deer Park	Garner
	Self Contained Breathing Apparatus (SCBA)	9	Deer Park	Garner
	Generators (Portable)	3	Deer Park	Garner
	Weed Eaters	5	Deer Park	Garner
	Air Compressors (Portable)	2	Deer Park	Garner
	Light Stand (Portable)	2	Deer Park	Garner
	Coppus Blower	1	Deer Park	Garner
	Chain Saw	1	Deer Park	Garner
	Tank Truck Emergency Transfer Valve	1	Deer Park	Garner
	Artic Cat , Four Wheeler	1	Port Arthur	Garner
	16' Trailer Mounted Steam Cleaner with Tank	1	Port Arthur	Garner
	Air Horn, 6"	1	Deer Park	Garner
	Fan Ventilation, 48"	1	Deer Park	Garner
	Fan Ventilation, 16" Port A Cool with water Mister	1	Deer Park	Garner

Corporate Operations	Response Equipment Listing	Equipment Listing Rev. December 2011

Digital Cameras	4	Deer Park	Garner		

A	Auger/Screw	**D**	Diesel
C	Fire Peristaltic	**E**	Electric
P	Reciprocating	**G**	Gasoline
R	Rotary/Flexible impeller	**H**	Hydraulic
I	Other	**P**	Pneumatic
OT		**OT**	Other

PUMP EQUIPMENT

Name of Manufacturer	Model Number	Pump Type Code	Drive Type Code	Suction/ Discharge Size (inches)	Mfg. Pump Rate (gpm)	Quantity	Storage Location	Owner
Aro/Ingersoll Rand	KO176-44	P	P	1.0	120	2	Deer Park	Garner
Honda	WXT-20	G	I	2.0	180	4	Deer Park	Garner
Yanmar	LD-40/2	D	I	2.0	180	2	Deer Park	Garner
Honda	WXT-30	G	I	3.0	275	1	Deer Park	Garner
Wilden	Model M	P	P	3.0	240	5	Deer Park	Garner
Honda	WXT-20	G	I	2.0	180	3	La Marque	Garner
Yanmar	LD-40/2	D	I	2.0	180	5	La Marque	Garner
Wilden	Model M	OT	P	3.0	240	7	La Marque	Garner
Acme Products Co., Inc.	FS-150A	G	I	1.5	275	1	Port Arthur	Garner
Honda	WXT-20	G	I	2.0	180	6	Port Arthur	Garner
Yanmar	LD-40/3	D	I	2.0	200	2	Port Arthur	Garner
Versa-Matic		OT	P	2.0	140	1	Deer Park	Garner
Versa-Matic		OT	P	1.5	140	1	Deer Park	Garner
Honda	EPT2	G	I	3.0	275	1	Deer Park	Garner
Wisconsin/Multi Quip		D	I	3.0	185	1	Deer Park	Garner
Yamada	POLY	P	P	3.0	200	1	Deer Park	Garner
Various		D	I	2.0	200	5	Deer Park	Garner
Various		G	I	2.0	190	2	Deer Park	Garner
Versa-Matic	STAINLESS	P	P	2.0	140	2	Deer Park	Garner

Corporate	Response Equipment Listing	Equipment Listing
Operations		Rev. December 2011

RESPONSE BOAT TYPE CODES		TRANPORTATION METHOD CODES	
BAY	Bay Waters	NT	Normal Trailer
JB	Jon Boat	WO	Water Only
LFB	Large Flat Bottom	WL	Wide load Trailer
OFF	Offshore	OT	Other
PRO	Protected Waters		
TC	Towing Capable		
OT	Other		

RESPONSE BOATS

Name of Manufacturer	Model Number	Boat Type Code	Horse Power	Normal Crew Size	Length / Beam	Draft Limit	Number of Boats	Transport Method Code	Storage Location	Owner
Alumacraft	12	PRO	0	1	12	1'	2	NT	Deer Park	Garner
Custom Flat	1650	JB	25	2	16'	1'	4	NT	Deer Park	Garner
Custom Flat	20	LFB	40	2	20' / 6'	2'	1	NT	Deer Park	Garner
Custom Build	30	BAY	300	3	30' / 8'	2'	1	NT	Deer Park	Garner
Alumaweld	1650	JB	25	3	16' / 6'	1'	4	NT	La Marque	Garner
Custom Boat Mfg.	1649R	JB	30	2	16' / 6'	2'	1	NT	La Marque	Garner
Alumaweld	24	JB	40	2	24' / 6	1.6	1	NT	La Marque	Garner
Broadhead	24	BAY	150	3	24' / 8'	2'	1	NT	La Marque	Garner
Alumaweld	1650	JB	25	2	16' / 6'	1'	5	NT	Port Arthur	Garner
Alumaweld	20	BAY	40	2	20' / 0'	2'	1	NT	Port Arthur	Garner
Alumaweld	1450	JB	25	2	14' / 0"	2"	1	NT	Port Arthur	Garner
Lobell	28'	BAY	200	3	28' / 8'	2'	1	NT	Port Arthur	Garner
Silver Ships	30'	BAY	400	3	30' / 8'	2	1	NT	Deer Park	Garner
Custom Boat Mfg.	1650	JB	25	2	16' / 6'	1'	6	NT	Deer Park	Garner
Duracraft	21'	LFB	40	3	21' / 6'	1'	1	NT	Deer Park	Garner
Pirogue	12'	OT	0	1	12' / 2"	3"	2	NT	Deer Park	Garner
Various	12'	JB	25	1	12' / 3"	1'	2	NT	Deer Park	Garner

Corporate	Response Equipment Listing	Equipment Listing
Operations		Rev. December 2011

SKIMMER TYPE CODES			
FS	Floating Suction	**HIP**	Hydrodynamic Inclined Plane
IV	Induced Vortex	**OB**	Oleophilic Belt
OD	Oleophilic Disk	**OR**	Oleophilic Rod
PW	Paddle-Wheel	**SK**	Sock
W	Weir	**OT**	Other

SKIMMER EQUIPMENT

Name of Manufacturer	Model Number	Skimmer Type Code	Number of Units	Mfg. Recovery Rate (gpm)	Hose Size Suction/Discharge (inches)	Time to Deploy	Storage Location	Owner
Acme Products Co., Inc.	FS400ASK-39T	W	3	275	3.0	1.5	Deer Park	Garner
Douglas Engineering	4200SH Skim-Pak	FS	2	5 - 68	2.0	5	Deer Park	Garner
Crucial Inc.	1D18P-23	OT	3	25	2.0	.5	Deer Park	Garner
Crucial Inc.	1D18P-36	OT	5	36	2.0	.5	Deer Park	Garner
Marco	Sidewinder 14	OB	1	70	3.0	.5	Deer Park	Garner
Crucial Inc.	VSP-3"	W	2	550	3.0	1.5	Deer Park	Garner
Crucial Inc.	RF-Floating Head	W	1	200	3.0	1	Deer Park	Garner
Desmi	Mini Max	W	1	220	3.0	1	La Marque	Garner
Acme Products Co., Inc.	FS400ASK-39T	W	1	275	3.0	1.0	La Marque	Garner
Crucial Inc.	1D18P-23	OT	3	25	2.0	.5	La Marque	Garner
Acme Products Co., Inc.	FS400ASK-39T	W	1	275	3.0	.5	Port Arthur	Garner
Crucial Inc.	1D18P-36	OT	3	25	2.0	.5	Port Arthur	Garner
Elastec	Double Drum	OT	1	60	2.0	.5	Port Arthur	Garner
Douglas Engineering	4200SH Skim-Pak	FS	2	5 - 68	2.0	.5	Deer Park	Garner
Marco	Sidewinder 14	OB	1	70	3.0	.5	Deer Park	Garner
Marco	Harbor 28	OB	1	70	2.0	.5	Deer Park	Garner
Elastec	Mini Max, 20"	OT	1	20	2.0	1.	Deer Park	Garner

Corporate	Response Equipment Listing	Equipment Listing
Operations		Rev. December 2011

PU	Portable Vacuum Pump Units	D	Diesel
SS	Super Sucker	E	Electric
VT	Vacuum Truck	G	Gasoline
OT	Other	H	Hydraulic
		P	Pneumatic
		OT	Other

VACUUM SYSTEM EQUIPMENT

Name of Manufacturer	Model Number	System Type Code	Drive Type Code	Suction (inches)	Number of Units	Mfg. Recovery Rate (gpm)	Storage Capacity (gallon)	Hose Invent (feet)	Storage Location	Owner
Safety Vac	449222	OT	D	14	1	40	150	200	Deer Park	Garner
Keith/Huber	LN8000	VT	D	27.0	6	80	3000	3200	La Marque	Garner
Ford	Meyers	OT	D		2	80	3000	500	La Marque	Garner
Super Products & Guzzler	5027	SS	D	27.0	1	450	3000	500	La Marque	Garner
Keith/Huber	LN8000	VT	D	27.0	1	80	3000	500	Port Arthur	Garner

Corporate	Response Equipment Listing	Equipment Listing
Operations		Rev. December 2011

SORBENT TYPE CODE		COMPOSITION CODE	
B	Boom	M	Mineral
PAD	Pad	NO	Natural
PT	Particulate	S	Organic
ST	Sheet	OT	Synthetic
SW	Sweep		Other
OT	Other		

SORBENTS

Name of Manufacturer	Model Number	Sorbent Type Code	Composition Type Code	Normal Inventory	Special Appl. Equip. Needed		Special Rcvg. Equip. Needed		Storage Location	Owner
					Yes	No	Yes	No		
Crucial, Inc.	OS-15	OT	S	1000		X		X	Deer Park	Garner
Complete Environmental Products	GES-P100	PAD	S	1000		X		X	Deer Park	Garner
Complete Environmental Products	GES-P200	PAD	S	250		X		X	Deer Park	Garner
Complete Environmental Products	GES-EP100	PAD	S	500		X		X	Deer Park	Garner
Complete Environmental Products	GES-P50	PAD	S	150		X		X	Deer Park	Garner
Complete Environmental Products	GES-B510	B	S	300		X		X	Deer Park	Garner
Complete Environmental Products	GES-B810	B	S	500		X		X	Deer Park	Garner
Complete Environmental Products	GES-R144	ST	S	150		X		X	Deer Park	Garner
Complete Environmental Products	GES-SW100	SW	S	300		X		X	Deer Park	Garner
Complete Environmental Products	GES-PART25	PT	S	10		X		X	Deer Park	Garner
Crucial, Inc.	OS-15	OT	S	150		X		X	La Marque	Garner
Complete Environmental Products	GES-P00	PAD	S	250		X		X	La Marque	Garner
Complete Environmental Products	GES-P200	PAD	S	100		X		X	La Marque	Garner
Complete Environmental Products	GES-P50	PAD	S	100		X		X	La Marque	Garner
Complete Environmental Products	GES-B510	B	S	100		X		X	La Marque	Garner
Complete Environmental Products	GES-B810	B	S	125		X		X	La Marque	Garner
Complete Environmental Products	GES-R144	ST	S	125		X		X	La Marque	Garner
Complete Environmental Products	GES-SW100	SW	S	150		X		X	La Marque	Garner
Complete Environmental Products	GES-PART25	P	S	10		X		X	La Marque	Garner

Corporate	Response Equipment Listing	Equipment Listing
Operations		Rev. December 2011

SORBENTS

Name of Manufacturer	Model Number	Sorbent Type Code	Composition Type Code	Normal Inventory	Special Appl. Equip. Needed		Special Rcvg. Equip. Needed		Storage Location	Owner
					Yes	No	Yes	No		
Crucial, Inc.	OS-15	OT	S	150		X		X	Port Arthur	Garner
Complete Environmental Products	GES-P100	PAD	S	100		X		X	Port Arthur	Garner
Complete Environmental Products	GES-P200	PAD	S	75		X		X	Port Arthur	Garner
Complete Environmental Products	GES-B510	B	S	100		X		X	Port Arthur	Garner
Complete Environmental Products	GES-B810	B	S	50		X		X	Port Arthur	Garner
Complete Environmental Products	GES-R144	ST	S	25		X		X	Port Arthur	Garner
Complete Environmental Products	GES-SW100	SW	S	50		X		X	Port Arthur	Garner
Crucial, Inc.	OS-15	OT	S	250		X		X	Deer Park	Garner
Complete Environmental Products	GES-P100	PAD	S	325		X		X	Deer Park	Garner
Complete Environmental Products	GES-P200	PAD	S	200		X		X	Deer Park	Garner
Complete Environmental Products	GES-EP100	PAD	S	500		X		X	Deer Park	Garner
Complete Environmental Products	GES-B510	B	S	100		X		X	Deer Park	Garner
Complete Environmental Products	GES-B810	B	S	150		X		X	Deer Park	Garner
Complete Environmental Products	GES-R144	ST	S	50		X		X	Deer Park	Garner
Complete Environmental Products	GES-SW100	SW	S	100		X		X	Deer Park	Garner

MASTER SERVICES AGREEMENT

THIS MASTER SERVICES AGREEMENT ("Agreement") is made and entered into effective July 15, 2008 ("Effective Date"), by and between Targa Resources LLC, a Delaware limited liability company ("Targa"), on behalf of itself and its Affiliates, and **Garner Environmental Services, Inc.** ("Contractor" and, together with Targa, each a "Party" and together the "Parties"). Capitalized terms not otherwise defined have the meaning set forth in Exhibit "A".

COMMERCIAL TERMS AND CONDITIONS

1. SCOPE OF AGREEMENT/PURCHASE ORDERS FOR SERVICES

A. Purchase Orders.

i. Contractor shall provide Services to Targa and its Affiliates during the Term of this Agreement as agreed upon in each Purchase Order. Subject to Section 1.A.ii below, each request for Services shall be made by Targa or the applicable Affiliate in writing pursuant to a Purchase Order in the form attached hereto as Exhibit "B" ("Purchase Order"). Contractor shall provide the Services set forth in the Purchase Order on such terms as shall be mutually agreed upon therein. Contractor's acceptance of a Purchase Order shall be accomplished by Contractor's execution of such Purchase Order or the commencement of the Services specified in such Purchase Order, whichever occurs first. All Purchase Orders, and Contractor's performance of Services thereunder, are subject to the terms and conditions of this Agreement, including the General Terms and Conditions set forth in Exhibit "A." This Agreement shall control in the event of any ambiguity, conflict or inconsistency between this Agreement and the Purchase Order.

ii. In the event of an emergency causing an immediate or imminent threat to Targa's Facilities, operations, personnel or other Persons, Targa may issue a verbal Purchase Order to Contractor. In such event, Targa shall promptly submit a written Purchase Order following the issuance of any such verbal Purchase Order. Contractor's commencement of Services under such verbal Purchase Order shall indicate acceptance of such Purchase Order.

B. No Minimum Commitment. Nothing herein shall obligate Targa to request Services from Contractor and Contractor shall be compensated only for such Services as Contractor actually performs at the request of Targa via a Purchase Order.

C. Targa Affiliates' Right to Purchase. Each Targa Affiliate shall have the right to issue a Purchase Order for Services subject to the terms of this Agreement.

D. Special Provisions. Special provisions applicable to the Services performed outside of the State of Texas are set forth in Exhibit "D".

2. COMPENSATION, PAYMENTS AND INVOICING

A. Compensation. As compensation for the satisfactory performance of the Services, Targa shall pay Contractor based on a Time and Materials payment method. Targa shall pay and reimburse Contractor in accordance with the Rate Schedule attached as Exhibit "F" attached hereto and incorporated herein for all purposes as if fully copied at length.

3. INVOICING AND PAYMENT

A. Invoicing. Contractor shall submit monthly invoices to Targa for Services performed in the name of the Targa Affiliate as identified in the upper left-hand corner of each Purchase Order. Each invoice (i) shall identify the Purchase Order number and shall include sufficient line item detail for Targa to reasonably verify the basis of the charges, including the Services performed and applicable quantities and pricing, and (ii) shall be accompanied by any supporting information or documentation reasonably requested by Targa. Invoices submitted for Fees and Expenses charged on an hourly basis shall be supported by documents, time sheets or work tickets showing description, date and location of Services performed and the names of employees

and hours each worked. Invoices submitted for Fees and Expenses charged as allowable expenses shall be supported by copies of the actual receipts forming the basis of reimbursement.

B. Payment. Payment terms are net thirty (30) days from Targa's receipt of an invoice unless otherwise specified in the Purchase Order. In the event of a dispute regarding any invoice submitted by Contractor, (i) all amounts not disputed shall be paid by Targa as required by this Section 3, (ii) Targa shall promptly notify Contractor of such dispute, and (iii) payment of any withheld and disputed amount shall be made within ten (10) days following resolution of the dispute.

4. INSURANCE

During the Term of this Agreement (or for such longer period required in Exhibit "C"), Contractor, at its sole cost and expense, shall procure and maintain, and shall require its Subcontractors to procure and maintain, insurance coverage with the minimum coverages, levels, limits and conditions set forth in Exhibit "C". Contractor's liability under this Agreement, or otherwise at law, shall not be limited by the amount or type of insurance required under this Agreement.

5. TERM OF AGREEMENT/TERM OF PURCHASE ORDERS

Except as otherwise provided herein, this Agreement shall commence on the Effective Date and shall remain in effect for an initial period of one (1) year (the "Initial Term"). Thereafter, it will automatically renew on a year to year basis and remain in effect until terminated by either Party in accordance with the applicable termination provisions of this Agreement (each renewal being a "Renewal Term"). Purchase Orders shall commence and continue in effect until final completion of the Services or termination by Targa in accordance with the applicable termination provisions of this Agreement.

6. NOTICES

Statements and reports required of Contractor hereunder shall be addressed to the individual designated on the particular Purchase Order. Invoices and Notices required of the Parties herein shall be addressed to the address set forth below.

7. ENTIRE AGREEMENT

This Agreement, together with all Exhibits referenced herein and Purchase Orders executed by the Parties, constitutes the entire agreement between the Parties in relation to the Services and supersedes all prior agreements, understandings and commitments, whether oral or in writing, between the Parties. This Agreement may not be amended or modified in any manner except by a written document signed by both Parties that expressly amends this Agreement. All additional and/or conflicting terms and conditions that may appear on Contractor written documents including delivery tickets, service order tickets, daily time sheets, invoices or any other document shall be null and void, and either party's signature on any written document containing conflicting terms shall not constitute either party's consent to any terms or conditions set forth in such document.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their duly authorized officers as of the date set forth below.

Accepted and Agreed to: **Garner Environmental Services, Inc.**	Accepted and Agreed to: **Targa Resources LLC**
By: Otis Chambers	By: J.S. Hopson
Printed Name: Otis Chambers	Printed Name: J.S. Hopson
Title: Executive Vice President	Title: Senior Vice President-Operations & Engineering
Date: 07-17-08	Date: 7/28/08

Address for Notices: **1717 W. 13th Street** **Deer Park, Texas 77536** Attention: Contracts Administrator Facsimile No.: 281.479.0283 Phone No. 281.930.1200 Contractor's Federal Tax ID Number or SSN: 760134613 Incorporation Status: Incorporated (X); Not Incorporated ( ) Contractor's State License No. _____ (where required by Applicable Law)	**Address for Notices:** 1000 Louisiana, Suite 4300 Houston, TX 77002 Attention: Procurement & Supply Chain Mgmt. Facsimile No. 713-584-1514 Phone No. 713-584-1116 **Address for Invoices:** 1000 Louisiana, Suite 4300 Houston, TX 77002 Attention: Accounts Payable Facsimile No. 713-584-1130 Phone No. 713-584-1344 Targa's Federal Tax ID Number: 14-1904332

APPENDIX B

Orange Spill Kit Inventory

Specifications

Fluids Absorbed:

Oils, Coolants, Solvents & Water

Absorbency:

Up to 76 gal.

Spill Volume:

50 - 79 gal.

Lift-out Basket:

No

Outdoor Storage:

Yes

UN Rated:

No

UV Resistant:

Yes

Wheels:

8" No Flat

Sold as:

1 each

Weight:

267 lbs.

per Pallet:

1

Composition:

Box - Polyethylene w/ 8" Pneumatic Wheels
Mat - Polypropylene
Socks - Polypropylene & Magnesium Aluminosilicate

Includes:

1 - 48" L x 31" W x 41.75" H PIG® Storage Chest (BOX405-OR)

10 - 3" x 10' PIG® BLUE Absorbent Socks (PIG202)

31 - 3" x 48" PIG® BLUE Absorbent Socks (4048)

154 - PIG® Universal Mat Pads (MAT203) Specifications

Fluids Absorbed:

Oils, Coolants, Solvents & Water

Absorbency:

Up to 76 gal.

Spill Volume:

50 - 79 gal.

Lift-out Basket:

No

Outdoor Storage:

Yes

UN Rated:

No

UV Resistant:

Yes

Wheels:

8" No Flat

Sold as:

1 each

Weight:

267 lbs.

per Pallet:

1

Composition:

Box - Polyethylene w/ 8" Pneumatic Wheels
Mat - Polypropylene
Socks - Polypropylene & Magnesium Aluminosilicate

Includes:

1 - 48" L x 31" W x 41.75" H PIG® Storage Chest (BOX405-OR)

10 - 3" x 10' PIG® BLUE Absorbent Socks (PIG202)

31 - 3" x 48" PIG® BLUE Absorbent Socks (4048)

154 - PIG® Universal Mat Pads (MAT203)

112 - PIG® Wipers (WIP310)

15 - Temporary Disposal Bags and Ties (BAG201-L)

6 - Tamperproof Labels (LBL100)

1 - Instruction Manual

Pigalog® Page Number:

Page 105

APPENDIX C

National Preparedness for Response Exercise Program (PREP)

TRIENNIAL CYCLE OF EXERCISING THE ENTIRE RESPONSE PLAN

Fill in the dates exercises were conducted in the spaces provided below:

QI
Notification Exercises[1]

1. 2/10/2014 at 10:20 AM
2. 4/28/2014 at 12:39 PM
3. 9/30/2014 at 12:00 PM
4. 12/11/2014 at 12:25 PM
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12.

OSRO Equipment Deployment Exercises

1. _____
2. _____
3. _____

Spill Management Team
Table Top Exercises[2]

1. _____
2. _____
3.

Unannounced Exercises

1. _____
2.

Facility-Owned Equipment Deployment Exercises

1. _____
2. _____
4. _____
5. _____
6. _____

NOTES:
[1]One of these a year must be conducted during off-duty hours
[2]One within a three (3) year cycle must include a Worst-Case Discharge Scenario

Complete documentation of drills or actual emergency responses is located in the Terminal Office PREP Documentation Log.

APPENDIX M

STORMWATER POLLUTION PREVENTION PLAN AND EROSION CONTROL PLANS

SPILL PREVENTION, CONTROL, AND COUNTERMEASURES PLAN

For

40 CFR PART 112 Regulated Facility
Located At:

Latitude: 47.9778° / Longitude: -103.6683°

ALEXANDER CRUDE TERMINAL
Township 152N, Range 101W, Section 19, NW/4
McKenzie County, ND

Owner/Operator:
Targa Resources Partners, LP
1000 Louisiana
Houston, TX 77002

REVISION NO. - 0
August 2013

TABLE OF CONTENTS

Page

LIST OF FIGURES iii
LIST OF APPENDICES iii
CODE OF FEDERAL REGULATIONS CROSS-REFERENCE TABLE iv
MANAGEMENT APPROVAL AND PROFESSIONAL ENGINEER CERTIFICATION vi
PLAN IMPLEMENTATION MEASURES NOT FULLY OPERATIONAL vii
SPCC PLAN REVIEW viii
SPILL RESPONSE COORDINATORS viii
SPCC INSPECTION AND DOCUMENTATION viii
CERTIFICATION OF SUBSTANTIAL HARM DETERMINATION ix

1.0 GENERAL INFORMATION 1
1.1 Plan Availability 1
1.1.1 Plan Distribution List 1
1.2 Deviations to the SPCC Rule 1
1.3 Plan Review and Update Process 2
1.4 Spill Reporting to Regional Administrator 3
1.5 Contact List and Phone Numbers 3
1.6 Notification Data Sheet 3
1.7 Personnel, Training and Discharge Prevention 3
1.8 Prevention, Response and Cleanup 4
1.9 Impracticability 4
1.10 Conformance with Other Requirements 4

2.0 FACILITY INFORMATION 5
2.1 Facility and Owner/Operator Information 5
2.2 Facility Description 5
2.3 Facility Layout and Diagram 5
2.4 Storage Containers and Potential Spills 6
2.5 Bulk Storage Containers 8
2.5.1 Mobile or Portable Storage Containers 8
2.5.2 Buried or Bunkered Storage Tanks 9
2.5.3 Bulk Storage Containers with Internal Heating Coils 9
2.5.4 Bulk Container Inventory Control 9
2.6 Inspections, Tests and Records 9
2.6.1 Bulk Storage Container Inspection 9
2.6.2 Bulk Storage Container Integrity Testing 10
2.6.3 In-Service Piping and Transfer Equipment 10
2.7 Facility Drainage 10
2.7.1 Facility Diked Drainage 10
2.7.2 Facility Undiked Area Drainage 11
2.7.3 Effluent Treatment Facilities 11
2.8 Transfer Operations, Pumping and In-Plant Processes 11
2.8.1 Buried Piping 11
2.8.2 Out-of-Service Piping 11
2.8.3 Aboveground Valves and Piping 11
2.9 Tank Truck and Tank Car Loading Racks 12
2.10 Vehicle Warnings 12
2.11 Facility Security 13

LIST OF FIGURES

Figure	Title	Page
1	Site Location Map	14
2	Simplified Site Plan	15
3	Containment Calculations	16

LIST OF APPENDICES

Appendix	Title
A	SPCC Personnel Training Program and Documentation
B	Inspections, Testing and Records
C	Targa Emergency Response Notification List
D	Spill Reporting Form and Submittal of Information to Regional Administrator for Qualified Discharge(s)
E	Containment Drainage Records

CODE OF FEDERAL REGULATIONS CROSS-REFERENCE TABLE		
Citation	**Description**	**Section/Page**
§112.3	**Requirement to Prepare and Implement a SPCC Plan**	**See below**
§112.3	Owner/operator must prepare SPCC plan	All
§112.3(d)(1)	Professional Engineer Certification	vi
§112.3(e)	Maintain complete copy of plan	1.1, 1.2
§112.3(g)	Qualified facilities/self-certification	1.2
§112.4	**Amendment of SPCC Plan by Regional Administrator**	**See below**
§112.4(a)	Report to EPA after specific discharges	1.4, App D
§112.4(c)	Send above report to appropriate state agencies	1.4, App D
§112.5	**Amendment of SPCC by Owners / Operators**	**See below**
§112.5(a)	Amendment of SPCC plan by owner or operator	viii, 1.3
§112.5(b)	Management of Five Year Review	viii, 1.3
§112.5(c)	PE certification of amendments	viii, 1.3
§112.6	**Qualified Facility Plan Requirements**	**See below**
§112.6(a)	Preparation and Self-Certification of Plan	1.3
§112.6(b)	Self-Certification of Technical Amendments	1.3
§112.6(c)	Applicable requirements	1.3
§112.6(d)	Professional Engineer Certifications of Portions of a Qualified Facility's Self-Certified Plan	1.3
§112.7	**General Requirements for SPCC Plans**	**See below**
§112.7	Management approval of plan	vi
§112.7	Cross reference table if plan does not follow sequence of regulations	iv
§112.7	Facilities not yet fully operational	vii
§112.7(a)(1)	Discussion of conformance with the requirements of SPCC	All
§112.7(a)(2)	Explanation of any deviations-equivalent environmental protection, alternative measures	1.2, throughout
§112.7(a)(3)	Physical layout of the facility including facility diagram	2.2, 2.3, Figs.
§112.7(a)(3)(i)	Type of oil in each container and its storage capacity	2.4
§112.7(a)(3)(ii)	Discharge prevention measures including procedures for routine handling of products	1.7, 1.8
§112.7(a)(3)(iii)	Discharge or drainage controls such as secondary containment around containers and other structures, equipment and procedures for control of a discharge	2.4
§112.7(a)(3)(iv)	Countermeasures for discharge discovery, response and cleanup	1.8
§112.7(a)(3)(v)	Methods of disposal of recovered materials	1.8
§112.7(a)(3)(vi)	Contact list and phone numbers	App C
§112.7(a)(4)	Procedures for reporting a discharge, unless FRP has been submitted	1.6, App D
§112.7(b)	Discharge predication / Fault analysis	2.4
§112.7(c)	Appropriate containment or diversion:	2.4
§112.7(d)	Deviations due to impracticability	1.9
§112.7(e)	Inspections, tests, and records	2.6
§112.7(f)	Employee training and discharge prevention procedures	1.7, App B
§112.7(f)(1)	Oil-handling and inspection personnel training	1.7, App B
§112.7(f)(2)	Accountable person for discharge prevention	viii
§112.7(f)(3)	Discharge prevention briefings	1.7
§112.7(g)	Security (excluding oil production facilities)	2.11
§112.7(g)(1)	Fencing and lock/guard gates	2.11
§112.7(g)(2)	Fail-safe valves for containers	2.11

REGULATORY CROSS-REFERENCE (Cont'd.)		
§112.7(g)(3)	Starter control on each pump	2.11
§112.7(g)(4)	Loading/unloading connections of oil pipelines or facility piping when not in service	2.11
§112.7(g)(5)	Lighting	2.11
§112.7(h)	Tank Car and Tank Truck Loading / Unloading Rack	2.9
§112.7(h)(1)	Handling discharges	1.8, App D
§112.7(h)(2)	Preventing early vehicle departure	2.9
§112.7(h)(3)	Inspection for discharges prior to filling and departure	2.9
§112.7(i)	Evaluate field-construct above ground tanks upon repair, etc.	2.6.1
§112.7(j)	Conformance with other requirements	1.10
§112.7(k)	Qualified Oil-Filled Operational Equipment	2.4
§112.7(k)(1)	Qualification Criteria-Reportable Discharge History	1.4, 1.6
§112.7(k)(2)	Alternative Requirements to General Secondary Containment	N/A
§112.7(k)(2)(i)	Establishment of Inspection & Monitoring Plan	2.6
§112.7(k)(2)(ii)(A)	Provide oil spill contingency plan	N/A
§112.7(k)(2)(ii)(B)	Written commitment of manpower, equipment, and materials to control and remove spill	vi, App C
§112.8	**Requirements for onshore facilities (excluding production facilities)**	**See below**
§112.8(a)	General and specific requirements	All
§112.8(b)	Facility drainage	2.7
§112.8(b)(1)	Restrain drainage from diked storage areas	2.7
§112.8(b)(2)	Manual valves in diked areas	2.7.1
§112.8(b)(3)	Facility drainage systems from undiked areas with a potential for a discharge	2.7.2
§112.8(b)(4)	If not 8(b)(3), diversion system for ditches	N/A
§112.8(b)(5)	If pump transfer required for drainage water treatment, provide fail-safe pumps and at least two pumps	N/A
§112.8(c)	Bulk storage containers	2.4, 2.5
§112.8(c)(1)	Material and construction	2.4
§112.8(c)(2)	Secondary means of containment	2.4
§112.8(c)(3)	Drainage controls to storm drain or open water bodies	2.7
§112.8(c)(4)	Protection of completely buried metallic tanks from corrosion	2.5.2
§112.8(c)(5)	Partially buried or bunkered metallic tanks protection from corrosion	2.5.2
§112.8(c)(6)	Aboveground container testing for integrity	2.6, App B
§112.8(c)(7)	Monitor possible leakage from defective internal heating coils	2.5.3
§112.8(c)(8)	Container installation updates per good engineering practice (fail-safe precautions)	2.6.2
§112.8(c)(9)	Observation of effluent treatment facilities	2.7.3
§112.8(c)(10)	Correction of visible discharges	2.4
§112.8(c)(11)	For mobile or portable containers provide secondary containment	2.4, 2.5.1
§112.8(d)	Facility transfer operations, pumping, and facility process	2.8
§112.8(d)(1)	Buried pipe corrosion protection	2.8.1
§112.8(d)(2)	Capping and marking pipe out of service	2.8.1
§112.8(d)(3)	Pipe supports	2.8.3
§112.8(d)(4)	Inspect aboveground valves, pipelines, appurtenances and buried piping	2.8
§112.8(d)(5)	Vehicle warnings	2.10

TARGA RESOURCES PARTNERS, LP

ALEXANDER CRUDE TERMINAL
Township 152N, Range 101W, Section 19, NW/4
McKenzie County, ND

MANAGEMENT APPROVAL

Targa is committed to preventing discharges of oil to navigable waters of the United States or adjoining shorelines. By signature below, I approve this Plan and acknowledge that the elements identified in the Plan have been implemented. The Spill Response Coordinator at the Facility has been giving the authority to commit the necessary resources to implement this Plan. This SPCC Plan will be implemented as herein described. Details to any impracticability are discussed in Section 1.9 of this SPCC Plan.

Signature: Tim Stubstad

I certify that the above information is true and accurate to the best of my knowledge.

Name: Tim Stubstad

Title: Crude Operations Manager

PROFESSIONAL ENGINEER CERTIFICATION

I hereby attest: (1) that I am familiar with the requirements of 40 CFR 112; (2) that I or my agent has visited and examined the facility; (3) that this Spill Prevention Control and Countermeasures Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of 40 CFR 112; (4) that procedures for required inspections and testing have been established; and (5) the plan is adequate for the facility.

Michael Maurice Heger
Printed Name of Registered Professional Engineer

Signature of Registered Professional Engineer

REGISTERED PROFESSIONAL ENGINEER
MICHAEL MAURICE HEGER
No. 5969
DATE 9/5/13
NORTH DAKOTA

PE-5969	North Dakota	09/05/13
Registration Number	State	Date

PLAN IMPLEMENTATION MEASURES NOT YET FULLY OPERATIONAL

- Any implementation measures that are required by this Plan or recommended by the Professional Engineer to bring the Facility into compliance with the SPCC requirements shall be identified on the following table.
- The Plan is conditionally approved and certified by the Professional Engineer based upon satisfactory completion and documentation of the Implementation Measures identified below.
- These measures must be satisfied by the scheduled completion date by the Responsible Party.
- Upon completion, a date and signature shall be provided and the actions items that were taken to address the implementation measures must be noted.
- Example implementation measures that may not be fully operational at the time of Plan development include but are not limited to:
  - Secondary containment structures
  - Diversionary structures
  - Security measures
  - Integrity testing program

Implementation Measure	Responsible Party	Scheduled Due Date	Actions Taken	Completed	
				Date	Signature
Build T-5000 berm per minimum specifications in Figure 3	Tim Stubstad	Sep 2013			
Raise T-100 berm height per minimum specifications in Figure 3	Tim Stubstad	Sep 2013			

PLAN REVIEW AND AMENDMENTS

The Spill Response Coordinator (SRC) will review the SPCC plan at least once every five years and any amendments, if required, will be made within six months of the review. This SPCC plan will be amended within six months whenever there is a change in facility design, construction, operation, or maintenance procedure that materially affects the facility's potential for an oil spill.

NON-TECHNICAL AMENDMENTS

- Non-technical amendments are not certified by a Professional Engineer (PE)
- Examples include name changes, phone number changes, or similar non-technical text changes

TECHNICAL AMENDMENTS

- All technical amendments are certified by a PE
- Examples of technical changes include
  - Replacement, reconstruction or movement of tanks, vessels or piping systems
  - Any alteration of secondary containment
  - Changes to standard operating procedures related to discharge prevention measures
- A technical amendment is required "when there is a change that materially affects the facility's potential to discharge oil"
- Any amendment made under this section will be prepared within 6 months of the change and implemented as soon as possible but always within 6 months of the preparation of the amendment
- If a technical amendment only affects certain pages, the PE can certify those pages. These changes will be documented on the log form below

MANAGEMENT REVIEW

- Management will review this SPCC Plan at least each five (5) years and document the review on the form below

Review / Amend Date	Signature (Specify Plan Reviewer or PE)	Amend Plan (Y/N)	Description of Review / Amendment	Affected Page(s)	PE Certification (Y/N)

SPILL RESPONSE COORDINATORS

Primary SPC: Tim Stubstad	**Alternate: David Low**
Work Phone: 701-675-2157	**Work Phone: 337-494-4446**
Mobile Phone: 701-580-5972	**Mobile Phone: 337-540-8628**

SPCC INSPECTION AND DOCUMENTATION SCHEDULE

Description	Schedule	Documentation
Tank Inspections	Monthly using Targa Tank Integrity Management Plan	Checklist kept in Appendix B of SPCC plan for three years after inspection.
Employee Training	Annually from date of hire for oil-handling employees.	Dated attendance sheet kept in Appendix A of SPCC plan.
Secondary Containment Documentation	As needed.	Documentation of containment drainage kept in Appendix E of SPCC plan.

CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA

FACILITY NAME: Targa Resources Partners, LP – Alexander Crude Terminal
FACILITY LOCATION: Township 152N, Range 101W, Section 19, NW/4
McKenzie County, ND

1. Does the facility transfer oil over water to or from vessels ***and*** does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?
   ☐ YES ☒ NO

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons ***and*** does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?
   ☐ YES ☒ NO

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons ***and*** is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula[1]) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" (59 FR 14713, March 29, 1994) and the applicable Area Contingency Plan.
   ☒ YES ☐ NO

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons ***and*** is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to 40 CFR 112 Appendix C or a comparable formula [1]) such that a discharge from the facility would shut down a public drinking water intake[2]?
   ☐ YES ☒ NO

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons ***and*** has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?
   ☐ YES ☒ NO

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Signature — Senior V.P. Engineering and Operations (Title)

Steve Hopson (Name (please type or print)) — 5/20/2015 (Date)

[1] If a comparable formula is used, documentation of the reliability and analytical soundness of the comparable formula must be attached to this form.

[2] For the purposes of 40 CFR part 112, public drinking water intakes are analogous to public water systems as described at 40 CFR 143.2(c).

1.0 GENERAL INFORMATION

The Spill Prevention, Control, and Countermeasures (SPCC) Plan has been developed for the Alexander Crude Terminal (hereinafter referred to as "Facility") in accordance with the regulatory requirements found in the Environmental Protection Agency's (EPA) 40 CFR §112, Oil Pollution Prevention; specifically sections §112.1-7 of Subpart A and §112.9 of Subpart B where applicable. SPCC regulations apply to owners or operators of non-transportation related onshore and offshore facilities engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, or consuming oil and oil products that meet each of the following criteria:

- Due to their location, could reasonably be expected to discharge oil in quantities that may be harmful into or upon navigable waters of the United States or adjoining shorelines and;
- Has an aggregate aboveground storage capacity greater than 1,320 gallons (31bbl), excluding containers less than 55 gallons and/or has an underground storage capacity greater than 42,000 gallons.

This SPCC Plan covers only the EPA-regulated portions of the Facility.

1.1 Plan Availability

A copy of this SPCC Plan is maintained at the following locations and is available for on-site review upon request of the EPA Regional Administrator (a distribution list is provided in Section 1.1.1):

- Facility (if normally attended at least four hours per day, else at the Little Missouri Gas Plant location below)
- Targa Web-Based Portal
- Targa Corporate Office - Houston (electronic copy)

1.1.1 Plan Distribution List *§112.3(e)*

PLAN DISTRIBUTION LIST	
COPY NUMBER	**PLAN HOLDER**
1	Targa Corporate Office (Electronic Copy) Attn: Environmental 1000 Louisiana; Suite 4300 Houston, TX 77002
2	Little Missouri Gas Plant 2139 125th Avenue NW Watford City (McKenzie County), North Dakota 58854
3	Web-Based Portal

1.2 Deviations to the SPCC Rule

Any deviations to the rule will be identified in this Plan along with reasoning for the non-

conformance, a detailed description of the alternative method, and how that method will achieve equivalent environmental protection.

Self-Certified Plans

The Amended SPCC rule allows self-certification, provided certain conditions are met (*§112.3(g*). Deviations from the rule in areas pertaining to Facility security provisions (112.7(g)), requirements for prevention of premature departures of vehicles during loading and unloading, inspection of truck and train drains (112.7(h)(2) and 112.7(h)(3), inspection/evaluation of field-constructed aboveground containers for brittle fracture (112.7(i)), and all secondary containment requirements are not permitted in self-certified plans unless certified by a Professional Engineer that they provide equivalent environmental protection measures sufficient to prevent a discharge.

1.3 Plan Review and Update Process

Five Year Review

In accordance with §112.5(b), Targa will complete a formal review and evaluation of this SPCC Plan at least once every five (5) years and document the review on the Log of Plan Review and Amendments. This review will be conducted by the Facility's Spill Response Coordinator with assistance from the Regional Environmental Coordinator ("REC") as needed and will include review of the following:

- Accuracy of the Plan with current operations and procedures.
- Accuracy of the Plan with current SPCC Regulations.
- Applicability of new prevention and control technology that may significantly reduce the likelihood of a spill event from the Facility if such technology has been field-proven at the time of review.
- Capacity and structural integrity of secondary containment systems.
- SPCC inspection documentation and records.

Facility Changes Requiring Plan Revision

Whenever there is a change in the Facility design, construction, operation or maintenance which materially affects the Facility's potential for a discharge of oil into or upon the navigable waters of the United States or adjoining shorelines, the SPCC Plan will be amended. Changes that require revision to the Plan may include, but are not limited to:

- Commissioning or decommissioning of containers.
- Replacement, reconstruction, or movement of containers.
- Reconstruction, replacement, or installation of piping systems.
- Construction or demolition that might alter secondary or tertiary containment structures and/or drainage systems.
- Revision of standard operating or maintenance procedures at the Facility.

The Spill Response Coordinator is responsible for notifying the Corporate Office of such changes to the Facility. Revisions and amendments to the Plan will be performed by the Corporate Office. The Plan shall be amended within six (6) months and fully implemented as soon as possible but no later than six (6) months after the preparation of the amendments. Any

amendments to the Plan shall be documented on the Log of Plan Review and Amendments.

Certification of Revisions

All amendments which could materially affect the Facility's potential for a discharge into navigable waters of the United States or adjoining shores (technical amendments) must be certified by a Registered Professional Engineer ("PE") or self-certified. Plans certified by a Professional Engineer, or portions of a self-certified plan certified by a Professional Engineer, must be re-certified by a Professional Engineer if amended. Self-certified plans must be amended if the Facility undergoes a significant change and do not require Professional Engineer re-certification. Non-technical amendments such as changes to personnel, telephone references, and other non-technical text changes do not require recertification by a PE.

1.4 Spill Reporting to Regional Administrator

The information found in Appendix D, "Submittal of Information to Regional Administrator for Qualified Discharge(s)" must be submitted to the EPA Regional Administrator within 60 days of a discharge event(s) which meets one of the following conditions:

- The Facility has a single discharge event greater than 1,000 gallons of oil or oil products into or upon navigable waters of the United States or adjoining shorelines **or:**
- The Facility has two (2) discharge events greater than 42 gallons of oil or oil products into or upon navigable waters of the United States or adjoining shorelines in a 12 month period.

The Corporate Houston Office, with assistance from the Regional Environmental Coordinator will submit such reports to the EPA. A copy of this report will also be sent to the appropriate state agency(ies) in charge of oil pollution control activities.

1.5 Contact List and Phone Numbers

The contact list and phone number reference for the facility is provided in Appendix C.

1.6 Notification Data Sheet

A spill notification data sheet is provided in Appendix D.

1.7 Personnel, Training and Discharge Prevention

The facility provides the following training to oil-handling personnel prior to assignment of job responsibilities:

- Operation and maintenance of equipment to prevent oil discharges;
- Oil discharge procedure protocols;
- Applicable oil spill prevention laws, rules and regulations;
- General facility operations; and,
- The contents of the facility SPCC Plan and applicable pollution control laws, rules and regulations.

The facility conducts prevention briefings for oil-handling personnel at least once a year to assure adequate understanding of the SPCC Plan for the facility. These briefings include known previous discharges and spills, discussion of potential discharges or component failures, and precautionary measures.

Documentation of this training is maintained for a period of three (3) years with the

SPCC Plan. The training documents are also kept electronically in the Computer Based Training system or on log sheets kept in field office files.

1.8 Prevention, Response and Cleanup

Prevention

The facility discharge prevention measures, including procedures for routine handling of products (loading, unloading, facility transfers, etc.) include, but are not limited to, containment, employee training, spill response equipment, security measures, and periodic inspections.

Countermeasures

The Facility discharge discovery, response and cleanup capabilities include trained oil-handling employees, on-site spill control equipment and contract environmental response companies. The resources available to the facility for discharge cleanup and response are provided in the Contact List in Appendix C. In addition to available resources in the contact list, spill response equipment is staged at each facility regulated by 40 CFR 112. If a spill occurs, personnel (or contractors hired to clean up material) will promptly clean up spilled material and collect it properly. The contract resources available to the Facility for discharge cleanup are provided in Appendix C: Emergency Response Notification List.

Disposal

The Facility will dispose of all recovered materials in accordance with all applicable local, state and federal guidelines.

1.9 Impracticability

The containment and/or diversionary structures or equipment to prevent a discharge are practicable at the Facility.

1.10 Conformance with Other Requirements

If there are any State or local regulations that are more stringent than the Federal regulations, a description of conformance with these regulations is described below:

- **North Dakota:** Oil spill/release reporting is specified under NDAC 33-16-02.1-11. North Dakota has not established specific minimum quantities for mandatory reporting. Instead, they require all spills which may potentially impact waters of the state, either surface water or ground water, to be reported. As soon as possible, the owner, operator, or person responsible for a spill must notify the North Dakota Department of Health or the North Dakota Hazardous Materials Emergency Assistance and Spill Reporting Number and provide all relevant information about the spill.

2.0 FACILITY INFORMATION

2.1 Facility and Owner/Operator Information *§112.7(a)(3)*

Facility Name:	Alexander Crude Terminal
Location:	Township 152N, Range 101W, Section 19, NW/4
County:	McKenzie
Facility Phone:	N/A
Latitude:	47.9778°
Longitude:	-103.6683°
Nearest Receiving Water:	Unnamed intermittent creek 0.3 miles to the southeast, with leads to the Missouri River, 6 miles to the east.
Landside Directions:	From Watford City, drive north on US-85 for 29.5 miles on turn left on CR-16 (39th St NW) and go 0.1 mile on left.
Owner/Operator:	Targa Resources
Mailing Address:	1000 Louisiana Houston, TX 77210
Telephone:	713-584-1420

2.2 Facility Description

The Facility is a crude oil storage facility. The facility layout is roughly rectangular but with the northeast corner removed. The site runs 1,110 feet north-south, and ranges in width from 310 feet on the north border to 670 feet along the southern border. The site is surrounded by an 8-foot tall chain link fence with three rolling vehicle gates. Site drainage is generally to the south, (varying from southeast to southwest) via sheet flow.

- Located within the facility is one 30,000-barrel internal floating-roof aboveground storage tank (AST) storing crude oil, one 500-bbl fixed roof AST, and related oil receiving, storage, and distribution equipment.
- The Facility is not attended during normal business hours, but is visited at least daily. Offloading from trucks does occur at the Facility. Bulk storage containers, as defined within §112.2, exist at the Facility.
- This Plan covers only the subject Facility.

2.3 Facility Layout and Diagram

The facility is shown in the attached facility diagrams (Figures 1 and 2). The information shown on the drawing includes:

- Process equipment, operating equipment and electrical equipment that contain oil
- Loading/unloading racks, if applicable. By rule definition, a rack is a fixed structure (such as platform, gangway) necessary for loading or unloading a tank truck or tank car, which is located at a facility subject to 40 CFR Part 112. A loading/unloading rack includes a loading or unloading arm and may include any combination of the following: piping assemblages, valves, pumps, shut-off devices, overfill sensors, or personnel safety devices.
- Loading/unloading areas subject to general secondary containment requirements (40 CFR Part 112.7 (c))
- Fixed aboveground storage tanks
- Transfer stations and connecting lines

- Completely buried and bunkered tanks
- Drum and portable container storage areas
- Contents of all SPCC regulated containers

2.4 Storage Container and Potential Spills

Tank ID	Contents	Major Potential Source of Spill	Total Capacity (Gal)	Dis-charge Rate (GPM)	Flow Direction	Secondary Containment Volume (Gallons)/ Dimensions	Secondary Containment Construction	Inv. Control ID
ABOVEGROUND FIXED CONTAINERS (SPCC REGULATED)								
T-5000	Crude Oil	Complete Tank Failure	1,260K	1,260K	South-east	1,836 K gal 255' x 175' x 5' 6" (no displacement)	Earthen Berm	2
T-100	Crude Oil	Complete Tank Failure	21,000	21,000	South-west	28,000-gal 47' x 47' x 2'' (no displacement)	Earthen Berm	2
MOBILE AND PORTABLE CONTAINERS *(Less Than 1,000-Gallon Capacity)*								
NA								
BUNKERED AND COMPLETELY BURIED TANKS								
NA								
OTHER SOURCES OF SPILLS								
NA								
PROCESS FLOW-THROUGH AND OIL-FILLED EQUIPMENT								
NA								
Oil-filled operational equipment is equipment that includes an oil storage container (or multiple containers and associated piping intrinsic to the operation of the equipment) in which the oil is present solely to support the function of the apparatus or the device. It is not considered a bulk storage container, and does not include oil-filled manufacturing equipment (flow-through process). Examples of oil-filled equipment at this facility include: • Compressor Engines and External Lube Oil Reserve Tanks; • Process Sumps; • Reserve Fuel Tanks • Electrical Transformers.								
TRUCK LOADING/UNLOADING RACK								
NA	No Loading/Unloading Racks; See Section 2.9							
OTHER SOURCES OF POTENTIAL SPILLS								

Tank ID	Contents	Major Potential Source of Spill	Total Capacity (Gal)	Dis-charge Rate (GPM)	Flow Direction	Secondary Containment Volume (Gallons)/ Dimensions	Secondary Containment Construction	Inv. Control ID
NA								

NOTES:

1.) The material and construction of bulk storage containers are compatible with the material stored and conditions of storage such as pressure and temperature.
2.) All bulk storage container installations are constructed so that a means of secondary containment is provided for the entire capacity of the largest container and sufficient freeboard to contain precipitation.
3.) Diked areas are sufficiently impervious to contain discharged oil.
4.) Visible discharges, which result in a loss of product from containers, will be promptly corrected and any accumulations of oil in the diked areas will be promptly removed.
5.) Inventory Control ID – See Section 2.5.4
6.) Tanks indicated by "*" contain non-SPCC regulated liquids

2.5 Bulk Storage Containers

The following controls apply to bulk aboveground storage containers at the facility:

- Secondary containment structures for bulk storage containers are identified in the Regulated Bulk Oil Storage Container and Potential Spills table in Section 2.4.
- All bulk storage container installations are constructed so that a means of secondary containment is provided for the entire capacity of the largest single container plus sufficient freeboard to contain precipitation.
- The Facility uses the National Oceanic and Atmospheric Administration's 24-hour, 25-year storm event to determine the amount of additional freeboard capacity required.
- Where bulk containers are manifolded together such that the loss of one (1) results in the loss of all, the combined storage capacity of the manifolded containers will be used to determine secondary containment and freeboard capacity.
- Secondary containment diked areas are sufficiently impervious to contain discharged oil from reaching navigable waters or adjoining shorelines before cleanup begins.
- Details concerning the construction of fixed secondary containment systems are provided in the Regulated Bulk Oil Storage Container and Potential Spills table in Section 2.4.
- Visible discharges, which result in any accumulations of oil in the diked area(s) are promptly removed and disposed of according to the waste disposal procedures described in Section 1.8.
- Secondary containment volume calculations, where secondary containment is present for SPCC regulated products, are provided in Regulated Bulk Oil Storage Container and Potential Spills table in Section 2.4, with details in Figure 3.
- Drainage from secondary containment areas, where secondary containment is present, is discussed in Section 2.7.

2.5.1 Mobile or Portable Storage Containers

Mobile or portable storage containers are currently not present at the facility, however; if mobile or portable storage containers were present they would be shown in the Container and Potential Spills Table. Mobile containers include 55 gallon drums, leased tanks (e.g. <1000 gallons) and totes. In addition to controls listed in Section 2.5, the following apply to mobile or portable containers:

- These containers are generally located in dedicated storage areas or areas with existing secondary containment which are positioned or located so as to prevent a spill from reaching navigable waters or adjoining shorelines.
- These containers are located where they will not be subject to periodic flooding or washout.
- Dedicated mobile or portable storage container areas if present would be identified on the Facility Diagram (Figure 2).
- Containers that may be temporarily located outside the dedicated storage area are positioned or located so as to prevent a spill from reaching navigable waters or adjoining shorelines until they can be returned to the dedicated storage area.

2.5.2 Buried or Bunkered Storage Tanks

The facility does not have completely buried metallic storage tanks that were installed on or after January 10, 1974.

2.5.3 Bulk Containers with Internal Heating Coils

The facility does not have bulk storage tanks with internal heating coils.

2.5.4 Bulk Container Inventory Control

Container installations shall be engineered with at least one of the following devices. Check all that apply to the facility. Inventory control identification should be noted (1, 2, 3, 4, or 5) in the Regulated Bulk Oil Storage Container and Potential Spills table in Section 2.4.

☐ 1. High Liquid Level alarms with signals or audible alarms or loading operations at small tanks that are attended and constantly monitored during the loading operations.

☒ 2. High liquid level pump cutoff device set to stop flow at predetermined container content level.

☐ 3. Direct audible or code signal communication between the container gauges and the pumping station.

☐ 4. Fast response system for determining the liquid level shall be used for each bulk storage container (direct vision gauge). A person must be present to monitor gauges and the tank. Fluid levels in drums used for oil storage and not equipped with direct visual gauges shall be visually gauged prior to transfer of oil.

☐ 5. Not Applicable

2.6 Inspections, Tests and Records

2.6.1 Bulk Storage Container Inspection

For the bulk storage containers, at the Facility, the following integrity management program is in effect:

- The outside of all bulk storage containers and their associated supports and foundations are inspected routinely during normal Facility walk-through for signs of deterioration, discharges, or accumulation of oil inside secondary containment areas.
- These routine Facility walk-through inspections will not be documented unless a corrective action must be taken.
- Documented visual external inspections for all bulk storage containers and their associated supports and foundations is conducted monthly and noted on the Storage Container Visual Inspection Log (Appendix B). *The Facility may use logs or forms that are kept under usual and customary business practices, in lieu of the above reference form.*
- Liquid level sensing devices (overfill prevention) are tested to ensure proper operation.
- Inspections for oil discharges within diked areas occur during the regular rounds of the operator. Any oil in the dike will be cleaned up in a timely manner.

- In the event that a field-constructed aboveground container undergoes a repair, alteration, reconstruction, or a change in service, the container will be evaluated for the risk of discharge or failure due to brittle fracture or other catastrophe.
- Inspection forms are maintained at the Facility or the Regional or Local Field Office.
- A summary of the inspection requirements applicable to the Facility is provided in the Targa Integrity Management Plan. Any future versions of the Targa Integrity Management Plan will govern the inspection requirements at this facility provided revisions to the plan meet the minimum requirements set forth in the current version.

2.6.2 Bulk Storage Container Integrity Testing

- The integrity testing program for bulk storage containers includes a combination of visual inspections and at least one (1) of the following alternate testing techniques: hydrostatic, radiographic, ultrasonic, and/or acoustic emissions for containers subject to quantitative integrity testing requirements presented in the Targa Integrity Management Plan. Any future versions of the Targa Integrity Management Plan will govern the integrity testing requirements at this facility provided revisions to the plan meet the minimum requirements set forth in the current version. Integrity testing for transformers and similar oil-filled operational equipment is limited to monthly visual inspections.
- Field-erected aboveground bulk storage containers will be integrity tested on a regular schedule and when material repairs are made in accordance with API 653.
- Small shop-built containers will follow testing standards set forth in the Targa Integrity Management Plan. *Note: Inspection schedule will be based on the risk-based integrity management program evaluation of each bulk container.*
- The Facility chooses to deviate from the integrity testing requirements of elevated shop-built containers up to 30,000 gallons and single-use containers such as drums, totes, and other small portable containers. These containers are elevated such that all sides of the container are visible during inspections and any problems that may occur will be quickly identified. These routine monthly inspections, as further described in the subsection above, will provide equivalent environmental protection for integrity testing of such containers. It is understood that adoption of such a policy will require Plan amendment and PE certification of the Plan.
- Comparative records will be kept at the Regional or Local Field Office.

2.6.3 In-Service Piping and Transfer Equipment

- All buried piping is integrity tested at the time of installation, modification, construction, relocation or replacement. Documentation of this integrity testing is required.
- All aboveground valves and piping (including flange joints, valve glands and bodies, catch pans, pipe supports, locking of valves and metal surfaces) are examined by facility operators during their regular rounds.

2.7 Facility Drainage

2.7.1 Facility Diked Drainage

- Drainage of stormwater from the Facility's diked storage areas, where present, is restrained by manually operated, open-and-closed designed valves, pumps or ejectors.

- Bypass valves, where present, are normally kept closed and are resealed by Facility personnel following drainage.
- The contents of the diked storage areas, where present, are inspected by Facility personnel prior to each draining event to ensure that only oil-free water (no product sheen) is discharged.
- Secondary containment contents are not generally released to the environment. If oil or oil sheen is observed in a diked storage area, vacuum trucks or other appropriate means will be used to remove any and all oil before drainage.
- Each drainage event and associated inspection is recorded on the Secondary Containment Drainage Event Log found in Appendix E. *The Facility may use logs or forms that are kept under usual and customary business practices, in lieu of the above referenced log.*

2.7.2 Facility Undiked Area Drainage

- With the exception of transformers/oil-filled equipment/uncontained transfer areas, the Facility does not have the potential to discharge oil into undiked areas given the secondary containment provisions noted in Section 2.4. Drainage improvements at the facility convey stormwater run-off from the active areas as sheet flow southwest of the facility.
- Catchment basins, where present, are not located in areas subject to periodic flooding.

2.7.3 Effluent Treatment Facilities

- The Facility does not treat drainage water prior to discharge. All wastewater is trucked offsite for treatment.

2.8 Transfer Operations, Pumping, and In-Plant Processes

2.8.1 Buried Piping

- The Facility has buried piping installed or replaced after August 16, 2002. The Facility employs the following:
  - New or replaced buried piping is cathodically protected against corrosion and provided with protected wrapping and coating.
  - If a section of buried line is exposed, it is inspected for signs of deterioration and corrective actions are taken as indicated by the magnitude of the damage.
  - Integrity and leak testing of buried piping is performed at the time of installation, modification, construction, relocation, and/or replacement.
  - *Note: Aboveground piping, which passes through dikes and roadways, is not considered to be buried piping.*

2.8.2 Out-of-Service Piping

- Connections are capped or blank-flanged at the transfer point and marked as to origin when the piping is not in service or in standby service for extended periods (i.e. greater than six (6) months).

2.8.3 Aboveground Valves and Piping

- The Facility has aboveground piping installed or replaced after August 16, 2002. The Facility employs the following:
  - All pipe supports are designed to minimize abrasion and corrosion and allow for expansion and contraction.
  - Aboveground valves and piping and appurtenances are regularly examined during normal Facility walk-through for general condition and necessity for corrective action.
  - The following items are included in the examination:
    - Flange joints,
    - Expansion joints,
    - Valve glands and bodies,
    - Piping supports,
    - Metal surfaces,
    - Catch pans, and
    - Valve locks and/or seals.
- These weekly Facility walk-through inspections are not documented unless a corrective action must be taken.
- Integrity testing for on-site, in-service piping will follow applicable Targa standards.
- Documented visual inspections of all regulated aboveground valves and piping and appurtenances is conducted annually and noted on the Storage Container Visual Inspection Log (Appendix B). *The Facility may use logs or forms that are kept under usual and customary business practices, in lieu of the above reference form.*

2.9 Tank Truck and Tank Car Loading Racks

- Tank truck loading/unloading rack(s) are not present at the Facility.
- Rail car loading/unloading rack(s) are not present at the Facility
- Truck loading/unloading areas are present at this Facility. The loading of lube oil into bulk storage tanks or unloading of condensate and produced water at the Facility is not considered a loading rack. If a loading arm or other appurtenances are not present at this location, then by definition per 40 CFR 112.7(h) a loading rack does not exist. However, depending on the location, size, and likelihood of contamination of a navigable waterway due to a spill while loading or unloading trucks/railcars at this Facility, containment may be present at the loading/unloading areas even if not required by the regulation. Loading/unloading areas, not defined as a loading/unloading rack, are required to meet the general secondary containment requirements of §112.7(c). Loading and unloading areas are identified on Figure 2. Secondary containment is not required at the loading/unloading areas; however, in accordance with 40 CFR 112.7(c)(vii) spill control equipment including spill pans, sorbent materials, and/or spill control boom also provide spill control for the loading/unloading areas.
- In order to prevent premature vehicular departure, the facility has warning signs in the loading areas and at loading racks, if present. The facility also requires that truck drivers chock their wheels prior to loading.
- Drain and outlets on tank trucks and tank cars are checked for leakage before loading/unloading or departure and, if necessary, are tightened, adjusted or replaced.

2.10 Vehicle Warnings

- Warning signs, where appropriate, are posted at appropriate locations throughout the Facility to prevent vehicles from damaging aboveground piping and appurtenances.
- Bumper guards, where appropriate, are provided in critical vehicular access areas to protect aboveground piping and/or other oil transfer operations.

2.11 Facility Security - *§112.7(g)*

Fencing

- The Facility is surrounded by 8-ft tall chain link fence which encircles the entire footprint of the Facility.
- The entrance gates are locked when the Facility is unattended.

Lighting

- Facility lighting is commensurate with the operations and the type and location of the Facility to assist in the discovery of discharges and to prevent discharges occurring through acts of vandalism.
- Area lights illuminate active areas of the Facility.

Valves

- All drain valves from containment areas, when present, are locked in the closed position, or are secured/inaccessible to unauthorized personnel, to prevent unauthorized opening.
- Valves which permit direct outward flow of a container's contents are locked, or are secured/inaccessible to unauthorized personnel, so that they remain closed when in non-operating or standby status.
- Keys for all locks are maintained in the Facility office.

Starter Controls

- Starter controls, if present, on all oil pumps in non-operating or standby status are locked in the off position and located at a site accessible only to authorized personnel.

Out-of-Service Piping

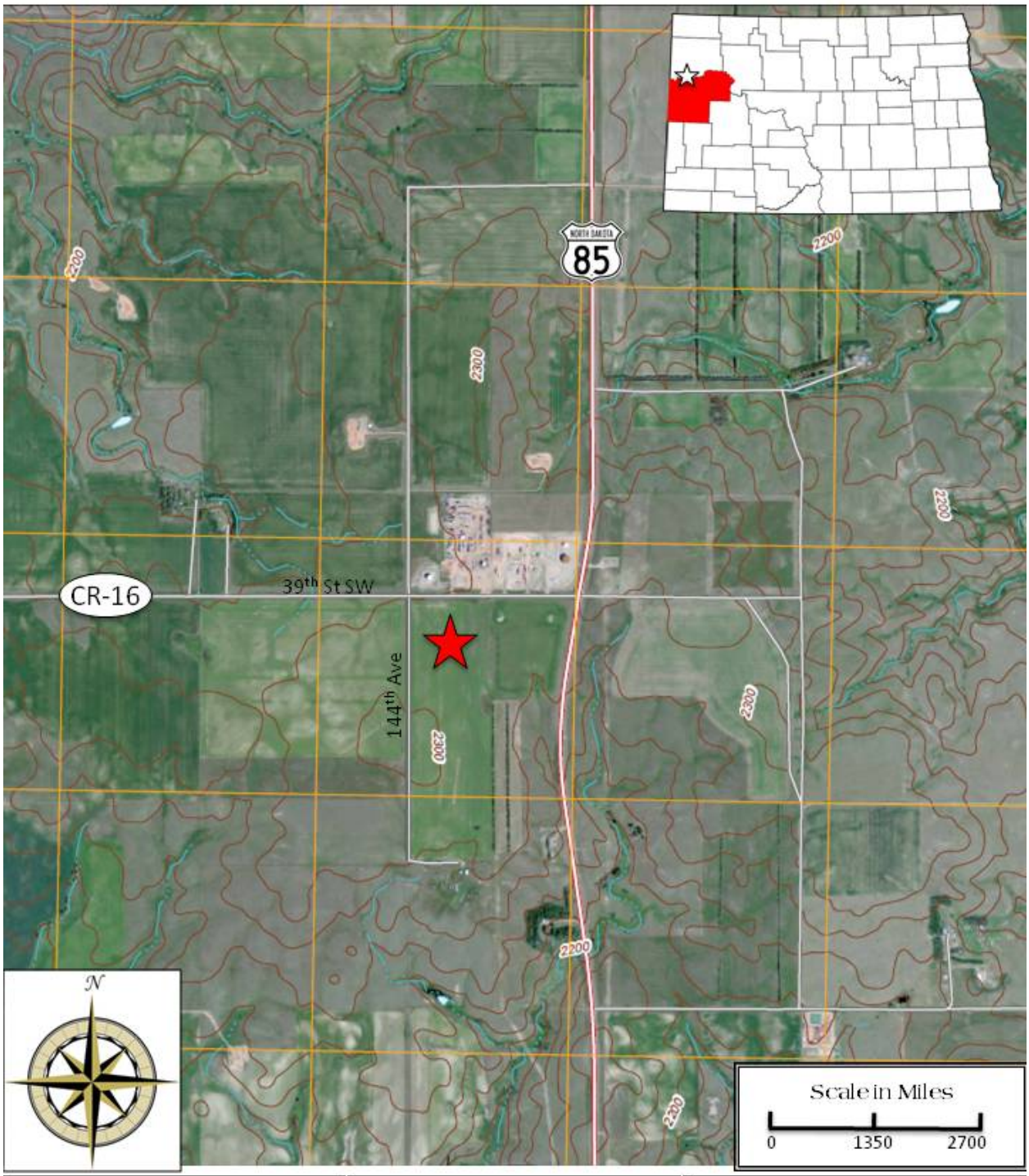
- Oil-containing piping is present at the Facility. The Facility securely caps or blank flanges the loading/unloading connections of Facility piping when not in service or when in standby service for an extended period of time (i.e. greater than six (6) months), or when piping is emptied of liquid content either by draining or by inert gas pressure.

FIGURES

Figure 1 – Site Location Map

Figure 2 – Simplified Site Plan

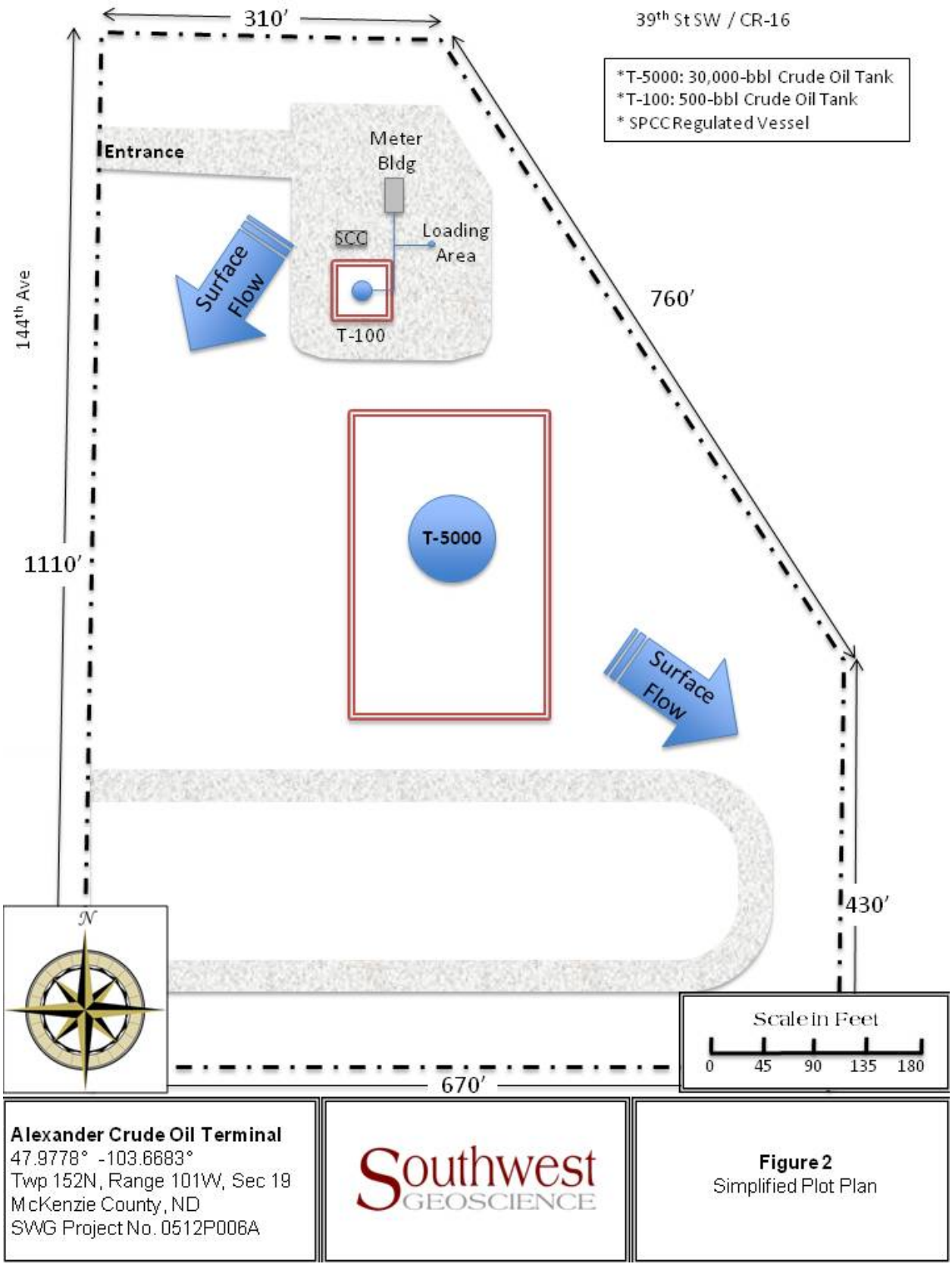
Figure 3 – Containment Calculations



Alexander Crude Oil Terminal
47.9778° -103.6683°
Twp 152N, Range 101W, Sec 19
McKenzie County, ND
SWG Project No. 0512P006A

Southwest GEOSCIENCE

Figure 1
USGS 7.5-Minute Series
ND Camp Creek West
Contour Interval – 10 Feet
2011


310'
39th St SW / CR-16
*T-5000: 30,000-bbl Crude Oil Tank
*T-100: 500-bbl Crude Oil Tank
* SPCC Regulated Vessel
Entrance
Meter Bldg
SCC
Loading Area
Surface Flow
144th Ave
760'
T-100
T-5000
1110'
Surface Flow
430'
N
Scale in Feet
0 45 90 135 180
670'
Alexander Crude Oil Terminal
47.9778° -103.6683°
Twp 152N, Range 101W, Sec 19
McKenzie County, ND
SWG Project No. 0512P006A
Southwest GEOSCIENCE
Figure 2
Simplified Plot Plan

Facility: Alexander Crude Terminal

T-5000 Containment Area

Containment Volume

If containment is odd shaped it's area will be calculated using AutoCAD.

Length (ft)	Width (ft)	Height (ft)	Volume (ft^3)	Volume (gallons)
175.0	255.0	5.500	245,437.5	**1,835,872.5**

Largest Tank Volume

Area x Height = Volume

Tank ID	Diameter (ft)	Height/ Length (ft)	Tank Volume (ft^3)	Tank Volume (gallons)
T-5000	68.0	48.0	174,232.3	**1,303,257.8**

Sufficient Freeboard

Sufficient Freeboard is determined to be 3.5 inches for a 25 year, 24 hour rainfall event.

Width (ft)	Length (ft)	Height (ft)	Volume (ft^3)	Volume (gallons)
175.0	255.0	0.292	13,015.6	**97,356.9**

Displacement

Displacement is the volume occupied by other tanks in the containment area.

Number of Tanks	Tank Diameter (ft)	Height/ Length (ft)	Volume Displaced (ft^3)	Volume displaced (gallons)
0.0	0.00	5.5	0.0	0.0
0.0	0.0	5.5	0.0	0.0
0.0	0.0	5.5	0.0	0.0
0.0	0.0	5.5	0.0	0.0
0.0	0.0	5.5	0.0	0.0
			Total:	0.0

Effective Containment Volume

Containment Volume - Displacement Volume = Effective Containment Volume

Containment Volume (gallons)	Displacement (gallons)	Effective Volume (gallons)
1,835,872.5	0.0	**1,835,872.5**

Containment Volume Needed

Largest Tank Volume + Sufficient Freeboard = Containment Volume Needed

Largest Tank Volume (gallons)	Sufficient Freeboard (gallons)	Containment Volume Needed (gallons)
1,303,257.8	97,356.9	**1,400,614.6**

Containment Adequacy

Is the Effective Containment Volume Greater than the Containment Volume Needed?	**Yes**

Containment Height Needed

The **needed** containment height in feet using the 25 year, 24 rainfall event	**4.196**

Facility: Alexander Crude Terminal

T-100 Containment Area

Containment Volume

If containment is odd shaped it's area will be calculated using AutoCAD.

Length (ft)	Width (ft)	Height (ft)	Volume (ft^3)	Volume (gallons)
47.0	47.0	2.000	4,418.0	**33,046.6**

Largest Tank Volume

Area x Height = Volume

Tank ID	Diameter (ft)	Height/ Length (ft)	Tank Volume (ft^3)	Tank Volume (gallons)
T-100	15.5	16.0	3,017.5	**22,571.2**

Sufficient Freeboard

Sufficient Freeboard is determined to be 3.5 inches for a 25 year, 24 hour rainfall event.

Width (ft)	Length (ft)	Height (ft)	Volume (ft^3)	Volume (gallons)
47.0	47.0	0.292	644.3	**4,819.3**

Displacement

Displacement is the volume occupied by other tanks in the containment area.

Number of Tanks	Tank Diameter (ft)	Height/ Length (ft)	Volume Displaced (ft^3)	Volume displaced (gallons)
0.0	0.00	1.3	0.0	0.0
0.0	0.0	1.3	0.0	0.0
0.0	0.0	1.3	0.0	0.0
0.0	0.0	1.3	0.0	0.0
0.0	0.0	1.3	0.0	0.0
			Total:	0.0

Effective Containment Volume

Containment Volume - Displacement Volume = Effective Containment Volume

Containment Volume (gallons)	Displacement (gallons)	Effective Volume (gallons)
33,046.6	0.0	**33,046.6**

Containment Volume Needed

Largest Tank Volume + Sufficient Freeboard = Containment Volume Needed

Largest Tank Volume (gallons)	Sufficient Freeboard (gallons)	Containment Volume Needed (gallons)
22,571.2	4,819.3	**27,390.5**

Containment Adequacy

Is the Effective Containment Volume Greater than the Containment Volume Needed?	**Yes**

Containment Height Needed

The **needed** containment height in feet using the 25 year, 24 rainfall event	**1.658**

APPENDIX A

SPCC Personnel Training Program and Documentation

EMPLOYEE TRAINING

PROGRAM OUTLINE

Alexander Crude Terminal

Listed below is the outline used to administer the SPCC training required under Title 40 of the CFR Part 112. The on-site spill prevention coordinator or competent designee will present each of the topics listed below at a scheduled training session to personnel working at the Alexander Crude Terminal. The on-site spill prevention coordinator or designee shall receive annual spill prevention refresher training from the Targa Corporate Environmental Manager.

Pollution Control Laws, Rules and Regulations

The SPCC regulation was promulgated on December 11, 1973 under the authority of Section 311 of the Clean Water Act.

Section 311 of the Clean Water Act authorizes the President to issue regulations establishing procedures, methods and equipment to prevent discharges of oil from vessels and on-shore facilities.

40 CFR 112 requires facilities with aboveground petroleum storage capacity greater than 1,320 gallons (considering only containers with capacities of 55 gallons or greater), establish procedures, methods and equipment to prevent and control spills of petroleum product from the storage facilities.

The SPCC Plan prepared for the Alexander Crude Terminal is intended to address the requirements of 40 CFR 112. The main elements of the SPCC rules that are covered by the Plan include: a description of the tanks used to store petroleum product, the spill control features associated with the tanks and associated transfer facilities, potential spills that may happen at the facility, the facility spill history, a description of the spill response procedures, security features of the facility and the tanks, an inspection program for the tanks, and a personnel training program.

Operation and Maintenance of Equipment

The following features regarding the tanks and spill control equipment will be described by the Site Manager:

- Operation of any tank liquid level measure devices;
- Operation of the transfer devices (pumps, hosing, piping) associated with the tanks;
- Operation of locks on the tank fill ports or pumps;
- Location, use and disposal of sorbents used to contain small spills;
- Response actions and reporting requirements for large volume spills; and
- Inspection of the tanks and related record keeping requirements.

Spill Prevention Briefing

The following spill prevention training will be discussed by the Site Manager:

- Potential spills at the facility and precautionary measures that can be taken to avoid the spills; and
- Any malfunctioning components associated with the tanks and what repairs have been or are scheduled to be made.

EMPLOYEE TRAINING LOG

Alexander Crude Terminal

Course Description: Spill Prevention Control and Countermeasure Plan

Instructor: _____

DATE	NAME	TIME	SIGNATURE

APPENDIX B

INSPECTIONS, TESTING AND RECORDS

SPCC INSPECTION FORM
MONTHLY
<FACILITY>

☑ If Yes and Insert Work Order Number.	SPCC REGULATED TANKS AND EQUIPMENT INSPECTION							
	Bulk Storage Containers, Supports, and Foundations[1,2]	Secondary Containments[1,2]	Above Ground Piping – Supports, Valves (glands/bodies), & Flanges[1]	Oil Transfer Equipment[1]	Liquid Level Sensing Devices (Overfill Protection)[1]	Buried Piping[1]	Emergency Generator and Fire Pump Diesel Tanks	Transformers/Oil Filled Equipment
Leakage is detected at seam connections, corrosion or gaskets.								
Leakage is detected at ancillary equipment, gauges and instrumentation.								
Leakage is detected from pumps, piping and fittings.								
Leakage is accumulating in area drains or ditches.								
Leakage is accumulating in diked area, if applicable.								
Corrosion present, coating damaged, or other visible signs of deterioration.								
ALL OK								

Notes:
1.) Inspection only applies to the SPCC regulated components of the facility (See Section 2.4 of SPCC Plan).
2.) If deficiencies are noted during visual inspection of tanks or secondary containment, provide additional details below.
3.) NA – Insert for inspections items not applicable to the inspection item or facility in general

Check ☑ appropriate boxes as indicated. If leakage is noted, please write in the work order number in the appropriate box.

COMMENTS:

Inspector _____ Date _____

Supervisor _____ Date _____

APPENDIX C

TARGA EMERGENCY RESPONSE NOTIFICATION LIST

EMERGENCY RESPONSE NOTIFICATION LIST

Contact	Primary	Alternate
Designated Persons Accountable For Oil Spill Prevention and/or Facility Response Coordinator		
David Low, Area Manager (Spill Prevention Coordinator)	(337) 494-4446	(337) 540-8628
James "Wayne" Allison, Plant Operations (Alternate SPC)	(701) 842-3315	(701) 580-8018
Galen Steffan, Field Operations (Alternate SPC)	(701) 675-2157	(701) 871-1540
Federal, State and Local Agencies (as necessary):		
National Response Center	(800) 424-8802	(202) 267-2675
U.S. EPA Region (Region 8)	(800) 227-8917	(303) 312-6312
OSHA	(800) 321-6742	
State Emergency Response Commission (SERC) (North Dakota Department of Emergency Services)	(701) 328-8100	
North Dakota Department of Health Water Quality Division See also: https://www.dmr.nd.gov/oilgas/spills/reportspill.asp	(701) 328-5210	(701) 328-5166
North Dakota Hazardous Materials Emergency Assistance and Spill Reporting	(800) 472-2121	
North Dakota Industrial Commission Oil and Gas Division	(701) 328-8020	
Local Emergency Planning Committee (LEPC) - Dunn County - McKenzie County - Fort Berthold Reservation	As appropriate: (701) 573-4612 (701) 444-6853 (701) 627-4805	
Watford City Volunteer Fire Department	911	(701) 444-2934
Watford City Police Department	911	(701) 444-2400
McKenzie County Sheriff	(701) 444-3654	
Dunn County Sheriff	(701) 573-4449	
McKenzie County Hospital, 516 North Main, Watford City	(701) 842-3000	
Mercy Medical Center, Williston	(701) 774-7400	
Additional Company Contacts:		
Targa Resources, LLC., Pipeline Emergency No. (Badlands)	(866) 957-3133	
Zachary Stornant, Environmental Specialist	(713) 584-1186	(832) 339-3277
David McQuade, Environmental Manager	(713) 584-1420	(281) 630-6974
Cleanup Contractors (as necessary):		
Strata Corporation	(800) 373-5259	(701) 842-4000
Garner Environmental Services	(701) 577-1200	(800) 424-1716
United States Environmental Services	(888) 279-9930	(701) 872-2122

APPENDIX D

SPILL REPORTING FORM AND SUBMITTAL OF INFORMATION TO REGIONAL ADMINISTRATOR FOR QUALIFIED DISCHARGE(S)

Targa Resources Partners, LP –Alexander Crude Terminal
Spill Response Notification Form

SPILL RESPONSE NOTIFICATION FORM

NOTE: INITIAL NOTIFICATION SHOULD NOT BE DELAYED PENDING COLLECTION OF ALL INFORMATION

Date of Last Update November 2011

Reporter's Last Name: _____ **First:** _____
Position: _____
Phone Number: Day: _____ **Evening:** _____
Company: Targa Resources Partners LP
Organization Type: Compressor Station
Address: _____ **City:** _____ **State:** _____ **Zip:**
Were Materials Discharged? (Y / N) **Confidential?** (Y / N)
Meeting Federal Obligations to Report? (Y / N) **Date Called**: _____
Calling for Responsible Party? (Y / N) **Time Called**: _____

INCIDENT DESCRIPTION

Location: _____
Substance Spilled: _____
Amount Spilled: _____
Source of Incident: _____
Cause of Incident: _____
_____
Number of and Nature of Injuries (if any): _____
_____
Date of Incident: _____ **Time of Incident:** _____**AM/PM**
Incident Address/Location_____
Nearest City: _____ **State:** _____ **County:** _____ **Zip:** _____
Distance from City: ___ **Direction from City:** _____ **Units of Measure:** ____
Container Type: _____
Tank Storage Capacity _____ **Unit of Measure:** gallons
Facility Oil Storage Capacity: _____ **Unit of Measure:** _____
Latitude: _____
Longitude: _____

Note: Spill Prevention Coordinator to fill out form

SPILL RESPONSE NOTIFICATION FORM (Continued)

Date of Last Update November 2011

MATERIAL INFORMATION

CHRIS* Code	Product Name	Discharged Quantity	Unit of Measure	Material Discharged in Water? Yes/No	Quantity	Unit of Measure

* CHRIS - Chemical Hazard Response Information System Codes:

OSX	= Fuel Oil	OIL	= Crude Oil
ODS	= Diesel Fuel	OMN	= Cutter Stock Oil
OTF	= Transformer Oils	ASR	= Asphalt Blending Stocks

RESPONSE ACTION

Actions Taken to Correct, Control or Mitigate Incident:

_____

_____

_____

IMPACT

Number of Injuries: _____ **Number of Deaths:** _____

Were there Evacuations? (Y / N) **Number Evacuated:** _____

Was there any Damage? (Y / N) **Damage in Dollars (approx.):** _____

Medium Affected: _____

Description: _____

Additional Information about Medium: _____

_____

SPILL RESPONSE NOTIFICATION FORM (Continued)

Date of Last Update November 2011

ADDITIONAL INFORMATION

Any additional information about the incident not already recorded elsewhere in the report:

_____

_____

CALLER NOTIFICATIONS

EPA? (Y / N) **USCG?** (Y / N) **State?** (Y / N) **Other?** (Y / N)

Describe: _____

Log:

Name of EPA Contact: _____ **Follow Up Required:** (Y / N)

Reference Report Number: _____

Date/Time Called: _____/_____

Name of USCG/NRC Contact: _____ **Follow Up Required:** (Y / N)

Reference Report Number: _____

Date/Time Called: _____/_____

Name of State Contact: _____ **Follow Up Required:** (Y / N)

Reference Report Number: _____

Date/Time Called: _____/_____

Other Contact:_____ **Name:** _____

Follow Up Required: (Y / N)

Reference Report Number: _____

Date/Time Called: _____/_____

APPENDIX E

CONTAINMENT DRAINAGE RECORDS

TARGA RESOURCES – ALEXANDER CRUDE TERMINAL
CONTAINMENT AREA DRAINAGE DOCUMENTATION

Date of Inspection	Date of Drainage	Oil Removal Required? (Yes/No)	Inspector's Signature	Comments (Indicate which containment area was inspected/drained)

SPILL PREVENTION, CONTROL, AND COUNTERMEASURES PLAN

For

40 CFR PART 112 Regulated Facility
Located At:

Latitude: 47.8017° / Longitude: -102.9192°

JOHNSONS CORNER CRUDE OIL TERMINAL
2680 109th Ave NW
Watford City, McKenzie County, ND 58854
Township 150N, Range 96W, Section 24, NW/4

Owner/Operator:
Targa Resources Partners, LP
1000 Louisiana
Houston, TX 77002

REVISION NO. - 0
JUNE 2013

TABLE OF CONTENTS

Page

LIST OF FIGURES iii
LIST OF APPENDICES iii
CODE OF FEDERAL REGULATIONS CROSS-REFERENCE TABLE iv
MANAGEMENT APPROVAL AND PROFESSIONAL ENGINEER CERTIFICATION vi
PLAN IMPLEMENTATION MEASURES NOT FULLY OPERATIONAL vii
SPCC PLAN REVIEW viii
SPILL RESPONSE COORDINATORS viii
SPCC INSPECTION AND DOCUMENTATION viii
CERTIFICATION OF SUBSTANTIAL HARM DETERMINATION ix

1.0 GENERAL INFORMATION 1
1.1 Plan Availability 1
1.1.1 Plan Distribution List 1
1.2 Deviations to the SPCC Rule 1
1.3 Plan Review and Update Process 2
1.4 Spill Reporting to Regional Administrator 3
1.5 Contact List and Phone Numbers 3
1.6 Notification Data Sheet 3
1.7 Personnel, Training and Discharge Prevention 3
1.8 Prevention, Response and Cleanup 4
1.9 Impracticability 4
1.10 Conformance with Other Requirements 4

2.0 FACILITY INFORMATION 5
2.1 Facility and Owner/Operator Information 5
2.2 Facility Description 5
2.3 Facility Layout and Diagram 5
2.4 Storage Containers and Potential Spills 6
2.5 Bulk Storage Containers 8
2.5.1 Mobile or Portable Storage Containers 8
2.5.2 Buried or Bunkered Storage Tanks 9
2.5.3 Bulk Storage Containers with Internal Heating Coils 9
2.5.4 Bulk Container Inventory Control 9
2.6 Inspections, Tests and Records 9
2.6.1 Bulk Storage Container Inspection 9
2.6.2 Bulk Storage Container Integrity Testing 10
2.6.3 In-Service Piping and Transfer Equipment 10
2.7 Facility Drainage 10
2.7.1 Facility Diked Drainage 10
2.7.2 Facility Undiked Area Drainage 11
2.7.3 Effluent Treatment Facilities 11
2.8 Transfer Operations, Pumping and In-Plant Processes 11
2.8.1 Buried Piping 11
2.8.2 Out-of-Service Piping 11
2.8.3 Aboveground Valves and Piping 11
2.9 Tank Truck and Tank Car Loading Racks 12
2.10 Vehicle Warnings 12
2.11 Facility Security 13

LIST OF FIGURES

Figure	Title	Page
1	Site Location Map	14
2	Simplified Site Plan	15
3	Containment Calculations	16

LIST OF APPENDICES

Appendix	Title
A	SPCC Personnel Training Program and Documentation
B	Inspections, Testing and Records
C	Targa Emergency Response Notification List
D	Spill Reporting Form and Submittal of Information to Regional Administrator for Qualified Discharge(s)
E	Containment Drainage Records

CODE OF FEDERAL REGULATIONS CROSS-REFERENCE TABLE		
Citation	**Description**	**Section/Page**
§112.3	**Requirement to Prepare and Implement a SPCC Plan**	**See below**
§112.3	Owner/operator must prepare SPCC plan	All
§112.3(d)(1)	Professional Engineer Certification	vi
§112.3(e)	Maintain complete copy of plan	1.1, 1.2
§112.3(g)	Qualified facilities/self-certification	1.2
§112.4	**Amendment of SPCC Plan by Regional Administrator**	**See below**
§112.4(a)	Report to EPA after specific discharges	1.4, App D
§112.4(c)	Send above report to appropriate state agencies	1.4, App D
§112.5	**Amendment of SPCC by Owners / Operators**	**See below**
§112.5(a)	Amendment of SPCC plan by owner or operator	viii, 1.3
§112.5(b)	Management of Five Year Review	viii, 1.3
§112.5(c)	PE certification of amendments	viii, 1.3
§112.6	**Qualified Facility Plan Requirements**	**See below**
§112.6(a)	Preparation and Self-Certification of Plan	1.3
§112.6(b)	Self-Certification of Technical Amendments	1.3
§112.6(c)	Applicable requirements	1.3
§112.6(d)	Professional Engineer Certifications of Portions of a Qualified Facility's Self-Certified Plan	1.3
§112.7	**General Requirements for SPCC Plans**	**See below**
§112.7	Management approval of plan	vi
§112.7	Cross reference table if plan does not follow sequence of regulations	iv
§112.7	Facilities not yet fully operational	vii
§112.7(a)(1)	Discussion of conformance with the requirements of SPCC	All
§112.7(a)(2)	Explanation of any deviations-equivalent environmental protection, alternative measures	1.2, throughout
§112.7(a)(3)	Physical layout of the facility including facility diagram	2.2, 2.3, Figs.
§112.7(a)(3)(i)	Type of oil in each container and its storage capacity	2.4
§112.7(a)(3)(ii)	Discharge prevention measures including procedures for routine handling of products	1.7, 1.8
§112.7(a)(3)(iii)	Discharge or drainage controls such as secondary containment around containers and other structures, equipment and procedures for control of a discharge	2.4
§112.7(a)(3)(iv)	Countermeasures for discharge discovery, response and cleanup	1.8
§112.7(a)(3)(v)	Methods of disposal of recovered materials	1.8
§112.7(a)(3)(vi)	Contact list and phone numbers	App C
§112.7(a)(4)	Procedures for reporting a discharge, unless FRP has been submitted	1.6, App D
§112.7(b)	Discharge predication / Fault analysis	2.4
§112.7(c)	Appropriate containment or diversion:	2.4
§112.7(d)	Deviations due to impracticability	1.9
§112.7(e)	Inspections, tests, and records	2.6
§112.7(f)	Employee training and discharge prevention procedures	1.7, App B
§112.7(f)(1)	Oil-handling and inspection personnel training	1.7, App B
§112.7(f)(2)	Accountable person for discharge prevention	viii
§112.7(f)(3)	Discharge prevention briefings	1.7
§112.7(g)	Security (excluding oil production facilities)	2.11
§112.7(g)(1)	Fencing and lock/guard gates	2.11
§112.7(g)(2)	Fail-safe valves for containers	2.11

REGULATORY CROSS-REFERENCE (Cont'd.)		
§112.7(g)(3)	Starter control on each pump	2.11
§112.7(g)(4)	Loading/unloading connections of oil pipelines or facility piping when not in service	2.11
§112.7(g)(5)	Lighting	2.11
§112.7(h)	Tank Car and Tank Truck Loading / Unloading Rack	2.9
§112.7(h)(1)	Handling discharges	1.8, App D
§112.7(h)(2)	Preventing early vehicle departure	2.9
§112.7(h)(3)	Inspection for discharges prior to filling and departure	2.9
§112.7(i)	Evaluate field-construct above ground tanks upon repair, etc.	2.6.1
§112.7(j)	Conformance with other requirements	1.10
§112.7(k)	Qualified Oil-Filled Operational Equipment	2.4
§112.7(k)(1)	Qualification Criteria-Reportable Discharge History	1.4, 1.6
§112.7(k)(2)	Alternative Requirements to General Secondary Containment	N/A
§112.7(k)(2)(i)	Establishment of Inspection & Monitoring Plan	2.6
§112.7(k)(2)(ii)(A)	Provide oil spill contingency plan	N/A
§112.7(k)(2)(ii)(B)	Written commitment of manpower, equipment, and materials to control and remove spill	vi, App C
§112.8	**Requirements for onshore facilities (excluding production facilities)**	**See below**
§112.8(a)	General and specific requirements	All
§112.8(b)	Facility drainage	2.7
§112.8(b)(1)	Restrain drainage from diked storage areas	2.7
§112.8(b)(2)	Manual valves in diked areas	2.7.1
§112.8(b)(3)	Facility drainage systems from undiked areas with a potential for a discharge	2.7.2
§112.8(b)(4)	If not 8(b)(3), diversion system for ditches	N/A
§112.8(b)(5)	If pump transfer required for drainage water treatment, provide fail-safe pumps and at least two pumps	N/A
§112.8(c)	Bulk storage containers	2.4, 2.5
§112.8(c)(1)	Material and construction	2.4
§112.8(c)(2)	Secondary means of containment	2.4
§112.8(c)(3)	Drainage controls to storm drain or open water bodies	2.7
§112.8(c)(4)	Protection of completely buried metallic tanks from corrosion	2.5.2
§112.8(c)(5)	Partially buried or bunkered metallic tanks protection from corrosion	2.5.2
§112.8(c)(6)	Aboveground container testing for integrity	2.6, App B
§112.8(c)(7)	Monitor possible leakage from defective internal heating coils	2.5.3
§112.8(c)(8)	Container installation updates per good engineering practice (fail-safe precautions)	2.6.2
§112.8(c)(9)	Observation of effluent treatment facilities	2.7.3
§112.8(c)(10)	Correction of visible discharges	2.4
§112.8(c)(11)	For mobile or portable containers provide secondary containment	2.4, 2.5.1
§112.8(d)	Facility transfer operations, pumping, and facility process	2.8
§112.8(d)(1)	Buried pipe corrosion protection	2.8.1
§112.8(d)(2)	Capping and marking pipe out of service	2.8.1
§112.8(d)(3)	Pipe supports	2.8.3
§112.8(d)(4)	Inspect aboveground valves, pipelines, appurtenances and buried piping	2.8
§112.8(d)(5)	Vehicle warnings	2.10

TARGA RESOURCES PARTNERS, LP

JOHNSONS CORNER CRUDE OIL TERMINAL
Township 150N, Range 96W, Section 24, NW/4
McKenzie County, ND

MANAGEMENT APPROVAL

Targa is committed to preventing discharges of oil to navigable waters of the United States or adjoining shorelines. By signature below, I approve this Plan and acknowledge that the elements identified in the Plan have been implemented. The Spill Response Coordinator at the Facility has been giving the authority to commit the necessary resources to implement this Plan. This SPCC Plan will be implemented as herein described. Details to any impracticability are discussed in Section 1.9 of this SPCC Plan.

Signature: _____

I certify that the above information is true and accurate to the best of my knowledge.

Name: Tim Stubstad

Title: Crude Operations Manager

PROFESSIONAL ENGINEER CERTIFICATION

I hereby attest: (1) that I am familiar with the requirements of 40 CFR 112; (2) that I or my agent has visited and examined the facility; (3) that this Spill Prevention Control and Countermeasures Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of 40 CFR 112; (4) that procedures for required inspections and testing have been established; and (5) the plan is adequate for the facility.

Michael Maurice Heger
Printed Name of Registered Professional Engineer

_____
Signature of Registered Professional Engineer

PE-5969	North Dakota	07/15/14
Registration Number	State	Date

PLAN IMPLEMENTATION MEASURES NOT YET FULLY OPERATIONAL

- Any implementation measures that are required by this Plan or recommended by the Professional Engineer to bring the Facility into compliance with the SPCC requirements shall be identified on the following table.
- The Plan is conditionally approved and certified by the Professional Engineer based upon satisfactory completion and documentation of the Implementation Measures identified below.
- These measures must be satisfied by the scheduled completion date by the Responsible Party.
- Upon completion, a date and signature shall be provided and the actions items that were taken to address the implementation measures must be noted.
- Example implementation measures that may not be fully operational at the time of Plan development include but are not limited to:
  - Secondary containment structures
  - Diversionary structures
  - Security measures
  - Integrity testing program

Implementation Measure	Responsible Party	Scheduled Due Date	Actions Taken	Completed	
				Date	Signature
NONE					

PLAN REVIEW AND AMENDMENTS

The Spill Response Coordinator (SRC) will review the SPCC plan at least once every five years and any amendments, if required, will be made within six months of the review. This SPCC plan will be amended within six months whenever there is a change in facility design, construction, operation, or maintenance procedure that materially affects the facility's potential for an oil spill.

NON-TECHNICAL AMENDMENTS

- Non-technical amendments are not certified by a Professional Engineer (PE)
- Examples include name changes, phone number changes, or similar non-technical text changes

TECHNICAL AMENDMENTS

- All technical amendments are certified by a PE
- Examples of technical changes include
  - Replacement, reconstruction or movement of tanks, vessels or piping systems
  - Any alteration of secondary containment
  - Changes to standard operating procedures related to discharge prevention measures
- A technical amendment is required "when there is a change that materially affects the facility's potential to discharge oil"
- Any amendment made under this section will be prepared within 6 months of the change and implemented as soon as possible but always within 6 months of the preparation of the amendment
- If a technical amendment only affects certain pages, the PE can certify those pages. These changes will be documented on the log form below

MANAGEMENT REVIEW

- Management will review this SPCC Plan at least each five (5) years and document the review on the form below

Review / Amend Date	Signature (Specify Plan Reviewer or PE)	Amend Plan (Y/N)	Description of Review / Amendment	Affected Page(s)	PE Certification (Y/N)
7/15/2014		Y	Tesoro Interconnect, additional loading lanes	1, 5,6	

SPILL RESPONSE COORDINATORS

Primary SPC: Tim Stubstad	**Alternate: David Low**
Work Phone: 701-675-2157	**Work Phone: 337-494-4446**
Mobile Phone: 701-580-5972	**Mobile Phone: 337-540-8628**

SPCC INSPECTION AND DOCUMENTATION SCHEDULE

Description	Schedule	Documentation
Tank Inspections	Monthly using Targa Tank Integrity Management Plan	Checklist kept in Appendix B of SPCC plan for three years after inspection.
Employee Training	Annually from date of hire for oil-handling employees.	Dated attendance sheet kept in Appendix A of SPCC plan.
Secondary Containment Documentation	As needed.	Documentation of containment drainage kept in Appendix E of SPCC plan.

APPLICABILITY OF SUBSTANTIAL HARM [40 CFR §112 Attachment C-I]

1. Does the facility transfer oil over-water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

   Yes ____ No __X__

2. Does the facility have a total oil storage capacity greater than or equal to 1 million (1,000,000) gallons *and*, within any storage area, does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation?

   Yes ____ No __X__

3. Does the facility have a total oil storage capacity greater than or equal to 1 million (1,000,000) gallons and is the facility located at a distance (as calculated using the appropriate formula in Appendix C or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?

   Yes __X__ No ____

4. Does the facility have a maximum storage capacity of oil greater than or equal to one million (1,000,000) gallons *and* is the facility located at a distance such that a discharge from the facility would shut down a public drinking water intake?

   Yes ____ No __X__

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill 2 in an amount greater than or equal to 10,000 gallons within the last 5 years??

   Yes ____ No __X__

CERTIFICATION OF SUBSTANTIAL HARM DETERMINATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining information, I believe that the submitted information is true, accurate, and complete.

Targa Badlands, LLC

Signature: _____ Printed Name: J S Hopson

Title: 3rd V P Eng & Ops Date: 3/21/13

1.0 GENERAL INFORMATION

The Spill Prevention, Control, and Countermeasures (SPCC) Plan has been developed for the Johnsons Corner Crude Oil Terminal (hereinafter referred to as "Facility") in accordance with the regulatory requirements found in the Environmental Protection Agency's (EPA) 40 CFR §112, Oil Pollution Prevention; specifically sections §112.1-7 of Subpart A and §112.9 of Subpart B where applicable. SPCC regulations apply to owners or operators of non-transportation related onshore and offshore facilities engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, or consuming oil and oil products that meet each of the following criteria:

- Due to their location, could reasonably be expected to discharge oil in quantities that may be harmful into or upon navigable waters of the United States or adjoining shorelines and;
- Has an aggregate aboveground storage capacity greater than 1,320 gallons (31bbl), excluding containers less than 55 gallons and/or has an underground storage capacity greater than 42,000 gallons.

This SPCC Plan covers only the EPA-regulated portions of the Facility.

1.1 Plan Availability

A copy of this SPCC Plan is maintained at the following locations and is available for on-site review upon request of the EPA Regional Administrator (a distribution list is provided in Section 1.1.1):

- Facility (if normally attended at least four hours per day, else at the Little Missouri Gas Plant)
- Targa Web-Based Portal
- Targa Corporate Office - Houston (electronic copy)

1.1.1 Plan Distribution List *§112.3(e)*

PLAN DISTRIBUTION LIST	
COPY NUMBER	**PLAN HOLDER**
1	Targa Corporate Office (Electronic Copy) Attn: Environmental 1000 Louisiana; Suite 4300 Houston, TX 77002
2	Johnsons Corner Crude Oil Terminal 2680 109th Ave NW Watford City (McKenzie County), ND 58854
3	Web-Based Portal

1.2 Deviations to the SPCC Rule

Any deviations to the rule will be identified in this Plan along with reasoning for the non-

conformance, a detailed description of the alternative method, and how that method will achieve equivalent environmental protection.

Self-Certified Plans

The Amended SPCC rule allows self-certification, provided certain conditions are met (*§112.3(g*). Deviations from the rule in areas pertaining to Facility security provisions (112.7(g)), requirements for prevention of premature departures of vehicles during loading and unloading, inspection of truck and train drains (112.7(h)(2) and 112.7(h)(3), inspection/evaluation of field-constructed aboveground containers for brittle fracture (112.7(i)), and all secondary containment requirements are not permitted in self-certified plans unless certified by a Professional Engineer that they provide equivalent environmental protection measures sufficient to prevent a discharge.

1.3 Plan Review and Update Process

Five Year Review

In accordance with §112.5(b), Targa will complete a formal review and evaluation of this SPCC Plan at least once every five (5) years and document the review on the Log of Plan Review and Amendments. This review will be conducted by the Facility's Spill Response Coordinator with assistance from the Regional Environmental Coordinator ("REC") as needed and will include review of the following:

- Accuracy of the Plan with current operations and procedures.
- Accuracy of the Plan with current SPCC Regulations.
- Applicability of new prevention and control technology that may significantly reduce the likelihood of a spill event from the Facility if such technology has been field-proven at the time of review.
- Capacity and structural integrity of secondary containment systems.
- SPCC inspection documentation and records.

Facility Changes Requiring Plan Revision

Whenever there is a change in the Facility design, construction, operation or maintenance which materially affects the Facility's potential for a discharge of oil into or upon the navigable waters of the United States or adjoining shorelines, the SPCC Plan will be amended. Changes that require revision to the Plan may include, but are not limited to:

- Commissioning or decommissioning of containers.
- Replacement, reconstruction, or movement of containers.
- Reconstruction, replacement, or installation of piping systems.
- Construction or demolition that might alter secondary or tertiary containment structures and/or drainage systems.
- Revision of standard operating or maintenance procedures at the Facility.

The Spill Response Coordinator is responsible for notifying the Corporate Office of such changes to the Facility. Revisions and amendments to the Plan will be performed by the Corporate Office. The Plan shall be amended within six (6) months and fully implemented as soon as possible but no later than six (6) months after the preparation of the amendments. Any

amendments to the Plan shall be documented on the Log of Plan Review and Amendments.

Certification of Revisions

All amendments which could materially affect the Facility's potential for a discharge into navigable waters of the United States or adjoining shores (technical amendments) must be certified by a Registered Professional Engineer ("PE") or self-certified. Plans certified by a Professional Engineer, or portions of a self-certified plan certified by a Professional Engineer, must be re-certified by a Professional Engineer if amended. Self-certified plans must be amended if the Facility undergoes a significant change and do not require Professional Engineer re-certification. Non-technical amendments such as changes to personnel, telephone references, and other non-technical text changes do not require recertification by a PE.

1.4 Spill Reporting to Regional Administrator

The information found in Appendix D, "Submittal of Information to Regional Administrator for Qualified Discharge(s)" must be submitted to the EPA Regional Administrator within 60 days of a discharge event(s) which meets one of the following conditions:

- The Facility has a single discharge event greater than 1,000 gallons of oil or oil products into or upon navigable waters of the United States or adjoining shorelines **or:**
- The Facility has two (2) discharge events greater than 42 gallons of oil or oil products into or upon navigable waters of the United States or adjoining shorelines in a 12 month period.

The Corporate Houston Office, with assistance from the Regional Environmental Coordinator will submit such reports to the EPA. A copy of this report will also be sent to the appropriate state agency(ies) in charge of oil pollution control activities.

1.5 Contact List and Phone Numbers

The contact list and phone number reference for the facility is provided in Appendix C.

1.6 Notification Data Sheet

A spill notification data sheet is provided in Appendix D.

1.7 Personnel, Training and Discharge Prevention

The facility provides the following training to oil-handling personnel prior to assignment of job responsibilities:

- Operation and maintenance of equipment to prevent oil discharges;
- Oil discharge procedure protocols;
- Applicable oil spill prevention laws, rules and regulations;
- General facility operations; and,
- The contents of the facility SPCC Plan and applicable pollution control laws, rules and regulations.

The facility conducts prevention briefings for oil-handling personnel at least once a year to assure adequate understanding of the SPCC Plan for the facility. These briefings include known previous discharges and spills, discussion of potential discharges or component failures, and precautionary measures.

Documentation of this training is maintained for a period of three (3) years with the

SPCC Plan. The training documents are also kept electronically in the Computer Based Training system or on log sheets kept in field office files.

1.8 Prevention, Response and Cleanup

Prevention

The facility discharge prevention measures, including procedures for routine handling of products (loading, unloading, facility transfers, etc.) include, but are not limited to, containment, employee training, spill response equipment, security measures, and periodic inspections.

Countermeasures

The Facility discharge discovery, response and cleanup capabilities include trained oil-handling employees, on-site spill control equipment and contract environmental response companies. The resources available to the facility for discharge cleanup and response are provided in the Contact List in Appendix C. In addition to available resources in the contact list, spill response equipment is staged at each facility regulated by 40 CFR 112. If a spill occurs, personnel (or contractors hired to clean up material) will promptly clean up spilled material and collect it properly. The contract resources available to the Facility for discharge cleanup are provided in Appendix C: Emergency Response Notification List.

Disposal

The Facility will dispose of all recovered materials in accordance with all applicable local, state and federal guidelines.

1.9 Impracticability

The containment and/or diversionary structures or equipment to prevent a discharge are practicable at the Facility.

1.10 Conformance with Other Requirements

If there are any State or local regulations that are more stringent than the Federal regulations, a description of conformance with these regulations is described below:

- **North Dakota:** Oil spill/release reporting is specified under NDAC 33-16-02.1-11. North Dakota has not established specific minimum quantities for mandatory reporting. Instead, they require all spills which may potentially impact waters of the state, either surface water or ground water, to be reported. As soon as possible, the owner, operator, or person responsible for a spill must notify the North Dakota Department of Health or the North Dakota Hazardous Materials Emergency Assistance and Spill Reporting Number and provide all relevant information about the spill.

2.0 FACILITY INFORMATION

2.1 Facility and Owner/Operator Information *§112.7(a)(3)*

Facility Name:	Johnsons Corner Crude Oil Terminal
Location:	2680 109th Ave NW (Township 150N, Range 96W, Section 24, NW/4)
County:	McKenzie
Facility Phone:	(701) 675-2157
Latitude:	47.8017°
Longitude:	-102.9192°
Nearest Receiving Water:	An intermittent creek approximately 0.3 miles to the east feeds into Dry Creek, which in turn leads to Lake Sakakawea, 9.5 miles to the east.
Landside Directions:	From Watford City, drive east 17 miles on highway 23, which becomes highway 73. Continue 1 mile east of Johnsons Corner on highway 73 and site is on the right.
Owner/Operator:	Targa Resources
Mailing Address:	1000 Louisiana Houston, TX 77210
Telephone:	713-584-1420

2.2 Facility Description

The Facility is a crude oil storage facility. The facility layout is rectangular with an east-west width of 440 feet, and north-south length of 1280 feet. The northern third is occupied by truck loading and pump/metering areas, with the tank storage south (and uphill) of there. The southern half of the site is currently used for miscellaneous (non-liquid) storage. The site is surrounded by 8-foot tall chain link fence with three rolling vehicle gates. Drainage in the northern part of the facility is to catch basins located in the northeast corner of the property, while drainage in the southern portion of the site will be to the south via sheet flow.

- Located within the facility are two 20,000-barrel internal floating-roof aboveground storage tanks (ASTs) storing crude oil, tanker truck loading areas, and related oil receiving, storage, and distribution equipment. Two transformers containing oil are also on site. Note, only those containers storing oil products are SPCC-regulated.
- The Facility is manned during normal business hours, but is accessible 24-hours via access codes. Offloading from trucks occurs at the Facility. Bulk storage containers, as defined within §112.2, exist at the Facility.
- This Plan covers only the subject Facility.

2.3 Facility Layout and Diagram

The facility is shown in the attached facility diagrams (Figures 1 and 2). The information shown on the drawing includes:

- Process equipment, operating equipment and electrical equipment that contain oil
- Loading/unloading racks, if applicable. By rule definition, a rack is a fixed structure (such as platform, gangway) necessary for loading or unloading a tank truck or tank car, which is located at a facility subject to 40 CFR Part 112. A loading/unloading rack includes a loading or unloading arm and may include any combination of the following: piping assemblages, valves, pumps, shut-off devices, overfill sensors, or personnel safety

devices.

- Loading/unloading areas subject to general secondary containment requirements (40 CFR Part 112.7 (c))
- Fixed aboveground storage tanks
- Transfer stations and connecting lines
- Completely buried and bunkered tanks
- Drum and portable container storage areas
- Contents of all SPCC regulated containers

2.4 Storage Container and Potential Spills

Tank ID	Con-tents	Major Potential Source of Spill	Total Capacity (Gal)	Dis-charge Rate (GPM)	Flow Direc-tion	Secondary Containment Volume (Gallons)/ Dimensions	Secondary Containment Construction	Inv. Control ID
ABOVEGROUND FIXED CONTAINERS (SPCC REGULATED)								
T-200	Crude Oil	Complete Tank Failure	840,000	840,000	North	1,475K gal 235' x 150' x 6' (after displacement is subtracted)	Earthen Berm	2
T-210	Crude Oil	Complete Tank Failure	840,000	840,000	North	1,475K gal 235' x 150' x 6' (after displacement is subtracted)	Earthen Berm	2
MOBILE AND PORTABLE CONTAINERS *(Less Than 1,000-Gallon Capacity)*								
NA								
BUNKERED AND COMPLETELY BURIED TANKS								
NA								
OTHER SOURCES OF SPILLS								
NA								
PROCESS FLOW-THROUGH AND OIL-FILLED EQUIPMENT								
Trans-former 1	Oil	Container Failure	~500	500	North-east	Active Spill Response	Active Spill Response	4
Trans-former 2	Oil	Container Failure	~500	500	East	Active Spill Response	Active Spill Response	4

Oil-filled operational equipment is equipment that includes an oil storage container (or multiple containers and associated piping intrinsic to the operation of the equipment) in which the oil is present solely to support the function of the apparatus or the device. It is not considered a bulk storage container, and does not include oil-filled manufacturing equipment (flow-through process).

Tank ID	Con-tents	Major Potential Source of Spill	Total Capacity (Gal)	Dis-charge Rate (GPM)	Flow Direc-tion	Secondary Containment Volume (Gallons)/ Dimensions	Secondary Containment Construction	Inv. Control ID
Examples of oil-filled equipment at this facility include: • Compressor Engines and External Lube Oil Reserve Tanks; • Process Sumps; • Reserve Fuel Tanks; • Electrical Transformers.								
TRUCK LOADING/UNLOADING RACK								
NA	No Loading/Unloading Racks; See Section 2.9							
OTHER SOURCES OF POTENTIAL SPILLS								
Truck Loading Area	Crude Oil	Truck Tank Failure	7,140	7,140	North-east	16,800	Soil	4

NOTES:

1.) The material and construction of bulk storage containers are compatible with the material stored and conditions of storage such as pressure and temperature.
2.) All bulk storage container installations are constructed so that a means of secondary containment is provided for the entire capacity of the largest container and sufficient freeboard to contain precipitation.
3.) Diked areas are sufficiently impervious to contain discharged oil.
4.) Visible discharges, which result in a loss of product from containers, will be promptly corrected and any accumulations of oil in the diked areas will be promptly removed.
5.) Inventory Control ID – See Section 2.5.4
6.) Tanks indicated by "*" contain non-SPCC regulated liquids

2.5 Bulk Storage Containers

The following controls apply to bulk aboveground storage containers at the facility:

- Secondary containment structures for bulk storage containers are identified in the Regulated Bulk Oil Storage Container and Potential Spills table in Section 2.4.
- All bulk storage container installations are constructed so that a means of secondary containment is provided for the entire capacity of the largest single container plus sufficient freeboard to contain precipitation.
- The Facility uses the National Oceanic and Atmospheric Administration's 24-hour, 25-year storm event to determine the amount of additional freeboard capacity required.
- Where bulk containers are manifolded together such that the loss of one (1) results in the loss of all, the combined storage capacity of the manifolded containers will be used to determine secondary containment and freeboard capacity.
- Secondary containment diked areas are sufficiently impervious to contain discharged oil from reaching navigable waters or adjoining shorelines before cleanup begins.
- Details concerning the construction of fixed secondary containment systems are provided in the Regulated Bulk Oil Storage Container and Potential Spills table in Section 2.4.
- Visible discharges, which result in any accumulations of oil in the diked area(s) are promptly removed and disposed of according to the waste disposal procedures described in Section 1.8.
- Secondary containment volume calculations, where secondary containment is present for SPCC regulated products, are provided in Regulated Bulk Oil Storage Container and Potential Spills table in Section 2.4, with details in Figure 3.
- Drainage from secondary containment areas, where secondary containment is present, is discussed in Section 2.7.

2.5.1 Mobile or Portable Storage Containers

Mobile or portable storage containers are currently not present at the facility, however; if mobile or portable storage containers were present they would be shown in the Container and Potential Spills Table. Mobile containers include 55 gallon drums, leased tanks (e.g. <1000 gallons) and totes. In addition to controls listed in Section 2.5, the following apply to mobile or portable containers:

- These containers are generally located in dedicated storage areas or areas with existing secondary containment which are positioned or located so as to prevent a spill from reaching navigable waters or adjoining shorelines.
- These containers are located where they will not be subject to periodic flooding or washout.
- Dedicated mobile or portable storage container areas if present would be identified on the Facility Diagram (Figure 2).
- Containers that may be temporarily located outside the dedicated storage area are positioned or located so as to prevent a spill from reaching navigable waters or adjoining shorelines until they can be returned to the dedicated storage area.

2.5.2 Buried or Bunkered Storage Tanks

The facility does not have completely buried metallic storage tanks that were installed on or after January 10, 1974.

2.5.3 Bulk Containers with Internal Heating Coils

The facility does not have bulk storage tanks with internal heating coils.

2.5.4 Bulk Container Inventory Control

Container installations shall be engineered with at least one of the following devices. Check all that apply to the facility. Inventory control identification should be noted (1, 2, 3, 4, or 5) in the Regulated Bulk Oil Storage Container and Potential Spills table in Section 2.4.

☐ 1. High Liquid Level alarms with signals or audible alarms or loading operations at small tanks that are attended and constantly monitored during the loading operations.

☒ 2. High liquid level pump cutoff device set to stop flow at predetermined container content level.

☐ 3. Direct audible or code signal communication between the container gauges and the pumping station.

☒ 4. Fast response system for determining the liquid level shall be used for each bulk storage container (direct vision gauge). A person must be present to monitor gauges and the tank. Fluid levels in drums used for oil storage and not equipped with direct visual gauges shall be visually gauged prior to transfer of oil.

☐ 5. Not Applicable

2.6 Inspections, Tests and Records

2.6.1 Bulk Storage Container Inspection

For the bulk storage containers, at the Facility, the following integrity management program is in effect:

- The outside of all bulk storage containers and their associated supports and foundations are inspected routinely during normal Facility walk-through for signs of deterioration, discharges, or accumulation of oil inside secondary containment areas.
- These routine Facility walk-through inspections will not be documented unless a corrective action must be taken.
- Documented visual external inspections for all bulk storage containers and their associated supports and foundations is conducted monthly and noted on the Storage Container Visual Inspection Log (Appendix B). *The Facility may use logs or forms that are kept under usual and customary business practices, in lieu of the above reference form.*
- Liquid level sensing devices (overfill prevention) are tested to ensure proper operation.
- Inspections for oil discharges within diked areas occur during the regular rounds of the operator. Any oil in the dike will be cleaned up in a timely manner.

- In the event that a field-constructed aboveground container undergoes a repair, alteration, reconstruction, or a change in service, the container will be evaluated for the risk of discharge or failure due to brittle fracture or other catastrophe.
- Inspection forms are maintained at the Facility or the Regional or Local Field Office.
- A summary of the inspection requirements applicable to the Facility is provided in the Targa Integrity Management Plan. Any future versions of the Targa Integrity Management Plan will govern the inspection requirements at this facility provided revisions to the plan meet the minimum requirements set forth in the current version.

2.6.2 Bulk Storage Container Integrity Testing

- The integrity testing program for bulk storage containers includes a combination of visual inspections and at least one (1) of the following alternate testing techniques: hydrostatic, radiographic, ultrasonic, and/or acoustic emissions for containers subject to quantitative integrity testing requirements presented in the Targa Integrity Management Plan. Any future versions of the Targa Integrity Management Plan will govern the integrity testing requirements at this facility provided revisions to the plan meet the minimum requirements set forth in the current version. Integrity testing for transformers and similar oil-filled operational equipment is limited to monthly visual inspections.
- Field-erected aboveground bulk storage containers will be integrity tested on a regular schedule and when material repairs are made in accordance with API 653.
- Small shop-built containers will follow testing standards set forth in the Targa Integrity Management Plan. *Note: Inspection schedule will be based on the risk-based integrity management program evaluation of each bulk container.*
- The Facility chooses to deviate from the integrity testing requirements of elevated shop-built containers up to 30,000 gallons and single-use containers such as drums, totes, and other small portable containers. These containers are elevated such that all sides of the container are visible during inspections and any problems that may occur will be quickly identified. These routine monthly inspections, as further described in the subsection above, will provide equivalent environmental protection for integrity testing of such containers. It is understood that adoption of such a policy will require Plan amendment and PE certification of the Plan.
- Comparative records will be kept at the Regional or Local Field Office.

2.6.3 In-Service Piping and Transfer Equipment

- All buried piping is integrity tested at the time of installation, modification, construction, relocation or replacement. Documentation of this integrity testing is required.
- All aboveground valves and piping (including flange joints, valve glands and bodies, catch pans, pipe supports, locking of valves and metal surfaces) are examined by facility operators during their regular rounds.

2.7 Facility Drainage

2.7.1 Facility Diked Drainage

- Drainage of stormwater from the Facility's diked storage areas, where present, is restrained by manually operated, open-and-closed designed valves, pumps or ejectors.

- Bypass valves, where present, are normally kept closed and are resealed by Facility personnel following drainage.
- The contents of the diked storage areas, where present, are inspected by Facility personnel prior to each draining event to ensure that only oil-free water (no product sheen) is discharged.
- Secondary containment contents are not generally released to the environment. If oil or oil sheen is observed in a diked storage area, vacuum trucks or other appropriate means will be used to remove any and all oil before drainage.
- Each drainage event and associated inspection is recorded on the Secondary Containment Drainage Event Log found in Appendix E. *The Facility may use logs or forms that are kept under usual and customary business practices, in lieu of the above referenced log.*

2.7.2 Facility Undiked Area Drainage

- With the exception of transformers/oil-filled equipment/uncontained transfer areas, the Facility does not have the potential to discharge oil into undiked areas given the secondary containment provisions noted in Section 2.4. Drainage improvements at the facility convey stormwater run-off from the active areas as sheet flow southwest of the facility.
- Catchment basins, where present, are not located in areas subject to periodic flooding.

2.7.3 Effluent Treatment Facilities

- The Facility does not treat drainage water prior to discharge. All wastewater is trucked offsite for treatment.

2.8 Transfer Operations, Pumping, and In-Plant Processes

2.8.1 Buried Piping

- The Facility has buried piping installed or replaced after August 16, 2002. The Facility employs the following:
  - New or replaced buried piping is cathodically protected against corrosion and provided with protected wrapping and coating.
  - If a section of buried line is exposed, it is inspected for signs of deterioration and corrective actions are taken as indicated by the magnitude of the damage.
  - Integrity and leak testing of buried piping is performed at the time of installation, modification, construction, relocation, and/or replacement.
  - *Note: Aboveground piping, which passes through dikes and roadways, is not considered to be buried piping.*

2.8.2 Out-of-Service Piping

- Connections are capped or blank-flanged at the transfer point and marked as to origin when the piping is not in service or in standby service for extended periods (i.e. greater than six (6) months).

2.8.3 Aboveground Valves and Piping

- The Facility has aboveground piping installed or replaced after August 16, 2002. The Facility employs the following:
  - All pipe supports are designed to minimize abrasion and corrosion and allow for expansion and contraction.
  - Aboveground valves and piping and appurtenances are regularly examined during normal Facility walk-through for general condition and necessity for corrective action.
  - The following items are included in the examination:
    - Flange joints,
    - Expansion joints,
    - Valve glands and bodies,
    - Piping supports,
    - Metal surfaces,
    - Catch pans, and
    - Valve locks and/or seals.
- These weekly Facility walk-through inspections are not documented unless a corrective action must be taken.
- Integrity testing for on-site, in-service piping will follow applicable Targa standards.
- Documented visual inspections of all regulated aboveground valves and piping and appurtenances is conducted annually and noted on the Storage Container Visual Inspection Log (Appendix B). *The Facility may use logs or forms that are kept under usual and customary business practices, in lieu of the above reference form.*

2.9 Tank Truck and Tank Car Loading Racks

- Tank truck loading/unloading rack(s) are not present at the Facility.
- Rail car loading/unloading rack(s) are not present at the Facility
- Truck loading/unloading areas are present at this Facility. The loading of lube oil into bulk storage tanks or unloading of condensate and produced water at the Facility is not considered a loading rack. If a loading arm or other appurtenances are not present at this location, then by definition per 40 CFR 112.7(h) a loading rack does not exist. However, depending on the location, size, and likelihood of contamination of a navigable waterway due to a spill while loading or unloading trucks/railcars at this Facility, containment may be present at the loading/unloading areas even if not required by the regulation. Loading/unloading areas, not defined as a loading/unloading rack, are required to meet the general secondary containment requirements of §112.7(c). Loading and unloading areas are identified on Figure 2. Secondary containment is not required at the loading/unloading areas; however, the design of the truck loading area is such that any spill will flow into either of two catchment basins adequate to contain the contents of a single tank truck. Additionally, in accordance with 40 CFR 112.7(c)(vii) spill control

equipment including spill pans, sorbent materials, and/or spill control boom also provide spill control for the loading/unloading areas.

- In order to prevent premature vehicular departure, the facility has warning signs in the loading areas and at loading racks, if present. The facility also requires that truck drivers chock their wheels prior to loading.
- Drain and outlets on tank trucks and tank cars are checked for leakage before loading/unloading or departure and, if necessary, are tightened, adjusted or replaced.

2.10 Vehicle Warnings

- Warning signs, where appropriate, are posted at appropriate locations throughout the Facility to prevent vehicles from damaging aboveground piping and appurtenances.
- Bumper guards, where appropriate, are provided in critical vehicular access areas to protect aboveground piping and/or other oil transfer operations.

2.11 Facility Security - *§112.7(g)*

Fencing

- The Facility is surrounded by 8-ft tall chain link fence which encircles the entire footprint of the Facility.
- The entrance gates are locked when the Facility is unattended.

Lighting

- Facility lighting is commensurate with the operations and the type and location of the Facility to assist in the discovery of discharges and to prevent discharges occurring through acts of vandalism.
- Area lights illuminate active areas of the Facility.

Valves

- All drain valves from containment areas, when present, are locked in the closed position, or are secured/inaccessible to unauthorized personnel, to prevent unauthorized opening.
- Valves which permit direct outward flow of a container's contents are locked, or are secured/inaccessible to unauthorized personnel, so that they remain closed when in non-operating or standby status.
- Keys for all locks are maintained in the Facility office.

Starter Controls

- Starter controls, if present, on all oil pumps in non-operating or standby status are locked in the off position and located at a site accessible only to authorized personnel.

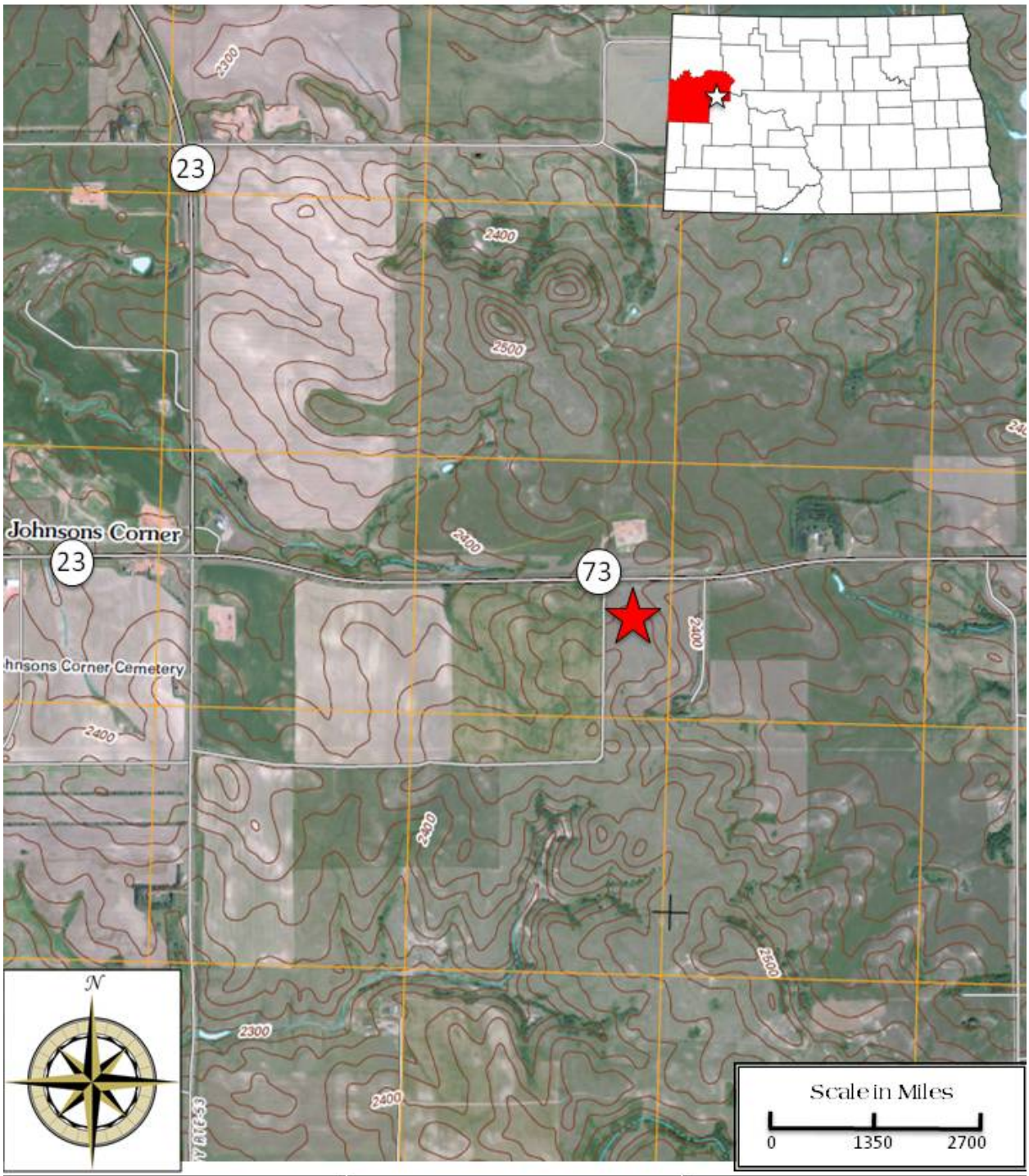
Out-of-Service Piping

- Oil-containing piping is present at the Facility. The Facility securely caps or blank flanges the loading/unloading connections of Facility piping when not in service or when in standby service for an extended period of time (i.e. greater than six (6) months), or when piping is emptied of liquid content either by draining or by inert gas pressure.

FIGURES

Figure 1 – Site Location Map

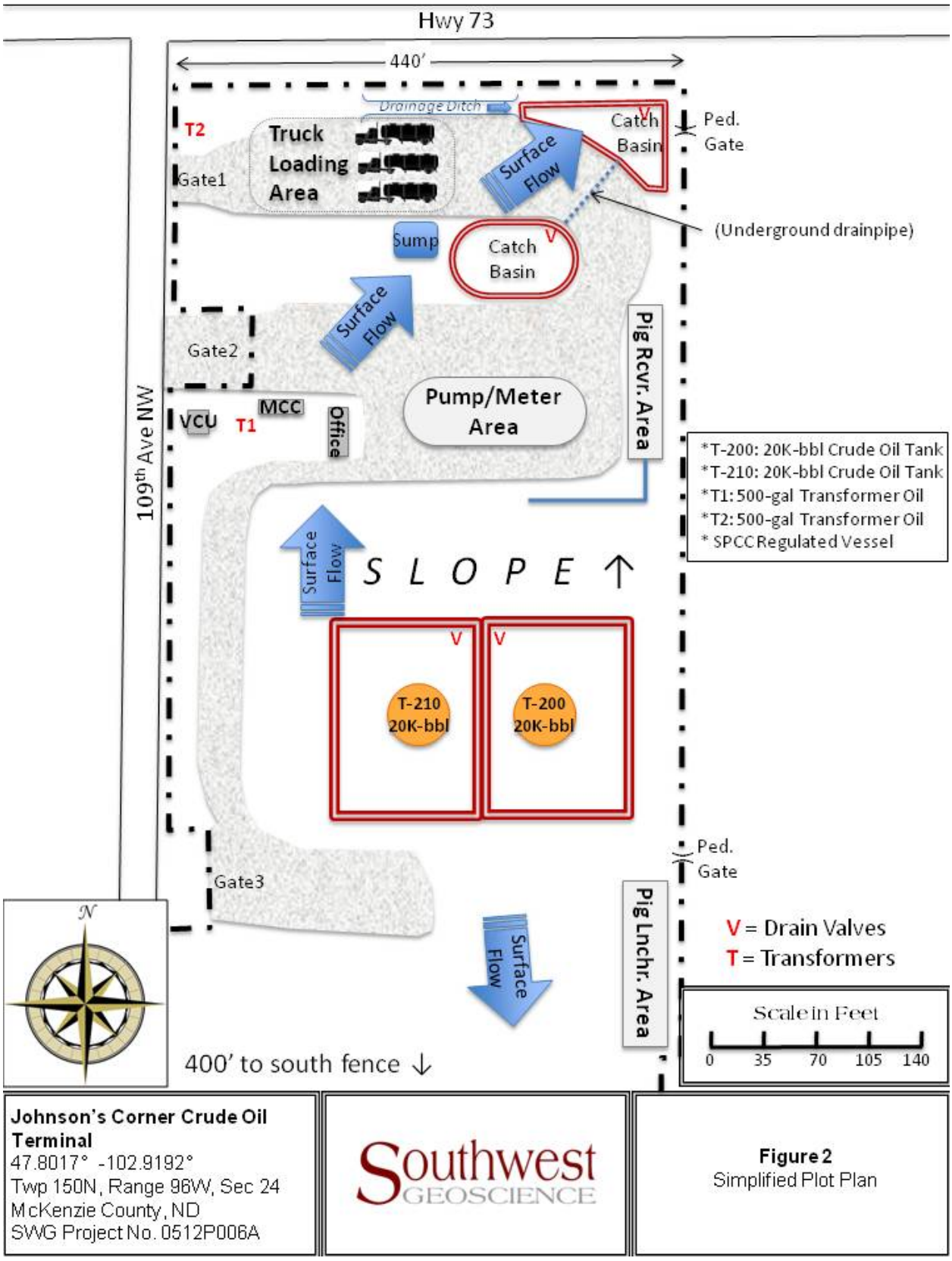
Figure 2 – Simplified Site Plan



Johnson's Corner Crude Oil Terminal
47.8017° -102.9192°
Twp 150N, Range 96W, Sec 24
McKenzie County, ND
SWG Project No. 0512P006A

Southwest GEOSCIENCE

Figure 1
USGS 7.5-Minute Series
ND Johnson's Corner
Contour Interval – 10 Feet
2011


Hwy 73
440'
Drainage Ditch
T2
Truck Loading Area
Gate1
Surface Flow
Catch Basin
V
Ped. Gate
(Underground drainpipe)
Sump
Catch Basin
V
Surface Flow
Gate2
Pig Rcvr. Area
109th Ave NW
VCU
T1
MCC
Office
Pump/Meter Area
*T-200: 20K-bbl Crude Oil Tank
*T-210: 20K-bbl Crude Oil Tank
*T1: 500-gal Transformer Oil
*T2: 500-gal Transformer Oil
* SPCC Regulated Vessel
Surface Flow
S L O P E ↑
V
V
T-210 20K-bbl
T-200 20K-bbl
Ped. Gate
Gate3
Pig Lnchr. Area
Surface Flow
V = Drain Valves
T = Transformers
N
Scale in Feet
0 35 70 105 140
400' to south fence ↓
Johnson's Corner Crude Oil Terminal
47.8017° -102.9192°
Twp 150N, Range 96W, Sec 24
McKenzie County, ND
SWG Project No. 0512P006A
Southwest GEOSCIENCE
Figure 2
Simplified Plot Plan

Facility: Johnsons Corner Crude Terminal

T-200/T-210 Containment Area

Containment Volume

Area (ft^2)

Length (ft)	Width (ft)	Height (ft)	Volume (ft^3)	Volume (gallons)
235.0	150.0	6.000	211,500.0	**1,582,020.0**

Largest Tank Volume

Area x Height = Volume

Tank ID	Diameter (ft)	Height / Length (ft)	Tank Volume (ft^3)	Tank Volume (gallons)
T-200	55.0	48.0	113,982.0	**852,585.4**

Sufficient Freeboard

Sufficient Freeboard is determined to be 3.5 inches for a 25 year, 24 hour rainfall event.

Width (ft)	Length (ft)	Height (ft)	Volume (ft^3)	Volume (gallons)
235.0	150.0	0.292	10,281.3	**76,903.8**

Displacement

Displacement is the volume occupied by other tanks and separator berm in the containment area.

No. of Tanks	Tank Diameter (ft)	Height (ft)	Volume Displaced (ft^3)	Volume displaced (gallons)
1.0	55.00	6.0	14,247.8	106,580.3

No. of Berms	Berm Dimensions (Top Width, Bottom Width, Length & Height) (ft)	Volume Displaced (ft^3)	Volume displaced (gallons)
1.0	8 x 24 x 150 x 3	7,200.0	53,859.6
		Total:	160,439.9

Effective Containment Volume

Containment Volume - Displacement Volume = Effective Containment Volume

Containment Volume (gallons)	Displacement (gallons)	Effective Volume (gallons)
1,582,020.0	160,439.9	**1,421,580.1**

Containment Volume Needed

Largest Tank Volume + Sufficient Freeboard = Containment Volume Needed

Largest Tank Volume (gallons)	Sufficient Freeboard (gallons)	Containment Volume Needed (gallons)
852,585.4	76,903.8	**929,489.1**

Containment Adequacy

Is the Effective Containment Volume Greater than the Containment Volume Needed?	**Yes**

Containment Height Needed

The **needed** containment height in feet using the 25 year, 24 rainfall event	**3.923**

APPENDIX A

SPCC Personnel Training Program and Documentation

EMPLOYEE TRAINING

PROGRAM OUTLINE

Johnsons Corner Crude Oil Terminal

Listed below is the outline used to administer the SPCC training required under Title 40 of the CFR Part 112. The on-site spill prevention coordinator or competent designee will present each of the topics listed below at a scheduled training session to personnel working at the Johnsons Corner Crude Oil Terminal. The on-site spill prevention coordinator or designee shall receive annual spill prevention refresher training from the Targa Corporate Environmental Manager.

Pollution Control Laws, Rules and Regulations

The SPCC regulation was promulgated on December 11, 1973 under the authority of Section 311 of the Clean Water Act.

Section 311 of the Clean Water Act authorizes the President to issue regulations establishing procedures, methods and equipment to prevent discharges of oil from vessels and on-shore facilities.

40 CFR 112 requires facilities with aboveground petroleum storage capacity greater than 1,320 gallons (considering only containers with capacities of 55 gallons or greater), establish procedures, methods and equipment to prevent and control spills of petroleum product from the storage facilities.

The SPCC Plan prepared for the Johnsons Corner Crude Oil Terminal is intended to address the requirements of 40 CFR 112. The main elements of the SPCC rules that are covered by the Plan include: a description of the tanks used to store petroleum product, the spill control features associated with the tanks and associated transfer facilities, potential spills that may happen at the facility, the facility spill history, a description of the spill response procedures, security features of the facility and the tanks, an inspection program for the tanks, and a personnel training program.

Operation and Maintenance of Equipment

The following features regarding the tanks and spill control equipment will be described by the Site Manager:

- Operation of any tank liquid level measure devices;
- Operation of the transfer devices (pumps, hosing, piping) associated with the tanks;
- Operation of locks on the tank fill ports or pumps;
- Location, use and disposal of sorbents used to contain small spills;
- Response actions and reporting requirements for large volume spills; and
- Inspection of the tanks and related record keeping requirements.

Spill Prevention Briefing

The following spill prevention training will be discussed by the Site Manager:

- Potential spills at the facility and precautionary measures that can be taken to avoid the spills; and
- Any malfunctioning components associated with the tanks and what repairs have been or are scheduled to be made.

EMPLOYEE TRAINING LOG

Johnsons Corner Crude Oil Terminal

Course Description: Spill Prevention Control and Countermeasure Plan

Instructor: _____

DATE	NAME	TIME	SIGNATURE

APPENDIX B

INSPECTIONS, TESTING AND RECORDS

SPCC INSPECTION FORM
MONTHLY
<FACILITY>

☑ If Yes and Insert Work Order Number.	SPCC REGULATED TANKS AND EQUIPMENT INSPECTION							
	Bulk Storage Containers, Supports, and Foundations[1,2]	Secondary Containments[1,2]	Above Ground Piping – Supports, Valves (glands/bodies), & Flanges[1]	Oil Transfer Equipment[1]	Liquid Level Sensing Devices (Overfill Protection)[1]	Buried Piping[1]	Emergency Generator and Fire Pump Diesel Tanks	Transformers/Oil Filled Equipment
Leakage is detected at seam connections, corrosion or gaskets.								
Leakage is detected at ancillary equipment, gauges and instrumentation.								
Leakage is detected from pumps, piping and fittings.								
Leakage is accumulating in area drains or ditches.								
Leakage is accumulating in diked area, if applicable.								
Corrosion present, coating damaged, or other visible signs of deterioration.								
ALL OK								

Notes:
1.) Inspection only applies to the SPCC regulated components of the facility (See Section 2.4 of SPCC Plan).
2.) If deficiencies are noted during visual inspection of tanks or secondary containment, provide additional details below.
3.) NA – Insert for inspections items not applicable to the inspection item or facility in general

Check ☑ appropriate boxes as indicated. If leakage is noted, please write in the work order number in the appropriate box.

COMMENTS:

Inspector _____ Date _____

Supervisor _____ Date _____

APPENDIX C

TARGA EMERGENCY RESPONSE NOTIFICATION LIST

EMERGENCY RESPONSE NOTIFICATION LIST

Contact	Primary	Alternate
Designated Persons Accountable For Oil Spill Prevention and/or Facility Response Coordinator		
Tim Stubstad, Terminal Manager (Spill Prevention Coordinator)	(701) 675-2157	(701) 580-5972
David Low, Area Manager (Spill Prevention Coordinator)	(337) 494-4446	(337) 540-8628
Galen Steffan, Field Operations (Alternate SPC)	(701) 675-2157	(701) 871-1540
Federal, State and Local Agencies (as necessary):		
National Response Center	(800) 424-8802	(202) 267-2675
U.S. EPA Region (Region 8)	(800) 227-8917	(303) 312-6312
OSHA	(800) 321-6742	
State Emergency Response Commission (SERC) (North Dakota Department of Emergency Services)	(701) 328-8100	
North Dakota Department of Health Water Quality Division See also: https://www.dmr.nd.gov/oilgas/spills/reportspill.asp	(701) 328-5210	(701) 328-5166
North Dakota Hazardous Materials Emergency Assistance and Spill Reporting	(800) 472-2121	
North Dakota Industrial Commission Oil and Gas Division	(701) 328-8020	
Local Emergency Planning Committee (LEPC) - Dunn County - McKenzie County - Fort Berthold Reservation	As appropriate: (701) 573-4612 (701) 444-6853 (701) 627-4805	
Watford City Volunteer Fire Department	911	(701) 444-2934
Watford City Police Department	911	(701) 444-2400
McKenzie County Sheriff	(701) 444-3654	
Dunn County Sheriff	(701) 573-4449	
McKenzie County Hospital, 516 North Main, Watford City	(701) 842-3000	
Mercy Medical Center, Williston	(701) 774-7400	
Additional Company Contacts:		
Targa Resources, LLC., Pipeline Emergency No. (Badlands)	(866) 957-3133	
Zachary Stornant, Environmental Specialist	(713) 584-1186	(832) 339-3277
David McQuade, Environmental Manager	(713) 584-1420	(281) 630-6974
Cleanup Contractors (as necessary):		
Strata Corporation	(800) 373-5259	(701) 842-4000
Garner Environmental Services	(701) 577-1200	(800) 424-1716
United States Environmental Services	(888) 279-9930	(701) 872-2122

APPENDIX D

SPILL REPORTING FORM AND SUBMITTAL OF INFORMATION TO REGIONAL ADMINISTRATOR FOR QUALIFIED DISCHARGE(S)

Targa Resources Partners, LP –Johnsons Corner Crude Oil Terminal
Spill Response Notification Form

SPILL RESPONSE NOTIFICATION FORM

NOTE: INITIAL NOTIFICATION SHOULD NOT BE DELAYED PENDING COLLECTION OF ALL INFORMATION

Date of Last Update November 2011

Reporter's Last Name: _____ **First:** _____
Position: _____
Phone Number: Day: _____ **Evening:** _____
Company: Targa Resources Partners LP
Organization Type: Oil Storage
Address: _____ **City:** _____ **State:** _____ **Zip:**
Were Materials Discharged? (Y / N) **Confidential?** (Y / N)
Meeting Federal Obligations to Report? (Y / N) **Date Called**: _____
Calling for Responsible Party? (Y / N) **Time Called**: _____

INCIDENT DESCRIPTION

Location: _____
Substance Spilled: _____
Amount Spilled: _____
Source of Incident: _____
Cause of Incident: _____
_____
Number of and Nature of Injuries (if any): _____
_____
Date of Incident: _____ **Time of Incident:** _____**AM/PM**
Incident Address/Location_____
Nearest City: _____ **State:** _____ **County:** _____ **Zip:** _____
Distance from City: ___ **Direction from City:** _____ **Units of Measure:** ____
Container Type: _____
Tank Storage Capacity _____ **Unit of Measure:** gallons
Facility Oil Storage Capacity: _____ **Unit of Measure:** _____
Latitude: _____
Longitude: _____

Note: Spill Prevention Coordinator to fill out form

SPILL RESPONSE NOTIFICATION FORM (Continued)

Date of Last Update November 2011

MATERIAL INFORMATION

CHRIS* Code	Product Name	Discharged Quantity	Unit of Measure	Material Discharged in Water? Yes/No	Quantity	Unit of Measure

* CHRIS - Chemical Hazard Response Information System Codes:

OSX	= Fuel Oil	OIL	= Crude Oil
ODS	= Diesel Fuel	OMN	= Cutter Stock Oil
OTF	= Transformer Oils	ASR	= Asphalt Blending Stocks

RESPONSE ACTION

Actions Taken to Correct, Control or Mitigate Incident:

_____

_____

_____

IMPACT

Number of Injuries: _____ **Number of Deaths:** _____

Were there Evacuations? (Y / N) **Number Evacuated:** _____

Was there any Damage? (Y / N) **Damage in Dollars (approx.):** _____

Medium Affected: _____

Description: _____

Additional Information about Medium: _____

_____

SPILL RESPONSE NOTIFICATION FORM (Continued)

Date of Last Update November 2011

ADDITIONAL INFORMATION

Any additional information about the incident not already recorded elsewhere in the report:

_____

_____

CALLER NOTIFICATIONS

EPA? (Y / N) **USCG?** (Y / N) **State?** (Y / N) **Other?** (Y / N)

Describe: _____

Log:

Name of EPA Contact: _____ **Follow Up Required:** (Y / N)

Reference Report Number: _____

Date/Time Called: _____/_____

Name of USCG/NRC Contact: _____ **Follow Up Required:** (Y / N)

Reference Report Number: _____

Date/Time Called: _____/_____

Name of State Contact: _____ **Follow Up Required:** (Y / N)

Reference Report Number: _____

Date/Time Called: _____/_____

Other Contact:_____ **Name:** _____

Follow Up Required: (Y / N)

Reference Report Number: _____

Date/Time Called: _____/_____

APPENDIX E

CONTAINMENT DRAINAGE RECORDS

TARGA RESOURCES – JOHNSONS CORNER CRUDE OIL TERMINAL
CONTAINMENT AREA DRAINAGE DOCUMENTATION

Date of Inspection	Date of Drainage	Oil Removal Required? (Yes/No)	Inspector's Signature	Comments (Indicate which containment area was inspected/drained)

APPENDIX N

INTEGRITY MANAGEMENT PLAN

BULK STORAGE CONTAINER

INTEGRITY MANAGEMENT PLAN

REVISION NO. – 1

NOVEMBER 2011

TABLE OF CONTENTS

Page
LIST OF TABLES iii
LIST OF FIGURES iii
LIST OF APPENDICES iii

1.0 POLICY STATEMENT & MANAGEMENT APPROVAL 1
1.1 Purpose 1
1.2 Scope and Applicability 1
1.3 General Facility Requirements 1
1.4 Document Control 2
1.5 Management Approval 2

2.0 INTEGRITY MANAGEMENT PLAN OVERVIEW 3

3.0 TANK INSPECTION PROGRAM 4
3.1 Risk-Based Evaluation of Steel Shop-Built Bulk Containers 4
3.2 Field-Fabricated Above Ground Storage Tanks 6
3.3 Fiber-Reinforced Plastic Containers 7
3.4 Buried or Bunkered Containers 8
3.5 Plastic Containers 8

4.0 QUALIFIED INSPECTORS 10
4.1 Routine In-Service Visual Inspections 10
4.2 Quantitative Integrity Testing 11
4.2.1 Leak Testing 11
4.2.2 Formal Internal and External Inspection and Testing 11

5.0 INTEGRITY TESTING PROGRAM 13
5.1 Routine In-Service Visual Inspections 13
5.2 Leak Testing 13
5.3 Formal External Inspection 15
5.4 Formal Internal Inspection 15
5.5 SUITABILITY FOR CONTINUED SERVICE 16

6.0 INSPECTION RECORDS & RETENTION POLICY 17

7.0 REFERENCES 18

LIST OF TABLES

Table	Title
1-1	Management Approval and Revision Summary
3-1	Shop-Built Container Risk-Based Inspection Schedule

LIST OF FIGURES

Figure	Title
1	Applicability Determination - API 653 or Risk-Based Integrity Management
2	Tank Inspection Program – Flowchart

LIST OF APPENDICES

Appendix	Title
A	Inspection and Testing Forms

1.0 POLICY STATEMENT & MANAGEMENT APPROVAL

1.1 Purpose

This Integrity Management Plan (IMP) has been developed with the primary objective of establishing procedures for inspection and maintenance of bulk storage containers that protect Targa Resources Partners, LP (hereafter referred to as "Company") personnel, the environment and Company operations. Although the IMP has been developed to directly address the requirements of 40 CFR Part 112.8(c)(6) for bulk oil storage tanks, this plan may also be applied to non-regulated storage tanks as a best management practice. The United States Environmental Protection Agency defines oil as, "*oil of any kind or in any form, including, but not limited to: fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or kernels; and, other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil"*. Each Company facility subject to the applicability requirements presented herein shall implement the plan to ensure the proper inspection, integrity testing, monitoring and/or maintenance of subject storage tanks.

1.2 Scope and Applicability

- The IMP shall be implemented to ensure consistent inspection and integrity management for containers located at Company facilities, which are subject to 40 CFR Part 112 (Hereafter referred to as the "SPCC Rule").

- The IMP applies to all bulk oil storage containers located at SPCC-regulated facilities owned and operated by the Company. The following definition of a bulk oil storage container is taken from 40 CFR Part 112.2 and applies to all containers with a rated capacity of 55-gallons or greater. *"Bulk storage container means any container used to store oil. These containers are used for purposes including, but not limited to, the storage of oil prior to use, while being used, or prior to further distribution in commerce. Oil-filled electrical, operating, or manufacturing equipment is not a bulk storage container."* This definition applies to all containers except exempted underground storage tanks meeting the criteria specified in 40 CFR Part 112.1(d) and oil-filled electrical, operating, or manufacturing equipment. Hence, process tanks, pressure vessels, flow-through process equipment are not regulated as bulk storage containers under 40 CFR Part 112, thus are not subject to this IMP.

1.3 General Facility Requirements

- Each facility shall develop a site-specific SPCC plan to satisfy the requirements of 40 CFR Part 112. Bulk storage containers may be subject to additional tank inspection and integrity requirements promulgated by federal, state, local or other jurisdictional authority. In the event the aforementioned requirements are more stringent than the requirements specified in the IMP, the more stringent requirements shall preempt this policy and shall apply to bulk storage containers at the subject facility. If other requirements for applicable jurisdictions do not apply to the facility, this IMP may be adopted as the site-specific bulk storage container integrity management program by incorporating this policy and associated appendices (without alteration) into the existing SPCC plan for the facility.

- The individual designated as the facility Spill Prevention Coordinator (SPC) shall be responsible for ensuring compliance with this policy. The SPC may designate an alternate individual as the on-site coordinator responsible for management of the IMP.

- Implementation of the IMP shall include:

- Identification of bulk storage containers subject to the IMP
- Compilation of available information (tank design standard, inspection history, maintenance/repair history) for applicable containers
- Completion of a risk-based assessment of the applicable containers using the IMP
- Development of a site-specific integrity management program for applicable containers
- Documentation of required inspection and monitoring activities in accordance with the IMP
- Verification of qualifications for Certified Inspectors

- Prior to change in service of any applicable bulk storage container, an evaluation of the proposed activities shall be performed to determine any changes that may be required to maintain compliance with the IMP. All new tanks shall be constructed in accordance with accepted industry standards and applicable codes related to the intended use of the container.

- Forms that shall be used to document inspection and testing activities specified in the IMP are included in Appendix A. Additional supporting documentation and standards required for implementation of the IMP are included as references as listed in Section 7.0.

1.4 Document Control

This document will be controlled and maintained by the Company Environmental, Health and Safety Department at the corporate office located at 1000 Louisiana, Houston, TX 77002.

1.5 Management Approval

Company is committed to the implementation of this IMP in order to support the existing site-specific facility controls and countermeasures designed to prevent discharges of oil to navigable waters of the United States or adjoining shorelines. Management will review this IMP at least each five (5) years and document the review and revision status using the form below.

TABLE 1-1
MANAGEMENT APPROVAL AND REVISION SUMMARY

Review/Revision Date	By Whom	Activity	Comments/Affected Sections
November 2011	David McQuade, P.E., P.G. Environmental Manager	Plan Development	Initial Distribution

2.0 INTEGRITY MANAGEMENT PLAN OVERVIEW

As previously mentioned, this IMP has been developed to specifically address 40 CFR Part 112.8(c)(6), which describes the requirements for inspections and integrity testing for bulk oil storage containers. Company has developed this IMP based upon existing industry standards, which have been used to establish the frequency and type of integrity testing required for bulk oil storage containers, as well as qualifications for personnel performing tests and inspections. The IMP includes a risk-based management approach to determining the appropriate frequency and type of integrity testing for individual bulk storage containers based on an evaluation of container capacity, configuration of the container, and governing design standards for tank construction. The Company has chosen to model the risk-based management approach on the Steel Tank Institute (STI) Standard for the Inspection of Aboveground Storage Tanks (Standard SP001). It should be noted, that the IMP is a standalone document and that all requirements of STI SP001 are not incumbent upon the Company. This IMP applies only to bulk storage containers for stable, flammable and combustible liquids with a specific gravity of less than 1.0, which are stored at atmospheric pressure (15 psi) and temperatures ranging from ambient to 200 degrees Fahrenheit. Hence, any containers used to store liquids not meeting these criteria shall be classified as non-standard products, and integrity and inspections types and frequencies shall be developed on a case by case basis. Flowcharts illustrating the bulk container integrity management program and associated inspection process are included as Figures 1 and 2.

3.0 TANK INSPECTION PROGRAM

The Company has developed this risk-based management program for bulk oil storage containers, and this program will be used to establish inspection and integrity testing frequencies as well as criteria for continuation of service for containers meeting the acceptability criteria specified herein. The risk-based inspection program outlined in Section 3.1 applies to shop-built containers only, and inspection/testing requirements for field-fabricated containers, plastic and fiber-reinforced plastic (FRP) containers and bunkered or completely buried containers are presented in subsequent sections. Upon implementation, a baseline inspection of each bulk storage container subject to the IMP shall be performed and documented using Inspection Form-1 (Appendix A). The baseline inspection should include a review of available historical construction testing and inspection records to centralize tank-specific information required to perform the evaluation presented herein.

3.1 Risk-Based Evaluation of Steel Shop-Built Bulk Containers

The company has established four categories for in-service, shop-built, bulk storage containers. Each of the categories are defined based on the following criteria:

- **Category 1:** Category 1 container shall meet **all** the following criteria:
  - New or like new containers constructed in accordance with accepted industry standards (e.g. API 12-F, UL 142 or equivalent).
  - Double-walled tanks or tanks that have sufficient secondary containment for the entire contents of the tank and sufficient freeboard for precipitation (Minimum 110% Containment).
  - Secondary containment shall be impermeable and provide a passive/continuous means for detection of a release from the container. Examples of tank configurations meeting continuous release detection criteria include tanks resting on or located within an impermeable release prevention barrier (e.g. impermeable synthetic liner or double-walled tanks with interstitial monitoring port) or elevated tanks that allow for 360^{o} visual inspection.
- **Category 2:** Category 2 containers shall meet **all** the following criteria:
  - Containers greater than 10 years old that otherwise meet the criteria specified for Category 1.
  - Containers in good condition with no history of integrity issues and constructed in accordance with accepted industry standards (e.g. API 12-F, UL 142 or equivalent).
  - Containers shall have sufficient secondary containment for the entire contents of the tank and sufficient freeboard for precipitation (Minimum 110% Containment) **and** shall not be in direct contact with the ground. Secondary containment shall also act as a release prevention barrier (RPB) that provides a continuous means for detection of a release from the container. Examples of RPBs include concrete, steel, or impermeable synthetic liners.

- **Category 3:** Containers exhibiting **any** of the following characteristics shall be classified as Category 3 containers:

  - Tanks that otherwise meet the criteria specified for Category 2, which are in direct contact with ground.
  - Containers having limited available construction details or integrity testing history.
  - Containers that may be in need of repair and/or repainting.
  - Containers having inadequate containment or containment requiring significant repair.

- **Category 4:** Containers exhibiting **any** of the following characteristics shall be classified as Category 4 containers:

  - Containers that do not meet the criteria for Categories 1 through 3
  - Containers that show visible signs of extreme corrosion, seepage and/or visible staining associated with uncontrolled releases of oil from the container or associated appurtenances.

The following matrix of tank configurations and rated capacities shall be used to establish inspection and integrity testing frequencies for each of the aforementioned container categories.

TABLE 3-1
SHOP-BUILT CONTAINER RISK-BASED INSPECTION SCHEDULE

CONTAINER CAPACITY	CATEGORY 1	CATEGORY 2	CATEGORY 3	CATEGORY 4
0-2,100 Gallons (0-50 bbls)	VI	VI	➢ VI ➢ L (10)	IMMEDIATE REPLACEMENT REQUIRED
2,100-10,500 Gallons(50-250 bbls)	VI	VI	➢ VI ➢ L (10) ➢ E (5)	
10,500-31,500 Gallons(250-750 bbls)	VI	➢ VI ➢ L (10)	➢ VI VI ➢ E (10) E (5) ➢ L(10) or L (10) ➢ I (20)	
>31,500 Gallons(>750bbls)	➢ VI ➢ L (10)[1]	➢ VI ➢ L (10) ➢ E (10)	➢ VI ➢ E (5) ➢ L(10) ➢ I (10)	
Non-Standard Product (Any Size)	Develop Container Specific Inspection and Integrity Testing Frequency			

NOTES:
1.) Testing frequency in years is noted parenthetically.
2.) VI –Visual inspection provides equivalent environmental protection in accordance with 40 CFR Part 112.7(a)(2).
3.) L – Denotes leak testing; hydrostatic testing is preferred method (See Section 5.0)
4.) E – Denotes formal external inspection of container by a certified inspector (contractor).
5.) I – Denotes formal internal inspection of container by a certified inspector (contractor).
6.) Example Inspection Schedule Designation: Formal External Inspection at 10 year frequency = E (10)

Required qualifications for Company personnel performing routine visual inspections and contract personnel performing non-destructive inspection and integrity testing are provided in Section 4.0. Details concerning integrity testing procedures are provided in Section 5.0. Any critical situations (leaks, fire, or physical damage from storms) will trigger additional tank inspection and integrity testing, and the scope of required unscheduled inspection and testing activities shall be determined by a Certified Inspector.

3.2 Field-Fabricated Above Ground Storage Tanks

Due to their larger size, field-fabricated Above Ground Storage Tanks (ASTs) are typically subjected to higher hydrostatic pressures and are typically constructed to American Petroleum Institute 650 standards (or other applicable standards) with floor and shell thicknesses that vary based on anticipated hydrostatic pressure and properties of the commodity stored in the AST. The following inspection and integrity testing activities shall be performed for each field fabricated AST:

- **Baseline inspection:** All field fabricated ASTs shall have a baseline inspection performed as part of the implementation of this IMP. The baseline inspection shall be documented using Inspection Form-1 (Appendix A). In the event an API 653 inspection has not been performed within the previous 10 years, the AST shall be inspected in accordance with API 653 within 12 months of the baseline inspection.

- **Monthly External Visual Inspections:** These routine external inspections shall be documented using the Inspection Form-2 (Appendix A). In-service monthly inspections shall be performed by a qualified person as defined in Section 4.0.

- **API 653 Inspection:** Inspect in accordance with the requirements of API Standard 653 every ten years or immediately following any critical situation or change in service. Alternate testing frequencies may be specified by a Certified Inspector following each API inspection and such modified inspection/integrity testing frequencies shall supersede the requirements of this IMP. The specified API 653 testing frequency applies only to ASTs containing stable, flammable and combustible liquids with a specific gravity of less than 1.0, which are stored at atmospheric pressure (15 psi) and temperatures ranging from ambient to 200 degrees Fahrenheit.

Integrity testing methods and procedures are described in Section 5.0. The inspection and testing frequencies specified herein are for typical, in-service petroleum storage tanks. Alternate, tank-specific inspection and integrity testing requirements shall be developed for each field-fabricated AST storing a non-standard product on a case by case basis using standard industry practices.

3.3 Fiber-Reinforced Plastic Containers

Fiber-reinforced Plastic (FRP) containers used for the storage of oil shall be inspected and tested to comply with the integrity testing requirements specified in 40 CFR Part 112.8(c)(6). The company has established two categories for FRP bulk storage containers and these categories are both based on the storage of stable, flammable and combustible liquids with a specific gravity of less than 1.0 at temperatures within the range specified by the manufacturer. The categories are defined based on the following criteria:

- **Category 1:** Container has a rated capacity of less than 30,000 gallons, is not in direct contact with ground, and is located within a secondary containment structure that acts as a RPB by providing a passive and continuous means for detection of a release. Elevated tanks that allow for 360^{o} visual inspection of the entire container and meet the aforementioned criteria shall also be classified as Category 1.

- **Category 2:** Container has either a rated capacity in excess of 30,000 gallons, is in direct contact with ground, or is used to contain a non-standard product.

Inspection requirements for Category 1 containers will be limited to monthly visual inspection, which provides equivalent environmental protection in accordance with 40 CFR 112.7(a)(2). Monthly container inspections shall be documented using Inspection Form – 2 (Appendix A). Additional quantitative integrity testing shall be performed for Category 1 containers in the event of a critical situation or visual indications of a container defect including excessive crazing (e.g. hairline cracking of surface laminate), blistering, delamination, or excessive UV effects.

In addition to monthly visual inspections, Category 2 containers shall be leak tested using a non-destructive method every ten years (small capacity FRP containers can be removed from service to allow for visual inspection of all sides of the container are not subject to the aforementioned leak testing requirement). Hydrostatic testing is the preferred method of testing; however, if process or tank configuration will not allow for isolation and hydrostatic testing of the container, alternate integrity testing methods should be employed (e.g. Acoustic Emission Testing or equivalent). In the event Acoustic Emission Testing (AET) or other equivalent quantitative integrity testing is performed, the Certified Inspector may recommend alternate testing frequencies based on the integrity test results, which shall be adopted for the subject tank. A formal internal inspection of Category 2 FRP containers shall also be performed on a 20-year basis. Documentation of the integrity inspections and/or recommended modifications to the leak testing or formal internal inspection frequencies approved by the Certified Inspector shall be maintained in accordance with the requirements of Section 6.0.

3.4 Buried or Bunkered Containers

Both completely buried and bunkered tanks subject to 40 CFR Part 112 shall be inspected and tested to comply with the integrity testing requirements specified in 40 CFR Part 112.8(c)(6). Following the completion of a baseline inspection, monthly visual inspection of each completely buried tank or bunkered tank shall be performed and documented using Inspection Form - 2. Completely buried and bunkered containers have little or no exposed surfaces for visual inspection. Hence, absent a dedicated containment structure that provides a means for the continuously detection of a release from the container, additional leak testing and integrity testing is required to ensure container integrity. Since materials of construction, secondary containment, and tank configurations vary widely for buried and bunkered tanks, inspection and integrity testing requirements shall be determined on a tank by tank basis. At a minimum, each container shall be hydrostatically tested on an annual basis to satisfy integrity testing requirements. In the event that hydrostatic testing is determined to be impracticable, other leak testing methods specified in Section 4.2.1 shall be performed. A Formal Internal Inspection of buried or bunkered tanks with suitable ingress and egress shall also be performed at minimum 10-year frequency. In addition, each completely buried steel tank installed after January 10, 1974 shall be equipped with coatings or cathodic protection to protect the container from corrosion based on local soil conditions. Partially buried or bunkered tanks shall be similarly protected from corrosion. Annual inspection of the corrosion prevention systems shall performed by a National Association of Corrosion Engineers (NACE)-certified inspector to ensure proper operation of the systems and to evaluate coating condition.

3.5 Plastic Containers

Plastic containers are constructed of un-reinforced thermoplastic resin, and plastic containers used for the storage of oil shall be inspected and tested to comply with the integrity testing requirements specified in 40 CFR Part 112.8(c)(6). Following the completion of a baseline inspection, routine monthly inspection of each plastic tank shall be performed and documented using Inspection Form – 2.

Each plastic container shall have an extensive internal and external inspection performed every two years, and results of the inspection shall be recorded on Inspection Form – 2. Based on the results of the initial internal/external inspection and process knowledge, the inspection frequency may be increased to 5 years for plastic containers exposed to ultraviolet light (UV) and up to 10 years for tanks sheltered from UV exposure. The majority of the plastic tanks will require internal inspection of all internal surfaces via the working vent or manway. If a means of ingress and egress is available for larger plastic tanks, the tank may be entered for inspection in accordance with applicable Company confined space entry and/or other applicable health and safety permitting requirements. Signs of deterioration including cracking or crazing not severe enough to result in the removal of the tank from service shall

result in an increase to an annual internal and external testing frequency. Minor repairs, including repair/replacement of bulkhead fittings, mechanically attached nozzles or similar appurtenances are permitted; however, structural repairs shall not be made to a plastic container. Visual indications of compromised integrity shall result in the replacement of the tank. Furthermore, prior to a change in service for a plastic container an internal and external inspection shall be performed. The change of service inspection shall include an evaluation of shell thickness, comparison of existing and proposed specific gravity of stored fluids, any anticipated hydrostatic pressure changes, applicable changes to the required secondary containment, relief valves or other appurtenances. Tank-specific calculations shall be performed to determine if the existing container condition is suitable for the proposed change in service. Examples of changes in service for plastic tanks include but are not limited to changes in the substance stored, pH, increase or decreases in operating temperature or pressure, specific gravity, mechanical agitation, or solids content/erosive substances.

4.0 INSPECTOR QUALIFICATIONS

The Company has developed the following qualification criteria for inspectors to ensure that in-service tank inspections and integrity testing activities are effective in identifying and appropriately addressing potential container integrity issues, which may affect the potential for discharge from a container. The inspector qualification criteria has been adapted from STI Standard SP001, and includes qualifications for inspectors performing routine visual inspections as well as formal internal and external testing, and leak testing using non-destructive methods for each type of bulk storage container included in the IMP.

The Company will designate an Integrity Management Coordinator (IMC), and this individual shall at a minimum meet the following criteria:

- General familiarity with SPCC regulated facility operations, types of bulk storage containers and associated appurtenances in service at Company facilities, and chemical and physical properties of substances stored.
- IMC shall be certified (within previous 10 years) to perform integrity inspection and testing activities in accordance with one or more of the following standard methods:
  - API Standard 653 (Authorized Inspector Certification with STI SP001 Adjunct Certification)
  - STI Certified SP001 AST Tank System Inspector
- Five years of applicable industry experience.

The IMC will be designated as the cognizant Company official responsible for training individuals designated as the Spill Prevention Coordinator for each SPCC-regulated facility. The SPC or knowledgeable designee shall complete the inspection and integrity testing activities described in Section 4.1. Although hydrostatic leak testing activities may be completed by either qualified Company representatives or a contracted Certified Inspector, all other quantitative non-destructive integrity testing and formal internal and external inspections shall be performed by a contractor meeting the qualifications set forth herein.

4.1 Routine In-Service Visual Inspections

Each bulk storage container subject to the IMP is also subject to routine in-service operational inspections. These external, visual inspections shall be performed as part of daily activities by the SPC or designee and formal visual inspections shall be formally documented on a monthly basis using Inspection Form - 2. SPC or designee shall sign and date the monthly inspection forms and retain records in accordance with Section 6.0.

4.2 Quantitative Integrity Testing

In accordance with Table 3-1 and Figure 2, quantitative integrity testing may be required for each type of bulk storage container subject to the IMP. A Certified Inspector shall be responsible for the completion of formal internal and external container inspections. A Certified Inspector shall hold one of more of the following certifications:

- API Standard 653 (Authorized Inspector Certification with STI SP001 Adjunct Certification)
- STI Certified SP001 AST Tank System Inspector
- Additional certifications required by individual states or other governing bodies with jurisdictional authority.

The following sections present additional required qualifications for inspectors/non-destructive test examiners performing quantitative integrity testing at Company facilities.

4.2.1 Leak Testing

The following are company approved quantitative leak tests:

- Hydrostatic testing
- Gas pressure decay (including interstitial vacuum decay testing)
- Gas pressure/soap bubble testing
- Tracer gas testing
- Soil tracer (chemical marker testing)
- Mass measurement

With exception of hydrostatic testing, all quantitative leak testing shall be performed by a qualified, Company-approved tank integrity contractor in general accordance with standard methods referenced in Section 5.2. Hydrostatic testing shall be performed by the SPC or other competent company designee.

4.2.2 Formal Internal and External Inspection and Testing

The following are company approved non-destructive testing (NDT) methods for in-service bulk storage containers:

- Ultrasonic Thickness Testing (UTT)
- Ultrasonic Thickness Scans (UTS)
- Radiographic Testing
- Magnetic Particle Testing
- Magnetic Flux Leakage
- Penetrant Testing

All quantitative non-destructive testing shall be performed by a qualified, Company-approved contractor in accordance with standard methods referenced in Section 5.3 and 5.4. Although NDT examiners are not required to

meet Company-specific qualifications for Certified Inspectors, each NDT examiner shall be qualified in accordance with their employer's written practice. At a minimum, the employers qualification standards shall comply with the American Society for Non-destructive Testing's document SNT-TC-1A "Personnel Qualification and Certification in Nondestructive Testing". Consistent with Section 4.3.3 of the STI SP001, all NDT examiners shall have minimum training required to operate NDT test equipment and be aware of factors affecting the performance and accuracy of NDT equipment. Although NDT test examiners shall not be required to meet certification criteria for a Certified Inspector listed in Section 4.2, results obtained by a NDT examiner must be included in an evaluation of container integrity performed by a Certified Inspector.

5.0 INTEGRITY TESTING PROGRAM

The integrity testing program developed by the Company covers both shop-built and field fabricated containers. With the exception of routine in-service visual inspections, the integrity testing methods and procedures presented herein apply only to shop-built containers. In addition to routine visual inspection, all field-fabricated bulk storage containers shall be subject to periodic integrity testing performed in accordance with API Standard 653 – Tank Inspection, Repair, Alteration, and Reconstruction by a qualified, Company-approved contractor. Unless otherwise approved by a Certified Inspector, API 653 inspection and integrity testing of field-constructed ASTs shall be performed at a minimum frequency of 10-years. Methods and procedures for inspection and integrity testing of shop-built containers are presented in the following sections.

5.1 Routine In-Service Visual Inspections

Documentation of routine, in-service visual inspections is required on a monthly basis for all bulk storage containers subject to the IMP. As outlined in Section 3.0, visual inspections alone satisfies integrity testing requirements for select containers by providing equivalent environmental protection in accordance with 40 CFR 112.7(a)(2). Methods and procedures for visual inspection activities should generally conform to the requirements of STI SP001 Section 6.0; however, the following minimum visual inspection requirements shall be met for each bulk storage container:

- Secondary containment condition, including presence of accumulated fluid, housekeeping and access
- Drainage control valve operation and positioning (closed)
- Visual indications of leakage at tank margins, foundation or within containment area
- Visual evidence of corrosion or damage requiring corrective actions
- Tank appurtenances in operational condition and without visible corrosion
- Condition of above-ground piping including supports, valves (glands & bodies), and flanges
- Operation of Inventory control devices and/or overfill protection
- General observations that may have the potential to affect container integrity

Routine, in-service visual inspection of bulk storage containers shall be documented on Inspection Form-2 on a monthly basis.

5.2 Leak Testing

Quantitative leak testing is specified as an integrity testing requirement for selected steel shop-built containers subject to the risk-based evaluation process, FRP tanks, and bunkered or buried containers. The following shop-built containers require leak testing at the frequencies specified in Section 3.0:

- Selected steel ASTs in Categories 1, 2, and 3
- FRP tanks in Category 2; and

- All buried/bunkered tanks.

Although hydrostatic testing (an STI-approved leak testing method) is the preferred leak testing method, hydrostatic testing of tanks may not be practicable given the configuration or service requirements for specific containers. The SPC or other competent Company designee may perform hydrostatic leak testing in accordance with the following methods and procedures:

- Isolate tank by closing all discharge valves on the storage container;
- Fill the container to its maximum safe-fill level with its normal contents;
- Measure the starting fluid level to the nearest 0.01 foot with respect to a fixed measuring point;
- Check the fluid level approximately 24 hours after filling. No measurable change in the fluid level will be considered evidence of satisfactory container integrity.
- The level of oils in storage containers can change depending on the temperature of the material and the barometric pressure. To the extent practicable, the material in the tanks shall be maintained at a consistent operating temperature throughout the duration of the hydrostatic test.
- The SPC shall note ambient atmospheric conditions at the beginning of the test and at a minimum frequency of 8 hours until completion of the test.

The SPC shall be present to witness initial and final test readings for each hydrostatic, and shall document the information listed above using Inspection Form-3 (Appendix A). In the event alternate or additional leak testing is required due to impracticability or results of hydrostatic testing, a Company-approved leak test listed in Section 4.2.1 shall be performed by a qualified contractor. Leak testing shall comply with applicable industry standards and best available technology, including but not limited to STI Standard R912 or 49 CFR 180.605 for portable container testing and recertification. Leak test results shall include:

- A written report including date of testing;
- A description of methods and procedures used;
- Summary of ambient conditions affecting testing results;
- Limitations of testing methods;
- Estimation of minimum detectable loss rates for container contents;
- Interpretation of test data including recommendations concerning on-going testing frequency; and
- Appendices with documentation of raw testing data, applicable field logs, and equipment calibration records.

Leak testing records provided by contractors shall be maintained in accordance with records retention requirements listed in Section 6.0.

5.3 Formal External Inspection

Formal External Inspections are specified for steel shop-built containers classified as Category 2 and Category 3. All Formal External Inspections shall be performed by a Company-approved, Certified Inspector in accordance with the requirements of Section 7.0 of STI Standard SP001. Frequencies for formal external inspections specified in Section 3.1 of this document. Formal External Inspection reports shall include:

- Results of the pre-test evaluation of former periodic inspections, repair and alteration data;
- Tabulated field data including, measurements, pictures, drawings;
- Summary of the limitations of UTT of UTS testing methods;
- Summary of inspection findings including unacceptable conditions and recommended corrective actions;
- A determination regarding the suitability for continued service of the container;
- Recommendations concerning modifications to the existing schedule for future formal internal or external inspections; and
- Name and certification number of the Certified Inspector.

Formal External Inspection reports provided by a Certified Inspector shall be maintained in accordance with records retention requirements listed in Section 6.0.

5.4 Formal Internal Inspection

Formal internal inspections are specified for steel shop-built ASTs classified as Category 2 and Category 3 as well as Category 2 FRP containers. It should be noted that formal internal inspections also satisfy all the inspection requirements for a formal external inspection; hence, a formal internal inspection meets and exceeds requirements for a formal external inspection and satisfies the required testing frequency for both formal inspection methods. All Formal Internal Inspections shall be performed by a Company-approved, Certified Inspector in accordance with the requirements of Section 8.0 of STI Standard SP001. Frequencies for formal internal inspections are specified in Sections 3.1 and 3.3, respectively. Formal Internal Inspection report shall include:

- Result of the pre-test evaluation of former periodic and formal inspections, repair and alteration data;
- Tabulated field data including, measurements, pictures, drawings;
- Summary of the limitations of UTT and UTS testing methods;
- Summary of inspection findings including unacceptable conditions and recommended corrective actions;

- A determination regarding the suitability for continued service of the container;
- Recommendations concerning modifications to the existing schedule for future formal internal and/or external inspections; and
- Name and certification number of the Certified Inspector.

Formal Internal Inspection reports provided by a Certified Inspector shall be maintained in accordance with records retention requirements listed in Section 6.0.

5.5 Suitability for Continued Service

The Company has adopted the criteria specified in STI Standard SP001 for evaluating formal internal and/or external testing data to determine if a bulk storage container is suitable to remain in service. Section 10.0 of STI Standard SP001 specifies the criteria for determining container suitability for continued service. It should be noted that tanks requiring visual inspection only shall remain in service and continue to be inspected visually on a monthly basis unless conditions noted during routine visual inspection, a change in service to the container, or critical situation trigger additional integrity testing. Similarly, bulk storage containers requiring visual inspection and leak testing only shall be deemed suitable to remain in service provided that the results of routine visual inspection and leak testing activities indicate satisfactory tank integrity.

6.0 INSPECTION RECORDS & RETENTION POLICY

The facility SPC shall create and maintain a separate file for each bulk oil storage container subject to this IMP. Records related to the original design and construction of each container, operational data, repairs/alterations, changes in service, inspection, NDT, corrosion rate calculations, certified inspection reports, or other pertinent information relating to tank integrity shall be maintained the file for each container for the life of the container plus three years. Monthly inspection records shall be maintained with the SPCC or in accordance with customary business practices for the SPCC-regulated facility for three years. This IMP shall be reviewed annually and revised (if needed) to reflect changes in the record retention requirements of 40 CFR Part 112 or other applicable agencies with jurisdictional authority.

7.0 REFERENCES

American Petroleum Institute (API), 2009. *Tank Inspection, Repair, Alteration, and Reconstruction,* API Publication No. 653. April.

API, 2008. *Welded Steel Tanks for Oil Storage,* API Publication No. 653. November.

Steel Tank Institute (STI), 2006. *Standard for the Inspection of Aboveground Storage Tanks,* STI Publication SP001. July.

STI, 2010. *Installation Instructions for Shop Fabricated Stationary Aboveground Storage Tanks for Flammable, Combustible Liquids,* STI Publication R912. October.

American Society of Nondestructive Testing, 2006. *Guideline to Personnel Qualification and Certification in Nondestructive Testing*. Recommended Practice ASNT-TC-1A

FIGURES

FIGURE 1

APPLICABILITY DETERMINATION-
API 653 OR RISK-BASED INTEGRITY MANAGEMENT

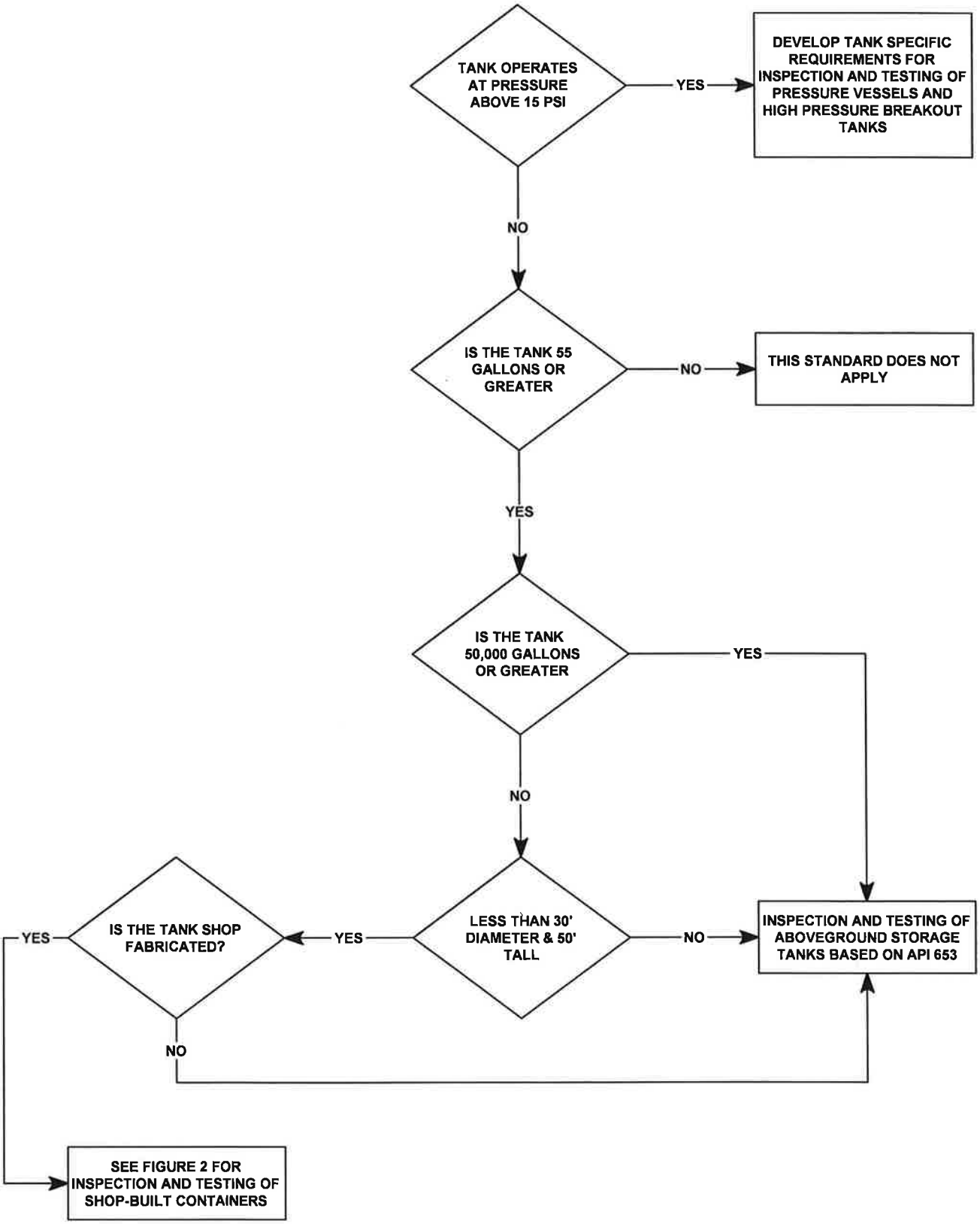
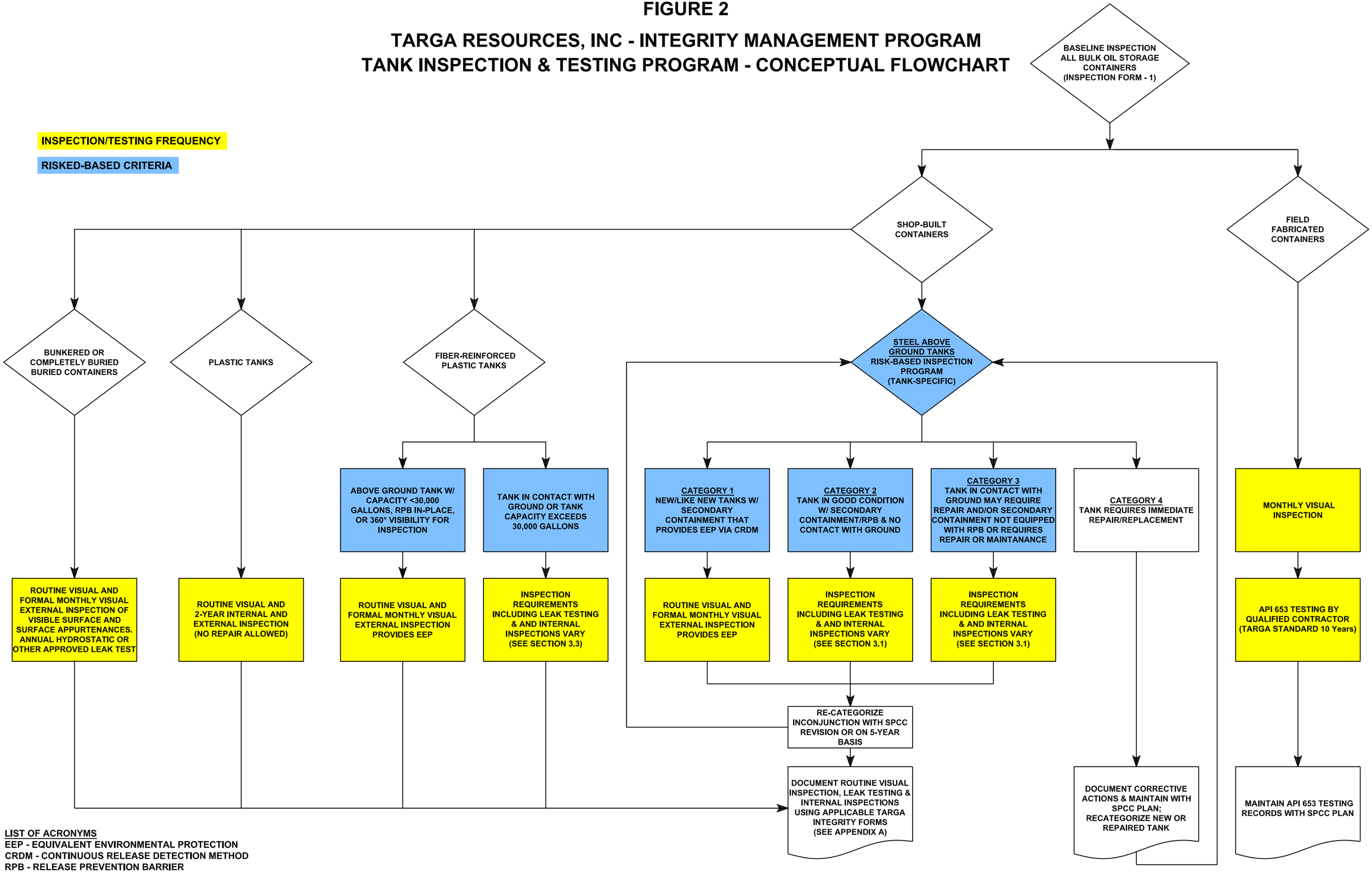


FIGURE 2

TARGA RESOURCES, INC - INTEGRITY MANAGEMENT PROGRAM
TANK INSPECTION & TESTING PROGRAM - CONCEPTUAL FLOWCHART



LIST OF ACRONYMS
EEP - EQUIVALENT ENVIRONMENTAL PROTECTION
CRDM - CONTINUOUS RELEASE DETECTION METHOD
RPB - RELEASE PREVENTION BARRIER

APPENDIX A

INSPECTION AND TESTING FORMS

INSPECTION FORM - 1
TARGA RESOURCES, INC - INTEGRITY MANAGEMENT PLAN
TANK DATA SHEET

TANK INFORMATION	FIELD INSPECTION DATA	EXAMPLE FIELD INPUTS
Facility Name		
Targa Owned		Yes / No
Tank ID No.		
Location		Latitude/Longitude (UTM D/M/S)
Tank Type		Vertical Fixed Roof / Horizontal Fixed Roof / Internal Floating Roof / External Floating Roof / Bullet Tank / Portable / Other
Construction Type		Shop-Built / Field Fabricated
Date of Construction/Date of Installation		
Shell Material		Steel / Fiberglass / FRP / Plastic
Paint / Coating		White / Aluminum-specular (shiny mirrored) / Aluminum (rough finish) / Gray / Red Primer / Water Jacketed / Other
Dimensions		
Rated Tank Capacity/Shell Capacity (Gal)		Gallons
Contents		
Specific Gravity		
Maximum Rated Operating Pressure (psi)		
Normal Operating Pressure (psi)		Atomospheric (15 psi)
Tank Setting		At Grade / Elevated (360^{o} Visibility) / Buried / Bunkered
Containment Type		Earthen / Earthen & Liner / Steel sidewall & Liner / Steel sidewall no liner / Double-walled/ Plastic / Concrete / Other
Containment Length (Feet)		
Containment Width (Feet)		
Containment Height (Feet)		
Containment Volume (gallons)		
Last Inspection Date		
Last Leak Test Date		
Last Formal External Inspection Date		
Last Formal Interior Inspection Date		

INSPECTION FORM - 2
TARGA RESOURCES, INC – INTEGRITY MANAGEMENT PLAN
BULK STORAGE CONTAINER VISUAL INSPECTION LOG

INSPECTOR:_____ **DATE:**_____

Tank ID No.	Containment Systems						Tank/Piping/Valves			
	Debris	Cracks or Erosion	Standing Liquid	Overall Condition	Double-walled Tank?	Liquid Between Walls (1)	Corrosion or Dis-coloration	Level Gauge / Overfill Prevention Condition	Tank Condition	Piping and Valve Condition
	Y / N	Y / N	Y / N	Good Fair Poor	No	Not Applicable	Y / N	Operating Not Operating Not Applicable	Good Fair Poor	Good Fair Poor
	Y / N	Y / N	Y / N	Good Fair Poor	No	Not Applicable	Y / N	Operating Not Operating Not Applicable	Good Fair Poor	Good Fair Poor
	Y / N	Y / N	Y / N	Good Fair Poor	No	Not Applicable	Y / N	Operating Not Operating Not Applicable	Good Fair Poor	Good Fair Poor
	Y / N	Y / N	Y / N	Good Fair Poor	No	Not Applicable	Y / N	Operating Not Operating Not Applicable	Good Fair Poor	Good Fair Poor
	Y / N	Y / N	Y / N	Good Fair Poor	No	Not Applicable	Y / N	Operating Not Operating Not Applicable	Good Fair Poor	Good Fair Poor

Comments:

Notes:
1.) For double-walled tanks, check for presence of liquid between inner and outer tank walls. If liquid is present, mark “yes”. If space between inner and outer tank walls can’t be checked (no access port, etc.) mark “Not Accessible”.
2.) If deficiencies are noted during visual inspection of tanks or secondary containment, provide additional details in the comments section.

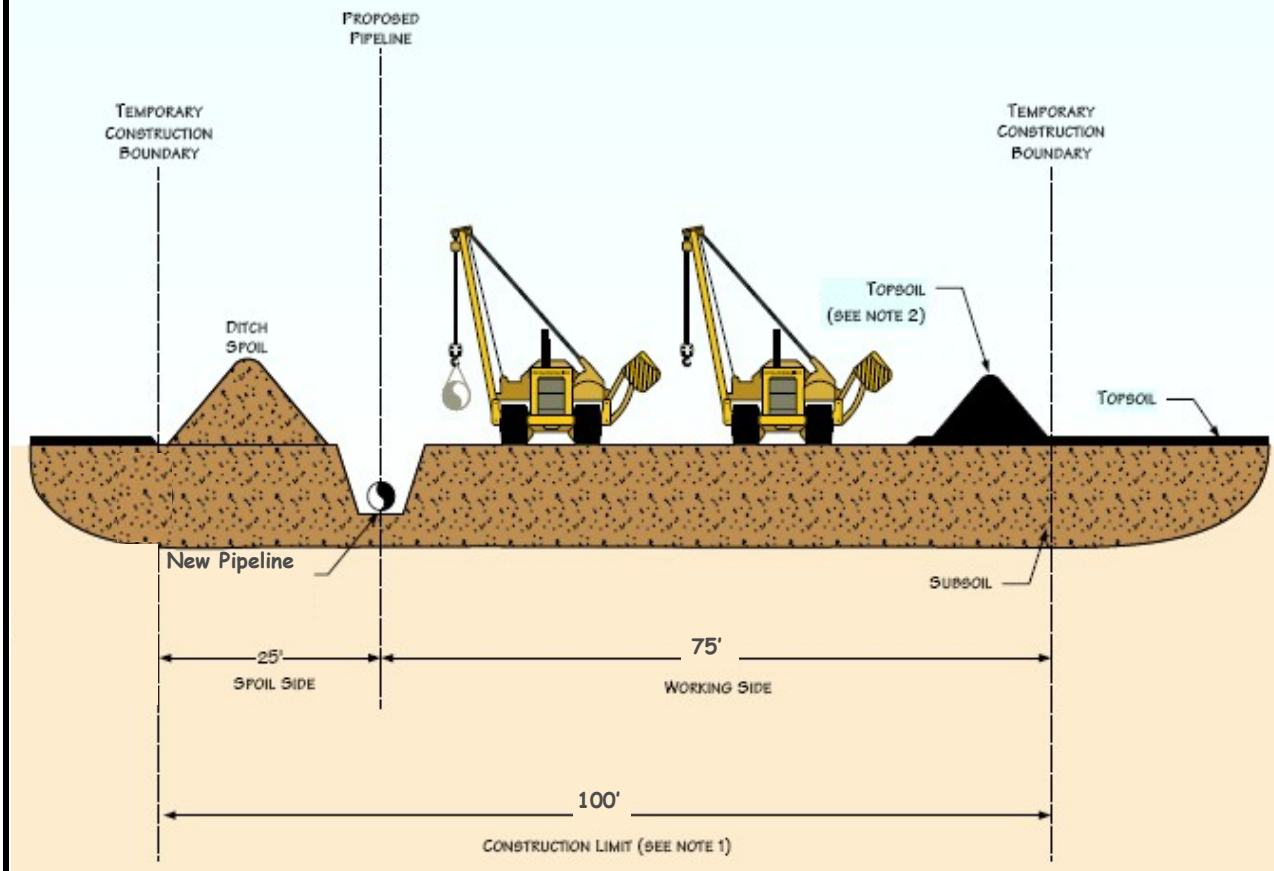
INSPECTION FORM -3
TARGA RESOURCES, INC – INTEGRITY MANAGEMENT PLAN
HYDROSTATIC TESTING RECORD

Tank ID No.	Record of Test Initiation				Record of Test Completion				
	Date Filled	Time Filled	Initial Temp (^oF)	Personnel Initiating Test (initials)	Date Level Checked	Time Level Checked	Final Temp. (^oF)	Personnel Completing Test (initials)	Fluid Level Maintained?
									Y / N
									Y / N
									Y / N
									Y / N
									Y / N
									Y / N
									Y / N
									Y / N
									Y / N
									Y / N
									Y / N
									Y / N
COMMENTS:									

NOTE: See Section 5.2 of the Integrity Management Plan for description of hydrostatic testing procedures. Hydrostatic testing frequency varies by bulk storage container type (See Section 3.0 of the Integrity Management Plan).

APPENDIX O

CONSTRUCTION DRAWINGS AND BEST MANAGEMENT PRACTICES



PROFILE

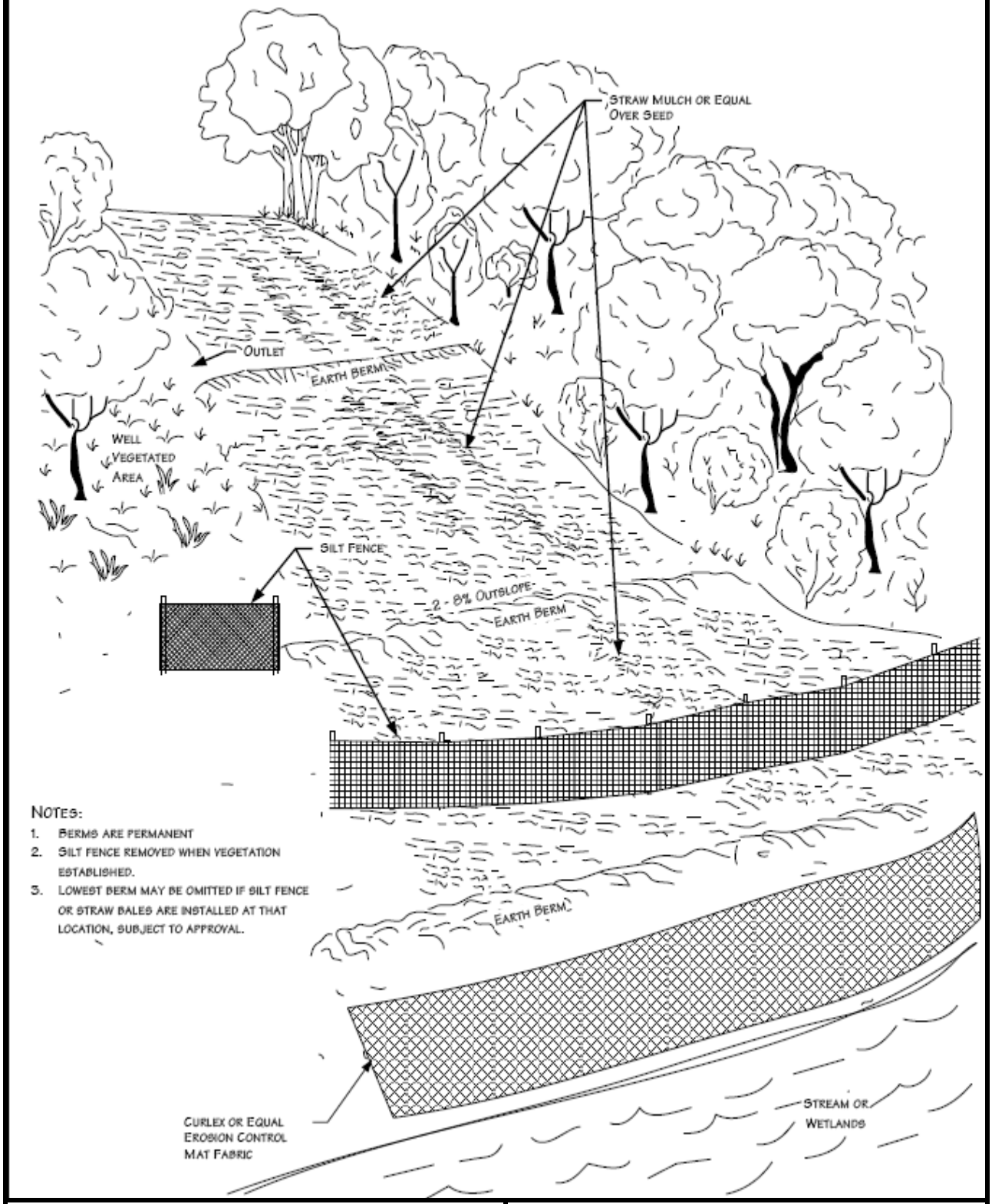
NOTES:

1. CONSTRUCTION LIMITS WILL TYPICALLY BE 100' WIDE. SPOIL SIDE WILL BE APPROXIMATELY 25' WIDE.
2. THIS DRAWING REFLECTS "FULL RIGHT OF WAY" TOPSOIL STRIPPING PROCEDURE. STOCKPILE TOPSOIL SEPARATELY FROM DITCH SPOIL SHOWN OR IN OTHER CONFIGURATION APPROVED BY COMPANY.
3. THE OFFSET FROM OUTERMOST EXISTING PIPELINE WILL BE 25' FOR MOST LOCATIONS BUT MAY BE INCREASED OR DECREASED DEPENDING ON THE SITE SPECIFIC CONSTRUCTION REQUIREMENTS.

TARGA

Targa Badlands, LLC
1000 Louisiana,
Suite 4300
Houston, TX 77002

Appendix O. Figure 1. – Typical Topsoil Segregation Full Right-of-Way
8-inch Crude Pipeline



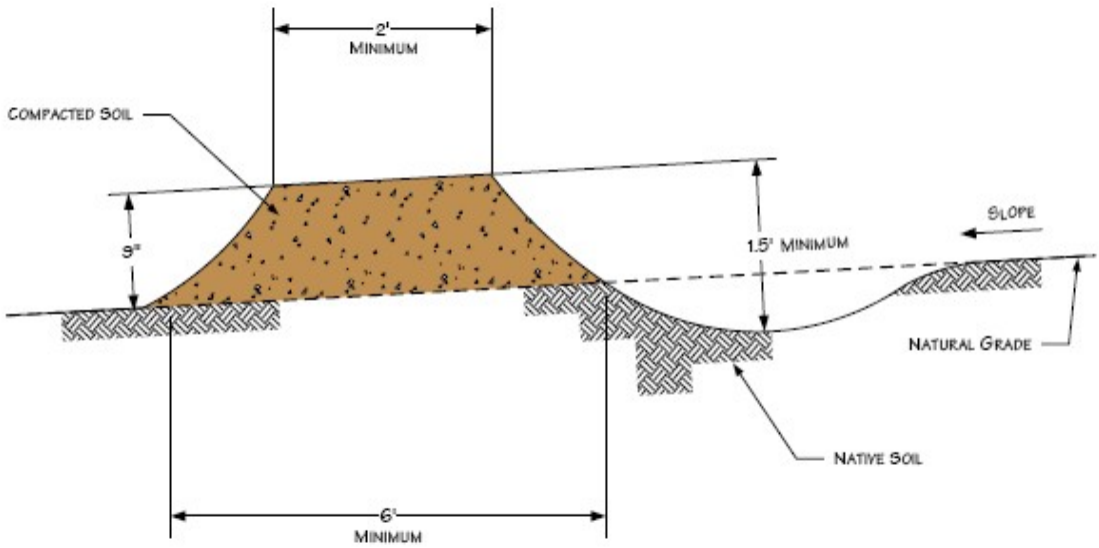
NOTES:

1. BERMS ARE PERMANENT
2. SILT FENCE REMOVED WHEN VEGETATION ESTABLISHED.
3. LOWEST BERM MAY BE OMITTED IF SILT FENCE OR STRAW BALES ARE INSTALLED AT THAT LOCATION, SUBJECT TO APPROVAL.

TARGA

Targa Badlands, LLC
1000 Louisiana,
Suite 4300
Houston, TX 77002

Appendix O. Figure 2. – Typical Temporary or Permanent Berms- Perspective View
8-inch Crude Pipeline



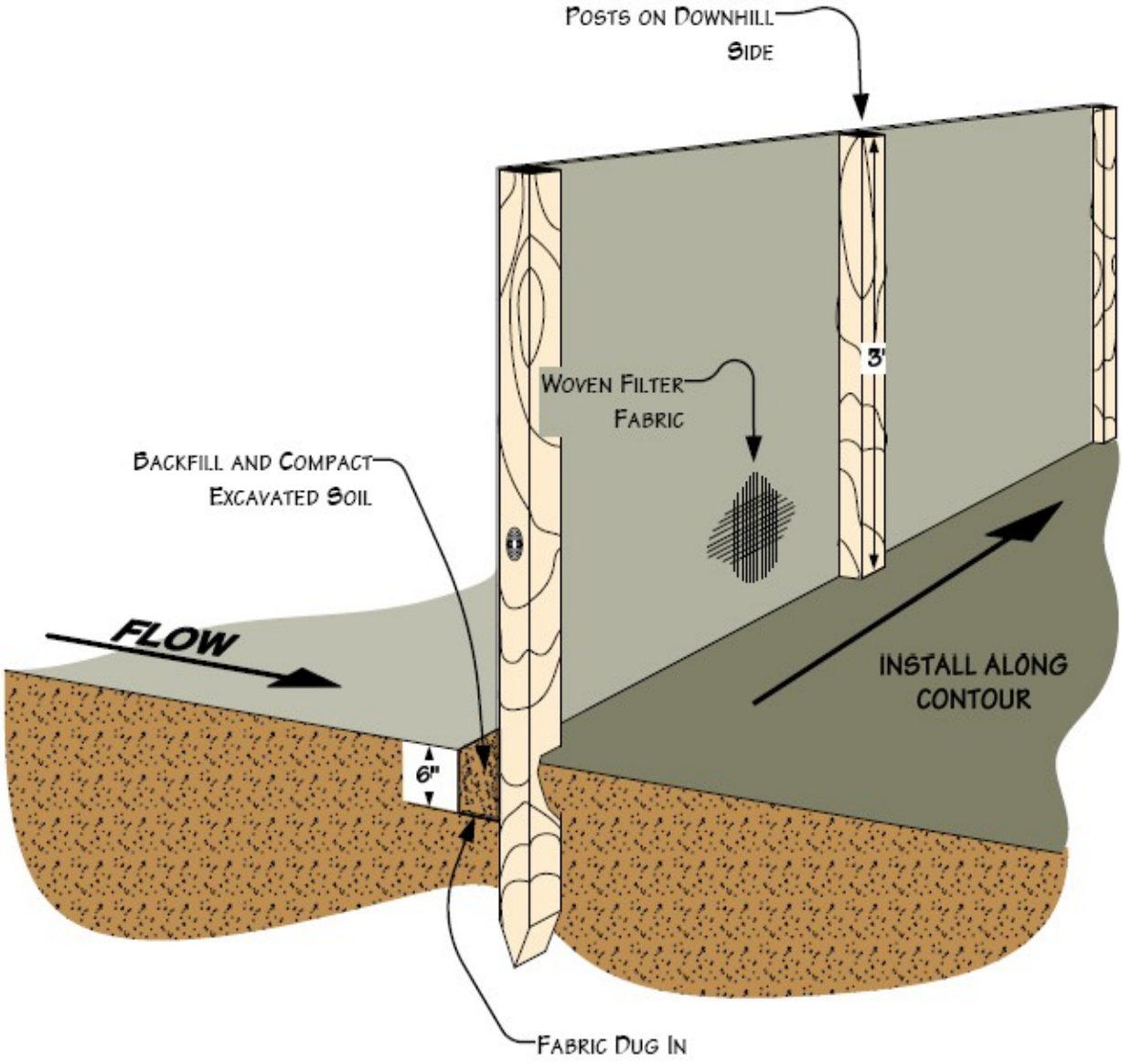
NOTES

1. BERMS SHALL BE CONSTRUCTED WITH 2 TO 8 PERCENT OUTSLOPE.
2. BERMS SHALL BE OUTLETED TO WELL VEGETATED STABLE AREAS, SILT FENCES, STRAW/HAY BALES OR ROCK APRONS.
3. BERMS SHALL BE SPACED AS DESCRIBED IN CONSTRUCTION SPECIFICATIONS.
4. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.

TARGA

Targa Badlands, LLC
1000 Louisiana,
Suite 4300
Houston, TX 77002

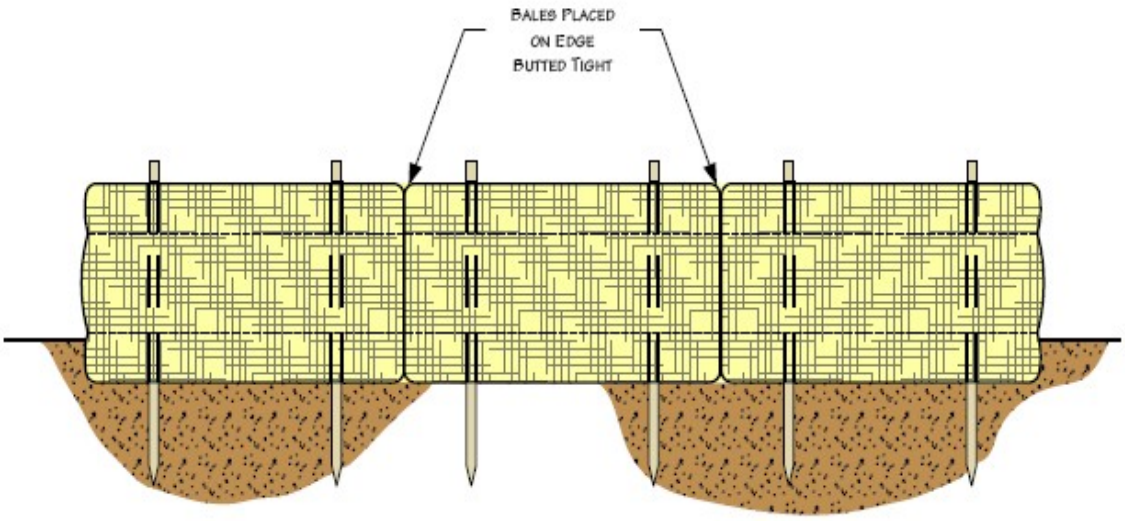
Appendix O. Figure 3. – Typical Temporary or Permanent Berm-Elevation View
8-inch Crude Pipeline

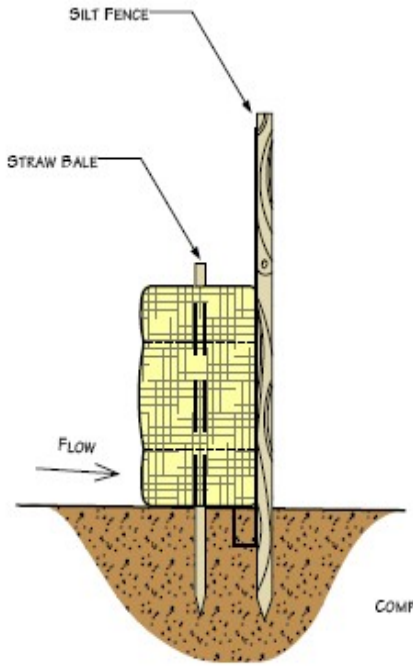


TARGA

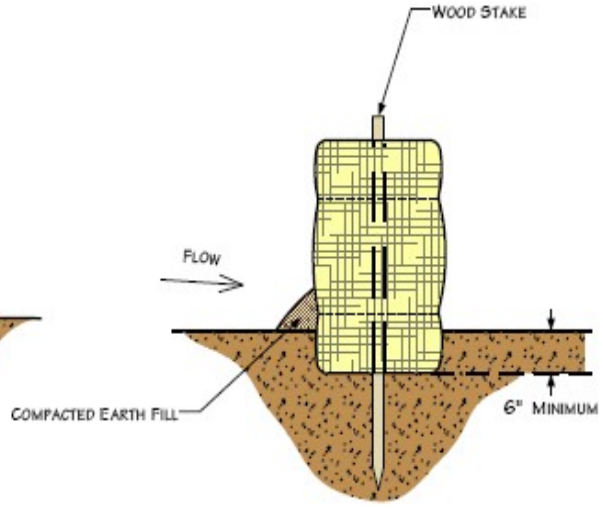
Targa Badlands, LLC
1000 Louisiana,
Suite 4300
Houston, TX 77002

Appendix O. Figure 4. –Typical Silt Fence Installation
8-inch Crude Pipeline





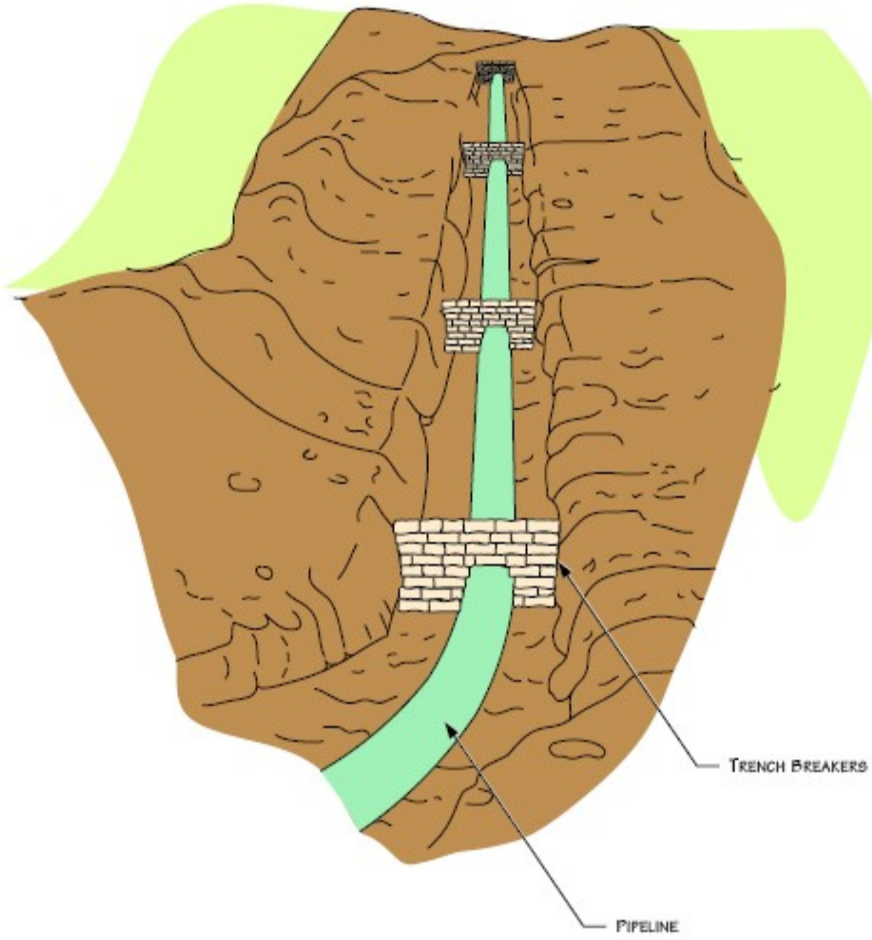
STRAW/HAY BALES & SILT FENCE



STRAW/HAY BALES ONLY

Targa Badlands, LLC
1000 Louisiana,
Suite 4300
Houston, TX 77002

Appendix O. Figure 5. – Straw Bale Installation
8-inch Crude Pipeline

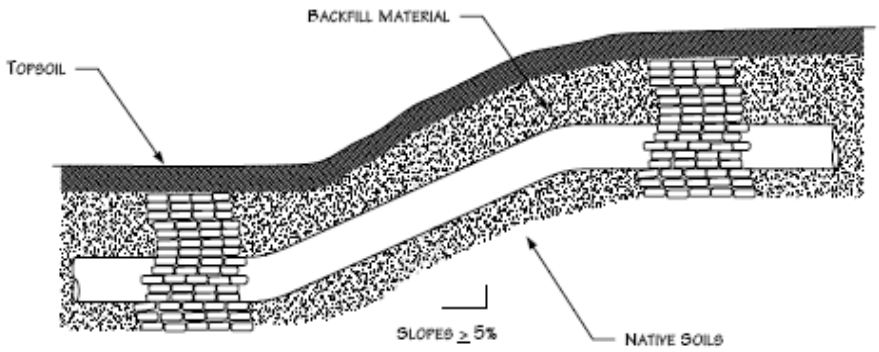


NOTES

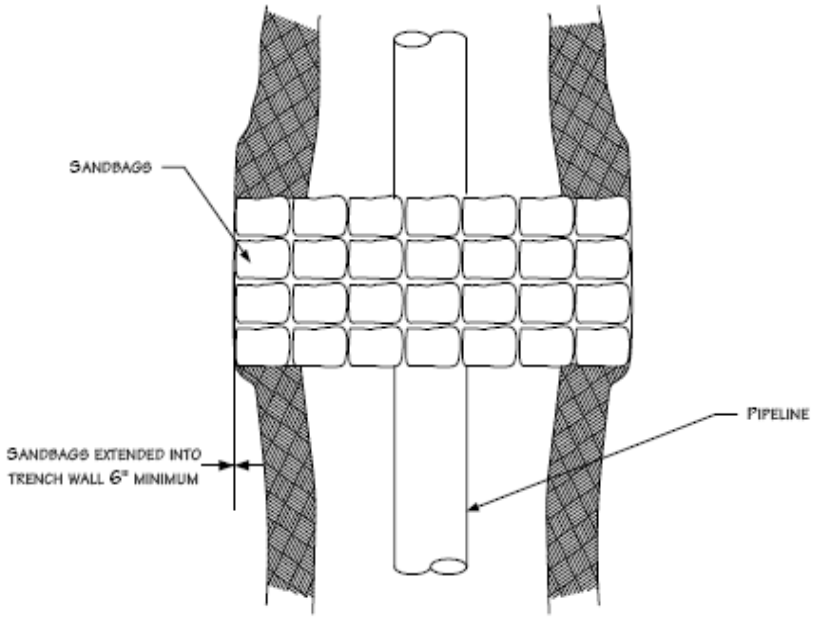
1. BAGS WILL NOT BE FILLED WITH TOPSOIL.
2. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.

Targa Badlands, LLC
1000 Louisiana,
Suite 4300
Houston, TX 77002

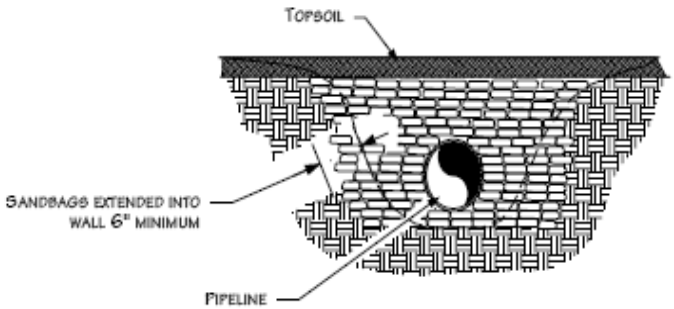
Appendix O. Figure 6. – Typical Trench Breaker Perspective View
8-inch Crude Pipeline



PROFILE VIEW
(NOT TO SCALE)



PLAN VIEW
(NOT TO SCALE)



FACE VIEW
(NOT TO SCALE)

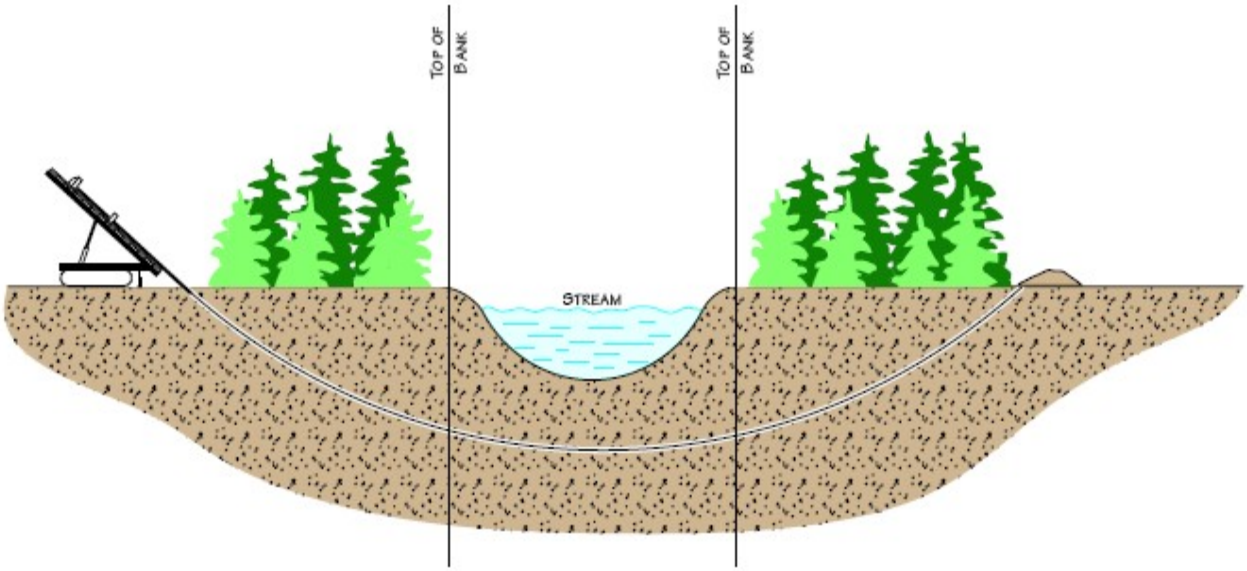
NOTES

1. BAGS WILL NOT BE FILLED WITH TOPSOIL
2. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS

TARGA

Targa Badlands, LLC
1000 Louisiana,
Suite 4300
Houston, TX 77002

Appendix O. Figure 7. – Typical Trench Breaker Plan and Profile View
8-inch Crude Pipeline

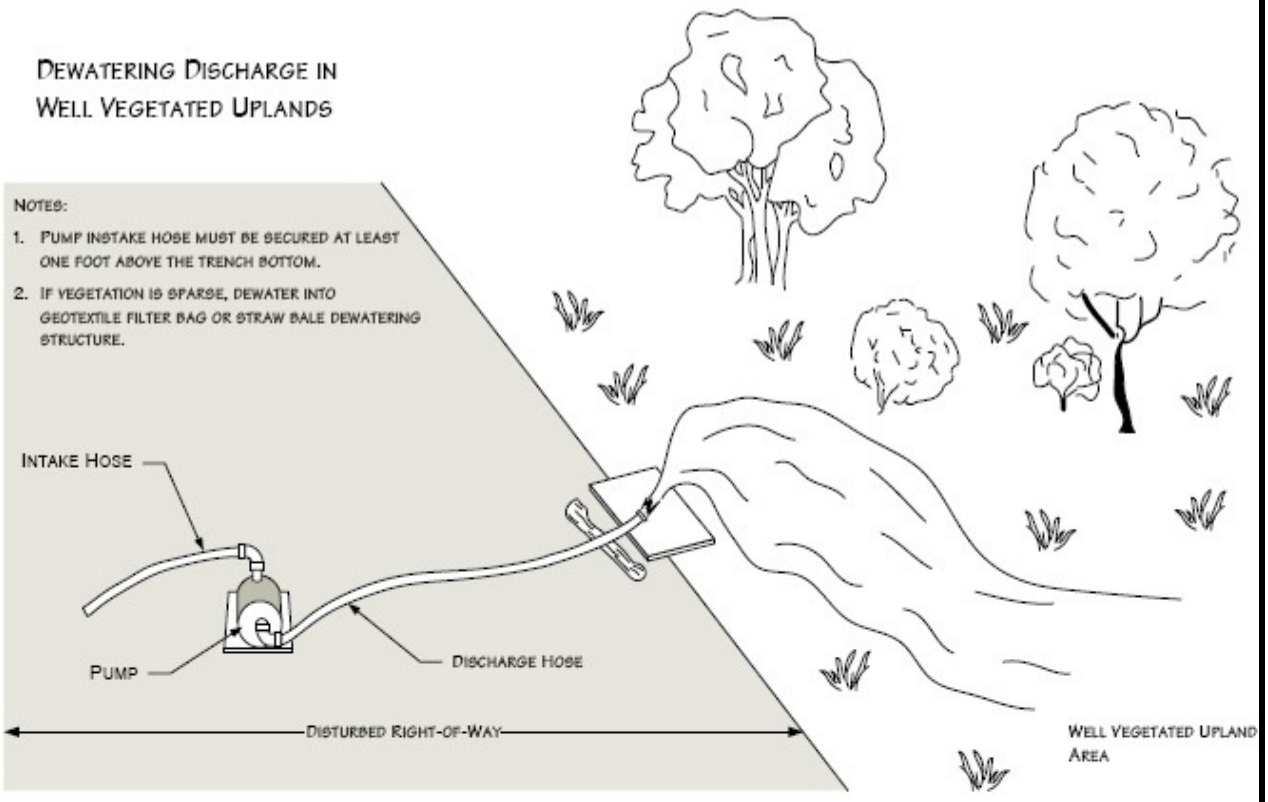


TARGA

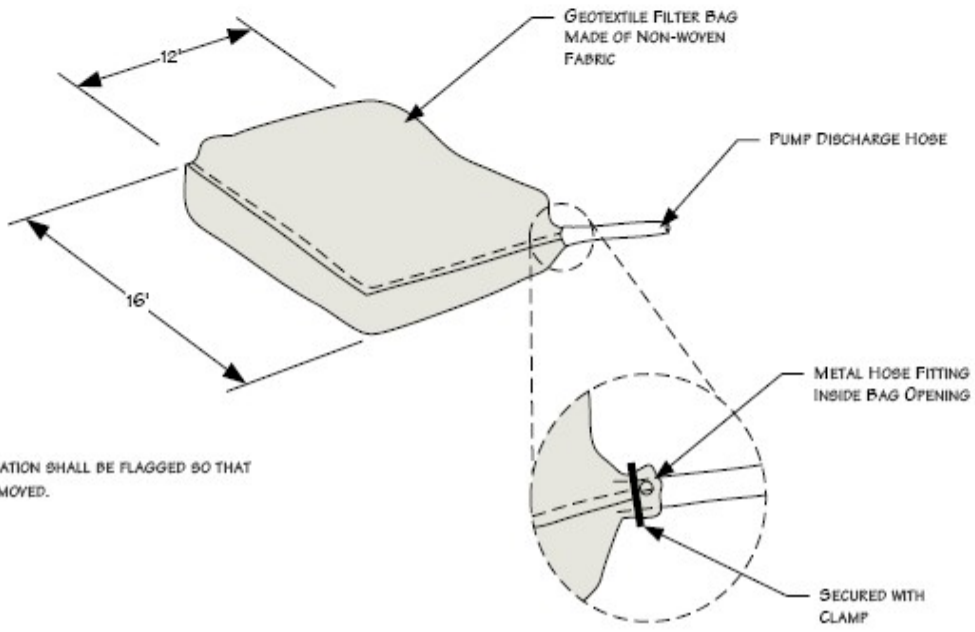
Targa Badlands, LLC
1000 Louisiana,
Suite 4300
Houston, TX 77002

Appendix O. Figure 8. –Typical Waterbody Crossing Directional Drill Method
8-inch Crude Pipeline

Dewatering Discharge in Well Vegetated Uplands



Geotextile Filter Bag



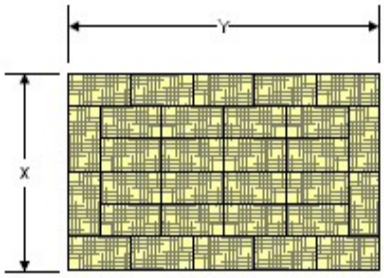
NOTE:

1. FILTER BAG LOCATION SHALL BE FLAGGED SO THAT BAG CAN BE REMOVED.

TARGA

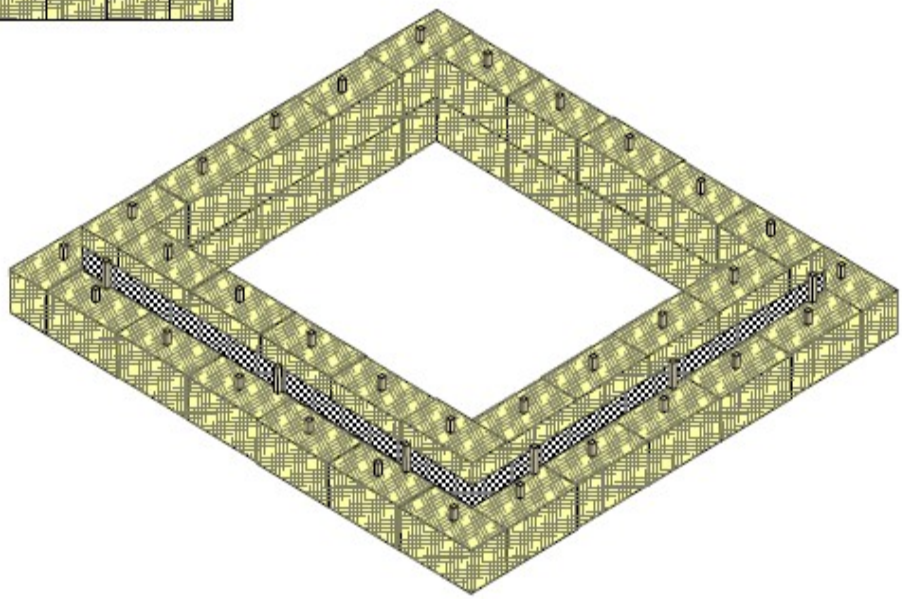
Targa Badlands, LLC
1000 Louisiana,
Suite 4300
Houston, TX 77002

Appendix O. Figure 9.– Typical Dewatering Measures
8-inch Crude Pipeline

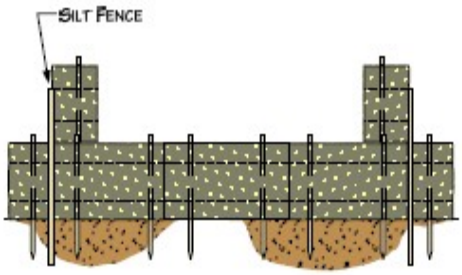


NOTES

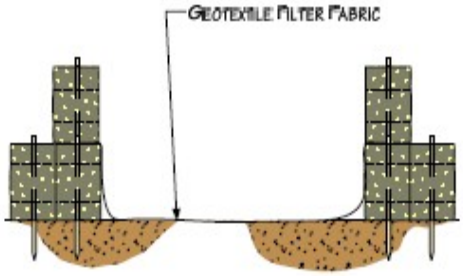
1. ARRANGE THE STRAW BALES TO THE X AND Y DIMENSIONS AS SPECIFICIED BELOW.
2. IF BOTTOM OF STRUCTURE IS NOT LINED WITH STRAW BALES (OPTION 1), LINE ENTIRE STRUCTURE WITH GEOTEXTILE FILTER FABRIC.



PERSPECTIVE VIEW



OPTION 1



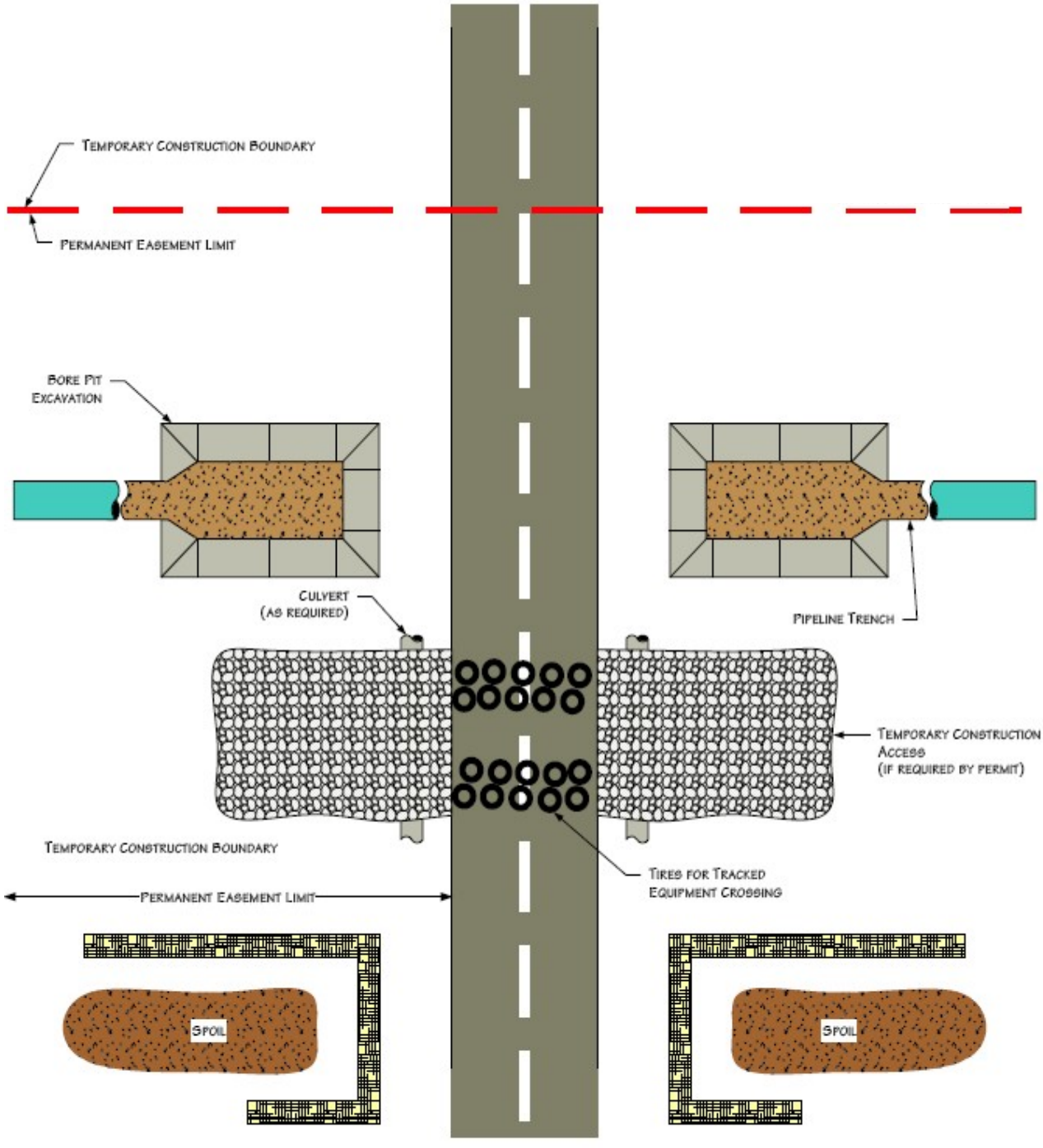
OPTION 2

MINIMUM SUMP DIMENSIONS (FEET)		MAXIMUM PUMPING RATE
X	Y	GALLONS PER MINUTE
10	20	300
15	20	350
20	20	400
20	25	450
25	25	500
25	30	550
30	30	660

TARGA

Targa Badlands, LLC
1000 Louisiana,
Suite 4300
Houston, TX 77002

Appendix O. Figure 10. –Typical Straw-Bale Dewatering Structure
8-inch Crude Pipeline



PLAN VIEW

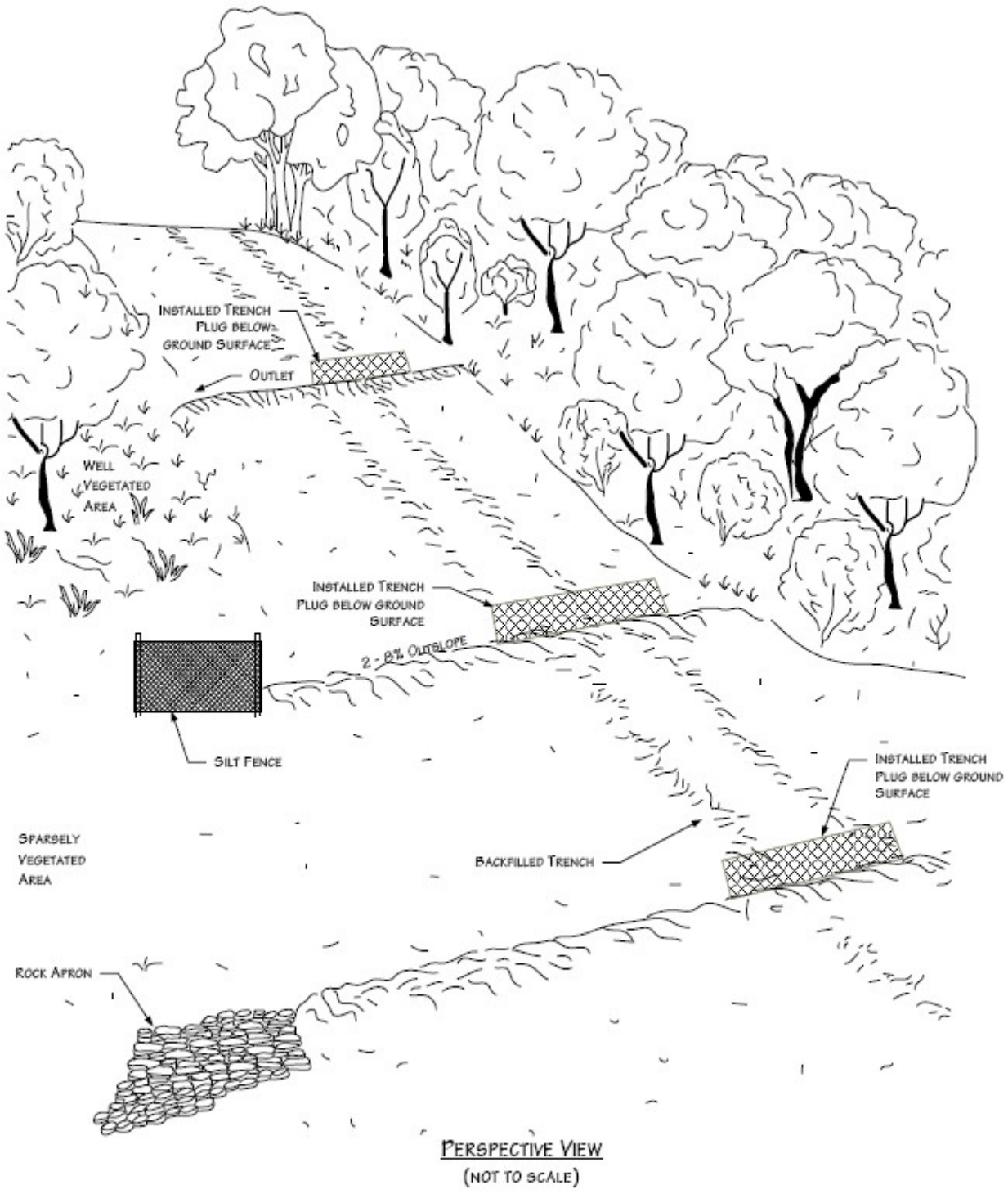
NOTES

1. PROCEDURES SHOWN IN THIS DRAWING APPLY TO IMPROVED ROADS.
2. ROADS MUST BE CLEANED AFTER EQUIPMENT CROSSES AND DIRT PLACED IN SPOIL CONTAINMENT AREAS.
3. TEMPORARY ACCESS MATERIALS MUST BE REMOVED UPON PROJECT COMPLETION.
4. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS OR PERMITS.
5. CONSTRUCTION AREAS LOCATED OUTSIDE ROAD ROW.

TARGA

Targa Badlands, LLC
1000 Louisiana
Suite 4300
Houston, TX 77002

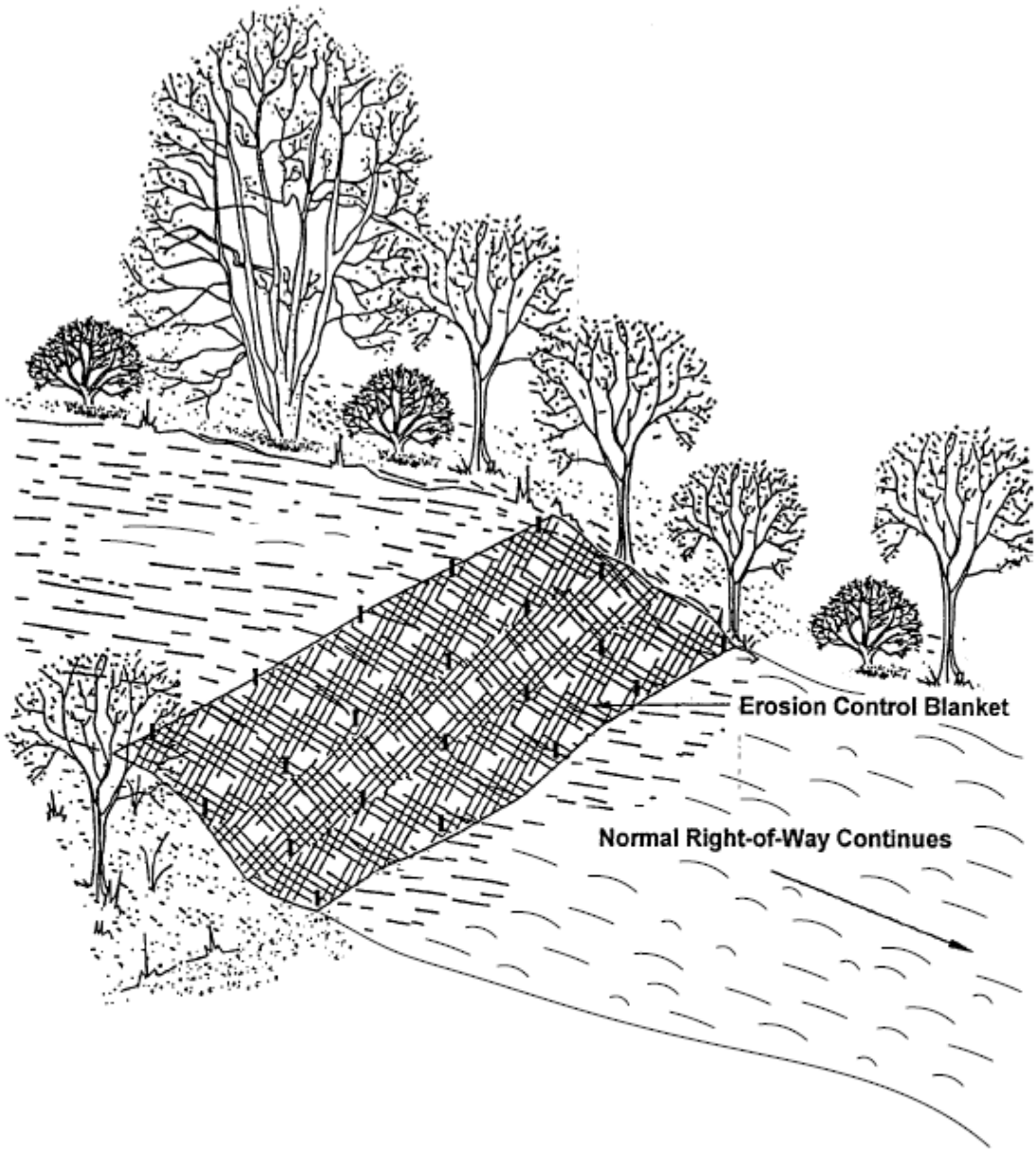
Appendix O. Figure 11. –Typical Improved Road Crossing-Directional Bore Method
8-inch Crude Pipeline



TARGA

Targa Badlands, LLC
1000 Louisiana
Suite 4300
Houston, TX 77002

Appendix O. Figure 12. – Permanent Slope Breakers Perspective View
8-inch Crude Pipeline



NOTES

1. INSTALL EROSION CONTROL BLANKET AS PER MANUFACTURER'S SPECIFICATIONS.
2. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.

TARGA

Targa Badlands, LLC
1000 Louisiana,
Suite 4300
Houston, TX 77002

Appendix O. Figure 13. – Erosion Control Blanket Steep Slopes (>30%)
8-inch Crude Pipeline

APPENDIX P

AS-BUILT DIAGRAMS

T148N
R99W

SBP MIDWAY STATION

NOTE: REFERENCE DWG. KOL-D1-1001 FOR KOALA GATHERING SYSTEM

NOTE: REF. DWG. XXX-XX-XXX FOR XXX GATHERING SYSTEM

NOTE: REFERENCE DWG. XXX-XX-XXX FOR XXX GATHERING SYSTEM

SEE DETAIL 'A'

SEE DETAIL 'A'

SEE DETAIL 'A'

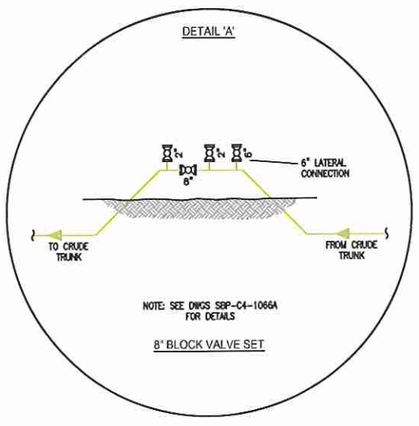
SBP 8" CRUDE STEEL MIDWAY TO ALEXANDER PIPELINE

NOTE: REFERENCE DWG. XXX-XX-XXX FOR XXX GATHERING SYSTEM

SEE DETAIL 'A'

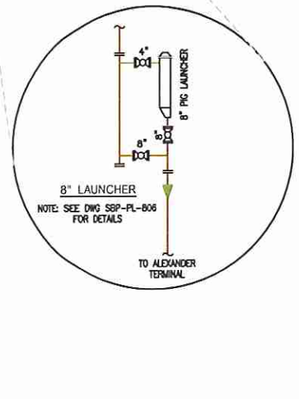
SBP ALEXANDER CRUDE TERMINAL

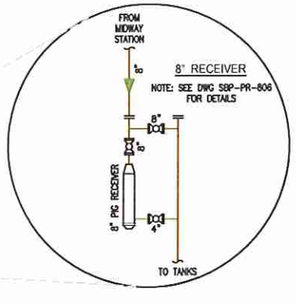
DETAIL 'A'

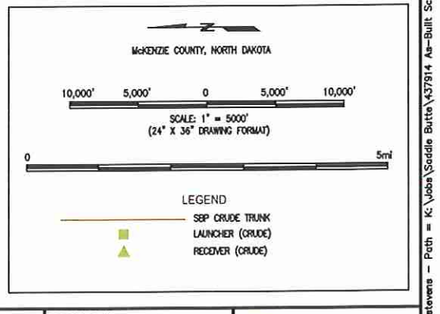


NOTE: SEE DWGS SBP-C4-1066A FOR DETAILS

8" BLOCK VALVE SET







NOTES:

1) FLOW SCHEMATIC IS FOR GRAPHICAL REPRESENTATION ONLY.
2) ALL GAS, WATER AND UTILITY LINES SHOULD BE LOCATED PRIOR TO ANY EXCAVATING, DIGGING, OR TRENCHING ANYWHERE ON OR NEAR THIS SITE.
3) CH2M HILL ASSUMES NO RESPONSIBILITY FOR THE SPECIFIC LOCATION OF ANY BURIED GAS, WATER, OR UTILITY LINES THAT MAY BE PRESENT ON OR NEAR THIS SITE, NOR IS ANY LIABILITY ASSUMED FOR ANY LEGAL ACTION WHICH RESULTS FROM A DISCOVERY OF A GAS, WATER, OR UTILITY LINE IN ADDITION TO OR IN A DIFFERENT LOCATION THAN SHOWN ON THIS PLAT.
4) COORDINATE SYSTEM BASED ON NAD 83 NORTH DAKOTA STATE PLANE NORTH ZONE.
5) PIPELINE ROUTES AND FACILITY LOCATIONS DIGITIZED FROM MAPS (PDF FORMAT) PROVIDED BY SADDLE BUTTE PIPELINE, LLC.

REFERENCE DRAWINGS	
DWG. NO.	TITLE

REVISIONS					
NO.	DESCRIPTION	DATE	BY	CHK.	APPR.
4	RE-ISSUED FOR REVIEW	05/24/12	CS	JK	
3	RE-ISSUED FOR REVIEW	05/23/12	CS	JK	
2	RE-ISSUED FOR REVIEW	05/03/12	EJW	JK	
1	ISSUED FOR REVIEW	09/19/11	TMM	BH	
0					

DRAWN BY: TMM	09/19/11
CHECKED BY: DB	09/20/11
REVIEWED BY:	
APPROVED BY:	
SCALE: SCALE: 1" = 5000'	

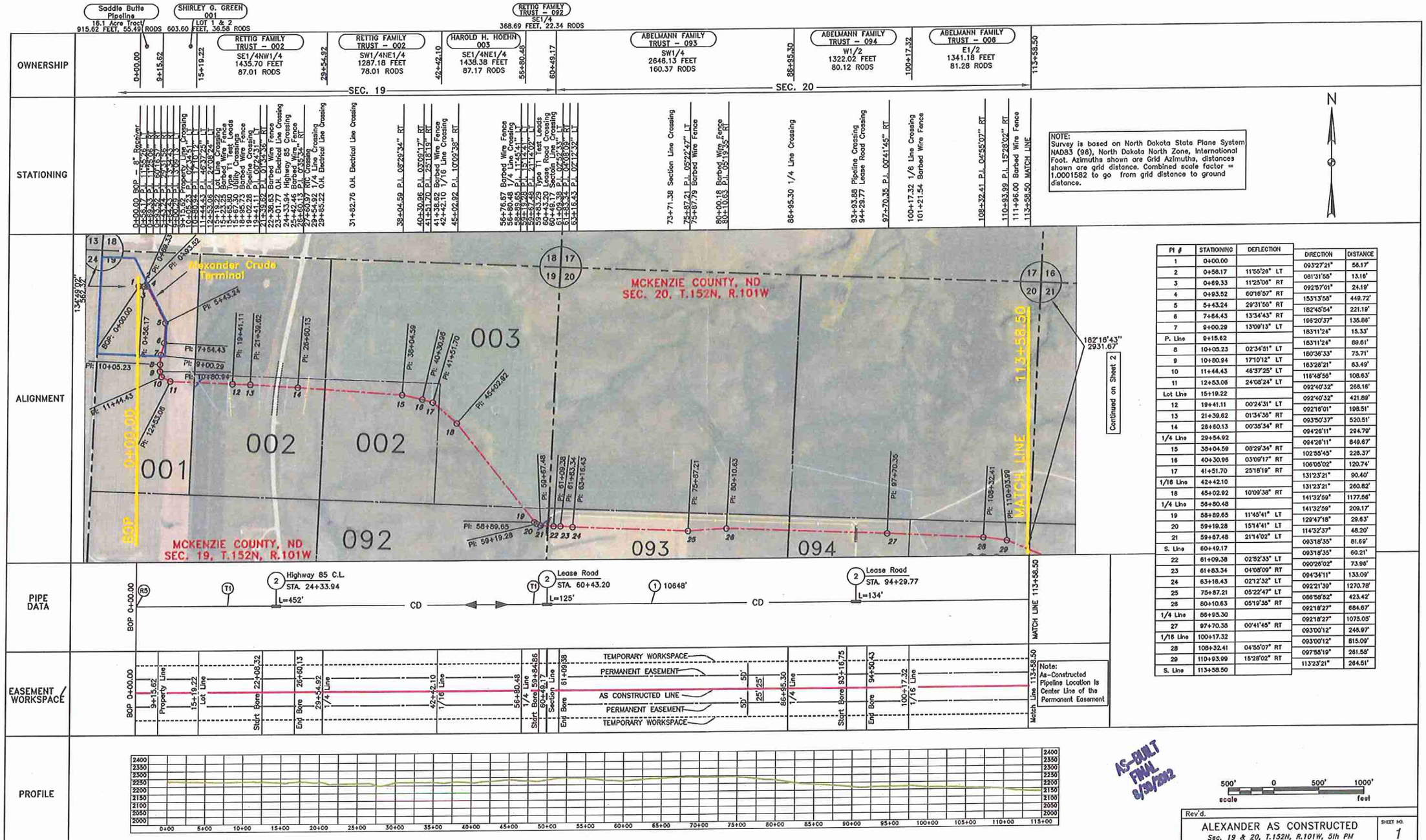
PREPARED FOR: SADDLE BUTTE PIPELINE, LLC

CH2MHILL
150 TECH CENTER DRIVE, SUITE E
DURANGO, COLORADO 81301-5849
970-385-4100

FLOW SCHEMATIC
MIDWAY TO ALEXANDER PIPELINE
ALEXANDER — McKENZIE COUNTY, NORTH DAKOTA

PROJECT NUMBER	DRAWING NUMBER	REV.
418078	ALX-D1-1001	D

May 25, 2012 - 12:26pm by cstevens - Path = K:\Jobs\Saddle Butte\437914 As-Built Schematics\Flow Schematics\Midway to Alexander Pipeline\ALX-D1-1001 Rev B.dwg



NOTE:
Survey is based on North Dakota State Plane System NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

PI #	STATIONING	DEFLECTION
1	0+00.00	
2	0+58.17	11°55'28" LT
3	0+69.33	11°25'08" RT
4	0+93.52	60°16'57" RT
5	5+43.24	29°31'58" RT
6	7+64.43	13°34'43" RT
7	9+00.29	13°09'13" LT
P. Line	9+15.62	
8	10+05.23	02°34'51" LT
9	10+80.94	17°10'12" LT
10	11+44.43	46°37'25" LT
11	12+53.08	24°08'24" LT
Lot Line	15+19.22	
12	19+41.11	00°24'31" LT
13	21+39.62	01°34'36" RT
14	28+60.13	00°35'34" RT
1/4 Line	29+54.92	
15	38+04.59	08°29'34" RT
16	40+30.98	03°09'17" RT
17	41+51.70	25°18'19" RT
1/16 Line	42+42.10	
18	45+02.92	10°09'38" RT
1/4 Line	56+80.48	
19	58+89.65	11°45'41" LT
20	59+19.28	15°14'41" LT
21	59+67.48	21°14'02" LT
S. Line	60+49.17	
22	61+09.38	02°32'33" LT
23	61+83.34	04°08'09" RT
24	63+16.43	02°12'32" LT
25	75+87.21	05°22'47" LT
26	80+10.63	05°19'35" RT
1/4 Line	86+95.30	
27	97+70.35	00°41'45" RT
1/16 Line	100+17.32	
28	108+32.41	04°55'07" RT
29	110+93.99	15°28'02" RT
S. Line	113+58.50	

DIRECTION	DISTANCE
093°27'21"	58.17'
081°31'55"	13.16'
092°57'01"	24.19'
153°13'58"	449.72'
182°45'54"	221.19'
198°20'37"	135.88'
183°11'24"	15.33'
183°11'24"	89.61'
180°36'33"	73.71'
163°26'21"	63.49'
116°48'56"	108.63'
092°40'32"	266.18'
092°40'32"	421.89'
092°16'01"	198.51'
093°50'37"	520.51'
094°26'11"	294.79'
094°26'11"	849.67'
102°55'45"	228.37'
106°05'02"	120.74'
131°23'21"	90.40'
131°23'21"	260.82'
141°32'59"	1177.56'
141°32'59"	209.17'
129°47'18"	29.63'
114°32'37"	48.20'
093°18'35"	81.69'
093°18'35"	60.21'
090°26'02"	73.96'
094°34'11"	133.09'
092°21'39"	1270.78'
086°58'52"	423.42'
092°18'27"	684.67'
092°18'27"	1075.05'
093°00'12"	246.97'
093°00'12"	815.09'
097°55'19"	261.58'
113°23'21"	284.51'

Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement

AS-BUILT FINAL 9/30/2012

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- REBAR & LS 2684 CAP
- REBAR
- GLO BC 1912
- RIGHT-OF-WAY MARKER
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC - OH
- BARBED WIRE FENCE
- GAS PIPELINE
- WATER LINE
- UG TELEPHONE LINE
- DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	10648	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	711	CRUDE 8.625"OD * 0.322"w API 5L X52 FBE
R5	1	8" RECEIVER
T1	2	SINGLE PIPE TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
R5	SBP-PR-808	STANDARD-8"-800# RECEIVER W/RIGHT HAND BYPASS
T1	AA-7204-1	SINGLE PIPE TEST LEAD
--	ALX-01-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED

Sec. 19 & 20, T.152N, R.101W, 5th PM
McKenzie County, North Dakota

SHEET NO. 1

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
M. Hocker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

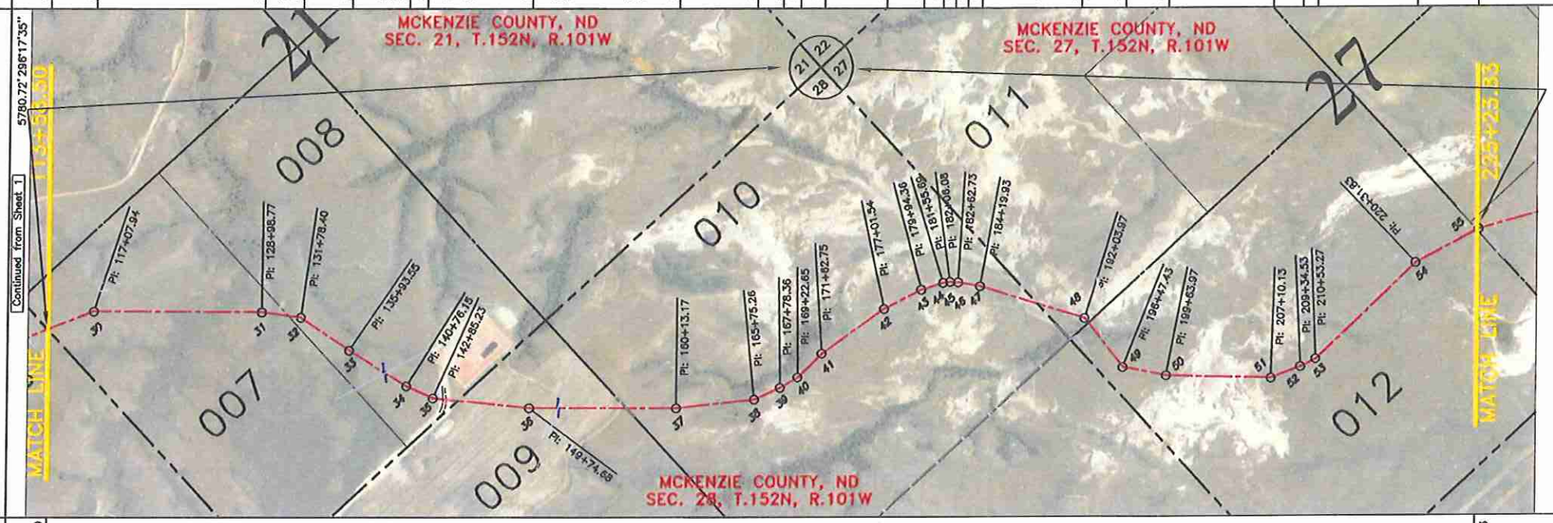
113+58.50	ABELMANN FAMILY TRUST – 007 W1/2SW1/4 1730.68 FEET 104.89 RODS	130+89.18	DANIEL ABELMANN – 008 E1/2SW1/4 1375.25 FEET 83.23 RODS	144+62.43	RONALD W. & KAY R STEPANEK – 009 N1/2NW1/4 1198.43 FEET 72.63 RODS	156+60.86	DANIEL ABELMANN – 010 NE1/4 3192.54 FEET 193.49 RODS	188+53.40	DANIEL & LEANNE ABELMANN – 011 SW1/4NW1/4 354.48 FEET 21.91 RODS	192+47.88	DANIEL & LEANNE ABELMANN – 012 SW1/4 3275.95 FEET 198.54 RODS	225+23.83
	SEC. 21				SEC. 28						SEC. 27	

STATIONING

113+58.50 MATCH LINE
117+07.94 P.I. 21°53'13" RT
128+98.77 P.I. 07°31'27" RT
130+89.18 1/16 Line Crossing
131+78.40 P.I. 26°20'49" RT
135+93.55 P.I. 02°23'24" LT
138+92.38 Type 1 Test Leads
138+93.68 Utility Crossing
140+76.15 P.I. 07°39'02" LT
142+85.23 P.I. 18°19'12" LT
143+15.24 Barbed Wire Fence Crossing
143+69.19 Lease Road Crossing
143+92.71 O.H. Electrical Line Crossing
144+62.43 Section Line Crossing
149+74.68 P.I. 05°42'03" LT
151+76.79 Type 1 Test Leads
151+80.14 Utility Crossing
156+60.86 1/4 Line Crossing
156+61.35 Barbed Wire Fence
160+13.17 P.I. 06°08'55" LT
165+75.26 P.I. 18°20'09" LT
167+78.36 P.I. 06°05'01" LT
169+22.65 P.I. 14°10'53" LT
171+62.75 P.I. 08°48'23" RT
177+01.54 P.I. 08°24'00" RT
179+94.36 P.I. 10°08'20" RT
181+55.69 P.I. 09°11'55" RT
182+06.08 P.I. 11°14'28" RT
182+62.73 P.I. 07°00'16" RT
184+19.93 P.I. 06°47'10" RT
188+53.40 Section Line Crossing
192+03.97 P.I. 34°49'55" RT
192+47.88 1/4 Line Crossing
198+47.43 P.I. 40°54'10" LT
199+63.97 P.I. 09°19'44" LT
207+10.13 P.I. 22°17'38" LT
209+34.53 P.I. 06°26'41" LT
210+53.27 P.I. 16°40'51" LT
220+31.83 P.I. 16°18'30" RT
225+23.83 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System NAD83 (98), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

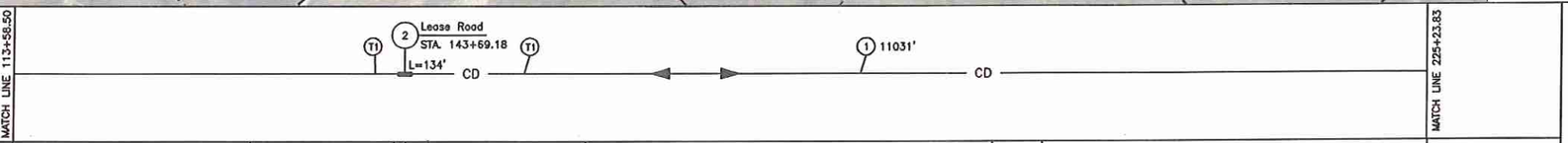
ALIGNMENT



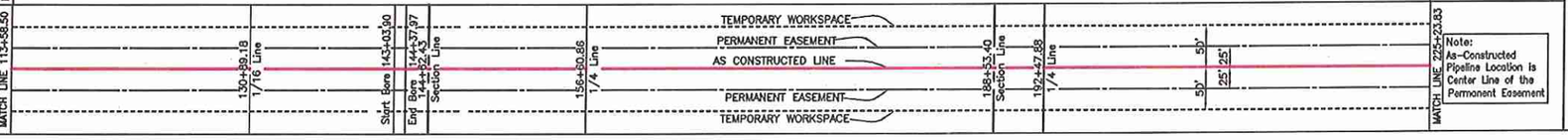
PI #	STATIONING	DEFLECTION
S. Line	113+58.50	
30	117+07.94	21°53'13" RT
31	128+98.77	07°31'27" RT
1/16 Line	130+89.18	
32	131+78.40	26°20'49" RT
33	135+93.55	02°23'24" LT
34	140+76.15	07°39'02" LT
35	142+85.23	18°19'12" LT
S. Line	144+62.43	
36	149+74.68	05°42'03" LT
1/4 Line	156+60.86	
37	160+13.17	06°08'55" LT
38	165+75.26	18°20'09" LT
39	167+78.36	06°05'01" LT
40	169+22.65	14°10'53" LT
41	171+62.75	08°48'23" RT
42	177+01.54	08°24'00" RT
43	179+94.36	10°08'20" RT
44	181+55.69	09°11'55" RT
45	182+06.08	11°14'28" RT
46	182+62.73	07°00'16" RT
47	184+19.93	06°47'10" RT
S. Line	188+53.40	
48	192+03.97	34°49'55" RT
1/4 Line	192+47.88	
49	196+47.43	40°54'10" LT
50	199+63.97	09°19'44" LT
51	207+10.13	22°17'38" LT
52	209+34.53	06°26'41" LT
53	210+53.27	16°40'51" LT
54	220+31.83	16°18'30" RT
1/4 Line	225+23.83	

DIRECTION	DISTANCE
113°23'21"	349.44'
135°16'34"	1190.83'
142°48'01"	190.41'
142°48'01"	89.22'
169°08'50"	415.15'
166°45'26"	482.60'
159°06'24"	209.08'
140°47'12"	177.20'
140°47'12"	512.25'
135°05'09"	686.18'
135°05'09"	352.31'
128°56'14"	562.09'
110°36'05"	203.10'
104°31'04"	144.29'
090°20'11"	240.10'
099°08'34"	538.79'
107°32'34"	292.82'
117°40'54"	161.33'
126°52'49"	50.39'
138°07'17"	56.65'
145°07'33"	157.20'
151°54'43"	433.47'
151°54'43"	350.57'
186°44'38"	43.91'
186°44'38"	399.55'
145°50'28"	316.54'
136°30'44"	746.16'
114°13'06"	224.40'
107°46'25"	118.74'
091°05'34"	978.56'
107°24'04"	492.00'

PIPE DATA

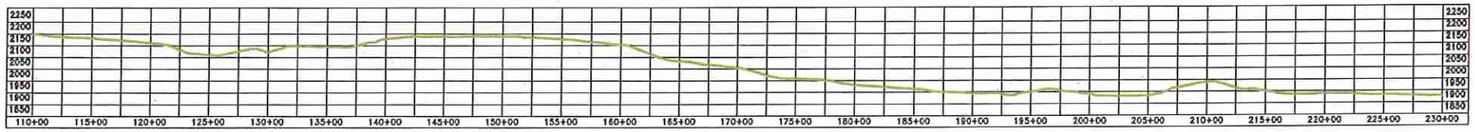


EASEMENT / WORKSPACE



Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement

PROFILE



AS-BUILT FINAL 8/30/2012

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- REBAR & LS 2684 CAP
- REBAR
- GLO BC 1912
- RIGHT-OF-WAY MARKER
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – OH
- BARBED WIRE FENCE
- GAS PIPELINE
- WATER LINE
- UG TELEPHONE LINE
- DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	11031	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	134	CRUDE 8.625"OD * 0.322"w API 5L X52 ARO
T1	2	SINGLE PIPE TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
T1	AI-7204-1	SINGLE PIPE TEST LEAD
–	ALX-01-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED
Sec. 21, 27 & 28, T.152N, R.101W, 5th PM
McKenzie County, North Dakota

SHEET NO. 2

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

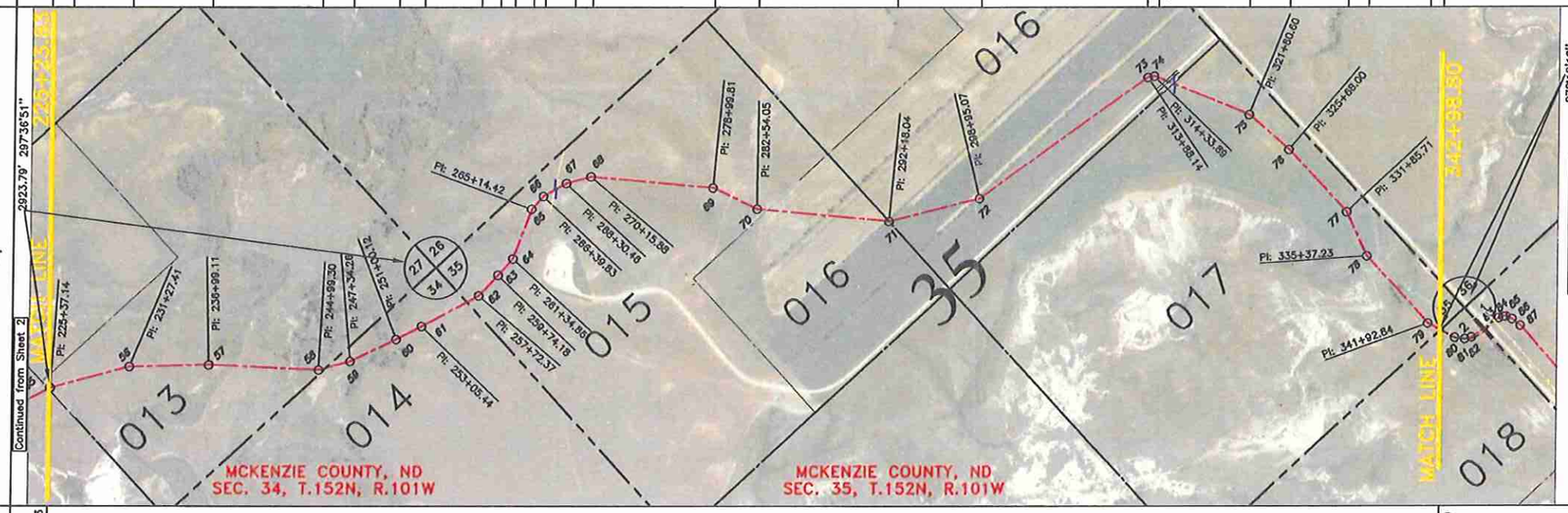
225+23.83	EDWARD BRATCHER – 013	245+52.26	EDWARD BRATCHER – 014	256+75.29	EDWARD BRATCHER – 015	283+28.40	MYRNA RAE & DENNIS FORTHUN DARRELL DEAN FORTHUN – 016	315+76.64	JAMIE TIMMRECK – 017	342+98.80
	E1/2SE1/4 2028.43 FEET 122.94 RODS		E1/2NE1/4 1123.03 FEET 68.06 RODS		W1/2NW1/4 & NE1/4NW1/4 2653.11 FEET 160.79 RODS		SE1/4NW1/4 & S1/2NE1/4 3248.24 FEET 196.86 RODS		SE1/4 2722.15 FEET 164.98 RODS	
SEC. 27		SEC. 34		SEC. 35						

STATIONING

225+23.83 MATCH LINE
225+28.49 Barbed Wire Fence
225+37.14 P.I. 12°37'14" RT
231+27.41 P.I. 13°34'10" RT
236+99.11 P.I. 04°03'39" RT
244+99.30 P.I. 18°01'00" LT
245+52.26 Section Line Crossing
247+34.26 P.I. 10°17'29" LT
251+00.12 P.I. 01°52'31" LT
253+05.44 P.I. 00°40'27" LT
256+75.29 Section Line Crossing
257+72.37 P.I. 18°38'39" LT
259+74.18 P.I. 01°32'54" LT
261+34.86 P.I. 21°10'13" LT
265+14.42 P.I. 22°00'37" RT
266+39.83 P.I. 18°20'49" RT
267+39.04 Pipeline Crossing
268+30.46 P.I. 13°58'55" RT
270+15.88 P.I. 20°25'44" RT
278+99.81 P.I. 20°25'39" RT
282+54.05 P.I. 20°24'27" LT
283+28.40 1/16 Line Crossing
292+17.86 1/4 Line Crossing
292+18.04 P.I. 19°15'13" LT
298+95.07 P.I. 21°44'21" LT
313+88.14 P.I. 24°29'52" RT
314+33.89 P.I. 33°08'46" RT
315+33.77 Lease Road Crossing
315+76.64 Buried Fiber Optic Crossing
315+91.85 Type T1 Test Leads
321+80.60 P.I. 18°35'59" RT
325+68.00 P.I. 06°17'37" RT
331+85.71 P.I. 17°57'17" RT
335+37.23 P.I. 16°59'05" LT
336+54.45 Barbed Wire Fence
341+92.84 P.I. 19°58'17" LT
342+98.80 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

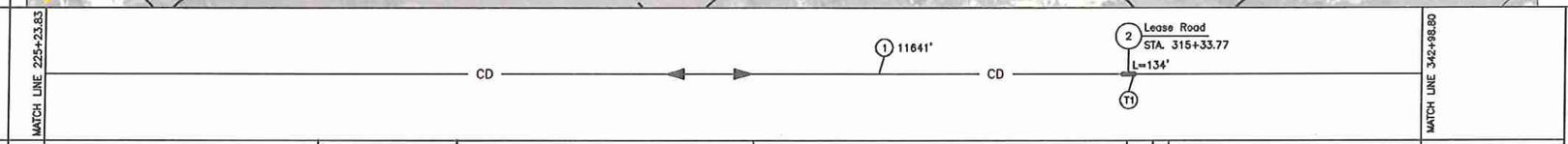
ALIGNMENT



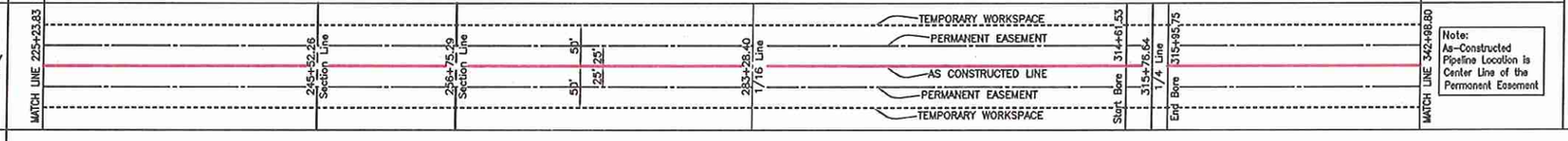
PI #	STATIONING	DEFLECTION
1/4 Line	225+23.83	
55	225+37.14	12°37'14" RT
56	231+27.41	13°34'10" RT
57	236+99.11	04°03'39" RT
58	244+99.30	18°01'00" LT
S. Line	245+52.26	
59	247+34.26	10°17'29" LT
60	251+00.12	01°52'31" LT
61	253+05.44	00°40'27" LT
S. Line	256+75.29	
62	257+72.37	18°38'39" LT
63	259+74.18	01°32'54" LT
64	261+34.86	21°10'13" LT
65	265+14.42	22°00'37" RT
66	266+39.83	18°20'49" RT
67	268+30.46	13°58'55" RT
68	270+15.88	20°25'44" RT
69	278+99.81	20°25'39" RT
70	282+54.05	20°24'27" LT
1/16 Line	283+28.40	
71	292+18.04	19°15'13" LT
72	298+95.07	21°44'21" LT
73	313+88.14	24°29'52" RT
74	314+33.89	33°08'46" RT
1/4 Line	315+76.64	
75	321+80.60	18°35'59" RT
76	325+68.00	06°17'37" RT
77	331+85.71	17°57'17" RT
78	335+37.23	16°59'05" LT
79	341+92.84	19°58'17" LT
S. Line	342+98.80	

DIRECTION	DISTANCE
107°24'04"	13.31'
120°01'18"	590.27'
133°35'28"	571.70'
137°39'07"	800.19'
119°38'07"	52.98'
119°38'07"	182.00'
109°20'38"	365.86'
107°28'07"	205.32'
106°47'40"	369.85'
106°47'40"	97.08'
088°09'01"	201.81'
086°36'07"	160.68'
065°25'54"	379.56'
087°26'31"	125.41'
105°47'20"	190.63'
119°46'15"	185.42'
140°11'59"	883.93'
160°37'38"	354.24'
140°13'11"	74.35'
140°13'11"	889.64'
120°57'58"	677.03'
099°13'37"	1493.07'
123°43'29"	45.75'
156°52'15"	142.75'
156°52'15"	603.96'
175°28'14"	387.40'
181°45'51"	617.71'
199°43'08"	351.52'
182°44'03"	655.61'
162°45'46"	105.98'

PIPE DATA

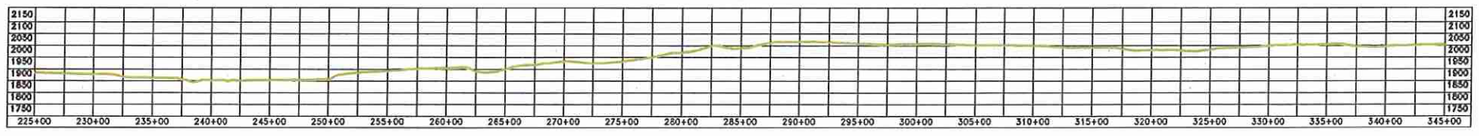


EASEMENT / WORKSPACE



Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement

PROFILE



AS-BUILT FINAL 8/30/2012

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- REBAR & LS 2884 CAP
- REBAR
- GLO BC 1912
- RIGHT-OF-WAY MARKER
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – OH
- BARBED WIRE FENCE
- GAS PIPELINE
- WATER LINE
- UG TELEPHONE LINE
- DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	11641	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	134	CRUDE 8.625"OD * 0.344"w API 5L X52 ARO
T1	1	SINGLE PIPE TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
T1	A1-7204-1	SINGLE PIPE TEST LEAD
–	AUX-01-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED
Sec. 34 & 35, T.152N, R.101W, 5th PM
McKenzie County, North Dakota

SHEET NO. 3

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

Aug 30, 2012 – 1:43pm – J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

OWNERSHIP

JAMIE TIMMRECK – 018 – LOT 1 – 344.90 FEET, 20.90 RODS

RUSSEL R. & THERESA M. TIMMRECK – 019 – LOT 4 – 1269.24 FEET – 76.92 RODS

RUSSEL R. & THERESA M. TIMMRECK – 020 – S1/2NW1/4 – 1315.59 FEET – 79.73 RODS

RUSSEL R. & THERESA M. TIMMRECK – 021 – N1/2SW1/4 – 1321.76 FEET – 80.11 RODS

LARRY J. FORTHUN – 088 – S1/2SW1/4 – 3459.95 FEET – 209.69 RODS

342+98.80 | 346+43.70 | 359+12.94 | 372+28.53 | 385+50.29 | 420+10.24

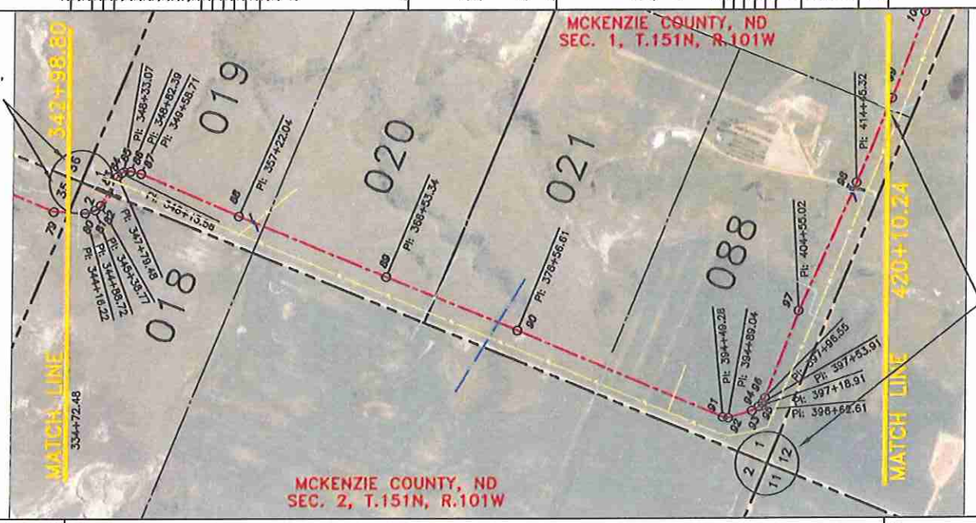
SEC. 2 ← → SEC. 1

STATIONING

342+98.80 MATCH LINE
343+70.10 Barbed Wire Fence
344+88.72 P.I. 21°29'01" LT
345+38.77 P.I. 21°20'18" LT
346+01.85 Oil, Electrical Line Crossing
346+43.70 Section Line Crossing
346+43.59 County Road 16 Crossing
346+43.70 Section Line Crossing
347+32.86 Telephone Line Crossing
347+40.13 Pipeline Crossing
347+78.48 Utility Crossing
348+13.56 P.I. 17°39'05" RT
348+33.07 P.I. 21°29'13" RT
348+82.39 P.I. 16°17'12" RT
349+58.71 P.I. 10°27'25" RT
357+22.04 P.I. 01°00'05" LT
358+53.34 P.I. 00°08'50" LT
359+12.94 1/16 Line Crossing
372+26.39 Barbed Wire Fence
372+28.53 1/4 Line Crossing
377+09.03 Drainage Crossing
378+56.61 P.I. 00°33'49" RT
385+50.29 1/16 Line Crossing
385+51.54 Barbed Wire Fence
390+76.26 Telephone Line Crossing
394+49.28 P.I. 13°28'06" LT
394+89.04 P.I. 26°08'46" LT
396+62.61 P.I. 14°54'48" RT
397+18.91 P.I. 13°37'27" RT
397+53.91 P.I. 14°30'19" LT
397+96.55 P.I. 09°29'34" RT
404+55.02 P.I. 03°33'58" RT
406+33.59 Barbed Wire Fence
413+60.64 Type T1 Test Leads
413+71.48 Barbed Wire Fence
414+04.13 Barbed Road Crossing
414+45.32 P.I. 01°40'35" LT
414+64.16 8" Main Block Valve
420+10.24 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System, NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

ALIGNMENT



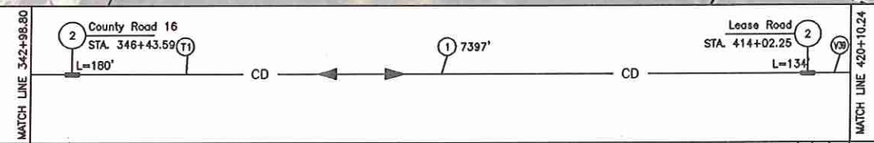
Continued from Sheet 3

Continued on Sheet 5

PI #	STATIOINING	DEFLECTION
S. Line	342+98.80	
80	344+16.22	20°12'01" LT
81	344+88.72	21°29'01" LT
82	345+38.77	21°20'18" LT
S. Line	346+43.70	
83	347+79.48	17°43'28" RT
84	348+13.56	17°39'05" RT
85	348+33.07	21°29'13" RT
86	348+82.39	16°17'12" RT
87	349+58.71	10°27'25" RT
88	357+22.04	01°00'05" LT
1/16 Line	359+12.94	
89	368+53.34	00°08'50" LT
1/4 Line	372+28.53	
90	378+56.61	00°33'49" RT
1/16 Line	385+50.29	
91	394+49.28	13°28'06" LT
92	394+89.04	26°08'46" LT
93	396+62.61	14°54'48" RT
94	397+18.91	13°37'27" RT
95	397+53.91	14°30'19" LT
96	397+96.55	09°29'34" RT
97	404+55.02	03°33'58" RT
98	414+45.32	01°40'35" LT
1/4 Line	420+10.24	

DIRECTION	DISTANCE
162°45'46"	117.42'
142°33'45"	72.50'
121°04'44"	50.05'
099°44'26"	104.93'
099°44'26"	135.78'
117°27'54"	34.08'
135°06'59"	19.51'
156°36'12"	49.32'
172°53'24"	76.32'
183°20'49"	763.33'
182°20'44"	190.90'
182°20'44"	940.40'
182°11'54"	375.19'
182°11'54"	628.08'
182°45'43"	693.68'
182°45'43"	898.99'
169°17'37"	39.76'
143°08'51"	173.57'
128°14'03"	56.30'
114°36'36"	35.00'
100°06'17"	42.64'
090°36'43"	658.47'
094°10'41"	990.30'
092°30'08"	564.92'

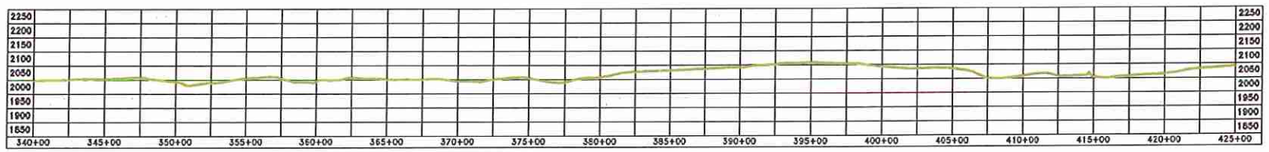
PIPE DATA



EASEMENT / WORKSPACE

Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement.

PROFILE



AS-BUILT FINAL 9/30/2012

500' 0 500' 1000'
scale feet

LEGEND

AS CONSTRUCTED LINE
PIPELINE PROFILE
REBAR & LS 2684 CAP
REBAR
CLO BC 1912
RIGHT-OF-WAY MARKER
TEST LEAD
FUTURE TIE-IN
ELECTRIC – OH
BARBED WIRE FENCE
GAS PIPELINE
WATER LINE
UG TELEPHONE LINE
DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	7397	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	314	CRUDE 8.625"OD * 0.322"w API 5L X52 ARO
V39	1	8" MAIN BLOCK VALVE
T1	1	SINGLE PIPE TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
T1	A4-7204-1	SINGLE PIPE TEST LEAD
V39	SSP-04-1006A	8" MAIN BLOCK VALVE W/8" LATERAL CONNECTION
–	ALX-01-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED
Sec. 1 & 2, T.151N, R.101W, 5th PM
McKenzie County, North Dakota

SHEET NO. 4

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN BY	CHK'D BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

RUSSELL R. & THERESA M. TIMMRECK – 022
S1/2SE1/4
2640.69 FEET
160.04 RODS

DORA & LYLE BRATCHER – 024
LOT 7
1249.19 FEET
75.71 RODS

DORA & LYLE BRATCHER – 028
NE1/4
210.61 FEET, 12.76 RODS

DORA & LYLE BRATCHER – 113
NW1/4
3034.70 FEET
183.92 RODS

DORA & LYLE BRATCHER – 114
SE1/4
3616.63 FEET
219.19 RODS

RUSSELL R. & THERESA M. TIMMRECK – 112
NE1/4NE1/4
378.23 FEET, 22.80 RODS

420+10.24 — SEC. 1 — 446+50.93 — SEC. 6 — 459+00.12 — SEC. 7 — 489+34.82 — 491+45.43 — 527+62.06 — SEC. 18 — 531+38.29

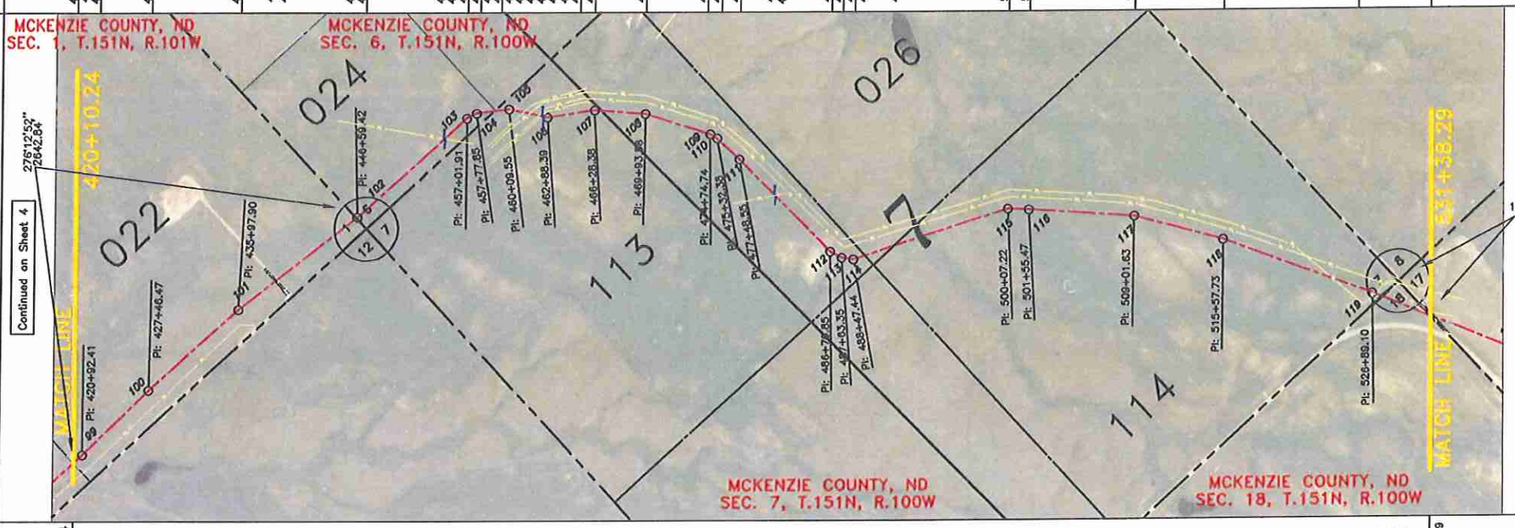
STATIONING

420+10.24 MATCH LINE
420+13.35 Barbed Wire Fence
420+92.41 P.I. 01°50'40" LT
427+46.47 P.I. 02°18'46" RT
435+97.90 P.I. 04°07'03" RT
438+67.66 O.H. Electrical Line Crossing
439+34.58 Lease Road Crossing
446+50.93 Section Line Crossing
446+59.42 P.I. 04°16'55" LT
454+83.92 Type T1 Test Leads
454+85.96 Pipeline Crossing
457+01.91 P.I. 14°43'28" RT
457+77.85 P.I. 20°15'33" RT
459+00.12 Section Line Crossing
460+09.55 P.I. 19°07'23" RT
460+34.36 O.H. Electrical Line Crossing
461+15.54 Pipeline Crossing
461+58.04 Pipeline Crossing
462+88.39 Pipeline Crossing
462+47.49 Pipeline Crossing
462+54.15 Type T1 Test Leads
462+88.39 P.I. 20°20'11" LT
466+28.38 P.I. 12°41'13" RT
469+93.58 P.I. 13°16'40" RT
474+74.74 P.I. 14°20'49" RT
475+32.38 P.I. 11°18'46" RT
477+48.55 P.I. 01°58'13" RT
481+06.61 Type T1 Test Leads
481+11.56 Pipeline Crossing
486+70.85 P.I. 17°21'55" LT
487+63.35 P.I. 19°42'47" LT
488+34.82 P.I. 25°40'59" LT
489+34.82 1/4 Line Crossing
491+45.43 1/4 Line Crossing
500+07.22 P.I. 20°06'24" RT
501+55.47 P.I. 01°15'33" RT
509+01.63 P.I. 11°14'32" RT
515+57.73 P.I. 05°06'37" RT
523+88.90 Pipeline Crossing
526+89.10 P.I. 01°43'31" RT
527+06.00 Pipeline Crossing
527+20.34 Barbed Wire Fence
527+62.06 34th St. Section Line Crossing
527+64.28 34th St. NW
531+38.29 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System, NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

N

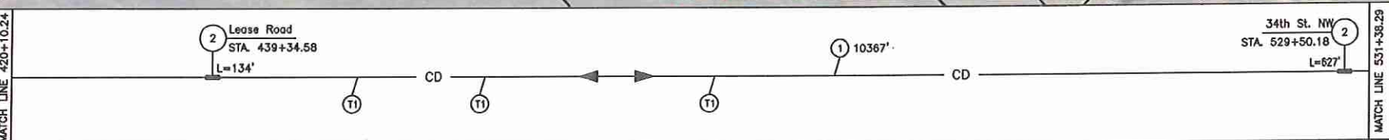
ALIGNMENT



PI #	STATIONING	DEFLECTION
1/4 Line	420+10.24	
99	420+92.41	01°50'40" LT
100	427+46.47	02°18'46" RT
101	435+97.90	04°07'03" RT
S. Line	446+50.93	
102	446+59.42	04°16'55" LT
103	457+01.91	14°43'28" RT
104	457+77.85	20°15'33" RT
S. Line	459+00.12	
105	460+09.55	19°07'23" RT
106	462+88.39	20°20'11" LT
107	466+28.38	12°41'13" RT
108	469+93.58	13°16'40" RT
109	474+74.74	14°20'49" RT
110	475+32.38	11°18'46" RT
111	477+48.55	01°58'13" RT
112	486+70.85	17°21'55" LT
113	487+63.35	19°42'47" LT
114	488+47.44	25°40'59" LT
1/4 Line	489+34.82	
1/4 Line	491+45.43	
115	500+07.22	20°06'24" RT
116	501+55.47	01°15'33" RT
117	509+01.63	11°14'32" RT
118	515+57.73	05°06'37" RT
119	526+89.10	01°43'31" RT
S. Line	527+62.06	
S. Line	531+38.29	

DIRECTION	DISTANCE
092°30'06"	82.17'
090°39'26"	654.06'
092°58'12"	851.43'
097°05'15"	1053.03'
097°05'15"	8.49'
092°48'20"	1042.49'
107°31'48"	75.94'
127°47'21"	122.27'
127°47'21"	109.43'
146°54'44"	278.84'
126°34'33"	339.99'
139°15'46"	365.20'
152°32'26"	481.16'
166°53'15"	57.64'
178°12'01"	216.17'
180°10'14"	922.30'
162°48'19"	92.50'
143°05'32"	84.09'
117°24'33"	87.38'
117°24'33"	210.61'
117°24'33"	861.79'
137°30'57"	148.25'
138°46'30"	746.16'
150°01'02"	656.10'
155°07'39"	1131.37'
156°51'10"	72.96'
156°51'10"	376.23'

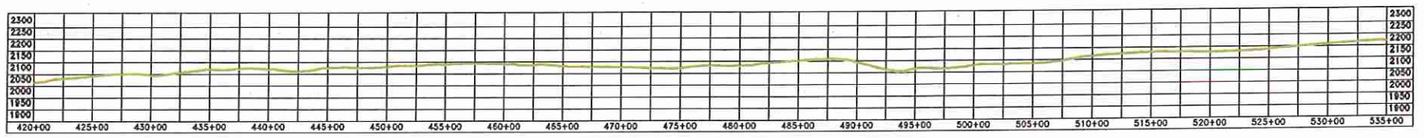
PIPE DATA



EASEMENT / WORKSPACE

Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement

PROFILE



AS-BUILT FINAL 8/30/2012

500' 0 500' 1000'
scale feet

LEGEND

AS CONSTRUCTED LINE
PIPELINE PROFILE
REBAR & LS 2884 CAP
REBAR
GLO BC 1912
RIGHT-OF-WAY MARKER
TEST LEAD
FUTURE TIE-IN
ELECTRIC – OH
BARBED WIRE FENCE
GAS PIPELINE
WATER LINE
UG TELEPHONE LINE
DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	10387	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	751	CRUDE 8.625"OD * 0.322"w API 5L X52 ARO
T1	3	SINGLE PIPE TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
T1	A4-7204-1	SINGLE PIPE TEST LEAD
–	ALX-01-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED
Sec. 1, 6, 7 & 18, T.151N, R.100W, 5th PM
McKenzie County, North Dakota

SHEET NO. 5

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/16/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

James, Alan, & Lyle Bruins 115 — NW1/4 2686.91 FEET 162.84 RODS
James, Alan, & Lyle Bruins 116 — SW1/4 2642.69 FEET 160.16 RODS
James, Alan, & Lyle Bruins 117 — SE1/4 512.93 FEET, 31.09 RODS
Lynn Hovde & Nancy Chamness 118 — NE1/4 3518.95 FEET 213.27 RODS

531+38.29 — 558+25.20 — 584+67.89 — 589+80.84 — 624+99.79

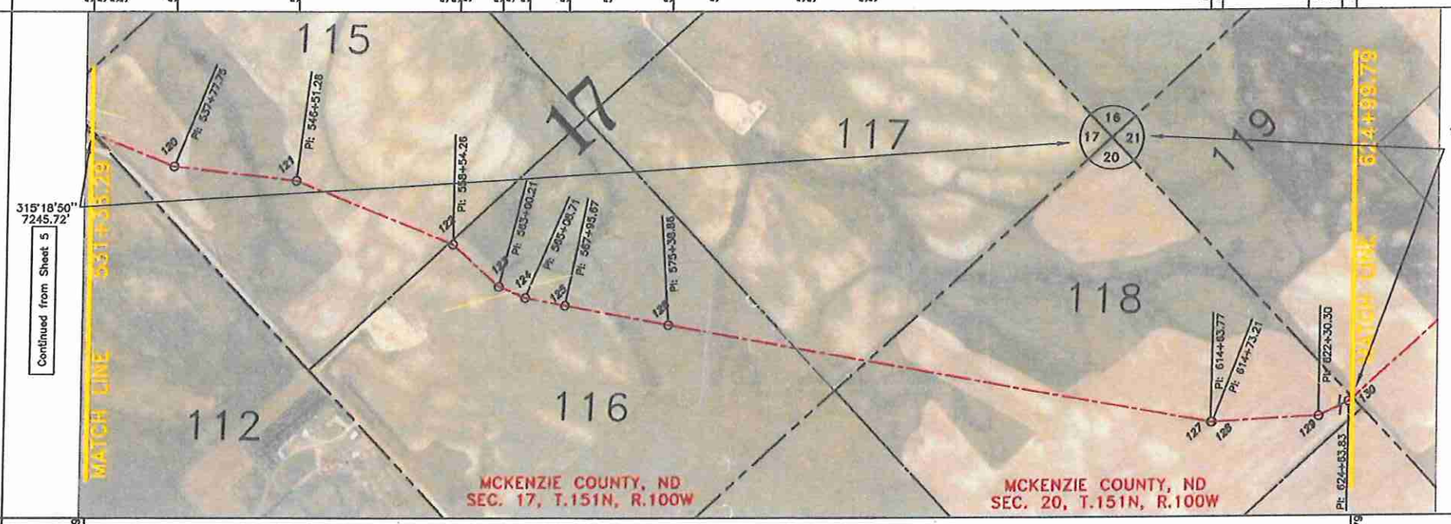
SEC. 17 — SEC. 20

STATIONING

531+38.29 MATCH LINE
531+86.21 C.L. Road Crossing
532+88.13 B.W. Fence Crossing
532+98.13 OH Electrical Crossing
537+77.75 P.I. 15°13'15" LT
546+51.28 P.I. 15°27'14" RT
558+25.20 1/4 Line Crossing
558+54.26 P.I. 19°50'08" RT
558+65.29 OH Electrical Crossing
563+00.21 P.I. 19°12'52" LT
563+99.77 Pipeline Crossing
565+08.71 P.I. 11°34'25" LT
567+95.67 P.I. 00°23'07" LT
570+71.26 B.W. Fence Crossing
575+38.86 P.I. 00°24'37" LT
576+22.13 Utility Crossing
584+67.89 1/4 Line Crossing
584+75.38 B.W. Fence Crossing
589+61.12 B.W. Fence Crossing
589+80.84 Section Line Crossing
614+63.77 P.I. 07°41'03" LT
614+73.21 P.I. 05°43'31" LT
622+30.30 P.I. 23°07'36" LT
622+94.68 Pipeline Crossing
623+83.99 Dyer Tr. Test Lead
624+63.83 P.I. 16°08'35" LT
624+99.79 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

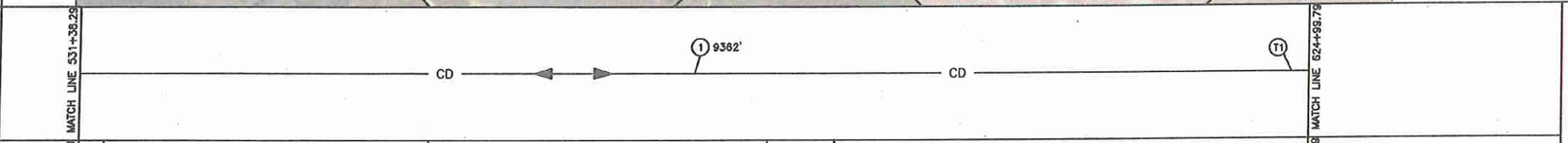
ALIGNMENT



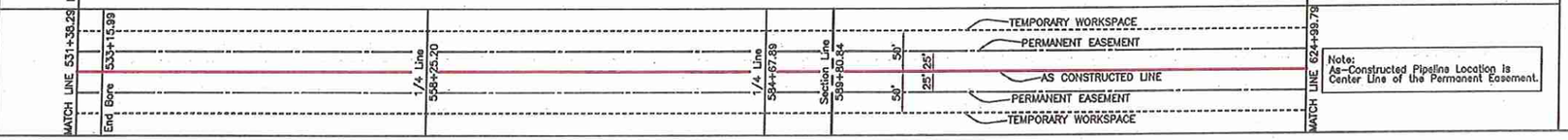
PI #	STATIOINING	DEFLECTION
S. Line	531+38.29	
120	537+77.75	15°13'15" LT
121	546+51.28	15°27'14" RT
1/4 Line	558+25.20	
122	558+54.26	19°50'08" RT
123	563+00.21	19°12'52" LT
124	565+08.71	11°34'25" LT
125	567+95.67	00°23'07" LT
126	575+38.86	00°24'37" LT
1/4 Line	584+67.89	
S. Line	589+80.84	
127	614+63.77	07°41'03" LT
128	614+73.21	05°43'31" LT
129	622+30.30	23°07'36" LT
130	624+63.83	16°08'35" LT
S. Line	624+99.79	

DIRECTION	DISTANCE
156°51'10"	639.46'
141°37'55"	873.53'
157°05'09"	1173.92'
157°05'09"	29.06'
176°55'17"	445.95'
157°42'25"	208.50'
146°08'00"	286.96'
145°44'53"	743.19'
145°20'16"	929.03'
145°20'16"	512.95'
145°20'16"	2482.93'
137°39'13"	9.44'
131°55'42"	757.09'
108°48'06"	233.53'
092°39'31"	35.96'

PIPE DATA

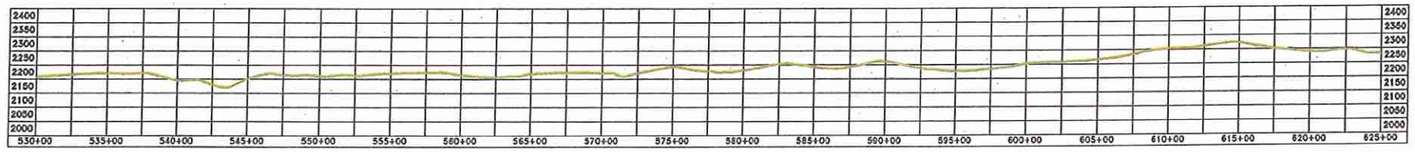


EASEMENT / WORKSPACE



Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement.

PROFILE



AS-BUILT FINAL 8/30/2012

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- REBAR & LS 2884 CAP
- REBAR
- GLO BC 1912
- (c) RIGHT-OF-WAY MARKER
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC - OH
- BARBED WIRE FENCE
- GAS PIPELINE
- WATER LINE
- UG TELEPHONE LINE
- DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	9362	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
T1	1	SINGLE PIPE TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
T1	A1-7204-1	SINGLE PIPE TEST LEAD
--	ALX-01-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED
Sec. 17 & 20, T.151N, R.100W, 5th PM
McKenzie County, North Dakota

SHEET NO. 6

Kadrmas Lee & Jackson
Engineers Surveyors Planners
828 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	DWD BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

Aug 30, 2012 – 2:08pm – J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

OWNERSHIP

624+99.79 — Lynn & Patricia Hovde 119 — W1/2NW1/4 — 1327.45 FEET — 80.45 RODS — 638+27.24

638+27.24 — Lynn Hovde & Nancy Chamness 120 — SE1/4NW1/4 — 1349.92 FEET — 81.81 RODS — 651+77.16

SEC. 21

651+77.16 — Edwin & Joycelaine Evenson 121 — NE1/4 — 2665.52 FEET — 161.55 RODS — 678+42.68

678+42.68 — Edwin & Joycelaine Evenson 122 — SW1/4NW1/4,NW1/4SW1/4 — 1341.64 FEET — 81.31 RODS — 691+84.32

691+84.32 — Edwin & Joycelaine Evenson 123 — NE1/4SW1/4 — 1344.48 FEET — 81.48 RODS — 705+28.80

SEC. 22

705+28.80 — Merton & Jacqueline Schwartz 124 — SE1/4 — 2665.10 FEET — 161.52 RODS — 731+93.90

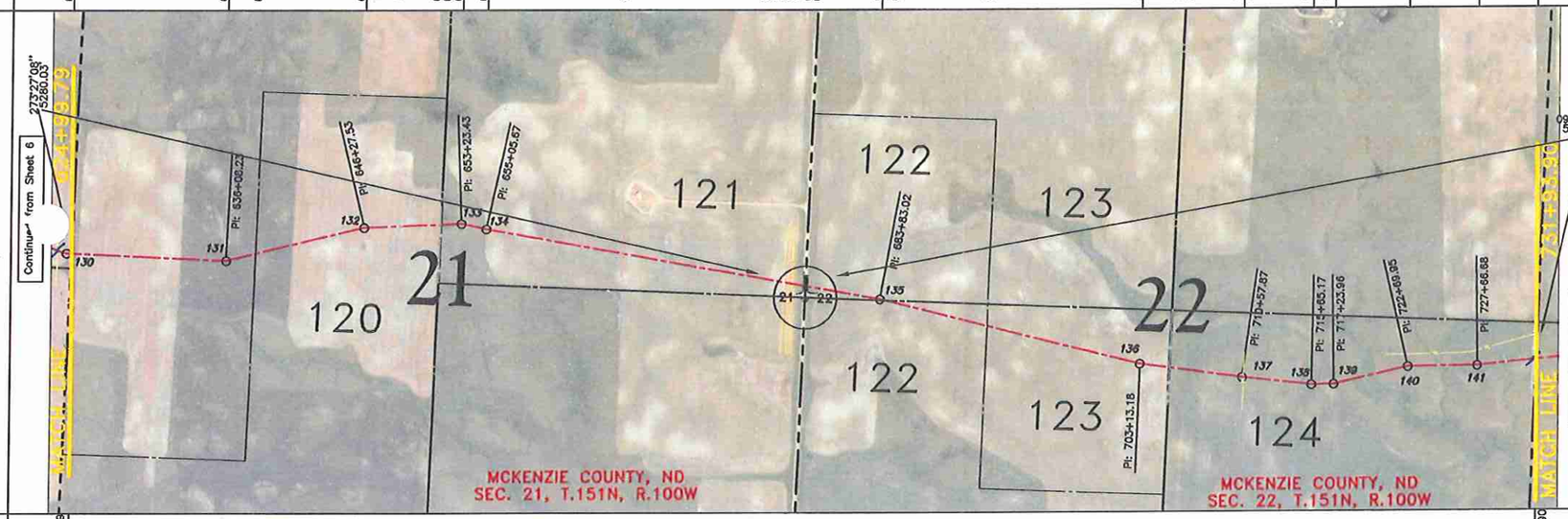
STATIONING

624+99.79 MATCH LINE
636+08.23 P.I. 15°59'53" LT
638+27.24 1/16 Line Crossing
646+27.53 P.I. 11°09'51" RT
648+91.61 Utility Crossing
651+74.22 B.W. Fence Crossing
651+77.16 1/4 Line Crossing
653+23.43 P.I. 14°13'51" RT
655+05.67 P.I. 01°56'57" LT
665+09.65 OH Electrical Crossing
676+66.05 Telephone Line Crossing
676+76.77 Telephone Line Crossing
677+38.77 Telephone Line Crossing
677+48.54 Telephone Line Crossing
678+42.68 Section Line Crossing
678+42.82 County Road 29
683+83.02 P.I. 03°56'10" RT
684+11.17 1/4 Line Crossing
691+84.32 1/16 Line Crossing
703+13.18 P.I. 06°19'48" LT
705+28.43 B.W. Fence Crossing
705+28.80 1/4 Line Crossing
710+57.87 P.I. 01°31'26" LT
710+68.00 Pipeline Crossings
715+65.17 P.I. 07°01'37" LT
717+23.96 P.I. 12°11'50" LT
722+69.95 P.I. 12°25'19" RT
727+66.68 P.I. 05°06'14" LT
731+71.25 Type T1 Test Leads
731+71.44 B.W. Fence Crossing
731+93.90 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

N

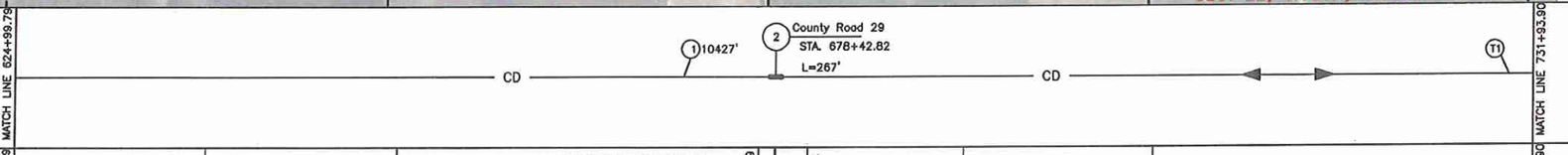
ALIGNMENT



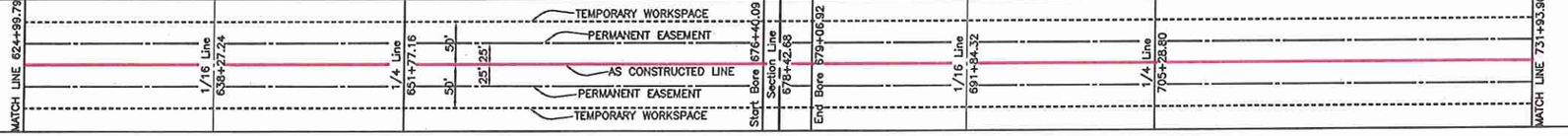
PI #	STATIONING	DEFLECTION
S. Line	624+99.79	
131	636+08.23	15°59'53" LT
1/16 Line	638+27.24	
132	646+27.53	11°09'51" RT
1/4 Line	651+77.16	
133	653+23.43	14°13'51" RT
134	655+05.67	01°56'57" LT
S. Line	678+42.68	
135	683+83.02	03°56'10" RT
1/4 Line	684+11.17	
1/16 Line	691+84.32	
136	703+13.18	06°19'48" LT
1/4 Line	705+28.80	
137	710+57.87	01°31'26" LT
138	715+65.17	07°01'37" LT
139	717+23.96	12°11'50" LT
140	722+69.95	12°25'19" RT
141	727+66.68	05°06'14" LT
S. Line	731+93.90	

DIRECTION	DISTANCE
092°39'31"	1108.44'
076°39'38"	219.01'
076°39'38"	800.29'
087°49'29"	549.63'
087°49'29"	146.27'
102°03'20"	182.24'
100°06'23"	2337.01'
100°06'23"	540.34'
104°02'33"	28.15'
104°02'33"	773.15'
104°02'33"	1128.86'
097°42'45"	215.62'
097°42'45"	529.07'
096°11'19"	507.30'
089°09'42"	158.79'
076°57'52"	545.99'
089°23'11"	496.73'
084°16'57"	427.22'

PIPE DATA

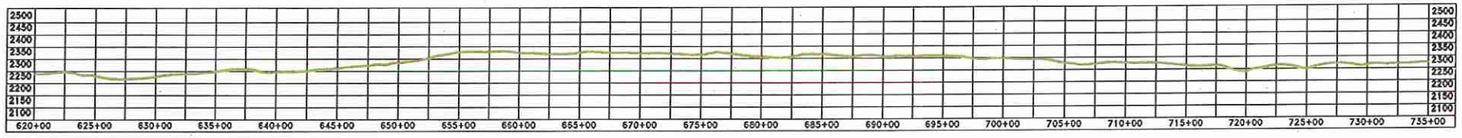


EASEMENT / WORKSPACE



Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement.

PROFILE



AS-BUILT FINAL 8/30/2012

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- REBAR & LS 2884 CAP
- REBAR
- GLO BC 1912
- RIGHT-OF-WAY MARKER
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – OH
- BARBED WIRE FENCE
- GAS PIPELINE
- WATER LINE
- UG TELEPHONE LINE
- DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	10427	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	267	CRUDE 8.625"OD * 0.322"w API 5L X52 ARC
T1	1	SINGLE PIPE TEST LEADS

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
T1	A4-7204-1	SINGLE PIPE TEST LEAD
–	ALX-01-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED
Sec. 21 & 22, T.151N, R.100W, 5th PM
McKenzie County, North Dakota

SHEET NO. 7

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CH'D BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

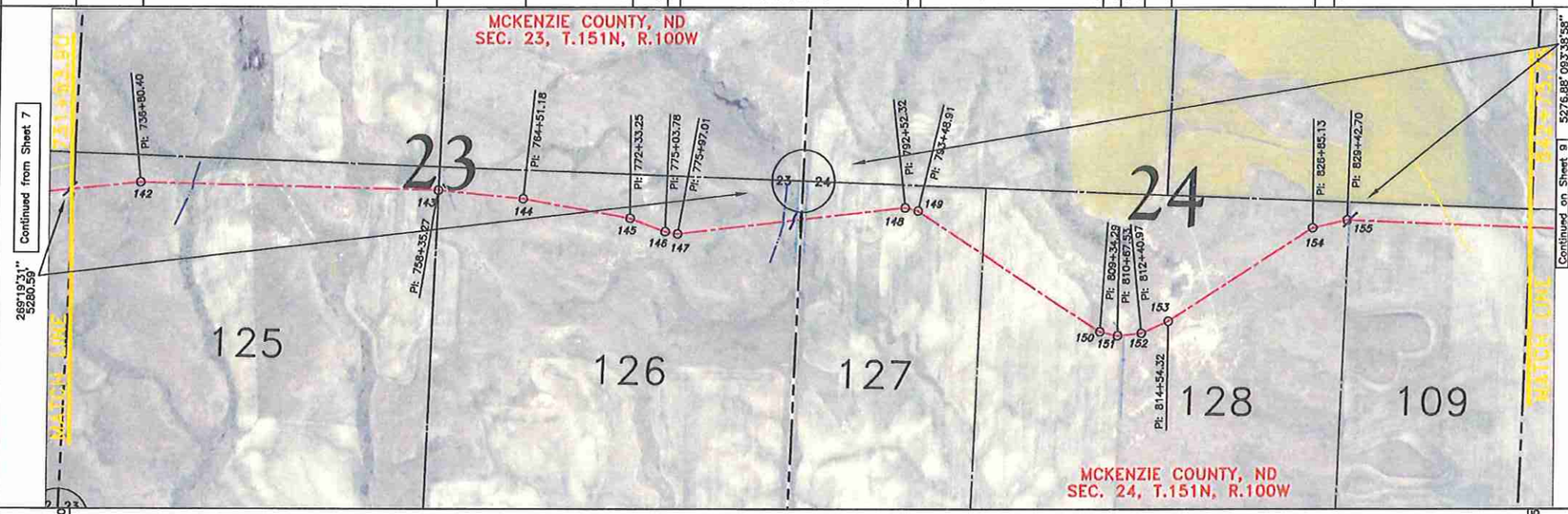
OWNERSHIP	731+93.90	Alfred or Nora Waltzin Trust 125 SW1/4 2643.67 FEET 160.22 RODS	758+37.57	Alfred or Nora Waltzin Trust 126 SE1/4 2669.81 FEET 161.81 RODS	785+07.38	Alfred or Nora Waltzin Trust 127 W1/2SW1/4 1409.01 FEET 85.39 RODS	799+16.39	Theodore Waltzin Trust 128 E1/2SW1/4 & W1/2SE1/4 3040.16 FEET 184.25 RODS	829+58.55	James Walla 109 E1/2SE1/4 1319.20 FEET 79.95 RODS	842+75.75
		SEC. 23				SEC. 24					

STATIONING: 731+93.90 MATCH LINE; 736+80.40 P.I. 07°08'22" RT; 740+58.36 Creek CL Crossing; 758+35.27 P.I. 4°19'10" RT; 758+37.57 1/4 Line Crossing; 759+05.49 B.W. Fence Crossing; 764+51.18 P.I. 04°32'48" RT; 772+33.25 P.I. 10°20'24" RT; 775+03.78 P.I. 10°35'11" LT; 775+97.01 P.I. 16°35'31" LT; 783+78.82 Creek CL Crossing; 784+07.38 Section Line Crossing; 784+92.47 Temporary Test Leads; 785+04.99 133rd Ave NW; 785+07.38 Section Line Crossing; 785+36.32 B.W. Fence Crossing; 785+65.51 8" Main Block Valve; 792+52.32 P.I. 19°50'46" RT; 793+48.91 P.I. 19°50'55" RT; 799+16.39 1/16 Line Crossing; 809+34.29 P.I. 20°28'04" LT; 810+67.53 P.I. 18°48'52" LT; 811+08.43 B.W. Fence Crossing; 812+40.97 P.I. 17°21'36" LT; 814+54.32 P.I. 09°21'27" LT; 826+85.13 P.I. 19°50'56" RT; 829+42.70 P.I. 15°24'10" RT; 829+55.11 B.W. Fence Crossing; 829+56.55 1/16 Line Crossing; 829+62.85 Type T1 Test Leads; 837+15.38 Pipeline Crossings; 842+75.75 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

N

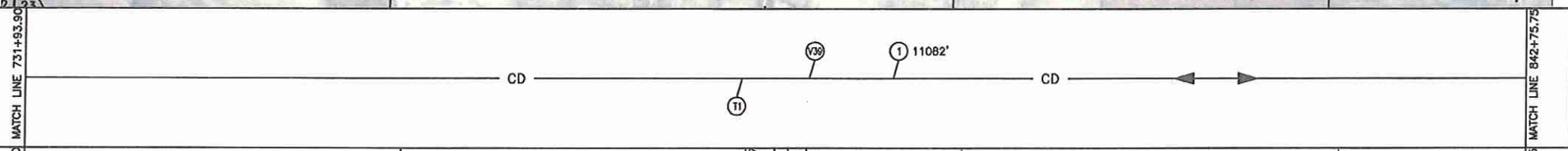
ALIGNMENT



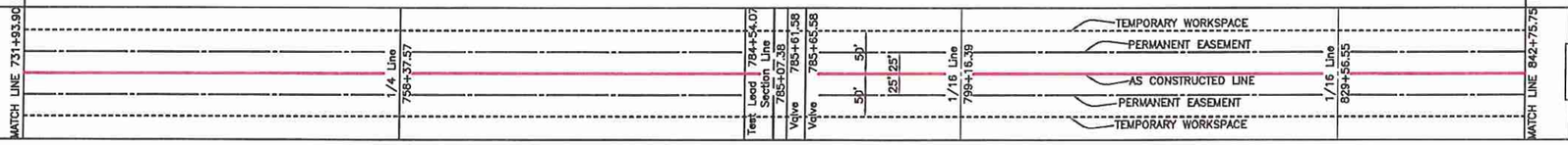
PI #	STATIOINING	DEFLECTION
S. Line	731+93.90	
142	736+80.40	07°08'22" RT
143	758+35.27	04°19'10" RT
1/4 Line	758+37.57	
144	764+51.18	04°32'48" RT
145	772+33.25	10°20'24" RT
146	775+03.78	10°35'11" LT
147	775+97.01	16°35'31" LT
S. Line	785+07.38	
148	792+52.32	19°50'46" RT
149	793+48.91	19°50'55" RT
1/16 Line	799+16.39	
150	809+34.29	20°28'04" LT
151	810+67.53	18°48'52" LT
152	812+40.97	17°21'36" LT
153	814+54.32	09°21'27" LT
154	826+85.13	19°50'56" RT
155	829+42.70	15°24'10" RT
1/6 Line	829+56.55	
S. Line	842+75.75	

DIRECTION	DISTANCE
084°16'57"	486.50'
091°25'19"	2154.87'
095°44'29"	2.30'
095°44'29"	613.61'
100°17'17"	782.07'
110°37'41"	270.53'
100°02'30"	93.23'
083°26'59"	910.36'
083°26'59"	744.95'
103°17'45"	96.59'
123°08'40"	567.47'
123°08'40"	1017.91'
102°40'36"	133.24'
083°51'44"	173.44'
066°30'08"	213.35'
057°08'41"	1230.81'
076°59'37"	257.57'
092°23'47"	13.85'
092°23'47"	1319.20'

PIPE DATA

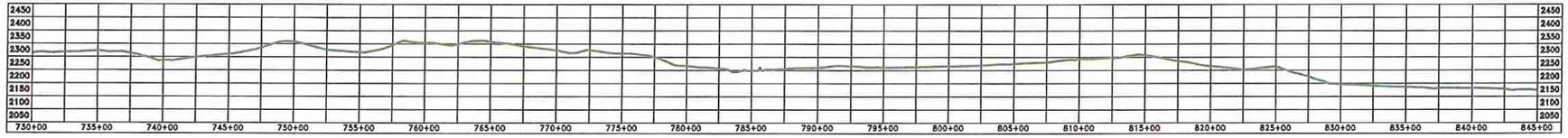


EASEMENT / WORKSPACE



Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement.

PROFILE



AS-BUILT FINAL 8/30/2012

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- REBAR & LS 2884 CAP
- REBAR
- GLO BC 1912
- RIGHT-OF-WAY MARKER
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – OH
- BARBED WIRE FENCE
- GAS PIPELINE
- WATER LINE
- UG TELEPHONE LINE
- DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	11082	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
V39	1	8" MAIN BLOCK VALVE
T1	1	SINGLE PIPE TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
V39	SBP-C4-1006A	8" MAIN BLOCK VALVE W/8" LATERAL CONNECTION
T1	A4-7204-1	SINGLE PIPE TEST LEAD
–	ALX-01-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED
Sec. 23 & 24, T.151N, R.100W, 5th PM
McKenzie County, North Dakota

SHEET NO. 8

Kadrmas Lee & Jackson
Engineers Surveyors Planners

SADDLE BUTTE PIPELINE, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN BY	CHK'D BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

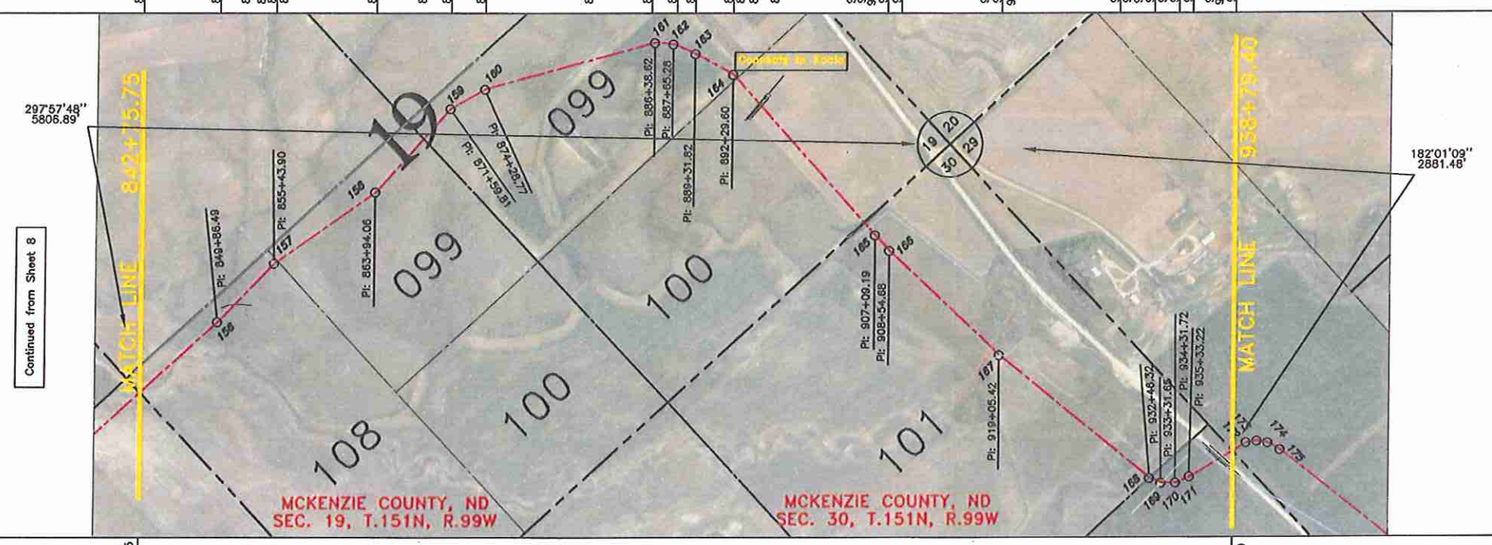
842+75.75	JAMES C. WALLA – 108	855+76.18	JASON & PEGGY S. LEISETH – 099	892+65.17	JAMES C. WALLA – 100	905+95.95	JAMES C. WALLA – 101	932+49.10	JAMES C. WALLA – 102	938+79.40
	W1/2SW1/4 1300.43 FEET 78.81 RODS		NE1/4SW1/4 & N1/2SE1/4 3688.99 FEET 223.58 RODS		S1/2SE1/4 1330.78 FEET 80.65 RODS		NE1/4 2653.15 FEET 160.80 RODS		N1/2SE1/4 630.30 FEET 38.20 RODS	
	SEC. 19						SEC. 30			

STATIONING

842+75.75 MATCH LINE
849+86.49 P.I. 03°11'41" LT
851+54.62 Lease Road C.L.
855+42.56 Barbed Wire Fence
855+43.90 P.I. 10°35'21" RT
855+76.18 1/16 Line Crossing
863+94.06 P.I. 13°17'39" LT
868+86.94 1/4 Line Crossing
871+59.81 P.I. 18°33'50" RT
874+28.77 P.I. 14°39'37" RT
881+51.23 Barbed Wire Fence
886+38.62 P.I. 19°22'26" RT
887+65.28 P.I. 19°28'03" RT
889+31.82 P.I. 05°02'48" RT
892+29.60 P.I. 19°37'11" RT
892+65.17 1/16 Line Crossing
893+63.43 8" Main Block Valve Connects to Koala System
895+06.49 Lease Road Crossing
905+93.77 County Road Crossing
906+00.95 Section Line Crossing
907+09.19 P.I. 00°53'24" LT
908+54.68 P.I. 04°22'22" LT
918+30.37 O.H. Electrical Line Crossing
919+05.42 P.I. 03°47'49" LT
919+17.86 Barbed Wire Fence
932+46.32 P.I. 17°23'00" LT
932+49.10 1/4 Line Crossing
932+60.14 Barbed Wire Fence
933+31.65 P.I. 22°20'25" LT
933+36.78 Pipeline Crossing
934+31.72 P.I. 23°10'46" LT
935+33.22 P.I. 07°05'44" LT
937+35.44 Barbed Wire Fence
937+80.42 131st Ave NW
938+79.40 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

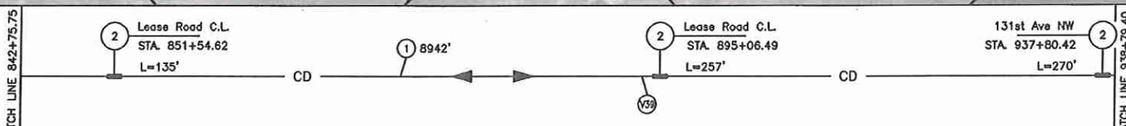
ALIGNMENT



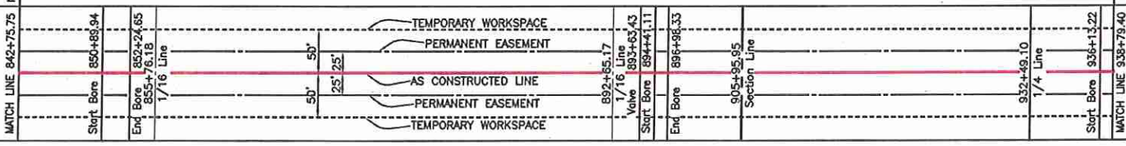
PI #	STATIONING	DEFLECTION
S. Line	842+75.75	
156	849+86.49	03°11'41" LT
157	855+43.90	10°35'21" RT
1/16 Line	855+76.18	
158	863+94.06	13°17'39" LT
1/4 Line	868+86.94	
159	871+59.81	18°33'50" RT
160	874+28.77	14°39'37" RT
161	886+38.62	19°22'26" RT
162	887+65.28	19°28'03" RT
163	889+31.82	05°02'48" RT
164	892+29.60	19°37'11" RT
1/16 Line	892+65.17	
S. Line	905+95.95	
165	907+09.19	00°53'24" LT
166	908+54.68	04°22'22" LT
167	919+05.42	03°47'49" LT
168	932+46.32	17°23'00" LT
1/4 Line	932+49.10	
169	933+31.65	22°20'25" LT
170	934+31.72	23°10'46" LT
171	935+33.22	07°05'44" LT
S. Line	938+79.40	

DIRECTION	DISTANCE
092°23'47"	710.74'
089°12'06"	557.41'
099°47'27"	32.27'
099°47'27"	817.89'
086°29'48"	492.88'
086°29'48"	272.87'
105°03'38"	268.96'
119°43'15"	1209.85'
139°05'41"	126.66'
158°33'44"	166.54'
163°36'32"	297.78'
183°13'43"	35.57'
183°13'43"	1330.78'
183°13'43"	113.24'
182°20'19"	145.49'
177°57'57"	1050.74'
174°10'08"	1340.90'
156°47'08"	2.78'
156°47'08"	82.55'
134°26'43"	100.07'
111°15'57"	101.50'
104°10'13"	346.18'

PIPE DATA

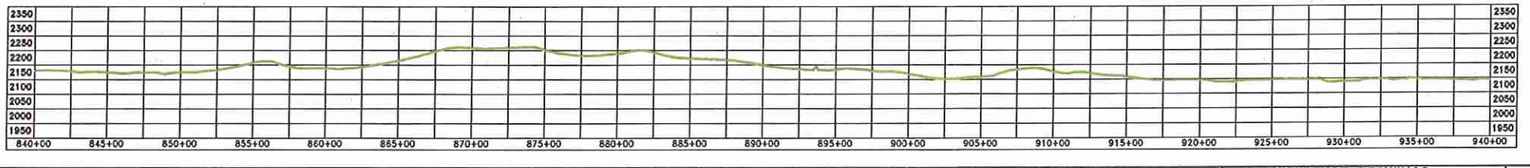


EASEMENT / WORKSPACE



Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement.

PROFILE



AS-BUILT FINAL 8/30/2012

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- REBAR & LS 2884 CAP
- REBAR
- GLO BC 1912
- (o) RIGHT-OF-WAY MARKER
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – OH
- BARBED WIRE FENCE
- GAS PIPELINE
- WATER LINE
- UG TELEPHONE LINE
- DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	8942	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	662	CRUDE 8.625"OD * 0.322"w API 5L X52 ARO
V39	1	8" MAIN BLOCK VALVE

SUMMARY OF MATERIALS

MK. NO	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
V39	SBP-04-1066A	8" MAIN BLOCK VALVE W/6" LATERAL CONNECTION
–	ALX-01-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED
Sec. 19 & 30, T.151N, R.99W, 5th PM
McKenzie County, North Dakota

SHEET NO. 9

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

938+79.40 — JAMES C. WALLA – 103 — W1/2SW1/4 — 2556.03 FEET — 154.91 RODS — 964+35.43 — SEC. 29

964+35.43 — JASON & PEGGY S. LEISETH – 104 — NW1/4 — 2663.61 FEET — 161.43 RODS — 990+99.04 — SEC. 32

990+99.04 — JASON & PEGGY S. LEISETH – 105 — SW1/4 — 2649.84 FEET — 160.60 RODS — 1017+48.88

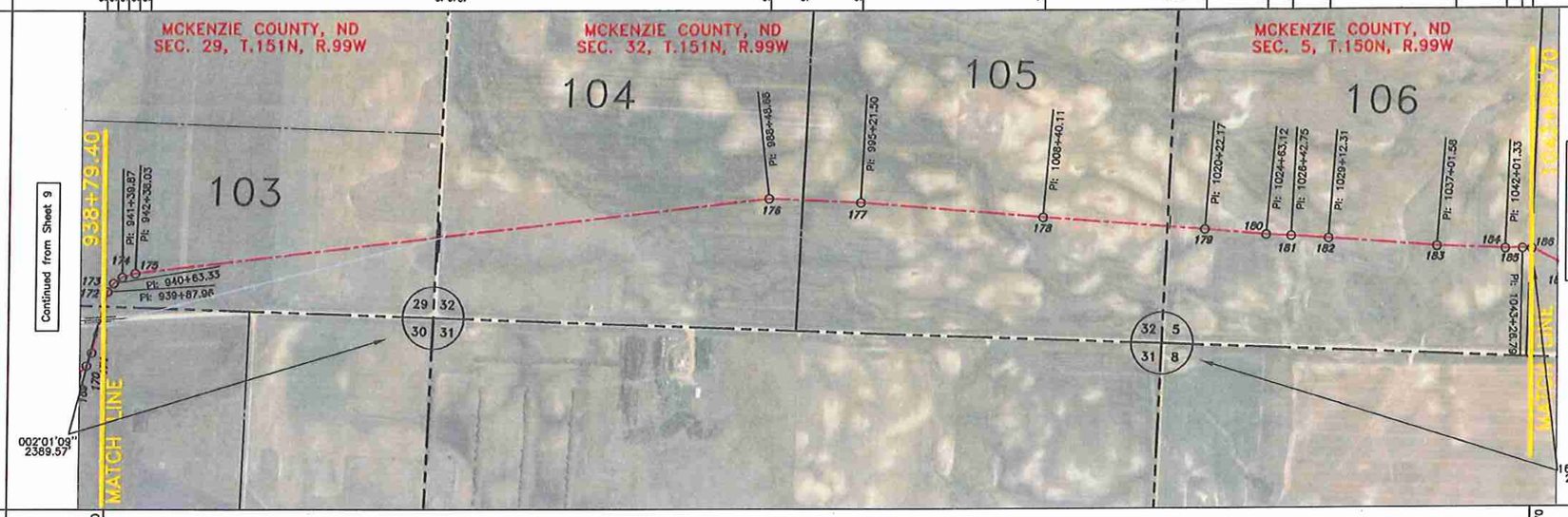
1017+48.88 — JASON & PEGGY S. LEISETH – 106 — Lot 4 & S1/2NW1/4 — 2640.82 FEET — 160.05 RODS — 1043+89.70 — SEC. 5

STATIONING

938+79.40 MATCH LINE
939+87.96 P.I. 21°53'45" RT
940+63.33 P.I. 18°47'38" RT
941+39.87 P.I. 19°26'00" RT
942+38.03 P.I. 09°01'43" RT
964+35.43 Section Line Crossing
964+46.65 County Road C.L.
964+86.24 Barbed Wire Fence
988+48.68 P.I. 09°09'53" RT
990+99.04 1/4 Line Crossing
995+21.50 P.I. 02°17'31" RT
1008+40.11 P.I. 00°23'03" LT
1017+48.88 Section Line Crossing
1017+68.87 2-Track Road C.L.
1020+22.17 P.I. 00°43'22" RT
1024+63.12 P.I. 02°29'22" LT
1026+42.75 P.I. 01°29'53" RT
1029+12.31 P.I. 00°17'16" RT
1037+01.58 P.I. 02°07'14" LT
1042+01.33 P.I. 02°47'07" LT
1043+26.79 P.I. 02°50'16" RT
1043+89.70 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

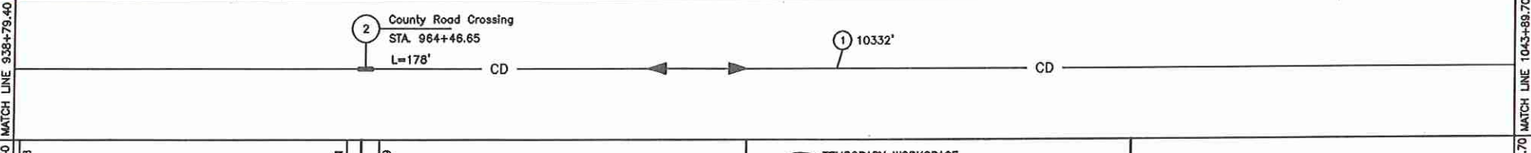
ALIGNMENT



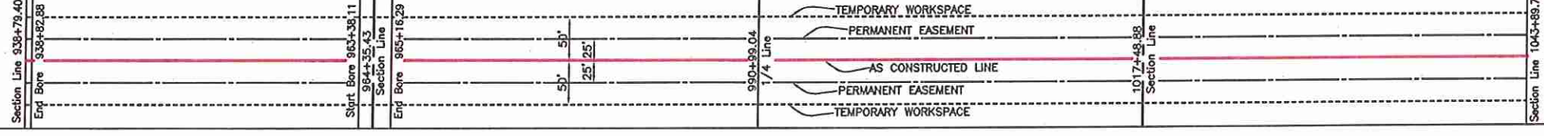
PI #	STATIONING	DEFLECTION
S. Line	938+79.40	
172	939+87.96	21°53'45" RT
173	940+63.33	18°47'38" RT
174	941+39.87	19°26'00" RT
175	942+38.03	09°01'43" RT
S. Line	964+35.43	
176	988+48.68	09°09'53" RT
1/4 Line	990+99.04	
177	995+21.50	02°17'31" RT
178	1008+40.11	00°23'03" LT
S. Line	1017+48.88	
179	1020+22.17	00°43'22" RT
180	1024+63.12	02°29'22" LT
181	1026+42.75	01°29'53" RT
182	1029+12.31	00°17'16" RT
183	1037+01.58	02°07'14" LT
184	1042+01.33	02°47'07" LT
185	1043+26.79	02°50'16" RT
1/4 Line	1043+89.70	

DIRECTION	DISTANCE
104°10'13"	108.56'
126°03'58"	75.37'
144°51'36"	76.54'
164°17'36"	98.16'
173°19'19"	2197.40'
173°19'19"	2413.25'
182°29'12"	250.36'
182°29'12"	422.46'
184°46'43"	1318.61'
184°23'40"	908.77'
184°23'40"	273.29'
185°07'02"	440.95'
182°37'40"	179.63'
184°07'33"	269.56'
184°24'49"	789.27'
182°17'35"	499.75'
179°30'28"	125.46'
182°20'44"	62.91'

PIPE DATA

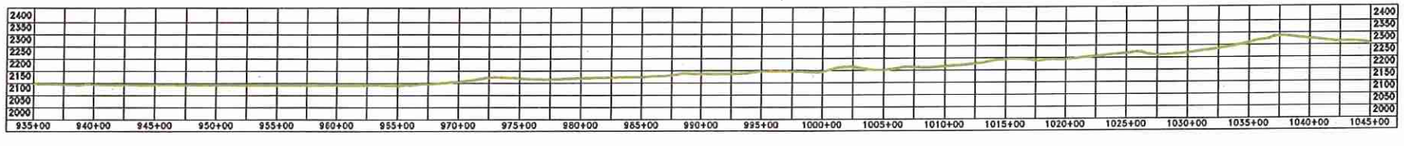


EASEMENT / WORKSPACE



Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement.

PROFILE



AS-BUILT
FINAL
8/30/2012

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- REBAR & LS 2684 CAP
- REBAR
- GLO BC 1912
- (o) RIGHT-OF-WAY MARKER
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – OH
- BARBED WIRE FENCE
- GAS PIPELINE
- WATER LINE
- UG TELEPHONE LINE
- DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	10332	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	178	CRUDE 8.625"OD * 0.322"w API 5L X52 ARO

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
–	ALX-01-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED

Sec. 29 & 32, T.151N, R.99W, Sec.5, T. 150N, R.99W, 5th PM
McKenzie County, North Dakota

SHEET NO. 10

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN BY	CHK'D BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

JUDITH H. STENEHJEM – 089
W1/2SW1/4
2817.37 FEET
170.75 RODS

JUDITH H. STENEHJEM – 090
W1/2NW1/4
2696.60 FEET
163.43 RODS

1043+89.70 — SEC. 5 — 1072+07.07 — SEC. 8 — 1099+03.67

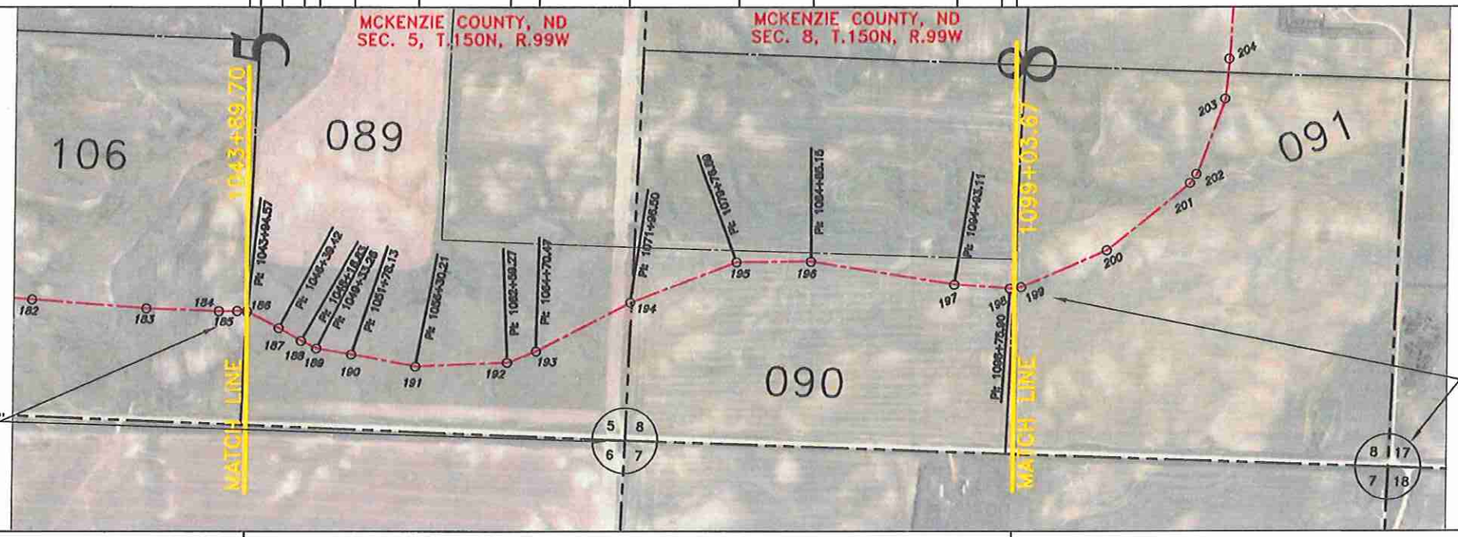
STATIONING

1043+89.70 MATCH LINE
1043+94.57 P.I. 25°29'28" RT
1046+39.42 P.I. 01°34'14" RT
1048+16.83 P.I. 02°39'32" LT
1049+33.26 P.I. 17°07'06" LT
1051+78.13 P.I. 00°57'17" RT
1056+30.21 P.I. 13°01'15" LT
1062+59.27 P.I. 19°09'25" LT
1064+70.47 P.I. 05°54'32" LT
1071+81.52 O.H. Electrical Line Crossing
1071+96.50 P.I. 6°51'20" RT
1072+07.07 Section Line Crossing
1079+76.69 P.I. 20°12'46" RT
1084+85.15 P.I. 09°23'53" RT
1094+93.11 P.I. 04°55'48" LT
1098+75.90 P.I. 11°45'04" LT
1099+03.67 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

N

ALIGNMENT



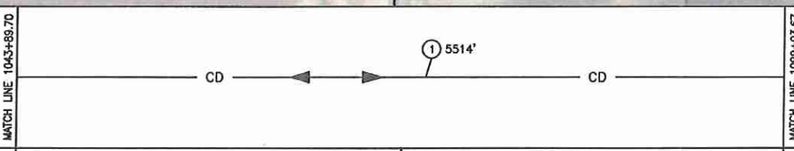
Continued from Sheet 10

Continued on Sheet 12

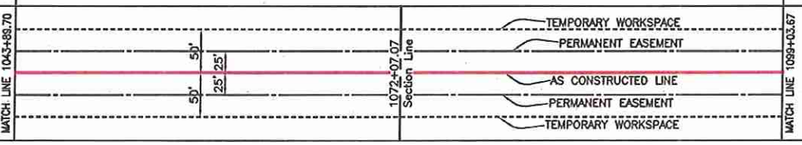
PI #	STATIOINING	DEFLECTION
1/4 Line	1043+89.70	
186	1043+94.57	25°29'28" RT
187	1046+39.42	01°34'14" RT
188	1048+16.83	02°39'32" LT
189	1049+33.26	17°07'06" LT
190	1051+78.13	00°57'17" RT
191	1056+30.21	13°01'15" LT
192	1062+59.27	19°09'25" LT
193	1064+70.47	05°54'32" LT
194	1071+96.50	06°51'20" RT
S. Line	1072+07.07	
195	1079+76.69	20°12'46" RT
196	1084+85.15	09°23'53" RT
197	1094+93.11	04°55'48" LT
198	1098+75.90	11°45'04" LT
1/4 Line	1099+03.67	

DIRECTION	DISTANCE
182°20'44"	4.87'
207°50'12"	244.85'
209°24'26"	177.41'
206°44'54"	116.43'
189°37'48"	244.87'
190°35'05"	452.08'
177°33'50"	629.06'
158°24'25"	211.20'
152°29'53"	726.03'
159°21'13"	10.57'
159°21'13"	769.62'
179°33'59"	508.46'
188°57'52"	1007.96'
184°02'04"	382.79'
172°17'00"	27.77'

PIPE DATA



EASEMENT / WORKSPACE



Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement.

PROFILE

AS-BUILT
FINAL
8/30/2012

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- REBAR & LS 2884 CAP
- REBAR
- GLO BC 1912
- RIGHT-OF-WAY MARKER
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – OH
- BARBED WIRE FENCE
- GAS PIPELINE
- WATER LINE
- UG TELEPHONE LINE
- DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	5514	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
–	ALX-01-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED
Sec. 5 & 8, T.150N, R.99W, 5th PM
McKenzie County, North Dakota

SHEET NO. 11

Kadrmas Lee & Jackson
Engineers Surveyors Planners

SADDLE BUTTE PIPELINE, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRAWN BY	CHK'D BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

Aug 30, 2012 – 2:35pm – J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

OWNERSHIP

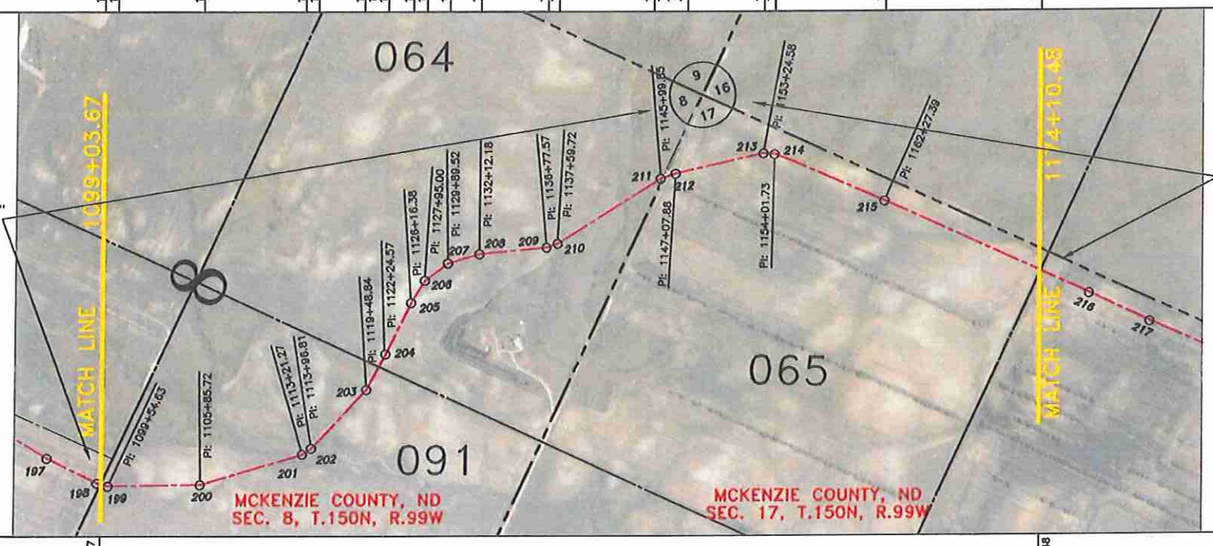
1099+03.67	David & Kathleen Drovdal 091 SW1/4 2224.89 FEET 134.84 RODS	1121+28.56	David & Kathleen Drovdal 064 SE1/4 2492.23 FEET 151.04 RODS	1146+20.79	David & Kathleen Drovdal 065 NE1/4 2789.69 FEET 169.07 RODS	1174+10.48
	SEC. 8				SEC. 17	

STATIONING

1099+03.67 MATCH LINE
1099+54.63 P.I. 15°36'43" LT
1105+85.72 P.I. 15°35'44" LT
1113+21.27 P.I. 16°52'08" LT
1113+96.81 P.I. 13°38'04" LT
1119+48.84 P.I. 15°13'39" LT
1121+28.56 1/4 Line Crossing
1122+24.57 P.I. 01°53'56" LT
1126+16.38 P.I. 05°30'00" RT
1127+95.00 P.I. 21°39'00" RT
1129+89.52 P.I. 20°19'04" RT
1132+12.18 P.I. 11°09'06" RT
1136+77.57 P.I. 13°58'32" LT
1137+59.72 P.I. 12°38'24" LT
1145+99.85 P.I. 13°55'41" RT
1146+20.79 Section Line Crossing
1146+24.86 B.W. Fence Crossing
1147+07.88 P.I. 05°05'45" RT
1153+24.58 P.I. 17°55'04" RT
1154+01.73 P.I. 18°12'30" RT
1162+27.39 P.I. 01°07'52" RT
1174+10.48 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

ALIGNMENT



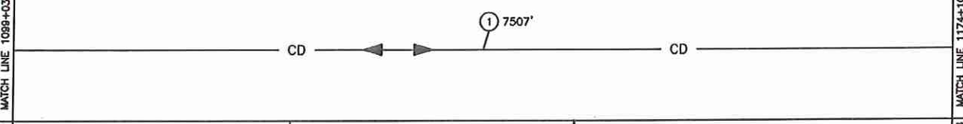
Continued from Sheet 11

Continued on Sheet 13

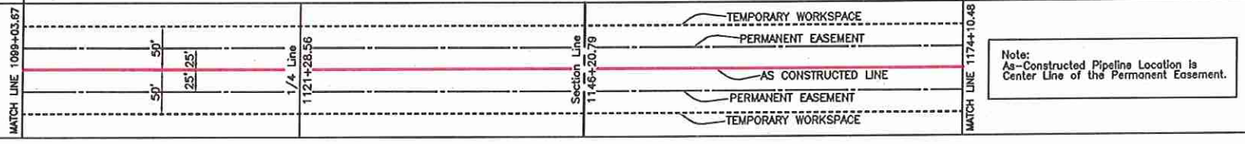
PI #	STATIONING	DEFLECTION
1/4 Line	1099+03.67	
199	1099+54.63	15°36'43" LT
200	1105+85.72	15°35'44" LT
201	1113+21.27	16°52'08" LT
202	1113+96.81	13°38'04" LT
203	1119+48.84	15°13'39" LT
1/4 Line	1121+28.56	
204	1122+24.57	01°53'56" LT
205	1126+16.38	05°30'00" RT
206	1127+95.00	21°39'00" RT
207	1129+89.52	20°19'04" RT
208	1132+12.18	11°09'06" RT
209	1136+77.57	13°58'32" LT
210	1137+59.72	12°38'24" LT
211	1145+99.85	13°55'41" RT
S. Line	1146+20.79	
212	1147+07.88	05°05'45" RT
213	1153+24.58	17°55'04" RT
214	1154+01.73	18°12'30" RT
215	1162+27.39	01°07'52" RT
1/4 Line	1174+10.48	

DIRECTION	DISTANCE
172°17'00"	50.96'
156°40'17"	631.09'
141°04'33"	735.55'
124°12'25"	75.54'
110°34'21"	552.03'
095°20'42"	179.72'
095°20'42"	96.01'
093°26'46"	391.81'
098°56'46"	178.62'
120°35'46"	194.52'
140°54'50"	222.66'
152°03'56"	465.39'
138°05'24"	82.15'
125°27'00"	840.13'
139°22'41"	20.94'
139°22'41"	87.09'
144°28'26"	616.70'
162°23'30"	77.15'
180°36'00"	825.66'
181°43'52"	1183.09'

PIPE DATA

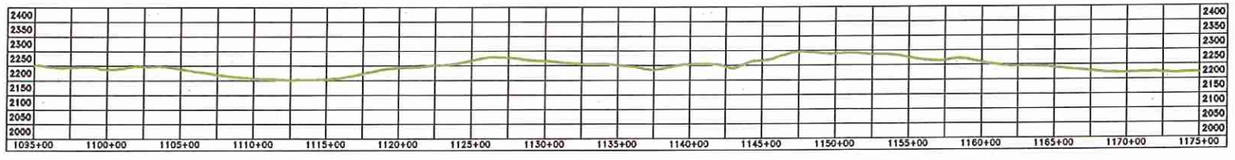


EASEMENT / WORKSPACE



Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement.

PROFILE



AS-BUILT FINAL 8/30/2012

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- REBAR & LS 2884 CAP
- REBAR
- GLO BC 1912
- RIGHT-OF-WAY MARKER
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – OH
- BARBED WIRE FENCE
- GAS PIPELINE
- WATER LINE
- UG TELEPHONE LINE
- DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	7507	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
–	ALX-D1-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED
Sec. 8 & 17, T.150N, R.99W, 5th PM
McKenzie County, North Dakota

SHEET NO. 12

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

Orvis Evanson 067 — 2.91 Acre Tract — 278.25 FEET, 16.86 RODS

1174+10.48	Jon & Timothy Evanson 066 — SE1/4 — 2672.44 FEET — 161.97 RODS	1200+82.92	SEC 20	1203+61.17	Joann Marie Schneiderman 069 — N1/2NW1/4 — 1166.97 FEET — 70.73 RODS	1215+28.14	Joann Marie Schneiderman 070 — S1/2NW1/4, N1/2SW1/4 — 2637.34 FEET — 159.84 RODS	1241+65.48	April Obenour, & Vicky Peterson 071 — S1/2SW1/4 — 1310.41 FEET — 79.42 RODS	1254+75.89	April Obenour, & Vicky Peterson 072 — NW1/4 — 2577.36 FEET — 156.20 RODS	1280+53.25	1282+90.98
SEC. 17							SEC. 21				SEC. 28		SEC. 29

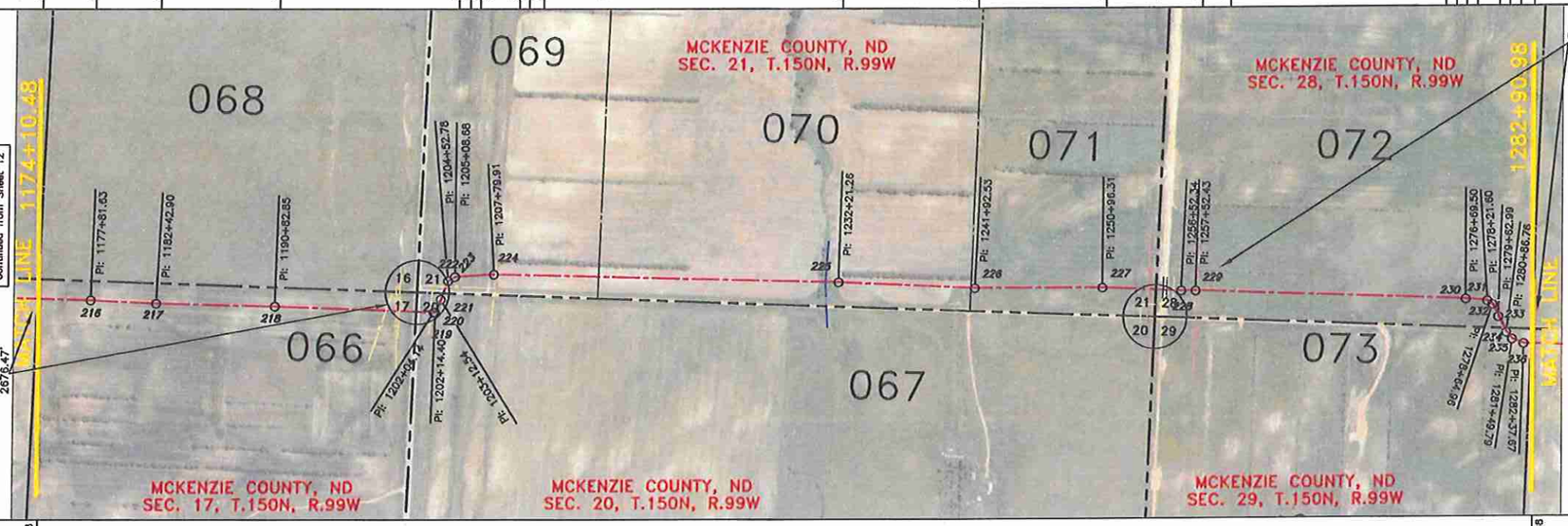
Layton & Dia Northrop 073 — NE1/4 — 237.73 FEET, 14.41 RODS

STATIONING

1174+10.48 MATCH LINE
1177+81.63 P.I. 01°05'49" RT
1182+42.90 P.I. 01°24'15" LT
1190+82.85 P.I. 00°42'06" RT
1198+68.41 Pipeline Crossing
1199+42.21 Telephone Line Crossing
1199+60.88 Pipeline Crossing
1200+82.92 Section Line Crossing
1201+58.26 Water Line Crossing
1201+85.17 Telephone Line Crossing
1202+04.14 P.I. 07°03'59" LT
1202+12.54 P.I. 03°12'27" LT
1203+61.17 Section Line Crossing
1203+66.64 130th Ave NW
1204+10.65 Pipeline Crossing
1204+52.78 P.I. 36°30'49" RT
1205+08.68 P.I. 28°46'04" RT
1207+79.91 P.I. 04°52'32" RT
1207+91.55 Pipeline Crossing
1215+28.14 1/16 Line Crossing
1231+29.55 CL Creek
1232+21.26 P.I. 01°12'42" RT
1241+65.48 1/16 Line Crossing
1241+92.53 P.I. 02°32'36" LT
1250+96.31 P.I. 02°22'16" RT
1254+22.53 GN Electrical Crossing
1254+75.89 Section Line Crossing
1255+37.09 26th St. NW
1255+97.84 Pipeline Crossing
1256+52.34 P.I. 02°02'28" LT
1257+52.43 P.I. 01°42'38" RT
1257+61.06 GN Electrical Crossing
1257+61.07 8" Main Block Valve
1276+69.50 P.I. 02°51'20" RT
1278+21.60 P.I. 30°53'24" RT
1278+64.96 P.I. 28°29'01" RT
1279+62.99 P.I. 01°08'56" LT
1280+53.25 Section Line Crossing
1280+86.76 P.I. 15°04'54" LT
1281+49.79 P.I. 26°46'06" RT
1282+37.67 P.I. 19°09'21" RT
1282+90.98 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

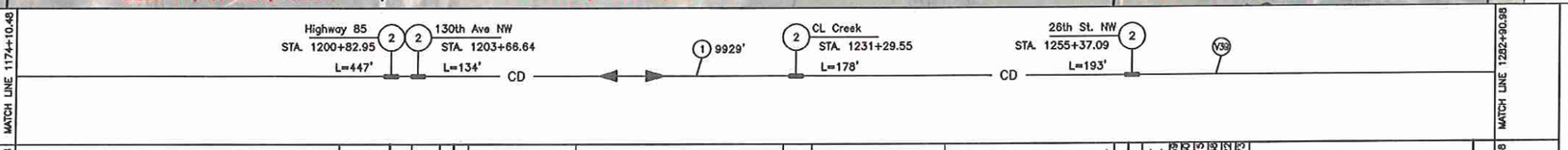
ALIGNMENT



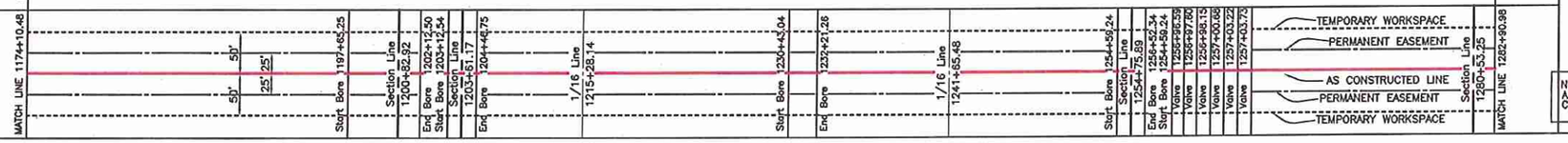
PI #	STATIOINING	DEFLECTION
1/4 Line	1174+10.48	
216	1177+81.63	01°05'49" RT
217	1182+42.90	01°24'13" LT
218	1190+82.85	00°42'06" RT
S. Line	1200+82.92	
219	1202+04.14	07°03'59" LT
220	1202+14.40	60°37'28" LT
221	1203+12.54	03°12'27" RT
S. Line	1203+61.17	
222	1204+52.78	36°30'49" RT
223	1205+08.68	28°46'04" RT
224	1207+79.91	04°52'32" RT
1/16 Line	1215+28.14	
225	1232+21.26	01°12'42" RT
1/16 Line	1241+65.48	
226	1241+92.53	02°32'36" LT
227	1250+96.31	02°22'16" RT
S. Line	1254+75.89	
228	1256+52.34	02°02'28" LT
229	1257+52.43	01°42'38" RT
230	1276+69.50	02°51'20" RT
231	1278+21.60	30°53'24" RT
232	1278+64.96	28°29'01" RT
233	1279+62.99	01°08'56" LT
S. Line	1280+53.25	
234	1280+86.76	15°04'54" LT
235	1281+49.79	26°46'06" RT
236	1282+37.67	19°09'21" LT
1/4 Line	1282+90.98	

DIRECTION	DISTANCE
181°43'52"	371.15'
182°49'41"	461.27'
181°25'28"	839.95'
182°07'34"	1000.07'
182°07'34"	121.22'
175°03'35"	10.26'
114°26'07"	98.14'
111°13'40"	48.63'
111°13'40"	91.61'
147°44'29"	55.90'
176°30'33"	271.23'
181°23'05"	748.23'
181°23'05"	1693.12'
182°35'47"	944.22'
182°35'47"	27.05'
180°03'11"	903.78'
182°25'27"	379.58'
182°25'27"	176.45'
180°22'59"	100.09'
182°05'37"	1917.07'
184°56'57"	152.10'
215°50'21"	43.36'
244°19'22"	98.03'
243°10'26"	90.26'
243°10'26"	33.51'
228°05'32"	63.03'
201°19'26"	87.88'
182°10'05"	53.31'

PIPE DATA

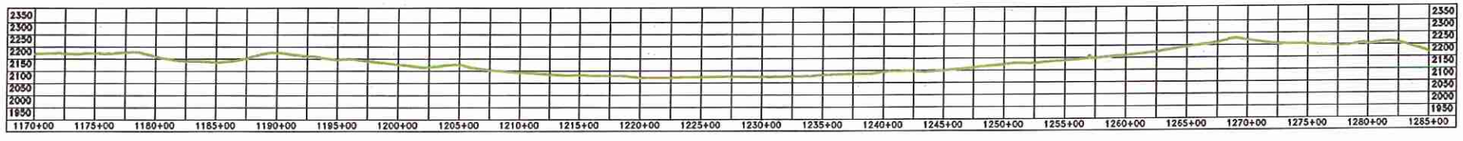


EASEMENT / WORKSPACE



Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement.

PROFILE



AS-BUILT FINAL 8/30/2012

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- REBAR & LS 2884 CAP
- REBAR
- GLO BC 1912
- RIGHT-OF-WAY MARKER
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – OH
- BARBED WIRE FENCE
- GAS PIPELINE
- WATER LINE
- UG TELEPHONE LINE
- DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	9929	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	952	CRUDE 8.625"OD * 0.322"w API 5L X52 ARO
V39	1	8" MAIN BLOCK VALVE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
V39	SBP-04-1066A	8" MAIN BLOCK VALVE W/6" LATERAL CONNECTION
--	ALX-D1-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED
Sec. 17, 20, 21, 28 & 29, T.150N, R.99W, 5th PM
McKenzie County, North Dakota

SHEET NO. 13

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

1282+90.98 — Joann Marie Schneiderman 074 — SE1/4 — 2666.75 FEET — 161.62 RODS — SEC. 29 — 1309+57.73 — Joann Marie Schneiderman 075 — E1/2NE1/4 — 2642.66 FEET — 160.16 RODS — SEC. 32 — 1336+00.39

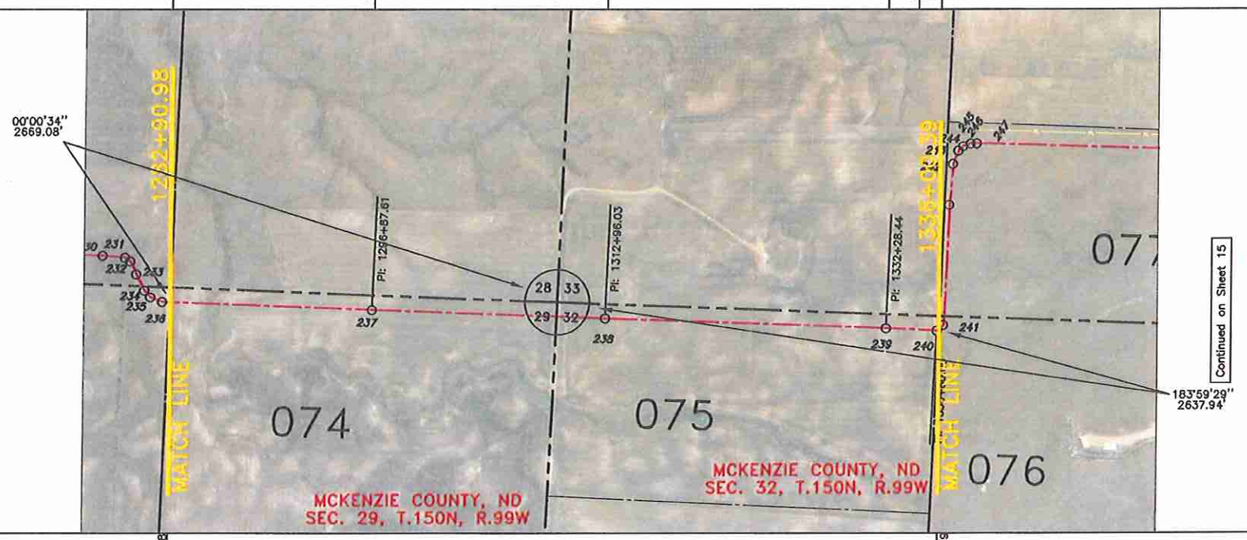
STATIONING

1282+90.98 MATCH LINE
1283+13.48 OH Electrical Crossing
1296+87.61 P.I. 00°02'51" LT
1309+57.73 Section Line Crossing
1312+96.03 P.I. 00°05'40" LT
1332+28.44 P.I. 00°43'19" RT
1335+80.00 P.I. 44°03'44" LT
1335+97.67 B.W. Fence Crossing
1336+00.39 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

N

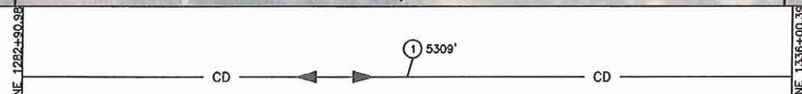
ALIGNMENT



PI #	STATIOINING	DEFLECTION
1/4 Line	1282+90.98	
237	1296+87.61	00°02'51" LT
S. Line	1309+57.73	
238	1312+96.03	00°05'40" LT
239	1332+28.44	00°43'19" RT
240	1335+80.00	44°03'44" LT
1/4 Line	1336+00.39	

DIRECTION	DISTANCE
182°10'05"	1396.63'
182°07'14"	1270.12'
182°07'14"	338.30'
182°01'34"	1932.41'
182°44'53"	351.56'
138°41'09"	20.39'

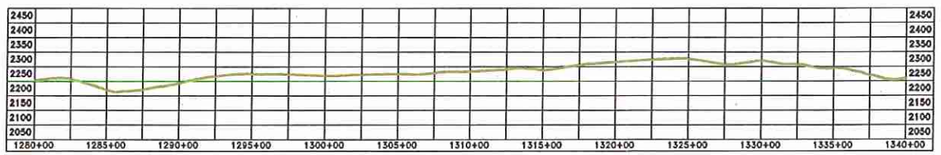
PIPE DATA



EASEMENT / WORKSPACE

Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement.

PROFILE



AS-BUILT FINAL 8/30/2012

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- REBAR & LS 2884 CAP
- REBAR
- GLO BC 1912
- RIGHT-OF-WAY MARKER
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – OH
- BARBED WIRE FENCE
- GAS PIPELINE
- WATER LINE
- UG TELEPHONE LINE
- DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	5309	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
–	ALX-01-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED
Sec. 29 & 32, T.150N, R.99W, 5th PM
McKenzie County, North Dakota

SHEET NO. 14

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

CLINT & ANN WOLD – 076
SE1/4
100.20 FEET, 6.07 RODS

CLINT & ANN WOLD – 077
W1/2SW1/4
3720.93 FEET
225.51 RODS

DARRELL RUD 078
Lot 4
338.40 FEET, 20.39 RODS

DENNIS L. & CAROL L. JOHNSON – 079
Lot 3, SE1/4NW1/4
2730.98 FEET
165.51 RODS

1336+00.39 — 1337+00.59 — 1374+21.52 — 1377+57.92 — 1404+88.90

SEC. 32 — SEC. 33 — SEC. 4

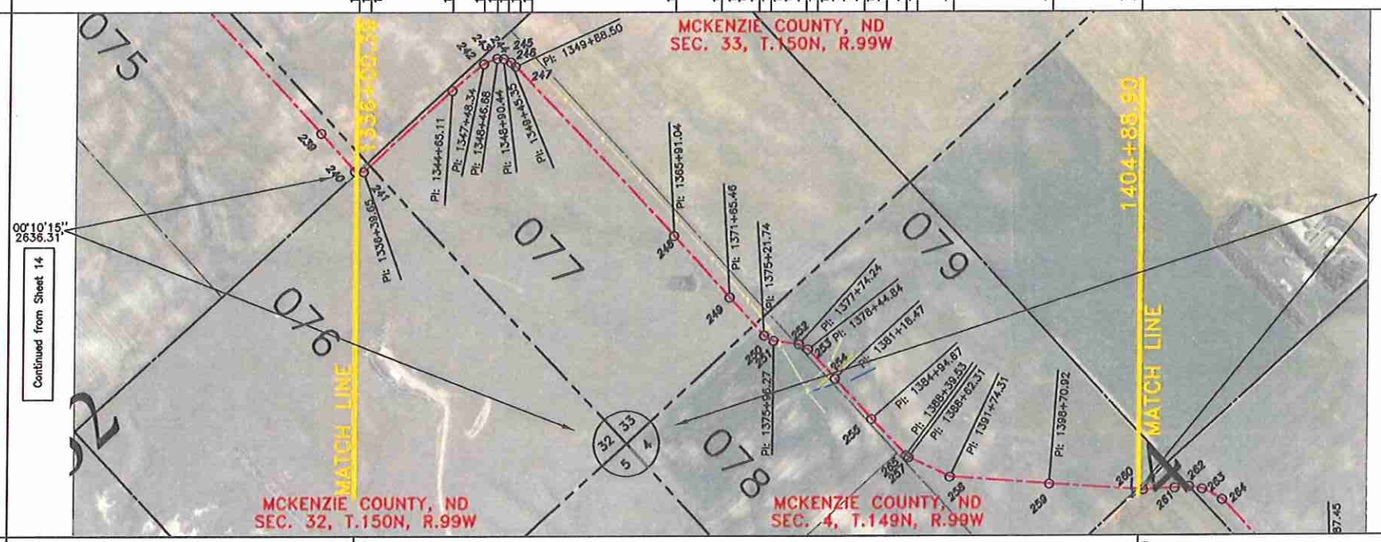
STATIONING

1336+00.39 MATCH LINE
1336+39.65 P.I. 46°11'54" LT
1337+00.59 Section Line Crossing
1344+65.11 P.I. 01°59'34" RT
1347+48.34 P.I. 18°11'00" RT
1348+46.68 P.I. 23°49'38" RT
1348+90.44 P.I. 24°47'09" RT
1349+45.35 P.I. 17°29'38" RT
1349+88.50 P.I. 02°57'08" RT
1365+91.04 P.I. 00°35'03" RT
1371+65.46 P.I. 00°06'28" RT
1374+21.52 Section Line Crossing
1374+21.52 B.M. Fence Crossing
1375+21.74 P.I. 18°50'22" LT
1375+96.27 P.I. 20°56'15" LT
1376+25.48 Pipeline Crossing
1377+57.92 1/16 Line Crossing
1377+74.24 P.I. 22°23'33" RT
1378+44.84 P.I. 17°00'22" RT
1380+24.84 Pipeline Crossing
1380+82.51 Pipeline Crossing
1381+09.61 Pipeline Crossing
1381+18.47 P.I. 00°55'06" RT
1381+63.64 Drainage Crossing
1384+94.67 P.I. 01°30'43" LT
1388+39.53 P.I. 10°08'16" LT
1388+62.31 P.I. 11°01'15" LT
1391+74.31 P.I. 21°07'38" LT
1398+70.92 P.I. 00°24'52" LT
1404+42.03 Type T1 Test Leads
1404+88.90 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

N

ALIGNMENT



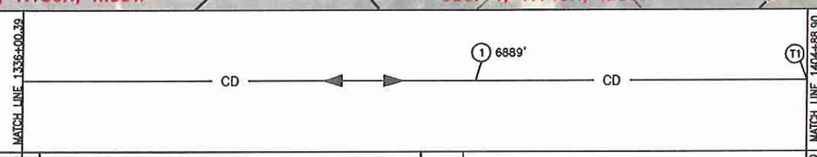
Continued from Sheet 14

Continued on Sheet 16

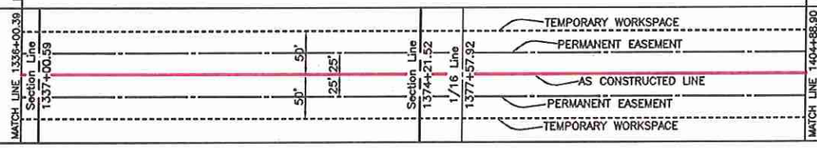
PI #	STATIOINING	DEFLECTION
1/4 Line	1336+00.39	
241	1336+39.65	46°11'54" LT
S. Line	1337+00.59	
242	1344+65.11	01°59'34" RT
243	1347+48.34	18°11'00" RT
244	1348+46.68	23°49'38" RT
245	1348+90.44	24°47'09" RT
246	1349+45.35	17°29'38" RT
247	1349+88.50	02°57'08" RT
248	1365+91.04	00°35'03" RT
249	1371+65.46	00°06'28" RT
S. Line	1374+21.52	
250	1375+21.74	18°50'22" LT
251	1375+96.27	20°56'15" LT
1/16 Line	1377+57.92	
252	1377+74.24	22°23'33" RT
253	1378+44.84	17°00'22" RT
254	1381+18.47	00°55'06" RT
255	1384+94.67	01°30'43" LT
256	1388+39.53	10°08'16" LT
257	1388+62.31	11°01'15" LT
258	1391+74.31	21°07'38" LT
259	1398+70.92	00°24'52" LT
1/4 Line	1404+88.90	

DIRECTION	DISTANCE
138°41'09"	39.26'
092°29'15"	60.94'
092°29'15"	764.52'
094°28'49"	283.23'
112°39'49"	98.34'
136°29'27"	43.76'
161°16'36"	54.91'
178°46'14"	43.15'
181°43'22"	1602.54'
182°18'25"	574.42'
182°24'53"	256.06'
182°24'53"	100.22'
163°34'31"	74.53'
142°38'16"	161.65'
142°38'16"	16.32'
165°01'49"	70.60'
182°02'11"	273.63'
182°57'17"	376.20'
181°26'34"	344.86'
171°18'18"	22.78'
160°17'03"	312.00'
139°09'25"	696.61'
138°44'33"	617.98'

PIPE DATA

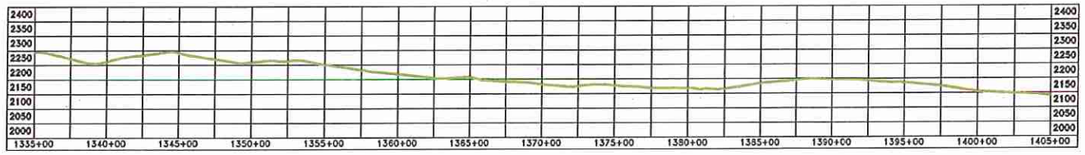


EASEMENT / WORKSPACE



Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement.

PROFILE



AS-BUILT FINAL 8/30/2012

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- REBAR & LS 2884 CAP
- REBAR
- GLO BC 1912
- (c) RIGHT-OF-WAY MARKER
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – OH
- BARBED WIRE FENCE
- GAS PIPELINE
- WATER LINE
- UG TELEPHONE LINE
- DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	6889	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
T1	1	SINGLE PIPE TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
T1	A4-7204-1	SINGLE PIPE TEST LEAD
–	ALX-01-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED
Sec. 32 & 33, T.150N, R.99W, Sec. 4, T.149N, R.99W, 5th PM
McKenzie County, North Dakota

SHEET NO. 15

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

DENNIS L. & CAROL L. JOHNSON – 079
E1/2SW1/4
347.97 FEET, 21.09 RODS

RICHARD & ROBERT WISNESS – 080
SE1/4
4115.65 FEET
249.43 RODS

RICHARD & ROBERT WISNESS – 081
S1/2SW1/4
982.02 FEET, 59.52 RODS

ALAN & HARRIS ANDERSEN – 082
NW1/4
3084.91 FEET
186.96 RODS

OWEN & LAURIE HAMRE – 083
SW1/4NE1/4
1360.87 FEET
82.48 RODS

OWEN D. & LAURIE K. HAMRE – 084
W1/2SE1/4
184.98 FEET, 11.21 RODS

ROBERT C. ERLER TRUST – 085
E1/2SE1/4
1325.31 FEET
80.32 RODS

1404+88.90 | 1408+36.87 | 1449+52.52 | 1459+34.54 | 1490+19.45 | 1503+80.32 | 1505+65.28 | 1518+90.59

SEC. 4 | SEC. 3 | SEC. 10

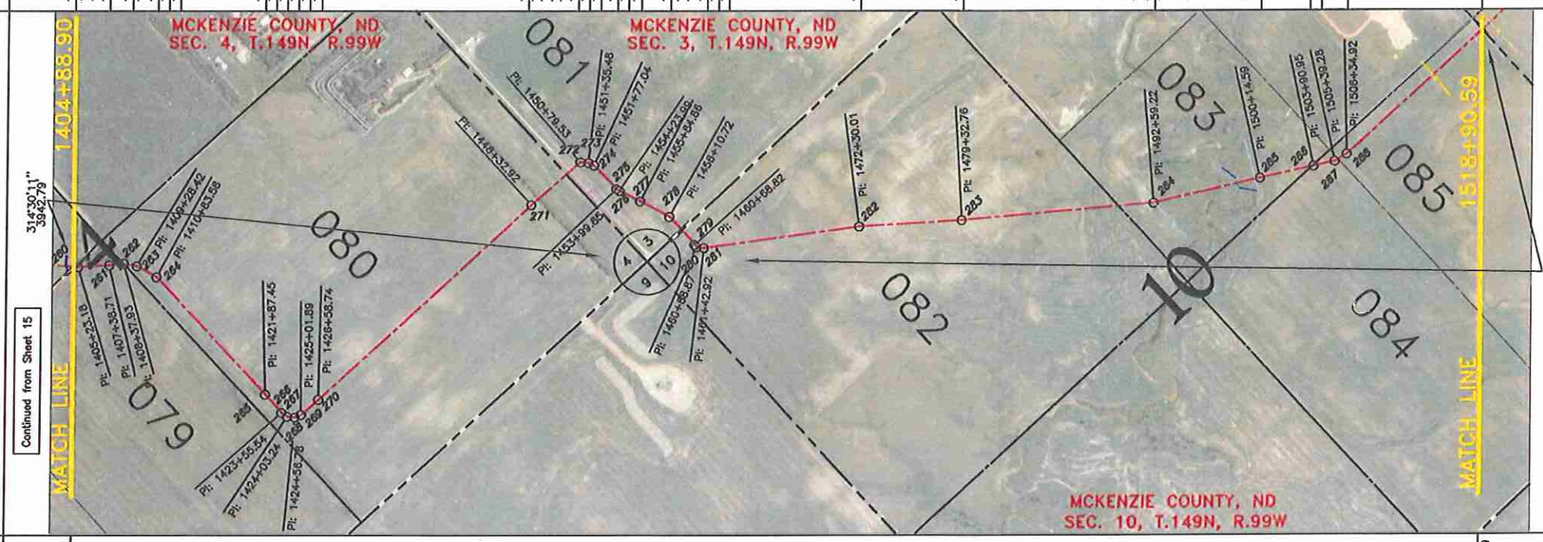
STATIONING

1404+88.90 MATCH LINE
1404+94.46 Utility Crossing
1405+11.54 County Road Crossing
1405+23.18 P.I. 06°50'00" LT
1405+49.13 P.I. Begin 30° Curve Crossing
1407+38.71 P.I. 03°05'08" LT
1408+36.87 1/4 Line Crossing
1408+37.93 P.I. 17°08'45" RT
1409+28.42 P.I. 17°28'04" RT
1410+83.58 P.I. 18°34'03" RT
1421+87.45 P.I. 01°16'58" RT
1423+55.54 P.I. 15°24'34" LT
1424+03.24 P.I. 27°47'25" LT
1425+01.89 P.I. 21°09'05" LT
1426+58.72 P.I. 00°44'46" LT
1446+32.92 P.I. 01°24'39" RT
1449+52.52 Section Line Crossing
1449+54.47 County Road Crossing
1450+79.53 P.I. 47°10'36" RT
1451+77.04 P.I. 21°53'04" RT
1453+99.85 P.I. 12°35'19" LT
1454+23.99 P.I. 06°50'05" LT
1455+84.88 P.I. 01°32'04" RT
1458+10.72 P.I. 19°47'13" RT
1459+34.54 Section Line Crossing
1459+34.54 County Road Crossing
1460+68.82 P.I. 05°14'18" RT
1460+88.87 P.I. 47°04'08" LT
1461+42.92 P.I. 14°02'41" LT
1472+30.01 P.I. 04°14'16" RT
1479+32.76 P.I. 01°32'42" LT
1480+19.45 1/4 Line Crossing
1492+59.22 P.I. 07°53'16" LT
1492+62.27 B.W. fence Crossing
1498+46.48 C.L. Drainage Crossing
1499+75.92 B.W. Fence Crossing
1500+14.59 P.I. 00°33'48" RT
1503+80.32 1/4 Line Crossing
1503+90.95 P.I. 00°24'44" LT
1504+39.28 P.I. 18°32'36" LT
1505+65.28 1/16 Line Crossing
1506+34.92 P.I. 11°13'33" LT
1514+26.61 Pipeline Crossing
1518+10.29 Utility Crossing
1518+78.45 Utility Crossing
1518+90.59 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System, NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

N

ALIGNMENT



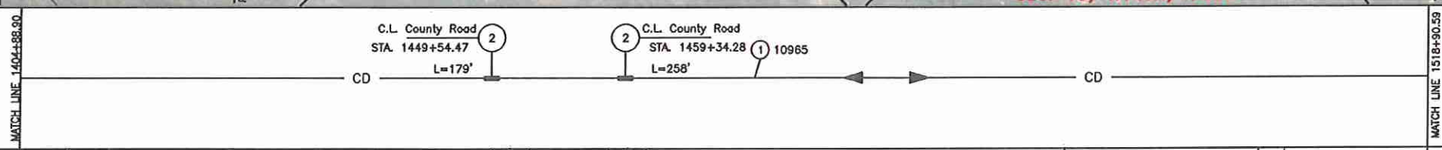
Continued from Sheet 15

Continued on Sheet 17

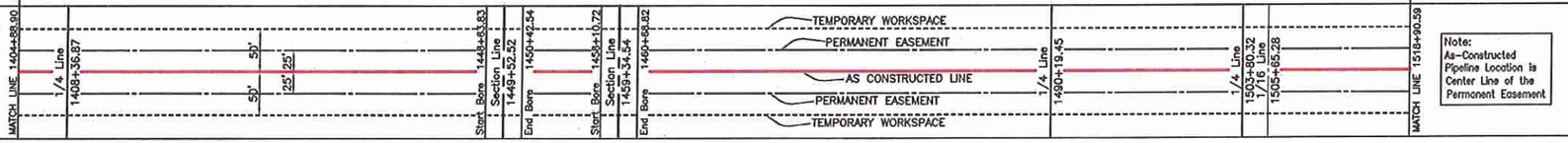
PI #	STATIONING	DEFLECTION
1/4 Line	1404+88.90	
260	1405+23.18	06°50'02" LT
261	1407+38.71	03°05'08" LT
1/4 Line	1408+36.87	
262	1408+37.93	17°08'45" RT
263	1409+28.42	17°28'04" RT
264	1410+83.58	18°34'03" RT
265	1421+87.45	01°16'58" RT
266	1423+55.54	15°24'34" LT
267	1424+03.24	27°47'25" LT
268	1424+58.78	25°45'21" LT
269	1425+01.89	21°09'05" LT
270	1426+58.74	00°44'46" LT
271	1446+32.92	01°24'39" RT
S. Line	1449+52.52	
272	1450+79.53	47°10'36" RT
273	1451+35.48	18°20'31" RT
274	1451+77.04	21°53'04" RT
275	1453+99.85	12°35'19" LT
276	1454+23.99	06°50'05" LT
277	1455+84.88	01°32'04" RT
278	1458+10.72	19°47'13" RT
S. Line	1459+34.54	
279	1460+68.82	05°14'18" RT
280	1460+88.87	47°04'08" LT
281	1461+42.92	14°02'41" LT
282	1472+30.01	04°14'16" RT
283	1479+32.76	01°32'41" LT
1/4 Line	1490+19.45	
284	1492+59.22	07°53'16" LT
285	1500+14.59	00°33'48" RT
1/4 Line	1503+80.32	
286	1503+90.95	00°24'44" LT
287	1505+39.28	18°32'36" LT
1/16 Line	1505+65.28	
288	1506+34.92	11°13'33" LT
S. Line	1518+90.59	

DIRECTION	DISTANCE
138°44'33"	34.28'
131°54'31"	215.53'
128°49'23"	98.16'
128°49'23"	1.06'
145°58'08"	90.49'
163°24'12"	155.16'
181°58'15"	1103.87'
183°15'11"	168.09'
167°50'37"	47.70'
140°03'12"	53.54'
114°17'51"	45.11'
093°08'46"	156.85'
092°24'00"	1974.18'
093°48'39"	319.60'
093°48'39"	127.01'
140°59'15"	55.95'
159°19'46"	41.56'
181°12'50"	222.81'
168°37'31"	24.14'
161°47'26"	160.87'
163°19'30"	225.86'
183°06'43"	123.82'
183°06'43"	134.28'
188°21'01"	20.05'
141°16'55"	54.05'
127°14'13"	1087.09'
131°28'29"	702.75'
129°55'48"	1068.69'
129°55'48"	239.77'
122°02'32"	755.37'
122°36'20"	365.73'
122°36'20"	10.63'
122°11'38"	148.33'
103°39'00"	26.00'
103°39'00"	69.64'
092°25'27"	1255.67'

PIPE DATA

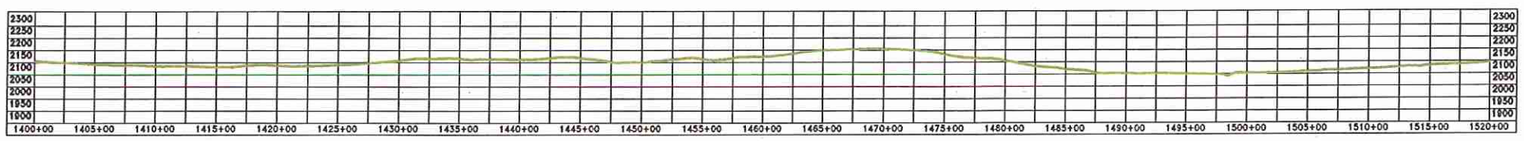


EASEMENT / WORKSPACE



Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement

PROFILE



AS-BUILT FINAL 8/30/2012

500' 0 500' 1000'
scale feet

LEGEND

AS CONSTRUCTED LINE
PIPELINE PROFILE
REBAR & LS 2884 CAP
REBAR
GLO BC 1912
RIGHT-OF-WAY MARKER
TEST LEAD
FUTURE TIE-IN
ELECTRIC – OH
BARBED WIRE FENCE
GAS PIPELINE
WATER LINE
UG TELEPHONE LINE
DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	10965	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	437	CRUDE 8.625"OD * 0.322"w API 5L X52 ARO

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
–	ALX-01-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED
Sec. 3, 4 & 10, T.149N, R.99W, 5th PM
McKenzie County, North Dakota

SHEET NO. 16

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

Owen & Laure Hamre – 086
SW1/4
2623.42 FEET
159.00 RODS

Floyde Syverson – 087
W1/2SE1/4
2944.11 FEET
178.43 RODS

Floyde Syverson – 130
E1/2SE1/4
360.47 FEET, 21.85 RODS

Floyde Syverson – 131
E1/2NE1/4
2471.26 FEET
149.77 RODS

1518+90.59 — 1545+14.01 — 1574+58.12 — 1578+18.59 — 1602+89.85

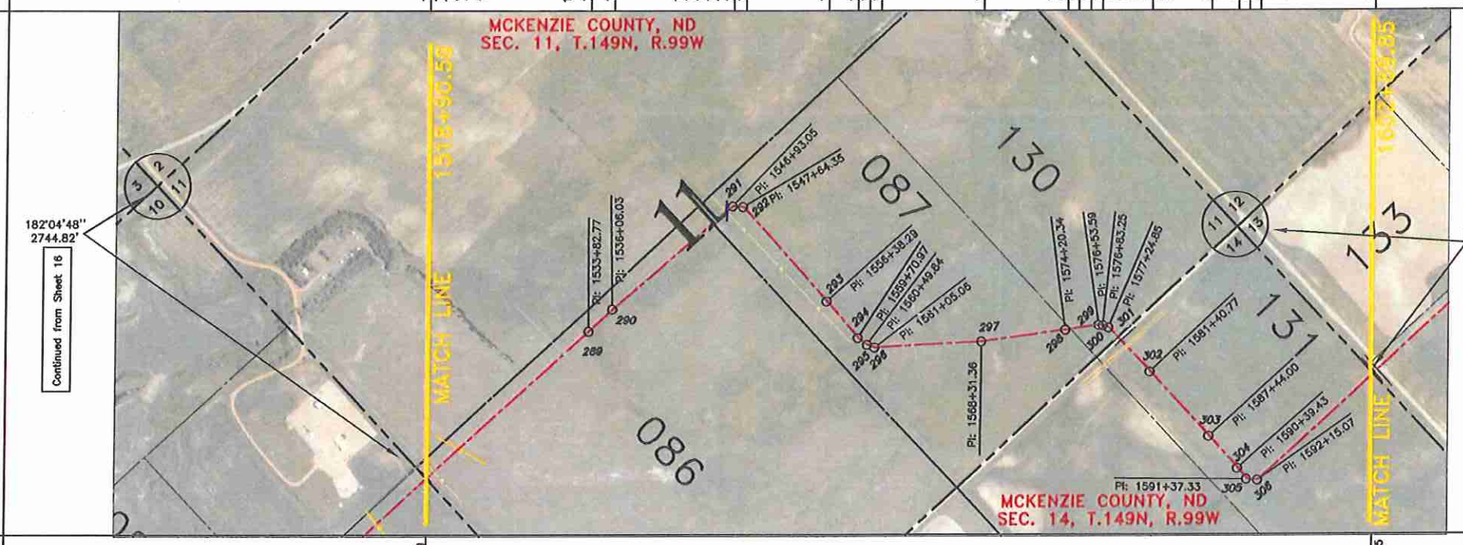
SEC. 11 | SEC. 14

STATIONING

1518+90.59 MATCH LINE
1519+02.02 C.L. 2 Track Road
1519+23.57 Overhead Electrical Crossing
1519+25.45 B.W. Fence Crossing
1519+58.38 Pipeline Crossing
1521+90.23 Pipeline Crossing
1531+57.24 B.W. Fence Crossing
1533+82.77 P.I. 00°21'31" LT
1536+06.03 P.I. 02°26'05" RT
1545+14.01 1/4 Line Crossing
1545+36.43 B.W. Fence Crossing
1545+36.60 B.W. Fence Crossing
1546+36.30 Type T1 Test Leads
1546+93.05 P.I. 44°24'09" RT
1547+64.35 P.I. 44°00'42" RT
1556+38.29 P.I. 01°12'41" RT
1559+70.97 P.I. 12°44'50" LT
1560+49.84 P.I. 15°59'19" LT
1561+05.06 P.I. 23°36'39" LT
1568+31.36 P.I. 04°27'36" LT
1574+58.12 1/16 Line Crossing
1574+20.34 P.I. 00°38'24" LT
1576+53.59 P.I. 14°05'01" RT
1576+83.25 P.I. 16°35'37" RT
1577+90.43 B.W. Fence Crossing
1578+18.59 Section Line Crossing
1578+35.50 Gravel Road Crossing
1581+40.77 P.I. 00°31'59" RT
1579+00.17 Telephone Line Crossing
1579+14.59 Telephone Line Crossing
1587+44.00 P.I. 01°02'39" RT
1590+39.43 P.I. 01°34'16" RT
1591+37.33 P.I. 45°30'27" LT
1592+15.07 P.I. 47°11'09" LT
1602+89.85 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System, NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

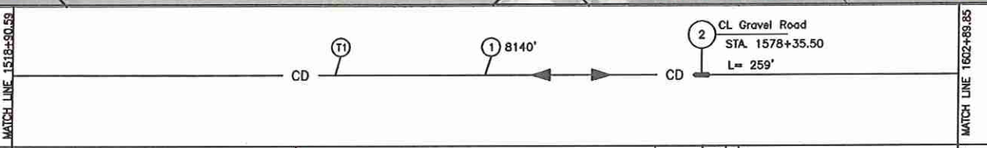
ALIGNMENT



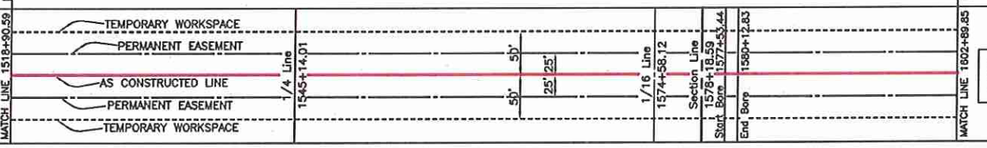
PI #	STATIONING	DEFLECTION
S. Line	1518+90.59	
289	1533+82.77	00°21'31" LT
290	1536+06.03	02°26'05" RT
1/4 Line	1545+14.01	
291	1546+93.05	44°24'09" RT
292	1547+64.35	44°00'42" RT
293	1556+38.29	01°12'41" RT
294	1559+70.97	12°44'50" LT
295	1560+49.84	15°59'19" LT
296	1561+05.06	23°36'39" LT
297	1568+31.36	04°27'36" LT
298	1574+20.34	00°38'23" LT
1/16 Line	1574+58.12	
299	1576+53.59	14°05'01" RT
300	1576+83.25	16°35'37" RT
301	1577+24.85	24°27'22" RT
S. Line	1578+18.59	
302	1581+40.77	00°31'59" RT
303	1587+44.00	01°02'39" RT
304	1590+39.43	01°34'16" RT
305	1591+37.33	45°30'27" LT
306	1592+15.07	47°11'09" LT
S. Line	1602+89.85	

DIRECTION	DISTANCE
092°25'27"	1492.18'
092°03'56"	223.26'
094°30'01"	907.98'
094°30'01"	179.04'
138°54'10"	71.30'
182°54'52"	873.94'
184°07'33"	332.68'
171°22'43"	78.87'
155°23'24"	55.22'
131°46'45"	726.30'
127°19'09"	588.98'
126°40'46"	37.78'
126°40'46"	195.47'
140°45'47"	29.66'
157°21'24"	41.60'
181°48'46"	93.74'
181°48'46"	322.18'
182°20'45"	603.23'
183°23'24"	295.43'
184°57'40"	97.90'
139°27'13"	77.74'
092°16'04"	1074.78'

PIPE DATA

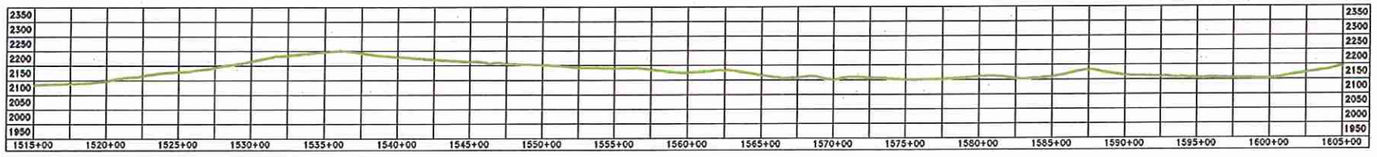


EASEMENT / WORKSPACE



Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement.

PROFILE



AS-BUILT FINAL 8/30/2012

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- REBAR & LS 2884 CAP
- REBAR
- GLO BC 1912
- RIGHT-OF-WAY MARKER
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – OH
- BARBED WIRE FENCE
- GAS PIPELINE
- WATER LINE
- UG TELEPHONE LINE
- DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	8140	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	259	CRUDE 8.625"OD * 0.322"w API 5L X52 ARO
T1	1	SINGLE PIPE TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
T1	A4-7204-1	SINGLE PIPE TEST LEAD
–	ALX-01-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED
Sec. 11 & 14, T.149N, R.99W, 5th PM
McKenzie County, North Dakota

SHEET NO. 17

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CH'D BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

NORSTOG ENTERPRISES, LLC – 137 — LOT 1 — 356.56 FEET, 21.61 RODS
VICKY STENEHJEM & ARDIS BURKHOLDER – 138 — LOT 4 — 1207.98 FEET, 73.21 RODS

1602+89.85	CURTIS M. SORENSEN – 132	1630+42.35	CURTIS M. SORENSEN – 135	1644+73.03	NORSTOG ENTERPRISES, LLC 136	1657+24.06	CURTIS M. SORENSEN 135	1670+19.68	SEC. 18	1673+76.24	1683+84.20
	S1/2NW1/4 2752.50 FEET 166.82 RODS		N1/2NE1/4 1430.68 FEET 86.71 RODS		N1/2NE1/4 1251.03 FEET 75.82 RODS		N1/2NE1/4 1295.62 78.52 RODS				

SEC. 4 — SEC. 7

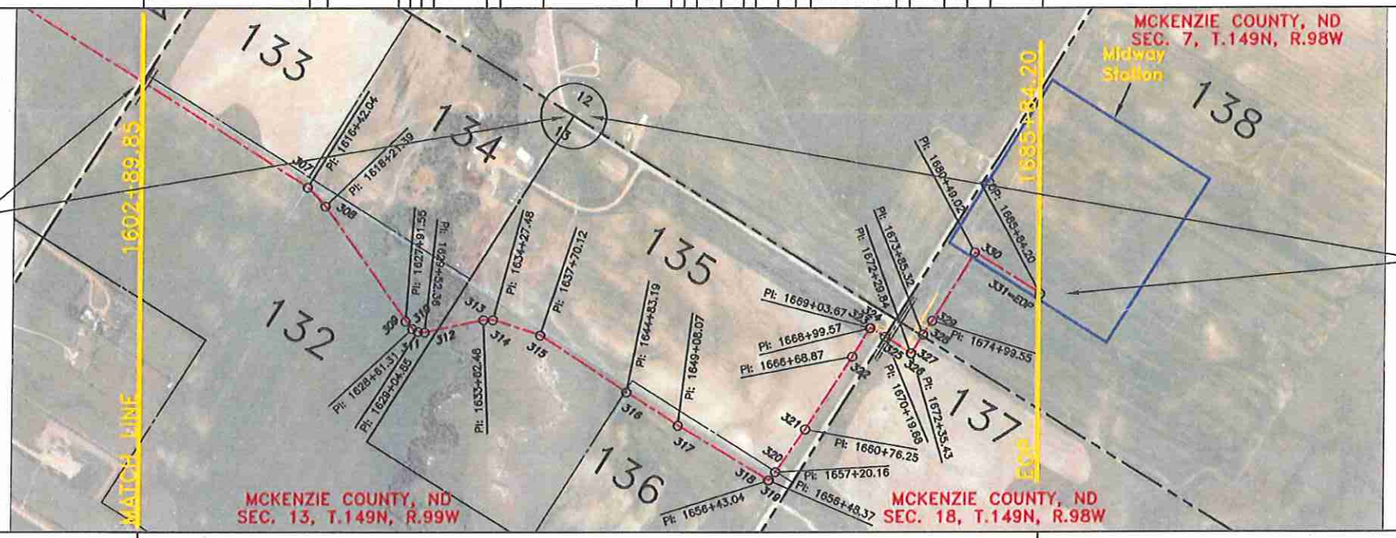
STATIONING

1602+89.85 MATCH LINE
1603+17.40 County Road Crossing
1603+64.63 B.W. Fence Crossing
1616+42.04 B.W. Fence Crossing
1618+21.39 P.I. 08°13'26" RT
1627+91.55 P.I. 07°15'40" LT
1628+61.31 P.I. 18°54'29" LT
1629+04.85 P.I. 22°31'41" LT
1629+52.36 P.I. 17°45'17" LT
1630+42.35 1/4 Line Crossing
1631+06.11 C.L. Creek Crossing
1633+62.48 P.I. 12°06'17" RT
1634+27.48 P.I. 17°52'17" RT
1637+70.12 P.I. 15°19'02" RT
1644+73.03 1/16 Line Crossing
1644+83.19 P.I. 00°45'30" LT
1644+99.94 B.W. Fence Crossing
1649+08.07 P.I. 01°37'23" LT
1656+43.04 P.I. 43°32'42" LT
1656+48.37 P.I. 39°49'04" LT
1657+20.16 B.W. Fence Crossing
1657+24.06 1/16 Line Crossing
1660+76.25 P.I. 02°20'26" LT
1666+68.87 P.I. 00°48'38" LT
1668+09.02 B.W. Fence Crossing
1668+99.57 P.I. 61°13'37" RT
1669+03.67 P.I. 28°34'55" RT
1670+19.68 P.I. 01°26'42" RT
1672+29.84 P.I. 49°08'45" LT
1672+35.43 P.I. 42°31'55" LT
1673+52.14 B.W. Fence Crossing
1673+76.24 Section Line Crossing
1673+85.32 P.I. 02°08'07" RT
1674+44.02 Reservation Tele. Line Crossing
1674+99.55 P.I. 01°25'21" LT
1680+09.75 Property Line Crossing
1680+49.02 P.I. 00°00'04" RT
1681+94.72 Foreign Utility Crossing
1685+84.20 EOP 8" Launcher

NOTE:
Survey is based on North Dakota State Plane System, NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

N

ALIGNMENT



PIPE DATA

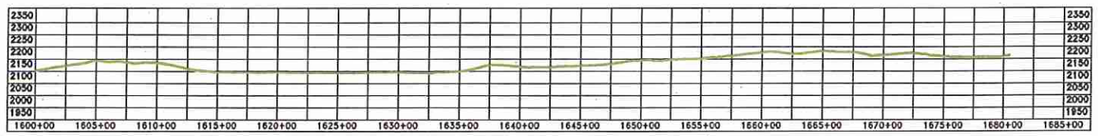
MATCH LINE 1602+89.85
2 — County Road Crossing — STA. 1603+17.40 — L=275'
CD
2 — Creek Crossing — STA. 1621+05.94 — L=310'
1 — 7383'
2 — Highway 85 Crossing — STA. 1670+41.42 — L=326'
CD
L5
EOP 1685+84.20

EASEMENT / WORKSPACE

MATCH LINE 1602+89.85 — End Bore 1604+65.82 — TEMPORARY WORKSPACE — PERMANENT EASEMENT — AS CONSTRUCTED LINE — PERMANENT EASEMENT — TEMPORARY WORKSPACE — Start Bore 1629+57.43 — 1/4 Line 1630+42.35 — End Bore 1632+67.11 — 50' — 25' — 25' — 50' — 1/16 Line 1644+73.03 — 1/16 Line 1657+24.06 — Start Bore 1669+03.67 — Section Line 1670+19.68 — End Bore 1672+29.84 — Section Line 1673+76.24 — EOP 1685+84.20

Note:
As-Constructed Pipeline Location is Center Line of the Permanent Easement.

PROFILE



PI #	STATIONING	DEFLECTION
S. Line	1602+89.85	
307	1616+42.04	13°57'12" RT
308	1618+21.39	08°13'26" RT
309	1627+91.55	07°15'40" LT
310	1628+61.31	18°54'29" LT
311	1629+04.85	22°31'41" LT
312	1629+52.36	17°45'17" LT
1/4 Line	1630+42.35	
313	1633+62.48	12°06'17" RT
314	1634+27.48	17°52'17" RT
315	1637+70.12	15°19'02" RT
1/16 Line	1644+73.03	
316	1644+83.19	00°45'30" LT
317	1649+08.07	01°37'23" LT
318	1656+43.04	43°32'42" LT
319	1656+48.37	39°49'04" LT
320	1657+20.16	02°44'39" LT
1/16 Line	1657+24.06	
321	1660+76.25	02°20'26" LT
322	1666+68.87	00°48'38" LT
323	1668+99.57	61°13'37" RT
324	1669+03.67	28°34'55" RT
325/S.L.	1670+19.68	01°26'42" RT
326	1672+29.84	49°08'45" LT
327	1672+35.43	42°31'55" LT
S. Line	1673+76.24	
328	1673+85.32	02°08'07" RT
329	1674+99.55	01°25'21" LT
330	1680+49.02	00°00'04" RT
331=EOP	1685+84.20	

DIRECTION	DISTANCE
092°16'04"	1352.19'
106°13'16"	179.35'
114°26'42"	970.16'
107°11'02"	69.76'
088°16'33"	43.54'
065°44'52"	47.51'
047°59'35"	89.99'
047°59'35"	320.13'
060°05'52"	65.00'
077°58'09"	342.64'
093°17'11"	702.91'
093°17'11"	10.16'
092°31'41"	424.88'
090°54'18"	734.97'
047°21'36"	5.33'
007°32'32"	71.79'
004°47'53"	3.90'
004°47'53"	352.19'
002°27'27"	592.62'
001°38'49"	230.70'
062°52'26"	4.10'
091°27'21"	116.01'
092°54'03"	210.16'
043°45'18"	5.59'
001°13'23"	140.81'
001°13'23"	9.08'
003°19'30"	114.23'
001°54'09"	549.47'
001°54'13"	535.18'

AS-BUILT FINAL 8/30/2012

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- REBAR & LS 2834 CAP
- REBAR
- GLO BC 1912
- RIGHT-OF-WAY MARKER
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – OH
- BARBED WIRE FENCE
- GAS PIPELINE
- WATER LINE
- UG TELEPHONE LINE
- DRAINAGE CROSSING

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	7383	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	911	CRUDE 8.625"OD * 0.322"w API 5L X52 ARO
L5	1	8" LAUNCHER

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
L5	SBP-PL-808	8" LAUNCHER
–	ALX-01-1001	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
2	08/30/12	AS CONSTRUCTED
1	07/18/12	AS CONSTRUCTED
0	10/11/11	ISSUED FOR CONSTRUCTION

Rev'd.

ALEXANDER AS CONSTRUCTED

Sec. 13, T.149N, R.99W, Sec. 7 & 18, T149N, R.93W, 5th PM
McKenzie County, North Dakota

SHEET NO. 18

Kadrmas Lee & Jackson
Engineers Surveyors Planners

SADDLE BUTTE PIPELINE, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
M. Hecker	TJK	3710275	7/18/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

© Kadrmas, Lee & Jackson 2012

Aug 30, 2012 – 3:04pm – J:\oilfield\Saddle Butte Pipeline\3710275\Alex\Cad\Alexander Asbuilt.dwg

T152N R99W
T153N R99W
T151N R99W
T150N R99W
T149N R99W
T148N R99W
T152N R100W
T153N R100W
T151N R100W
T150N R100W
T149N R100W
T148N R100W
T152N R101W
T153N R101W
T150N R101W
T149N R101W
T148N R101W

STA 884+50

SBP-C4-1061A w/ 6" lateral connection

STA 776+75

SBP-C4-1061A w/ 6" lateral connection

STA 405+50

SBP-C4-1061A w/ 6" lateral connection

Approx. STA 1249+25

SBP-C4-1061A w/ 6" lateral connection

PROPOSED SBP MIDWAY STATION

PROPOSED SBP 8" MIDWAY TO ALEXANDER PIPELINE

EXISTING SBP ALEXANDER CRUDE TERMINAL

FROM MIDWAY STATION
8"
8" RECEIVER
8" PIG RECEIVER
4"
TO TANKS

SBP-PR-806

4"
8" PIG LAUNCHER
8"
receiver
8" LAUNCHER
TO ALEXANDER TERMINAL

SBP-PR-806

McKENZIE COUNTY, NORTH DAKOTA

10,000' 5,000' 0 5,000' 10,000'

SCALE: 1" = 5000'
(24" X 36" DRAWING FORMAT)

0 5mi

LEGEND

PROPOSED 8" ALEXANDER CRUDE PIPELINE
FUTURE LATERALS

NOTES:

1) FLOW SCHEMATIC IS FOR GRAPHICAL REPRESENTATION ONLY.
2) ALL GAS, WATER AND UTILITY LINES SHOULD BE LOCATED PRIOR TO ANY EXCAVATING, DIGGING, OR TRENCHING ANYWHERE ON OR NEAR THIS SITE.
3) CH2M HILL ASSUMES NO RESPONSIBILITY FOR THE SPECIFIC LOCATION OF ANY BURIED GAS, WATER, OR UTILITY LINES THAT MAY BE PRESENT ON OR NEAR THIS SITE, NOR IS ANY LIABILITY ASSUMED FOR ANY LEGAL ACTION WHICH RESULTS FROM A DISCOVERY OF A GAS, WATER, OR UTILITY LINE IN ADDITION TO OR IN A DIFFERENT LOCATION THAN SHOWN ON THIS PLAT.
4) COORDINATE SYSTEM BASED ON NAD 83 NORTH DAKOTA STATE PLANE NORTH ZONE.
5) PIPELINE ROUTES AND FACILITY LOCATIONS DIGITIZED FROM MAPS (PDF FORMAT) PROVIDED BY SADDLE BUTTE PIPELINE, LLC.

REFERENCE DRAWINGS

DWG. NO.	TITLE

REVISIONS

NO.	DESCRIPTION	DATE	BY	CHK.	APPR.
1	ISSUED FOR REVIEW	09/19/11	TWM	BH	

DRAWN BY: TWM 09/12/11
CHECKED BY: DB 09/20/11
REVIEWED BY:
APPROVED BY:
SCALE: SCALE: 1" = 5000'

PREPARED FOR: SADDLE BUTTE PIPELINE, LLC

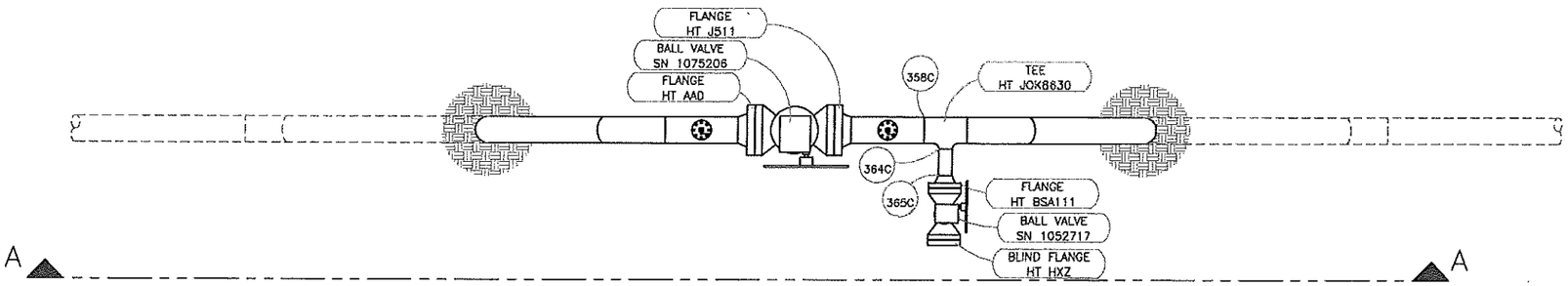
CH2MHILL
100 INTERCHANGE DRIVE, SUITE E
DURANGO, COLORADO 81301-8848
970-259-9100

FLOW SCHEMATIC
MIDWAY TO ALEXANDER PIPELINE
ALEXANDER McKENZIE COUNTY, NORTH DAKOTA

PROJECT NUMBER: 418078
DRAWING NUMBER: ALX-D1-1001
REV: A

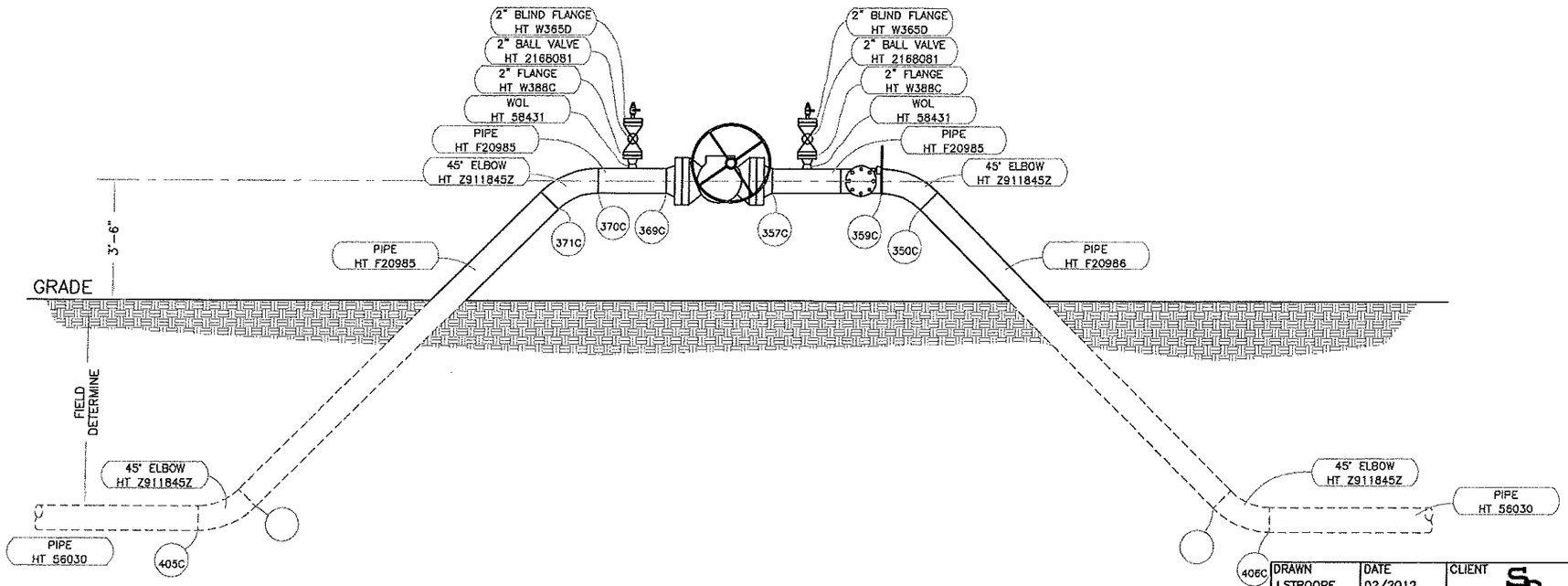
Sep 19, 2011 - 3:42pm by tmmadsen - Path = K:\Jobs\Saddle Butte\Alexander Pipeline\Alexander Schematic.dwg

REVISIONS			
REV.	DESCRIPTION	DATE	APPVD



PLAN VIEW

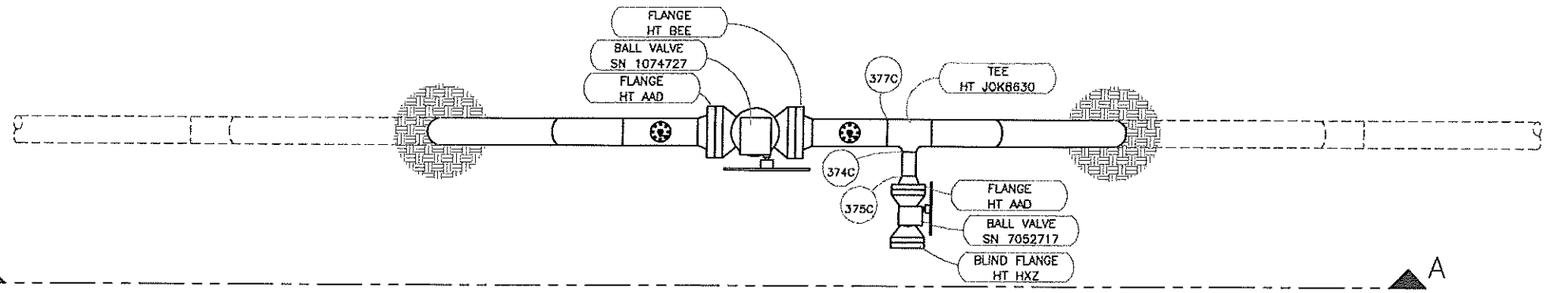
INSPECTOR : EARL CULLISON
SITE LOCATION : ALEXANDER #1
AFE No. : 11C0052
PIPE SIZE : 4" 6" (8") 10"
PRODUCT : GAS / (CRUDE)



SECTION A–A

DRAWN J.STROOPE	DATE 02/2012	CLIENT SPP Saddle Butte Pipeline, LLC	CENTRAL NDT
CHECKED	DATE		INLINE VALVE SETTING ALEXANDER RIGHT HAND TIE–IN #1 VALVE WELD MAP
SHEET 1 OF 1	SCALE N.T.S.	DWG NO: /Block Valve #1 Right Weld Map Alexander.dwg	

REVISIONS			
REV.	DESCRIPTION	DATE	APPVD



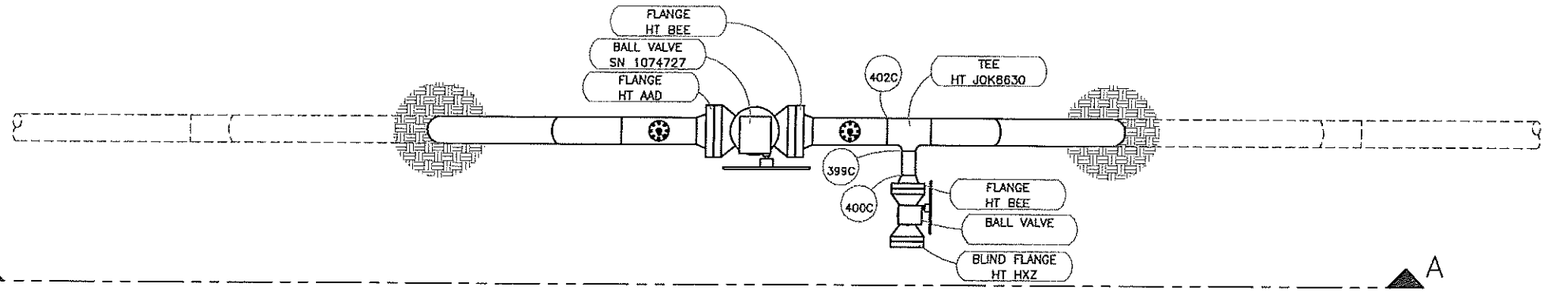
PLAN VIEW

INSPECTOR : EARL CULLISON
SITE LOCATION : ALEXANDER #2
AFE No. : 11C0052
PIPE SIZE : 4" 6" (8") 10"
PRODUCT : GAS / (CRUDE)

SECTION A–A

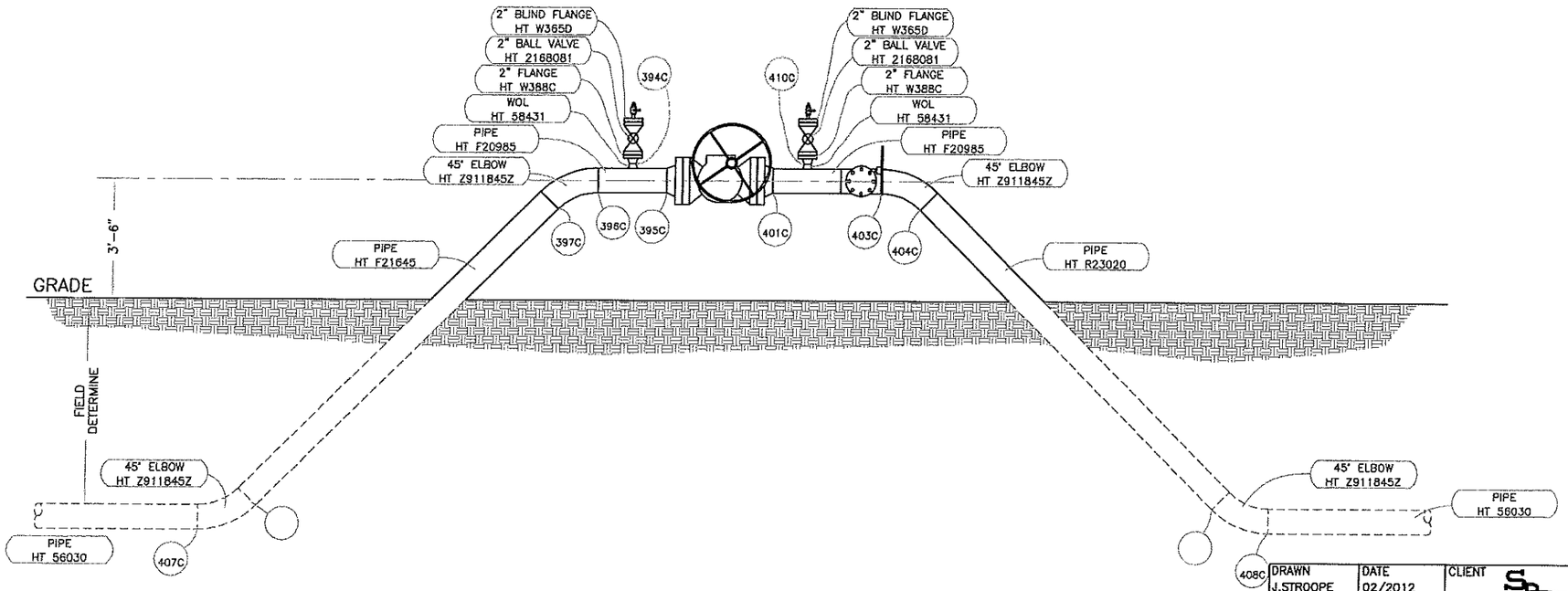
DRAWN J.STROOPE	DATE 02/2012	CLIENT SBP SADDLE BUTTE PIPELINE, LLC	CENTRAL NDT
CHECKED	DATE		INLINE VALVE SETTING ALEXANDER RIGHT HAND TIE–IN #2 VALVE WELD MAP
SHEET 1 OF 1	SCALE N.T.S.	DWG NO: /Block Valve #2 Right Weld Map Alexander.dwg	

REVISIONS			
REV.	DESCRIPTION	DATE	APPVD



PLAN VIEW

INSPECTOR : EARL CULLISON
SITE LOCATION : ALEXANDER #3
AFE No. : 11CO052
PIPE SIZE : 4" 6" (8") 10"
PRODUCT : GAS / (CRUDE)



SECTION A–A

DRAWN J.STROOPE	DATE 02/2012	CLIENT SBP SADDLE BUTTE PIPELINE, LLC	CENTRAL NDT
CHECKED	DATE		INLINE VALVE SETTING ALEXANDER RIGHT HAND TIE-IN #3 VALVE WELD MAP
SHEET 1 OF 1	SCALE N.T.S.	DWG NO: /Block Valve #3 Right Weld Map Alexander.dwg	

OWNERSHIP

0+00.00	TIMOTHY OLSON 051	6+34.11	TIMOTHY OLSON 050	19+88.35	TIMOTHY OLSON 049	46+76.83
	NW1/4NW1/4 634.11 FEET 38.43 RODS		S1/2NW1/4 1354.24 FEET 82.08 RODS		SW1/4 2688.48 FEET 162.94 RODS	

SEC. 24

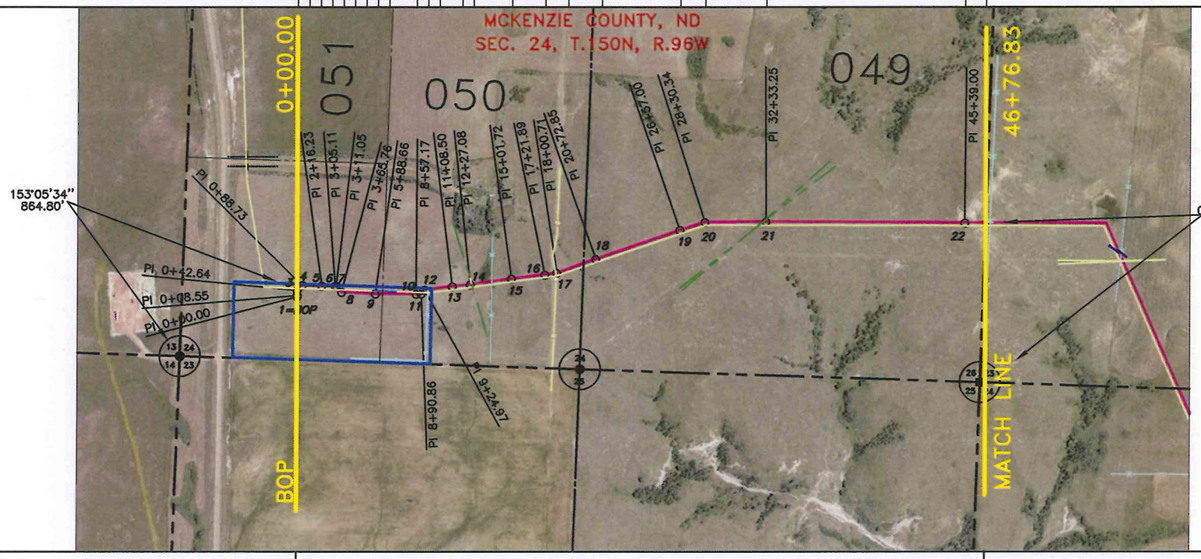
STATIONING

0+00.00 BOP 6" Receiver
0+40.59 P.I. 04°40'59" LT
0+42.64 P.I. 44°15'23" RT
0+88.73 P.I. 47°12'39" RT
2+16.23 P.I. 01°29'39" LT
3+05.11 P.I. 01°01'00" RT
3+11.05 P.I. 47°49'25" RT
3+65.76 P.I. 46°29'49" LT
5+88.66 P.I. 02°43'18" LT
6+34.11 1/16 Line Crossing
8+57.17 P.I. 02°20'45" LT
8+90.86 P.I. 46°38'29" LT
9+24.97 P.I. 41°38'39" RT
9+46.85 Barbed Wire Fence
11+08.50 P.I. 01°01'34" RT
12+27.08 P.I. 01°56'09" LT
12+38.95 Telephone Line Crossing
13+69.19 Barbed Wire Fence
15+01.72 P.I. 01°26'55" RT
17+21.89 P.I. 02°04'02" LT
17+93.52 Natural Gas Pipeline
18+00.71 P.I. 10°55'15" LT
19+88.35 1/4 Line Crossing
20+72.85 P.I. 0°29'16" RT
26+57.00 P.I. 01°15'34" RT
28+30.34 P.I. 17°37'25" RT
32+11.20 Telephone Line Crossing
32+11.94 Telephone Line
32+33.25 P.I. 00°34'37" RT
45+39.00 P.I. 00°12'38" LT
46+76.83 MATCH LINE
Section Line Crossing

NOTE:
Survey is based on North Dakota State Plane System NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

N

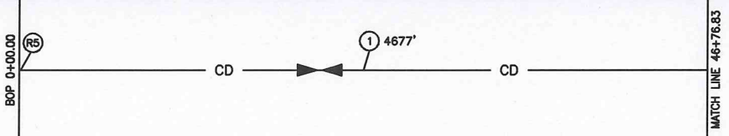
ALIGNMENT



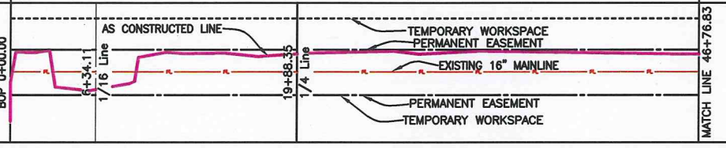
PI #	STATIOINING	DEFLECTION
1=BOP	0+00.00	
2	0+08.55	04°40'59" LT
3	0+42.64	44°15'23" RT
4	0+88.73	47°12'39" RT
5	2+16.23	01°29'39" LT
6	3+05.11	01°01'00" RT
7	3+11.05	47°49'25" RT
8	3+65.76	46°29'49" LT
9	5+88.66	02°43'18" LT
1/16 Line	6+34.11	
10	8+57.17	02°20'45" LT
11	8+90.86	46°38'29" LT
12	9+24.97	41°38'39" RT
13	11+08.50	01°01'34" RT
14	12+27.08	01°56'09" LT
15	15+01.72	01°26'55" RT
16	17+21.89	02°04'02" LT
17	18+00.71	10°55'15" LT
1/4 Line	19+88.35	
18	20+72.85	00°29'16" RT
19	26+57.00	01°15'34" RT
20	28+30.34	17°37'25" RT
21	32+33.25	00°34'37" RT
22	45+39.00	00°12'38" LT
S. Line	46+76.83	

DIRECTION	DISTANCE
095°14'26"	8.55'
090°33'27"	34.09'
134°48'50"	46.09'
182°01'29"	127.50'
180°31'50"	88.88'
181°32'50"	5.94'
229°22'15"	54.71'
182°52'26"	222.90'
180°09'08"	45.45'
180°09'08"	223.06'
177°48'23"	33.69'
131°09'54"	34.11'
172°48'32"	183.53'
173°50'07"	118.58'
171°53'58"	274.64'
173°20'52"	220.17'
171°16'51"	78.82'
160°21'36"	187.64'
160°21'36"	84.50'
160°50'52"	584.15'
162°06'26"	173.34'
179°43'51"	402.91'
180°18'28"	1305.75'
180°05'49"	137.83'

PIPE DATA

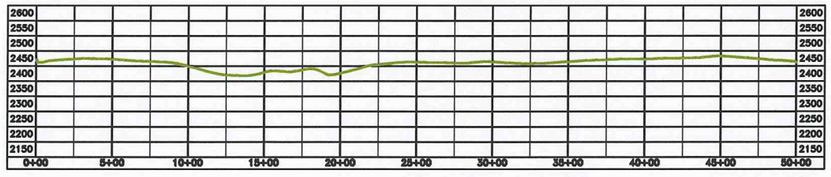


EASEMENT / WORKSPACE



Noted: The centerline between the As-Constructed Pipelines in the easement is the Baseline of the Permanent Easement

PROFILE



500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- IRON REBAR & LS 4626 CAP
- REBAR
- ORIGINAL STONE
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – UG
- ELECTRIC – OH
- BARBED WIRE FENCE
- DRAINAGE CROSSING
- GAS – UG
- TELEPHONE
- CRUDE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	4677	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
R5	1	8" RECEIVER 600#

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
R5	SBP-PR-806	STANDARD-8"-600# RECEIVER W/RIGHT HAND BYPASS
–	SMK-01-1005	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
1	7/12/12	AS CONSTRUCTED
0	9/20/11	ISSUED FOR CONSTRUCTION

Rev'd. –

Smokey Trunk Line As-built
Sec. 24, T.150N, R.96W, 5th PM
McKenzie County, North Dakota

SHEET NO. 1

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
Z. HUDGIK	TJK	3710275	7/12/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

131+68.42 — DELMER RINK 045 — SW1/4 — 3432.62 FEET — 208.04 RODS — 97+35.80
97+35.80 — DELMER L. & MARCELLINE RINK – 046 — N1/2 — 152.18 FEET — 9.22 RODS — 95+83.62
95+83.62 — DELMER L. & MARCELLINE RINK – 047 — N1/2 — 2921.62 FEET — 177.07 RODS — 66+62.00
66+62.00 — DELMER L. & MARCELLINE RINK – 048 — NW1/4 — 1985.17 FEET — 120.31 RODS — 46+76.83

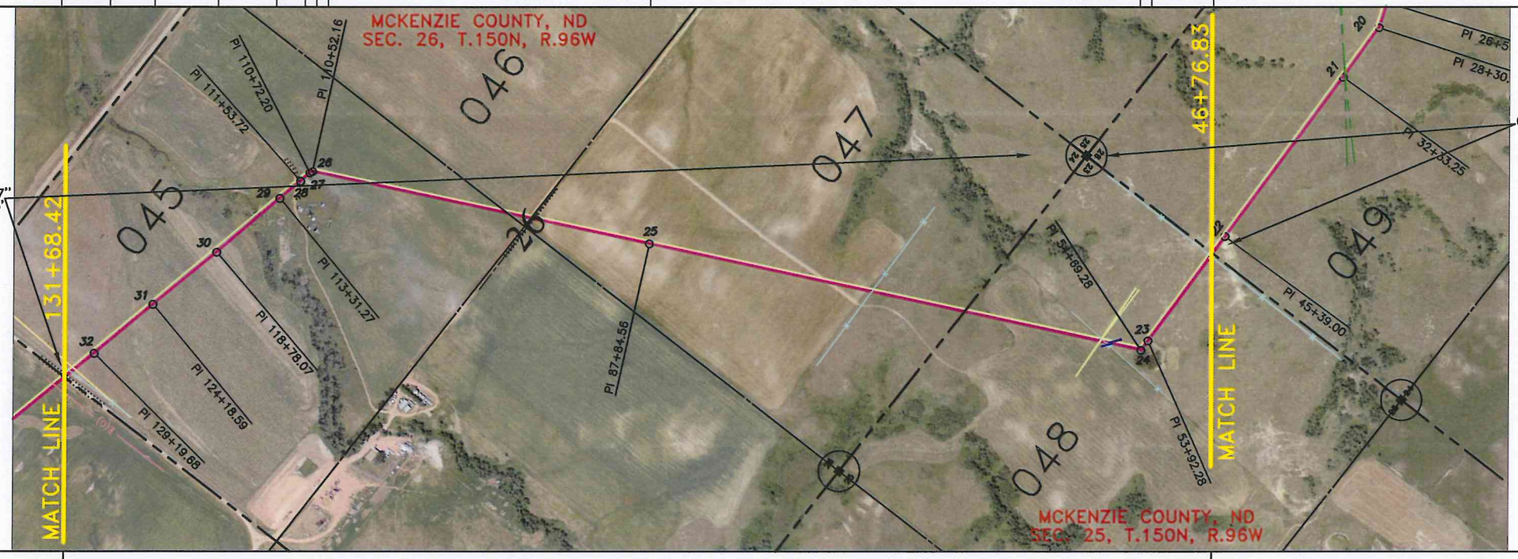
SEC. 26 | SEC. 25

STATIONING

131+68.42 Section Line Crossing
131+68.42 MATCH LINE
131+63.52 C.L. Road
131+15.99 E–W Barbed Wire Fence
130+86.62 E–W Telephone Line Crossing
129+19.68 P.I. 00°38'10" RT
124+18.59 P.I. 00°28'24" LT
118+78.07 P.I. 00°56'36" RT
113+31.27 P.I. 00°55'19" LT
111+73.92 C.L. Road
111+53.72 P.I. 02°04'56" RT
110+72.20 P.I. 14°22'08" LT
110+52.16 P.I. 39°33'51" LT
97+35.80 1/4 Line Crossing
95+83.62 1/4 Line Crossing
95+66.30 C.L. Road
87+84.56 P.I. 00°04'48" LT
72+84.30 N–S Barbed Wire Fence
66+62.00 Section Line Crossing
57+45.53 N–S Pipeline Crossing
57+43.07 N–S Pipeline Crossing
57+11.85 E–W Barb Wire Fence
56+76.03 Test Lead
54+69.28 P.I. 65°40'00" RT
53+92.28 P.I. 00°28'16" RT
47+04.08 E–W Barb Wire Face
46+76.83 Section Line Crossing
46+76.83 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

ALIGNMENT



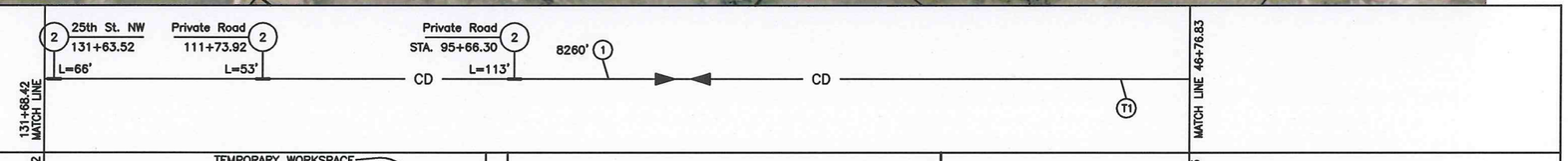
Continued on Sheet 3

Continued from Sheet 1

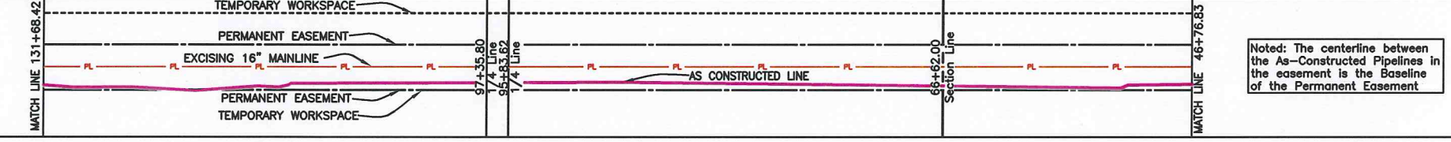
PI #	STATIOINING	DEFLECTION
S. Line	46+76.83	
23	53+92.28	00°28'16" RT
24	54+69.28	65°40'00" RT
S.line	66+62.00	
25	87+84.56	00°04'48" LT
1/4 Line	95+83.62	
1/4 Line	97+35.80	
26	110+52.16	39°33'51" LT
27	110+72.20	14°22'08" LT
28	111+53.72	02°04'56" RT
29	113+31.27	00°55'19" LT
30	118+78.07	00°56'36" RT
31	124+18.59	00°28'24" LT
32	129+19.68	00°38'10" RT
S. Line	131+68.42	

DIRECTION	DISTANCE
180°05'49"	715.45'
180°34'06"	77.00'
246°14'05"	1192.72'
246°14'05"	2122.56'
246°09'17"	799.06'
246°09'17"	152.18'
246°09'17"	1316.36'
206°35'26"	20.04'
192°13'18"	81.52'
194°18'15"	177.55'
193°22'56"	546.80'
194°19'32"	540.52'
193°51'08"	501.09'
194°29'18"	248.74'

PIPE DATA

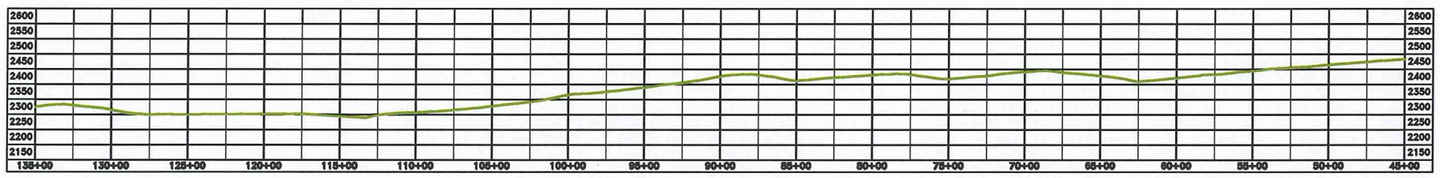


EASEMENT / WORKSPACE



Noted: The centerline between the As–Constructed Pipelines in the easement is the Baseline of the Permanent Easement

PROFILE



500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- IRON REBAR & LS 4626 CAP
- REBAR
- ORIGINAL STONE
- TEST LEAD
- FUTURE TIE–IN
- ELECTRIC – UG
- ELECTRIC – OH
- BARBED WIRE FENCE
- DRAINAGE CROSSING
- GAS – UG
- TELEPHONE
- CRUDE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	8260	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	232	CRUDE 8.625"OD * 0.322"w API 5L X52 ARO
T1	1	TYPE T1 TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
T1	M–7204–1	TYPE T1 TEST LEAD
–	SMK–01–1005	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
1	7/12/12	AS CONSTRUCTED
0	9/20/11	ISSUED FOR CONSTRUCTION

Rev'd. –

Smokey Trunk Line As–built
Sec. 25 & 26, T.150N, R.96W, 5th PM
McKenzie County, North Dakota

SHEET NO. 2

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
Z. HUDGIK	TJK	3710275	7/12/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

© Kadrmas, Lee & Jackson 2012

Jul 18, 2012 – 2:12pm – J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

OWNERSHIP

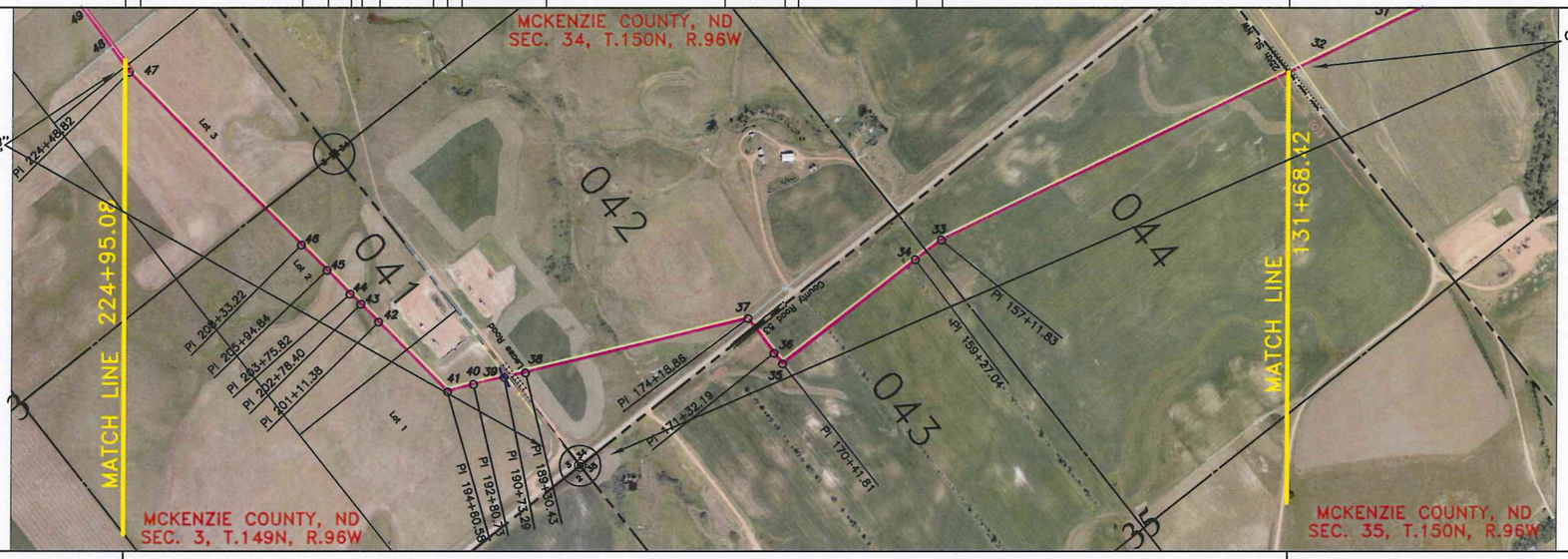
224+95.08	CURTIS J. & MERTON T. ANDERSON – 041	190+38.63	KERMIT D. & SANDRA S. KIRKLAND – 042	173+42.95	JUNE PETERSON 043	158+34.23	DELMER RINK 044	131+68.42
	LOTS 1–4, N1/2N1/2 3456.45 FEET 209.48 RODS		SE1/4 1695.68 FEET 102.77 RODS		SW1/4 1508.72 FEET 91.44 RODS		NW1/4 2665.81 FEET 161.46 RODS	
	SEC. 3		SEC. 34		SEC. 35			

STATIONING

224+95.08 1/16 Line Crossing
224+95.08 MATCH LINE
224+48.82 P.I. 08°28'58" RT
211+73.65 1/4 Line Crossing
208+33.22 P.I. 00°33'26" RT
205+94.84 P.I. 01°29'44" LT
203+75.82 P.I. 02°50'08" RT
202+78.40 P.I. 01°50'54" LT
201+11.38 P.I. 00°12'43" LT
198+50.00 1/16 Line Crossing
194+60.58 P.I. 61°26'45" RT
192+80.73 P.I. 02°59'21" LT
190+73.29 P.I. 01°41'23" LT
190+73.21 Test Lead
190+60.89 E–W Natural Gas Pipeline
190+40.81 E–W O.H. Electric Lines
190+38.83 E–W Barbed Wire Fence
190+38.63 Section Line Crossing
190+10.91 C.L. of Lease Road
189+30.43 P.I. 02°15'55" RT
174+18.86 P.I. 66°58'10" LT
174+17.97 N–S Barbed Wire Fence
173+42.95 Section Line Crossing
172+63.89 N–S Co. Rte. 53 Crossing
171+32.19 P.I. 01°51'33" RT
170+41.81 P.I. 89°35'57" RT
159+27.04 P.I. 01°15'27" LT
158+34.23 1/4 Line Crossing
157+11.83 P.I. 11°11'54" LT
132+55.00 E–W O.H. Elec. Line Crossing
132+55.00 Section Line Crossing
131+68.42 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System, NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.0001582 to go from grid distance to ground distance.

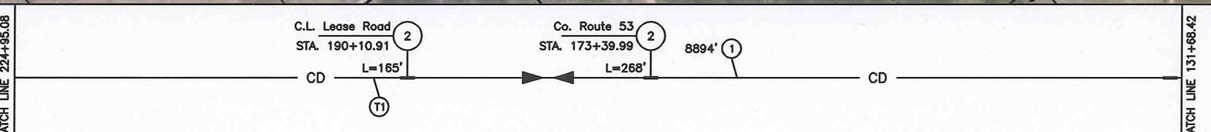
ALIGNMENT



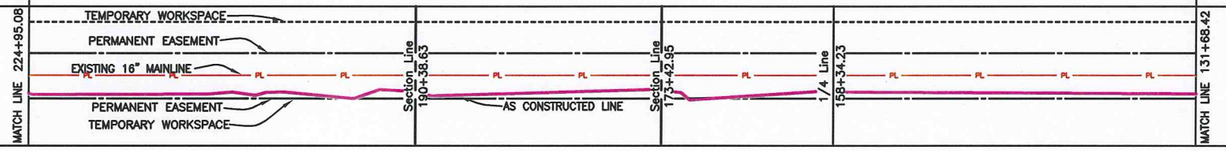
PI #	STATIOINING	DEFLECTION
S. Line	131+68.42	
33	157+11.83	11°11'54" LT
1/4 Line	158+34.23	
34	159+27.04	01°15'27" LT
35	170+41.81	89°35'57" RT
36	171+32.19	01°51'33" RT
S. Line	173+42.95	
37	174+18.86	66°58'10" LT
38	189+30.43	02°15'55" RT
S. Line	190+38.63	
39	190+73.29	01°41'23" LT
40	192+80.73	02°59'21" LT
41	194+60.58	61°26'45" RT
42	201+11.38	00°12'43" RT
43	202+78.40	01°50'54" LT
44	203+75.82	02°50'08" RT
45	205+94.84	01°29'44" LT
46	208+33.22	00°33'26" RT
47	224+48.82	08°28'58" RT
1/16 Line	224+95.08	

DIRECTION	DISTANCE
194°29'18"	2543.41'
183°17'24"	122.40'
183°17'24"	92.81'
182°01'56"	1114.77'
271°37'53"	90.38'
273°29'26"	210.76'
273°29'26"	75.91'
206°31'16"	1511.57'
208°47'11"	108.20'
208°47'11"	34.66'
207°05'48"	207.44'
204°06'27"	179.85'
265°33'12"	650.80'
265°20'29"	167.02'
263°29'35"	97.42'
266°19'43"	219.02'
264°49'59"	238.38'
265°23'25"	1615.60'
273°52'24"	46.26'

PIPE DATA



EASEMENT / WORKSPACE



Noted: The centerline between the As–Constructed Pipelines in the easement is the Baseline of the Permanent Easement

PROFILE

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- IRON REBAR & LS 4626 CAP
- REBAR
- ORIGINAL STONE
- TEST LEAD
- FUTURE TIE–IN
- ELECTRIC – UG
- ELECTRIC – OH
- BARBED WIRE FENCE
- DRAINAGE CROSSING
- GAS – UG
- TELEPHONE
- CRUDE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	8894	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	433	CRUDE 8.625"OD * 0.322"w API 5L X52 ARO
T1	1	TYPE T1 TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
T1	A4–7204–1	TYPE T1 TEST LEAD
–	SMK–D1–1005	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
1	7/12/12	AS CONSTRUCTED
0	9/20/11	ISSUED FOR CONSTRUCTION

Rev'd. –

Smokey Trunk Line As–built
Sec. 3, T.149N, R.96W, Sec. 34 & 35, T.150N, R.96W, 5th PM
McKenzie County, North Dakota

SHEET NO. 3

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
Z. HUDGIK	TJK	3710275	7/28/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

© Kadrmas, Lee & Jackson 2012

Jul 18, 2012 – 2:13pm – J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

OWNERSHIP

291+20.05 — Delmer L. & Marcelline Rink – 037 — NW1/4NW1/4 — 1318.35 FEET — 79.90 RODS — 278+01.50

278+01.50 — Curtis J. & Sharon Anderson Merton T. & Karen Anderson Contract for Deed to Drew Anderson – 038 — NE1/4NW1/4 — 1360.67 FEET — 82.46 RODS — 264+39.86

SEC. 4

264+39.86 — Curtis J. & Sharon Anderson Merton T. & Karen Anderson Contract for Deed to Drew Anderson – 039 — NE1/4 — 2630.20 FEET — 159.41 RODS — 238+09.77

238+09.77 — Curtis J. & Sharon Anderson Merton T. & Karen Anderson Contract for Deed to Drew Anderson – 040 — NW1/4 — 1360.82 FEET — 82.47 RODS — 224+95.08

SEC. 3

STATIONING

291+20.05 Section Line Crossing
291+20.05 MATCH LINE
280+74.65 C.L. Cee Line Crossing
280+34.85 P.I. 00°39'59" RT
278+01.50 1/16 Line Crossing
277+93.55 P.I. 00°02'15" RT
277+93.34 Test Lead
277+27.20 P.I. 00°01'02" RT
275+49.15 P.I. 39°39'38" RT
273+09.83 P.I. 26°17'31" LT
272+66.67 P.I. 11°15'29" LT
270+80.65 P.I. 01°09'15" RT
265+32.97 P.I. 00°52'56" RT
264+39.86 1/4 Line Crossing
262+76.49 P.I. 01°15'10" LT
258+13.18 P.I. 01°07'08" LT
251+62.68 P.I. 00°09'13" LT
242+92.99 P.I. 00°08'46" RT
239+74.03 C.L. Drainage Crossing
238+09.77 Section Line Crossing
236+75.84 P.I. 00°19'41" LT
228+78.55 P.I. 00°41'17" RT
226+45.59 N-S B.W. Fence Crossing
226+43.72 P.I. 00°46'16" LT
224+95.08 1/16 Line Crossing
224+95.08 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System, NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.000147296 to go from grid distance to ground distance.

N

ALIGNMENT

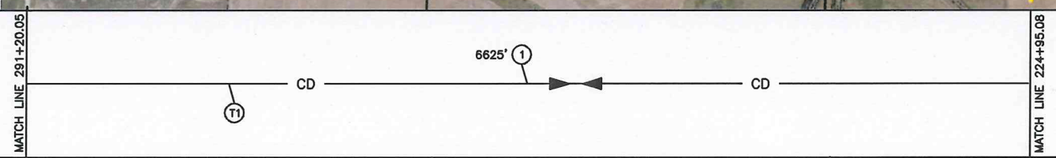
Continued on Sheet 5

Continued from Sheet 3

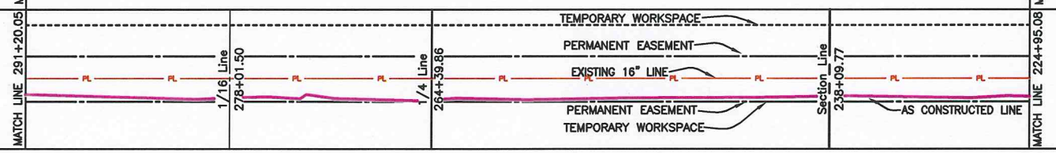
PI #	STATIOINING	DEFLECTION
1/16 Line	224+95.08	
48	226+43.72	00°46'16" LT
49	228+78.55	00°41'17" RT
50	236+75.84	00°19'41" LT
S. Line	238+09.77	
51	242+92.99	00°08'46" RT
52	251+62.68	00°09'13" LT
53	258+13.18	01°07'08" LT
54	262+76.49	01°15'10" LT
1/4 Line	264+39.86	
55	265+32.97	00°52'56" RT
56	270+80.65	01°09'15" RT
57	272+66.67	11°15'29" LT
58	273+09.83	26°17'31" LT
59	275+49.15	39°39'38" RT
60	277+27.20	00°01'02" RT
61	277+93.55	00°02'15" RT
1/16 Line	278+01.50	
62	280+34.85	00°39'59" RT
S. Line	291+20.05	

DIRECTION	DISTANCE
273°52'24"	148.64'
273°06'07"	234.83'
273°47'24"	797.29'
273°27'43"	133.93'
273°27'43"	483.22'
273°36'28"	869.69'
273°27'16"	650.50'
272°20'08"	463.31'
271°04'58"	163.37'
271°04'58"	93.11'
271°57'54"	547.68'
273°07'09"	186.02'
261°51'40"	43.16'
235°34'09"	239.32'
275°13'46"	178.05'
275°14'49"	66.35'
275°17'04"	7.95'
275°17'04"	233.35'
275°57'03"	1085.20'

PIPE DATA

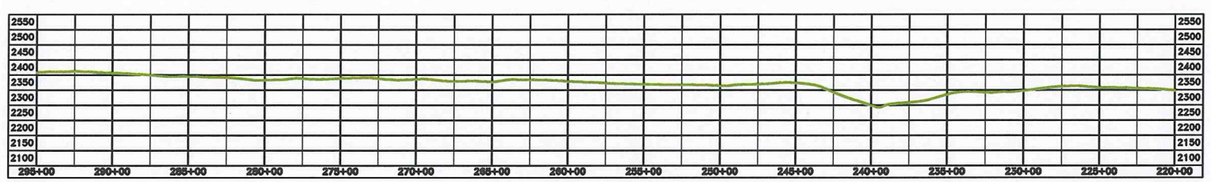


EASEMENT / WORKSPACE



Noted: The centerline between the As-Constructed Pipelines in the easement is the Baseline of the Permanent Easement

PROFILE



500' 0 500' 1000'
scale feet

LEGEND

AS CONSTRUCTED LINE
PIPELINE PROFILE
IRON REBAR & LS 4626 CAP
REBAR
ORIGINAL STONE
TEST LEAD
FUTURE TIE-IN
ELECTRIC – UG
ELECTRIC – OH
BARBED WIRE FENCE
DRAINAGE CROSSING
GAS – UG
TELEPHONE
CRUDE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	6625	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
T1	1	TYPE T1 TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
T1	A4-7204-1	TYPE T1 TEST LEAD
–	SMK-D1-1005	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
1	7/12/12	AS CONSTRUCTED
0	9/20/11	ISSUED FOR CONSTRUCTION

Rev'd. –

Smokey Trunk Line As-built
Sec. 3 & 4, T. 149N, R. 96W, 5th PM
McKenzie County, North Dakota

SHEET NO. 4

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
Z. HUDGIK	TJK	3710275	7/12/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

© Kadrmas, Lee & Jackson 2012

Jul 18, 2012 – 2:13pm – J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

OWNERSHIP

Calvin Parrish – 031: S1/2SW1/4, 2436.34 FEET, 147.66 RODS
Calvin Parrish – 032: S1/2SE1/4, 2652.00 FEET, 160.73 RODS
Calvin Parrish – 033: S1/2SW1/4, 2647.44 FEET, 160.45 RODS
Calvin Parrish – 035: NW1/4NE1/4, 148.01 FEET, 8.97 RODS
Calvin Parrish – 034: SW1/4SE1/4, 1391.01 FEET, 84.30 RODS
Delmer L. & Marcelline Rink – 036: NE1/4NE1/4, 1495.93 FEET, 90.66 RODS

398+90.78 — SEC. 31 — 374+54.44 | 348+02.44 — SEC. 32 — 321+55.00 | 307+63.99 | 306+15.98 — SEC. 5 — 291+20.05

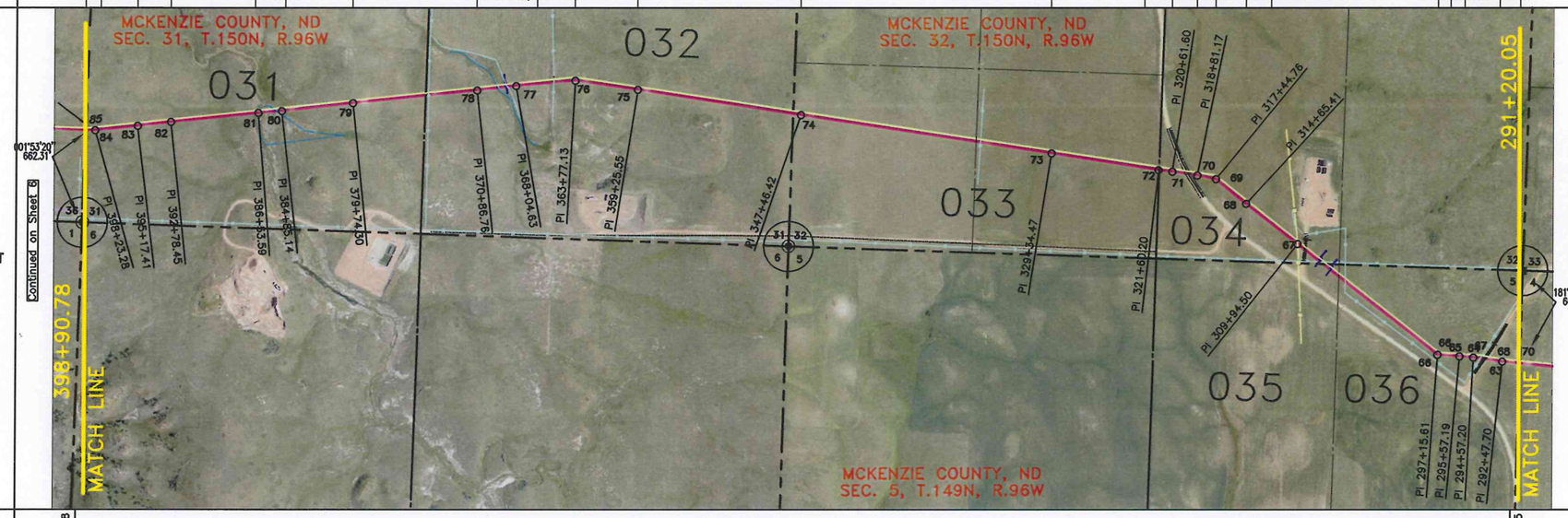
STATIONING

398+90.78 Section Line Crossing
398+23.28 P.I. 06°38'54" RT
395+17.41 P.I. 01°01'22" RT
392+78.45 P.I. 00°50'06" LT
386+53.59 P.I. 01°08'00" LT
385+20.29 CL Drainage Crossing
384+85.14 P.I. 01°38'27" RT
379+74.30 P.I. 00°34'39" LT
374+54.44 1/4 Line Crossing
374+32.83 N–S B.W. Fence Crossing
370+86.76 P.I. 00°31'15" RT
369+34.85 CL Drainage Crossing
368+71.19 Test Lead
368+68.62 N–S B.W. Fence Crossing
368+04.63 P.I. 01°14'58" LT
365+33.15 N–S B.W. Fence Crossing
363+77.13 P.I. 13°18'46" LT
359+25.55 P.I. 00°41'18" LT
348+02.44 Section Line Crossing
347+46.42 P.I. 00°08'32" RT
334+78.84 1/16 Line Crossing
334+46.73 N–S B.W. Fence Crossing
329+34.47 P.I. 00°13'36" LT
321+60.20 P.I. 02°41'47" RT
321+55.00 1/4 Line Crossing
320+61.60 P.I. 02°09'01" LT
319+45.80 CL Road Crossing
318+81.17 P.I. 03°04'37" LT
317+44.76 P.I. 27°44'57" LT
314+65.41 P.I. 01°27'43" RT
309+94.50 P.I. 00°37'42" LT
309+94.81 CL Gas Line Crossing
309+91.03 CL Beaver Creek Road
307+91.65 Test Lead
307+84.28 E–W B.W. Fence Crossing
307+63.99 Section Line Crossing
306+91.49 Test Lead
306+15.98 1/16 Line Crossing
305+57.10 N–S B.W. Fence Crossing
297+15.61 P.I. 34°20'45" RT
295+57.19 P.I. 01°01'53" LT
294+57.20 P.I. 02°56'25" LT
294+04.76 CL Gravel Road Crossing
293+77.79 CL Gas Line Crossing
292+47.70 P.I. 02°04'17" RT
291+20.05 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System, NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.000147296 to go from grid distance to ground distance.

N

ALIGNMENT

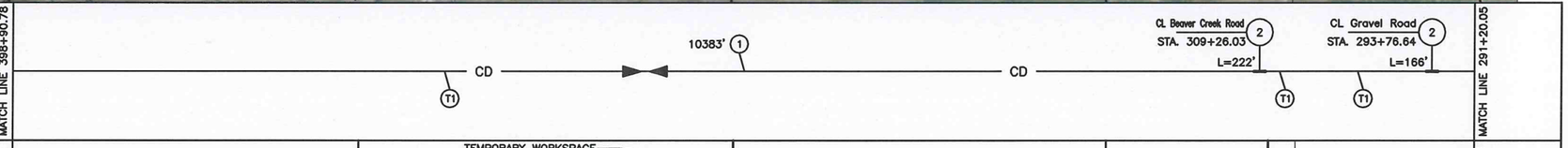


PI #	STATIOINING	DEFLECTION
S. Line	291+20.05	
63	292+47.70	02°04'17" RT
64	294+57.20	02°56'25" LT
65	295+57.19	01°01'53" LT
66	297+15.61	34°20'45" RT
1/16 Line	306+15.98	
S. Line	307+63.99	
67	309+94.50	00°37'42" LT
68	314+65.41	01°27'43" RT
69	317+44.76	27°44'57" LT
70	318+81.17	03°04'37" LT
71	320+61.60	02°09'01" LT
1/4 Line	321+55.00	
72	321+60.20	02°41'47" RT
73	329+34.47	00°13'36" LT
74	347+46.42	00°08'32" RT
S. Line	348+02.44	
75	359+25.55	00°41'18" LT
76	363+77.13	13°18'46" LT
77	368+04.63	01°14'58" LT
78	370+86.76	00°31'15" RT
1/4 Line	374+54.44	
79	379+74.30	00°34'39" LT
80	384+85.14	01°38'27" RT
81	386+53.59	01°08'00" LT
82	392+78.45	00°50'06" LT
83	395+17.41	01°01'22" RT
84	398+23.28	06°38'54" RT
S. Line	398+90.78	

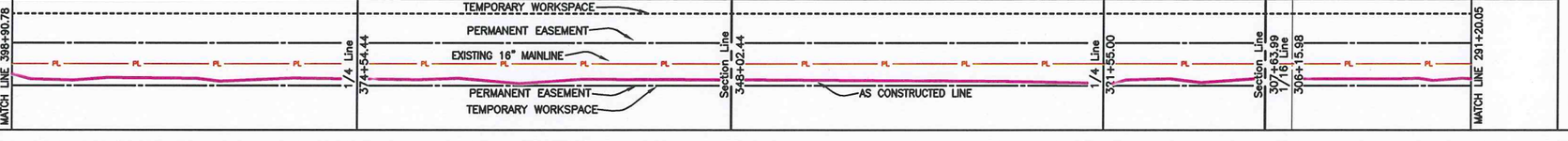
DIRECTION	DISTANCE
275°57'03"	127.65'
278°01'20"	209.50'
275°04'54"	99.99'
274°03'02"	158.42'
308°23'47"	900.37'
308°23'47"	148.01'
308°23'47"	230.51'
307°46'05"	470.91'
309°13'48"	279.35'
281°28'51"	136.41'
278°24'14"	180.43'
276°15'13"	93.40'
276°15'13"	5.20'
278°57'01"	774.27'
278°43'25"	1811.95'
278°51'57"	56.02'
278°51'57"	1123.11'
278°10'39"	451.58'
264°51'53"	427.50'
263°36'56"	282.13'
264°08'11"	367.68'
264°08'11"	519.86'
263°33'32"	510.84'
265°11'59"	168.45'
264°03'59"	624.86'
263°13'53"	238.96'
264°15'14"	305.87'
270°54'08"	67.50'

Noted: The centerline between the As–Constructed Pipelines in the easement is the Baseline of the Permanent Easement

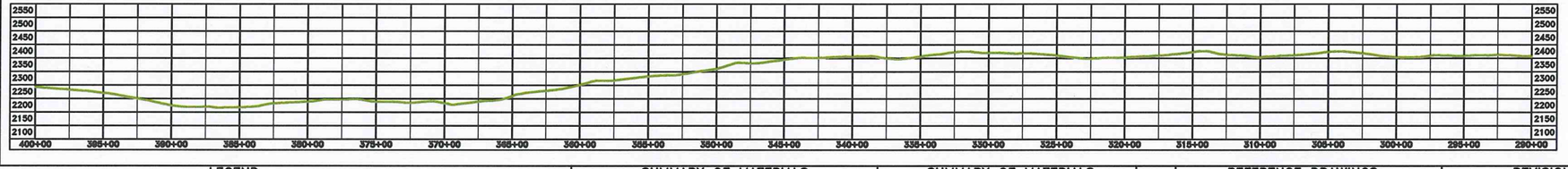
PIPE DATA



EASEMENT / WORKSPACE



PROFILE



500' 0 500' 1000'
scale feet

LEGEND

AS CONSTRUCTED LINE
PIPELINE PROFILE
IRON REBAR & LS 4626 CAP
REBAR
ORIGINAL STONE
TEST LEAD
FUTURE TIE–IN
ELECTRIC – UG
ELECTRIC – OH
BARBED WIRE FENCE
DRAINAGE CROSSING
GAS – UG
TELEPHONE
CRUDE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	10383	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	388	CRUDE 8.625"OD * 0.322"w API 5L X52 ARO
T1	3	TYPE T1 TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
T1	A4–7204–1	TYPE T1 TEST LEAD
–	SMK–01–1005	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
1	7/12/12	AS CONSTRUCTED
0	9/20/11	ISSUED FOR CONSTRUCTION

Rev'd. –

Smokey Trunk Line As–built
Sec. 31, 32, T. 150N, R. 96W & Sec. 5, T. 149N, R. 96W, 5th PM
McKenzie County, North Dakota

SHEET NO. 5

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
Z. HUDGIK	TJK	3710275	7/12/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

513+68.12 — Richard Jore – 028 — N1/2SW1/4 — 2812.31 FEET — 170.45 RODS — 485+49.31

485+49.31 — Richard Jore – 029 — SE1/4 — 3195.37 FEET — 193.66 RODS — 453+53.94

SEC. 35

453+53.94 — State of North Dakota – 030 — S1/2 — 5463.16 FEET — 331.10 RODS — 398+90.78

SEC. 36

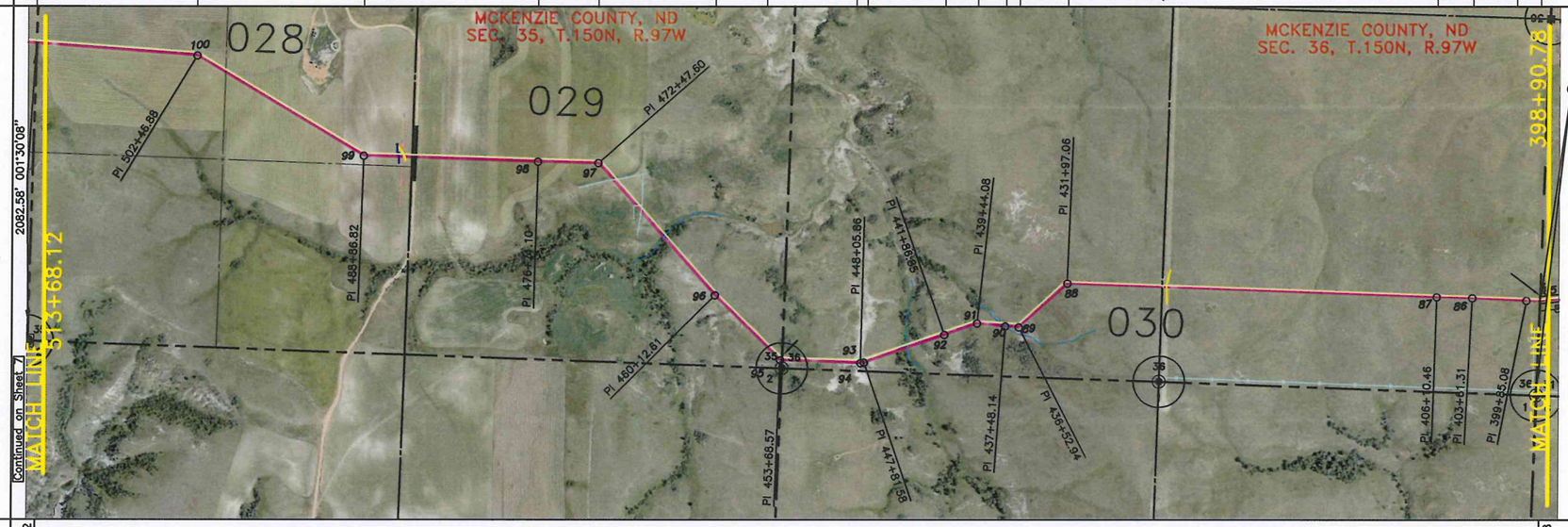
STATIONING

513+68.12 Section Line Crossing
513+68.12 MATCH LINE
502+46.88 P.I. 26°48'52" LT
500+14.77 1/16 Line Crossing
488+86.82 P.I. 29°08'07" RT
486+40.23 Test Lead
486+11.03 N-S OH-Electric Line Crossing
485+49.31 1/4 Line Crossing
485+27.47 N-S C.L. Road Crossing
483+77.80 8" Main Block Volve
476+71.10 P.I. 00°29'13" RT
472+47.60 P.I. 47°10'02" LT
470+90.06 N-S B.W. Fence Crossing
468+47.05 N-S B.W. Fence Crossing
467+95.46 N-S B.W. Fence Crossing
465+52.30 C.L. Drainage Crossing
465+40.27 Vegetation Crossing
464+90.08 Vegetation Crossing
460+12.61 P.I. 03°41'18" RT
453+68.57 P.I. 42°51'19" RT
453+53.94 Section Line Crossing
448+05.86 P.I. 10°46'27" RT
447+81.58 P.I. 10°18'30" RT
444+65.39 C.L. Drainage Crossing
441+86.85 P.I. 00°27'48" RT
439+44.08 P.I. 25°37'14" LT
437+49.58 C.L. Drainage Crossing
437+48.14 P.I. 02°12'54" RT
436+52.94 P.I. 46°14'00" RT
431+97.06 P.I. 44°25'30" LT
425+31.41 1/4 Line Crossing
425+29.64 N-S B.W. Fence Crossing
425+04.27 Foreign-Pipeline
406+10.46 P.I. 00°26'10" RT
403+61.31 P.I. 01°07'10" LT
399+85.08 P.I. 01°53'04" RT
398+90.78 Section Line Crossing
398+90.78 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System, NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.000147296 to go from grid distance to ground distance.

N

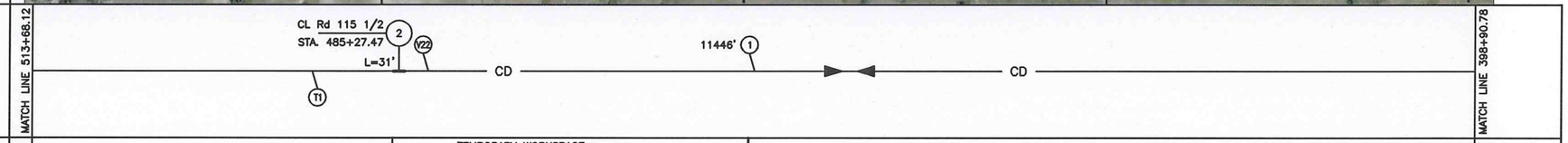
ALIGNMENT



PI #	STATIOINING	DEFLECTION
S. Line	398+90.78	
85	399+85.08	01°53'04" RT
86	403+61.31	01°07'10" LT
87	406+10.46	00°26'10" RT
88	431+97.06	44°25'30" LT
89	436+52.94	46°14'00" RT
90	437+48.14	02°12'54" RT
91	439+44.08	25°37'14" LT
92	441+86.85	00°27'48" RT
93	447+81.58	10°18'30" RT
94	448+05.86	10°46'27" RT
S. Line	453+53.94	
95	453+68.57	42°51'19" RT
96	460+12.61	03°41'18" RT
97	472+47.60	47°10'02" LT
98	476+71.10	00°29'13" RT
1/4 Line	485+49.31	
99	488+86.82	29°08'07" RT
100	502+46.88	26°48'52" LT
S. Line	513+68.12	

DIRECTION	DISTANCE
270°54'08"	94.30'
272°47'12"	376.23'
271°40'02"	249.15'
272°06'12"	2586.60'
227°40'42"	455.88'
273°54'42"	95.20'
276°07'36"	195.94'
250°30'22"	242.77'
250°58'10"	594.73'
261°16'40"	24.28'
272°03'07"	548.08'
272°03'07"	14.63'
314°54'27"	644.04'
318°35'45"	1234.99'
271°25'43"	423.50'
271°54'56"	878.21'
271°54'56"	337.51'
301°03'03"	1360.06'
274°14'11"	1121.24'

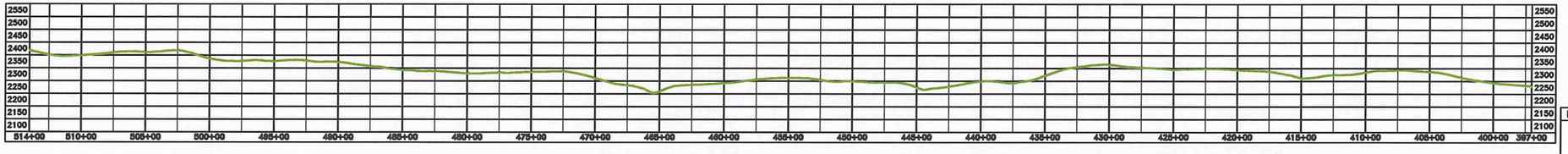
PIPE DATA



EASEMENT / WORKSPACE

Noted: The centerline between the As-Constructed Pipelines in the easement is the Baseline of the Permanent Easement

PROFILE



500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- IRON REBAR & LS 4626 CAP
- REBAR
- ORIGINAL STONE
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – UG
- ELECTRIC – OH
- BARBED WIRE FENCE
- DRAINAGE CROSSING
- GAS – UG
- TELEPHONE
- CRUDE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	11446	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	31	CRUDE 8.625"OD * 0.322"w API 5L X52 ARO
T1	1	TYPE T1 TEST LEAD
V22	1	8" MAINLINE BLOCK VALVE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO	DWG. NO.	REFERENCE DESCRIPTION
T1	A4-7204-1	TYPE T1 TEST LEAD
V22	SBP-04-1046A	8" MAIN BLOCK VALVE
–	SMK-01-1005	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
1	7/12/12	AS CONSTRUCTED
0	9/20/11	ISSUED FOR CONSTRUCTION

Rev'd. –

Smokey Trunk Line As-built
Sec. 35 & 36, T. 150N, R. 97W, 5th PM
McKenzie County, North Dakota

SHEET NO. 6

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
Z. HUDGIK	TJK	3710275	7/12/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

© Kadrmas, Lee & Jackson 2012

Jul 18, 2012 – 2:15pm – J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

OWNERSHIP

629+34.47	Herbert Lundin – 022	600+57.19	598+76.80	Herbert Lundin – 024	576+17.39	572+40.80	Herbert Lundin – 025	556+69.45	Herbert Lundin – 026	526+78.25	Richard Jore – 027	513+68.12
	S1/2SW1/4 2877.28 FEET 174.38 RODS			N1/2NE1/4 2259.41 FEET 136.93 RODS			S1/2SW1/4 1571.35 FEET 95.23 RODS		N1/2SW1/4 & NW1/4SE1/4 2991.20 FEET 181.28 RODS		NE1/4SE1/4 1310.13 FEET 79.40 RODS	
	SEC. 33			SEC. 4		SEC. 33			SEC. 34			

Herbert Lundin – 023 SW1/4SE1/4 180.39 FEET 10.93 RODS

Herbert Lundin – 023 SE1/4SE1/4 376.59 FEET 22.82 RODS

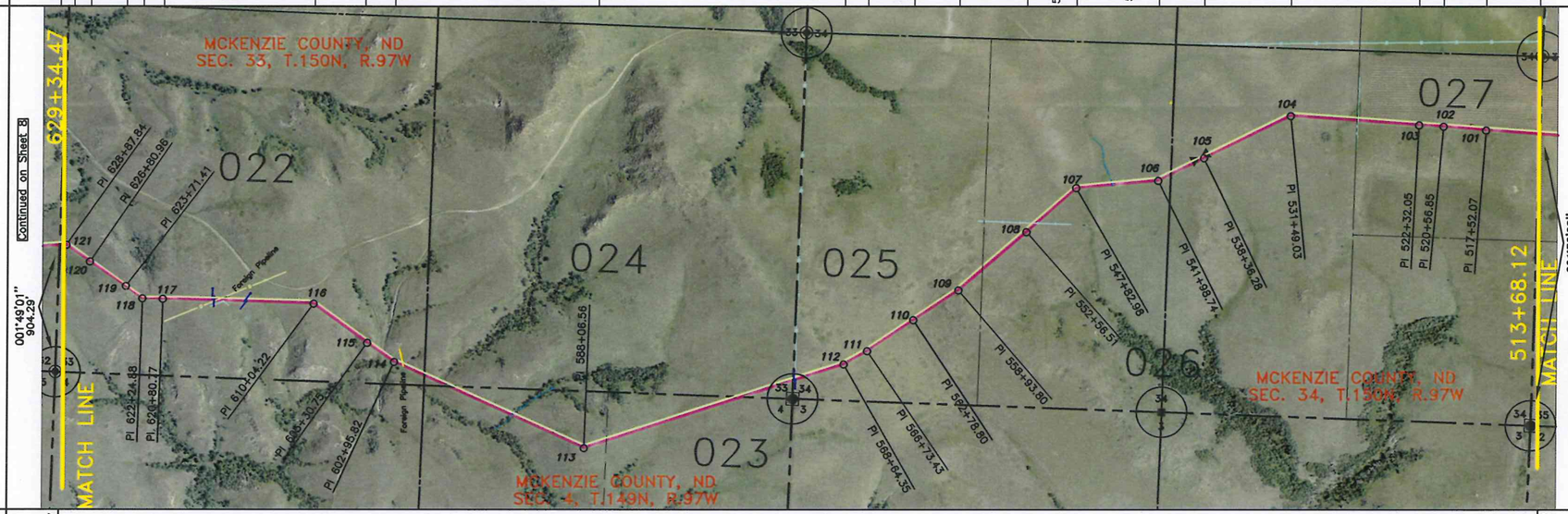
STATIONING

629+34.47 Section Line Crossing
629+34.47 MATCH LINE
628+87.84 P.I. 39°03'16" LT
626+80.96 P.I. 01°03'34" RT
623+71.41 P.I. 02°58'39" LT
622+24.88 P.I. 35°20'27" RT
620+80.77 P.I. 00°03'34" RT
617+20.67 Test Lead
616+99.60 NE–SW Gas Line Crossing
616+23.99 C.L. Lease Road
614+87.51 Test Lead
610+04.22 P.I. 34°38'29" LT
605+30.75 P.I. 01°02'10" RT
603+64.15 C.L. Lease Road
602+95.82 P.I. 10°50'16" RT
602+24.15 Foreign Utility Line
600+57.19 1/4 Line Crossing
598+76.80 Section Line Crossing
593+73.43 Vegetation Crossing
593+67.56 Drainage Crossing
593+38.85 Vegetation Crossing
588+06.56 P.I. 42°28'06" RT
586+38.97 1/16 Line Crossing
576+17.39 Section Line Crossing
572+40.80 Section Line Crossing
572+32.22 Test Lead
572+29.36 N–S B.W. Fence Crossing
568+64.35 P.I. 11°38'02" RT
566+73.43 P.I. 04°41'21" RT
564+44.12 C.L. Lease Road
562+78.80 P.I. 00°45'43" LT
558+93.80 P.I. 07°15'42" RT
556+69.45 1/16 Line Crossing
552+56.51 P.I. 00°47'25" RT
551+63.24 E–W B.W. Fence Crossing
547+82.98 P.I. 36°31'29" LT
545+23.84 C.L. Drainage Crossing
541+98.74 P.I. 21°34'02" RT
540+99.38 1/4 Line Crossing
538+56.41 Future Tie–In
538+36.28 P.I. 00°36'39" LT
531+49.03 P.I. 30°09'11" LT
526+78.25 1/16 Line Crossing
526+74.67 N–S B.W. Fence Crossing
522+32.05 P.I. 01°11'36" RT
520+56.85 P.I. 02°11'53" LT
517+52.07 P.I. 00°53'21" RT
513+68.12 Section Line Crossing
513+68.12 MATCH LINE

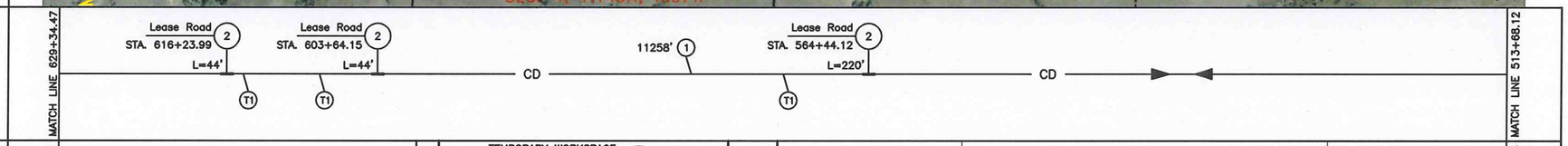
NOTE:
Survey is based on North Dakota State Plane System, NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.000147296 to go from grid distance to ground distance.

N

ALIGNMENT

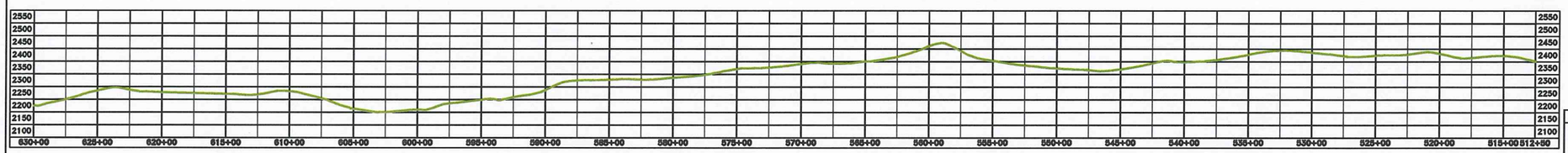


PIPE DATA



EASEMENT / WORKSPACE

PROFILE



PI #	STATIOINING	DEFLECTION
S. Line	513+68.12	
101	517+52.07	00°53'21" RT
102	520+56.85	02°11'53" LT
103	522+32.05	01°11'36" RT
1/16 Line	526+78.25	
104	531+49.03	30°09'11" LT
105	538+36.28	00°36'39" LT
106	541+98.74	21°34'02" RT
107	547+82.98	36°31'29" LT
108	552+56.51	00°47'25" RT
1/16 Line	556+69.45	
109	558+93.80	07°15'42" RT
110	562+78.80	00°45'43" LT
111	566+73.43	04°41'21" RT
112	568+64.35	11°38'02" RT
S. Line	572+40.80	
S. Line	576+17.39	
113	588+06.56	42°28'06" RT
S. Line	598+76.80	
1/4 Line	600+57.19	
114	602+95.82	10°50'16" RT
115	605+30.75	01°02'10" RT
116	610+04.22	34°38'29" LT
117	620+80.77	00°03'34" RT
118	622+24.88	35°20'27" RT
119	623+71.41	02°58'39" LT
120	626+80.96	01°03'34" RT
121	628+87.84	39°03'16" LT
S. Line	629+34.47	

DIRECTION	DISTANCE
274°14'11"	383.95'
275°07'32"	304.78'
272°55'39"	175.20'
274°07'16"	446.20'
274°07'16"	470.78'
243°58'04"	687.25'
243°21'26"	362.46'
264°55'28"	584.24'
228°24'00"	473.53'
229°11'24"	412.94'
229°11'24"	224.35'
236°27'06"	385.00'
235°41'23"	394.63'
240°22'43"	190.92'
252°00'45"	376.45'
252°00'45"	376.59'
252°00'45"	1189.17'
294°28'51"	1070.24'
294°28'51"	180.39'
294°28'51"	238.63'
305°19'07"	234.93'
306°21'17"	473.47'
271°42'47"	1076.55'
271°46'22"	144.11'
307°06'49"	146.53'
304°08'09"	309.55'
305°11'43"	206.88'
266°08'27"	46.63'

Noted: The centerline between the As–Constructed Pipelines in the easement is the Baseline of the Permanent Easement

500' 0 500' 1000'
scale feet

LEGEND

AS CONSTRUCTED LINE
PIPELINE PROFILE
IRON REBAR & LS 4626 CAP
REBAR
ORIGINAL STONE
TEST LEAD
FUTURE TIE–IN
ELECTRIC – UG
ELECTRIC – OH
BARBED WIRE FENCE
DRAINAGE CROSSING
GAS – UG
TELEPHONE
CRUDE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	11258	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	308	CRUDE 8.625"OD * 0.322"w API 5L X52 ARO
T1	3	TYPE T1 TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO	DWG. NO.	REFERENCE DESCRIPTION
T1	A4–7204–1	TYPE T1 TEST LEAD
–	SMK–01–1005	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
1	7/12/12	AS CONSTRUCTED
0	9/20/11	ISSUED FOR CONSTRUCTION

Rev'd. –

Smokey Trunk Line As–built
Sec. 4, T. 149N, R. 97W, 5th PM, Sec. 33 & 34, T. 150N, R. 97W, 5th PM
McKenzie County, North Dakota

SHEET NO. 7

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
Z. HUDGIK	TJK	3710275	7/12/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

© Kadrmas, Lee & Jackson 2012

Jul 18, 2012 – 2:15pm – J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

OWNERSHIP

Herbert Lundin 017 — NE1/4SW1/4 — 149.20 FEET — 9.04 RODS

722+99.82 — 721+50.62

Herbert Lundin – 017 — NW1/4SE1/4 — 1871.96 FEET — 113.45 RODS

721+50.62 — 702+78.66

Herbert Lundin – 019 — NE1/4SE1/4 — 1431.19 FEET — 86.74 RODS

702+78.66 — 688+47.47

SEC. 31

Herbert Lundin – 020 — SW1/4 — 3083.38 FEET — 186.87 RODS

688+47.47 — 657+64.09

Herbert Lundin – 021 — S1/2SE1/4 — 2829.62 FEET — 171.49 RODS

657+64.09 — 629+34.47

SEC. 32

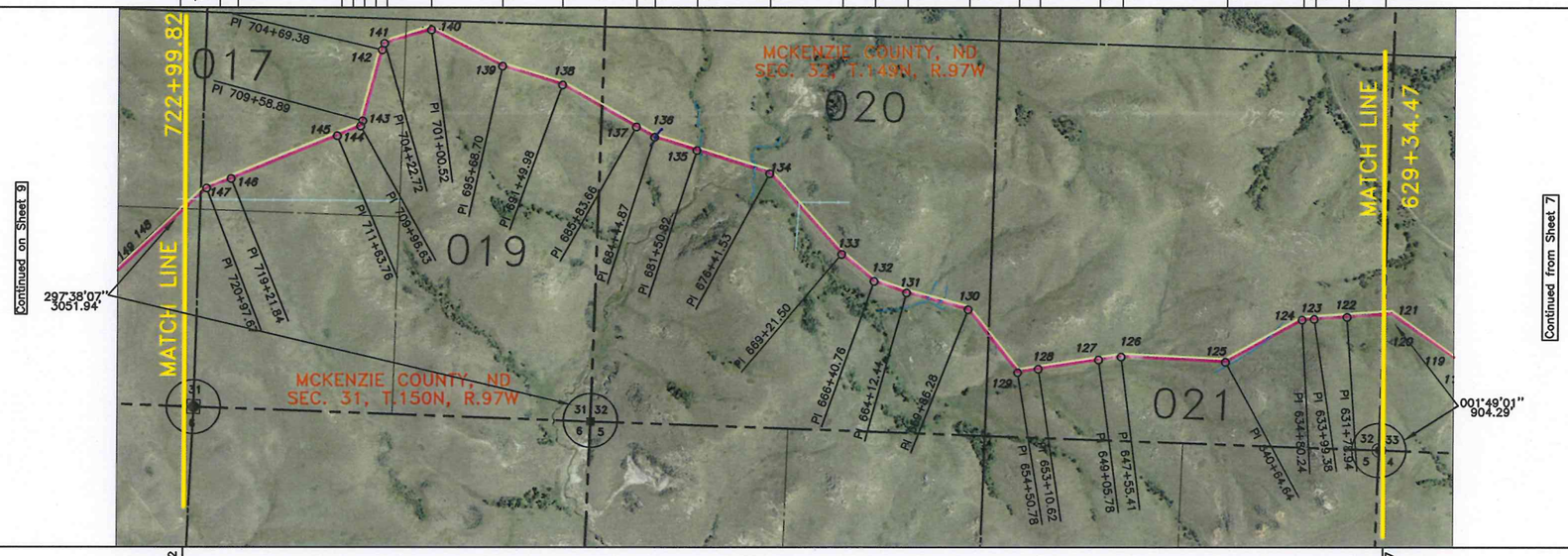
STATIONING

1/16 Line Crossing
722+99.82 MATCH LINE
721+08.88 E-W B.W. Fence Crossing
720+97.67 1/4 Line Crossing
719+21.84 P.I. 00°54'35" RT
711+63.76 P.I. 00°49'31" RT
709+96.63 P.I. 46°11'50" RT
709+58.89 P.I. 05°44'14" RT
704+69.38 P.I. 03°26'35" LT
704+22.72 P.I. 55°21'51" LT
702+78.66 1/16 Line Crossing
701+00.52 P.I. 43°05'44" LT
695+68.70 P.I. 09°36'41" RT
691+49.98 P.I. 12°17'25" LT
688+47.47 Section Line Crossing
685+83.66 P.I. 00°23'13" RT
684+44.87 P.I. 11°51'18" RT
681+50.82 P.I. 00°17'54" LT
681+28.90 C.L. Drainage Crossing
677+48.43 C.L. Drainage Crossing
676+41.53 P.I. 30°33'03" LT
673+51.79 B.W. Fence Crossing
669+21.50 P.I. 08°11'58" RT
666+40.76 P.I. 20°43'20" RT
664+12.44 P.I. 04°03'35" RT
662+60.91 C.L. Drainage Crossing
661+78.81 C.L. Drainage Crossing
659+86.28 P.I. 36°13'25" LT
657+64.09 1/4 Line Crossing
654+50.78 P.I. 61°01'54" RT
653+10.62 P.I. 00°49'47" LT
649+05.78 P.I. 01°05'02" LT
647+55.41 P.I. 10°28'13" LT
640+64.64 P.I. 31°44'20" RT
637+42.59 C.L. Drainage Crossing
634+80.24 P.I. 25°43'17" LT
633+99.38 P.I. 00°30'26" RT
631+78.94 P.I. 00°12'37" RT
Section Line Crossing
629+34.47 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System, NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.000147296 to go from grid distance to ground distance.

N

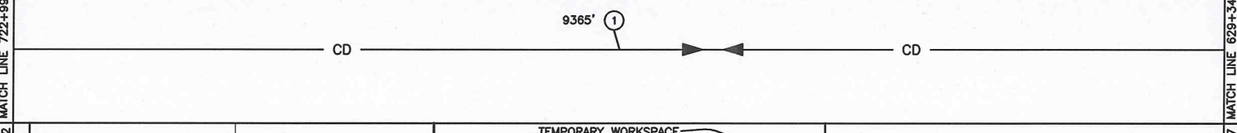
ALIGNMENT



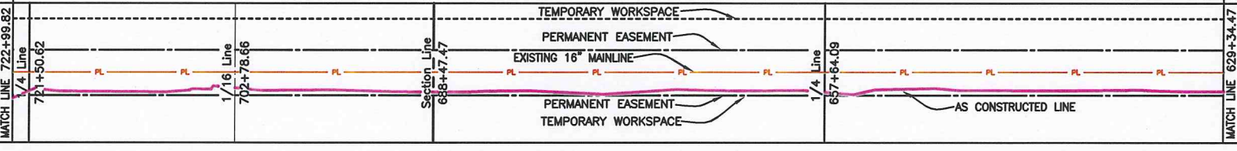
PI #	STATIOINING	DEFLECTION
S. Line	629+34.47	
122	631+78.94	00°12'37" RT
123	633+99.38	00°30'26" RT
124	634+80.24	25°43'17" LT
125	640+64.64	31°44'20" RT
126	647+55.41	10°28'13" LT
127	649+05.78	01°05'02" LT
128	653+10.62	00°49'47" LT
129	654+50.78	61°01'54" RT
1/4 Line	657+64.09	
130	659+86.28	36°13'25" LT
131	664+12.44	04°03'35" RT
132	666+40.76	20°43'20" RT
133	669+21.50	08°11'58" RT
134	676+41.53	30°33'03" LT
135	681+50.82	00°17'54" LT
136	684+44.87	11°51'18" RT
137	685+83.66	00°23'13" RT
S. Line	688+47.47	
138	691+49.98	12°17'25" LT
139	695+68.70	09°36'41" RT
140	701+00.52	43°05'44" LT
1/16 Line	702+78.66	
141	704+22.72	55°21'51" LT
142	704+69.38	03°26'35" RT
143	709+58.89	05°44'14" RT
144	709+96.63	46°11'50" RT
145	711+63.76	00°49'31" RT
146	719+21.84	00°54'35" RT
147	720+97.67	21°42'22" LT
1/4 Line	721+50.62	
1/16 Line	722+99.82	

DIRECTION	DISTANCE
266°08'27"	244.47'
266°21'04"	220.44'
266°51'30"	80.86'
241°08'14"	584.40'
272°52'33"	690.77'
262°24'20"	150.37'
261°19'18"	404.84'
260°29'32"	140.16'
321°31'25"	313.31'
321°31'25"	222.19'
285°18'01"	426.16'
289°21'36"	228.32'
310°04'56"	280.74'
318°16'54"	720.03'
287°43'52"	509.29'
287°25'58"	294.05'
299°17'16"	138.79'
299°40'29"	263.81'
299°40'29"	302.51'
287°23'04"	418.72'
296°59'45"	531.82'
253°54'01"	178.14'
253°54'01"	144.06'
198°32'11"	46.66'
195°05'36"	489.51'
200°49'50"	37.74'
247°01'40"	167.13'
247°51'11"	758.08'
248°45'46"	175.83'
227°03'24"	52.95'
227°03'24"	149.20'

PIPE DATA

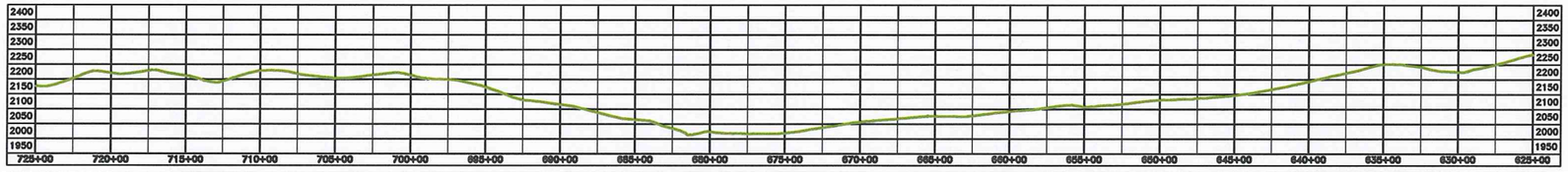


EASEMENT / WORKSPACE



Noted: The centerline between the As-Constructed Pipelines in the easement is the Baseline of the Permanent Easement

PROFILE



500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- IRON REBAR & LS 4626 CAP
- REBAR
- ORIGINAL STONE
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – UG
- ELECTRIC – OH
- BARBED WIRE FENCE
- DRAINAGE CROSSING
- GAS – UG
- TELEPHONE
- CRUDE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	9365	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
–	SMK-D1-1005	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
1	7/12/12	AS CONSTRUCTED
0	9/20/11	ISSUED FOR CONSTRUCTION

Rev'd. –

Smokey Trunk Line As-built
Sec. 31, 32, 33, T. 150N, R. 97W, 5th PM
McKenzie County, North Dakota

SHEET NO. 8

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
Z. HUDGIK	TJK	3710275	7/12/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

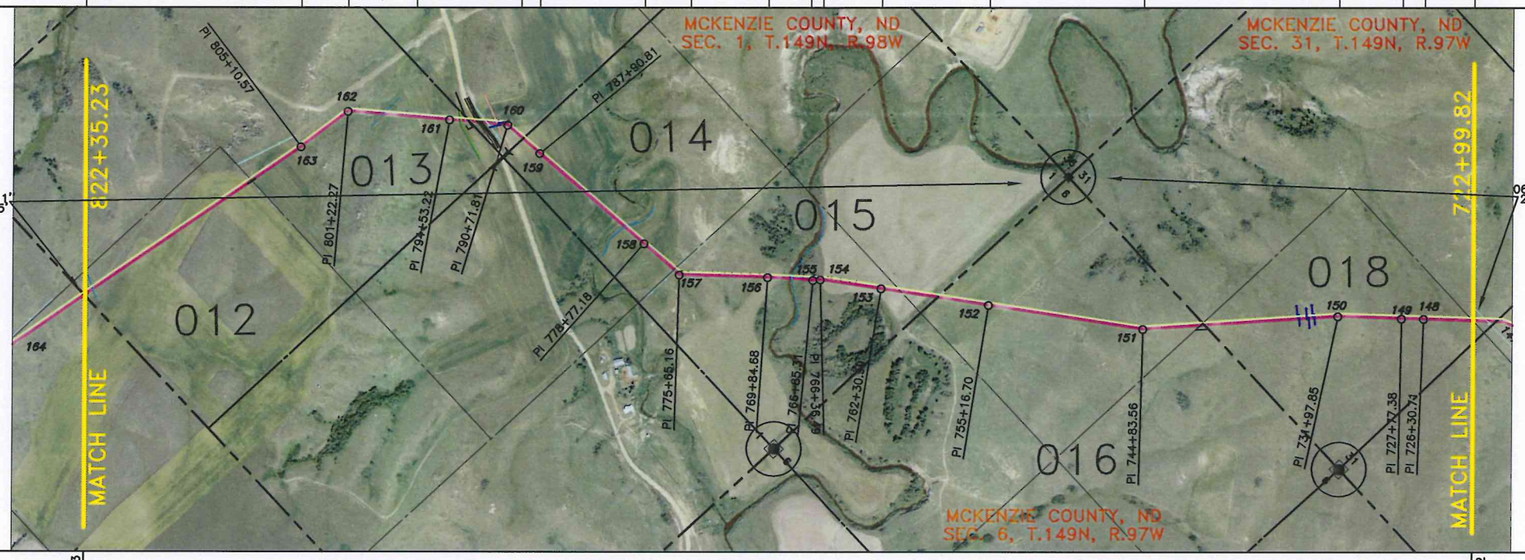
822+35.23	Alvin W Johnsrud Estate – 012	809+05.42	Hoffman Living Trust – 013	783+19.17	Hoffman Living Trust – 014	776+14.46	Alvin W Johnsrud Estate – 015	758+56.06	Arlene Johnson – 016	740+71.20	Arlene Johnson – 018	722+99.82
	SE1/4SW1/4 1329.81 FEET 80.59 RODS		NE1/4SW1/4 1586.25 FEET 96.13 RODS		SE1/4NE1/4 & SW1/4NW1/4 1704.71 FEET 103.31 RODS		E1/2NE1/4 1758.40 FEET 106.57 RODS		N1/2NW1/4 1784.86 FEET 108.17 RODS		SE1/4SW1/4 1771.38 107.36 RODS	
SEC. 1								SEC. 6			SEC. 31	

STATIONING

822+35.23 Section Line Crossing
821+65.39 C.L. Drainage Crossing
809+10.14 B.W. Fence Crossing
809+05.42 1/16 Line Crossing
805+10.57 P.I. 02°26'49" RT
801+22.27 P.I. 42°03'36" LT
798+84.77 C.L. Drainage Crossing
794+53.22 P.I. 00°22'11" LT
793+80.26 Telephone Crossing
793+24.55 Utility Crossing
793+19.17 1/4 Line Crossing
792+50.56 County Hgwy 37 Xing
792+05.93 B.W. Fence Crossing
791+36.14 OH-Electric Line Crossing
791+29.09 Test Lead
790+71.81 P.I. 36°26'59" LT
787+90.81 P.I. 00°51'11" RT
780+43.40 Creek/Drainage Bore NE–SW Drainage
778+77.18 P.I. 00°34'28" LT
776+14.46 1/16 Line Crossing
776+06.21 B.W. Fence Crossing
775+65.16 P.I. 39°47'44" RT
769+84.68 P.I. 02°10'26" LT
768+27.93 C.L. Cherry Creek Crossing
766+85.31 P.I. 08°37'23" RT
766+36.49 P.I. 13°15'53" LT
762+30.99 P.I. 00°29'18" LT
758+56.06 Section Line Crossing
758+52.50 B.W. Fence Crossing
755+16.70 P.I. 00°03'09" RT
744+83.56 P.I. 12°36'16" RT
741+94.67 1/16 Line Crossing
740+71.20 Section Line Crossing
734+52.17 Test Lead
733+95.66 Test Lead
733+52.12 Test Lead
731+97.85 P.I. 05°44'08" LT
727+77.38 P.I. 01°07'32" RT
726+30.71 P.I. 01°14'21" LT
722+99.82 1/6 Line Crossing MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System, NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.000147296 to go from grid distance to ground distance.

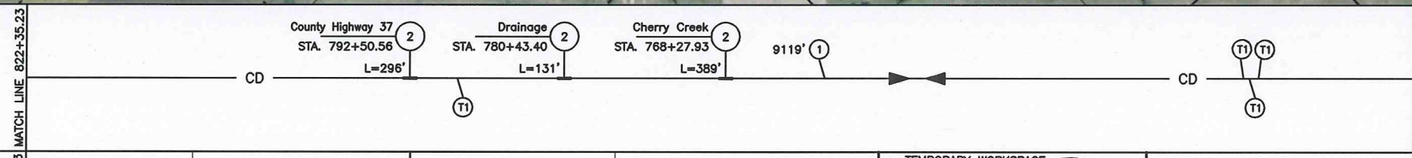
ALIGNMENT



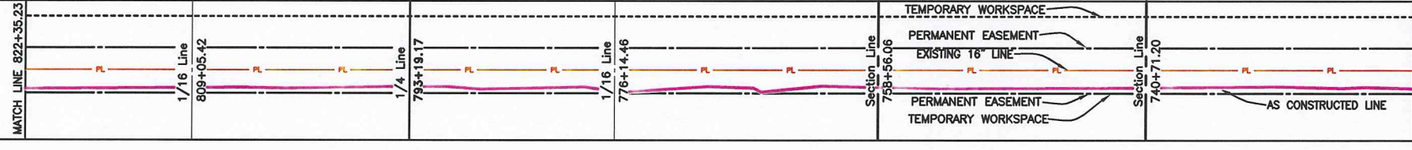
PI #	STATIOINING	DEFLECTION
1/6 Line	722+99.82	
148	726+30.71	01°14'21" LT
149	727+77.38	01°07'32" RT
150	731+97.85	05°44'08" LT
S. Line	740+71.20	
151	744+83.56	12°36'16" RT
152	755+16.70	00°03'09" RT
S. Line	758+56.06	
153	762+30.99	00°29'18" LT
154	766+36.49	13°15'53" LT
155	766+85.31	08°37'23" RT
156	769+84.68	02°10'26" LT
157	775+65.16	39°47'44" RT
1/16 Line	776+14.46	
158	778+77.18	00°34'28" LT
159	787+90.81	00°51'11" RT
160	790+71.81	36°26'59" LT
1/4 Line	793+19.17	
161	794+53.22	00°22'11" LT
162	801+22.27	42°03'36" LT
163	805+10.57	02°26'49" RT
1/16 Line	809+05.42	
S. Line	822+35.23	

DIRECTION	DISTANCE
227°03'24"	330.89'
225°49'04"	146.67'
226°56'36"	420.47'
221°12'28"	873.35'
221°12'28"	412.36'
233°48'43"	1033.14'
233°51'52"	339.36'
233°51'52"	374.93'
233°22'34"	405.50'
220°06'41"	48.82'
228°44'04"	299.37'
226°33'38"	580.48'
266°21'22"	49.30'
266°21'22"	262.72'
265°46'55"	913.63'
266°38'05"	281.00'
230°11'07"	247.36'
230°11'07"	134.05'
229°48'56"	669.05'
187°45'19"	388.30'
190°12'08"	394.85'
190°12'08"	1329.81'

PIPE DATA

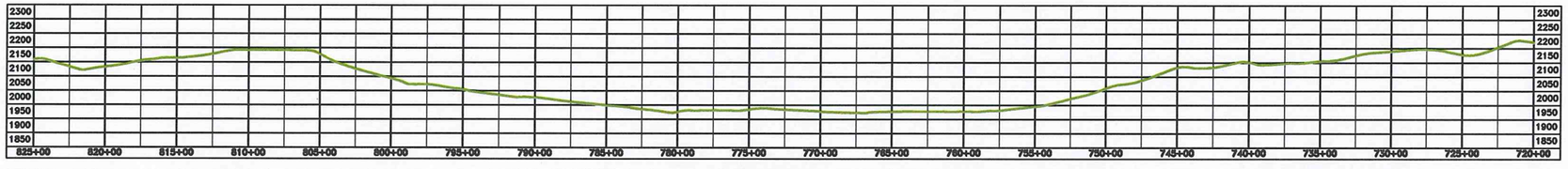


EASEMENT / WORKSPACE



Noted: The centerline between the As-Constructed Pipelines in the easement is the Baseline of the Permanent Easement

PROFILE



500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- IRON REBAR & LS 4626 CAP
- REBAR
- ORIGINAL STONE
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – UG
- ELECTRIC – OH
- BARBED WIRE FENCE
- DRAINAGE CROSSING
- GAS – UG
- TELEPHONE
- CRUDE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	9119	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	816	CRUDE 8.625"OD * 0.322"w API 5L X52 ARO
T1	4	TYPE T1 TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO	DWG. NO.	REFERENCE DESCRIPTION
T1	A4-7204-1	TYPE T1 TEST LEAD
–	SMK-01-1005	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
1	7/12/12	AS CONSTRUCTED
0	9/20/11	ISSUED FOR CONSTRUCTION

Rev'd. –

Smokey Trunk Line As-built

Sec. 1, T149N, R98W, Sec. 6, T149N, R97W, Sec. 31, T150N, R97W, 5th PM
McKenzie County, North Dakota

SHEET NO. 9

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Avenue, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
Z. HUDGIK	TJK	3710275	7/12/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

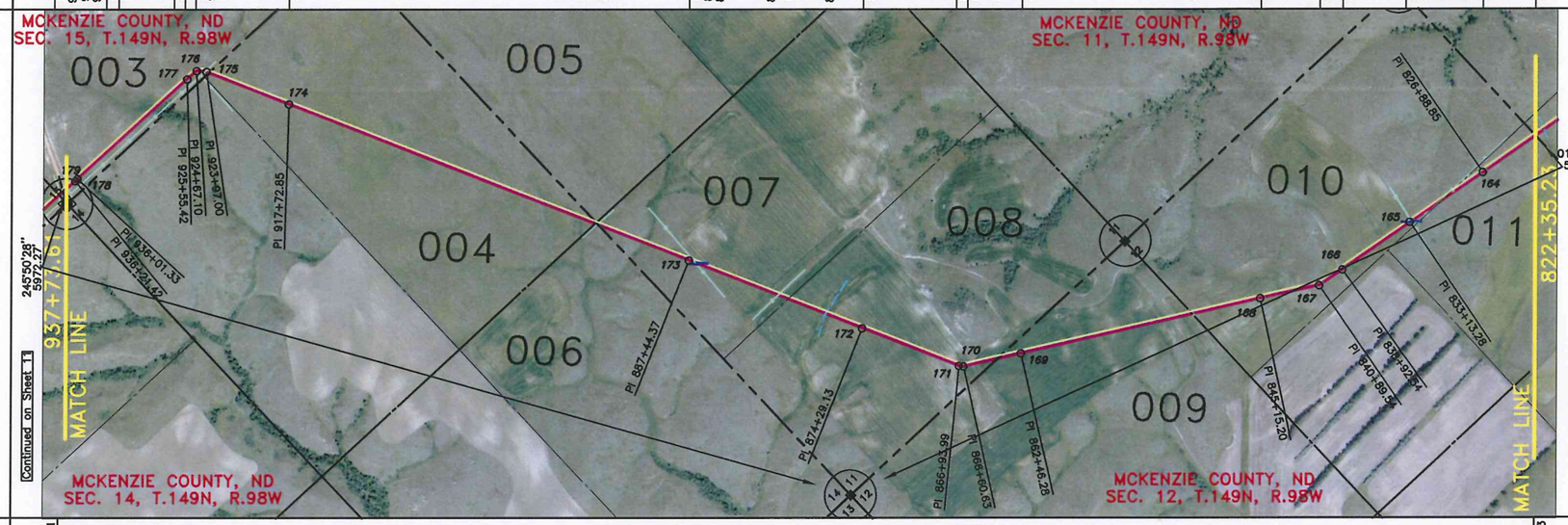
937+73.61	Randall Stevenson – 003	923+79.93	Reed Kenneth Maim – 004	Reed Kenneth Maim – 005	894+54.96	David & Denae Hoffman – 007	879+91.53	David & Denae Hoffman – 008	864+14.87	David & Denae Hoffman – 009	850+08.12	Hoffman Living Trust – 010	830+33.26	822+35.23
	NE1/4 1393.68 FEET 84.47 RODS		N1/2NW1/4 2905.83 FEET 176.11 RODS	S1/2SW1/4 CONSTRUCTION EASEMENT ONLY		W1/2SE1/4 1432.85 FEET 86.84 RODS		E1/2SE1/4 1576.66 FEET 95.56 RODS		SW1/4 1406.75 FEET 85.26 RODS		W1/2NW1/4 1974.86 FEET 119.69 RODS		

STATIONING

937+73.61 1/4 Line Crossing
937+73.61 MATCH LINE
937+70.10 B.W. Fence Crossing
937+33.58 C.L. 122nd Avenue NW
937+04.43 B.W. Fence Crossing
936+21.42 P.I. 07°41'43" RT
936+01.33 P.I. 06°43'57" LT
925+55.42 P.I. 00°41'53" LT
924+67.10 P.I. 47°55'16" LT
923+97.00 P.I. 15°25'54" LT
923+08.83 B.W. Fence Crossing
923+79.93 Section Line Crossing
917+72.85 P.I. 00°08'45" RT
894+54.96 1/4 Line Crossing
894+39.66 B.W. Fence Crossing
894+24.38 Section Line Crossing
887+44.37 P.I. 00°01'42" LT
886+97.15 B.W. Fence Crossing
886+75.39 Test Lead
880+67.39 B.W. Fence Crossing
879+91.53 1/16 Line Crossing
877+07.87 NE-SW Drainage Crossing
874+29.13 P.I. 00°09'02" RT
866+93.99 P.I. 15°53'39" RT
866+60.63 P.I. 18°09'38" RT
864+14.87 Section Line Crossing
862+46.28 P.I. 00°15'29" RT
850+12.81 B.W. Fence Crossing
850+08.12 1/4 Line Crossing
845+15.20 P.I. 00°35'31" LT
840+89.54 P.I. 21°57'20" RT
838+92.54 P.I. 01°05'40" RT
833+13.28 P.I. 01°15'09" LT
833+07.46 Test Lead
833+05.72 B.W. Fence Crossing
830+54.75 B.W. Fence Crossing
830+33.26 1/16 Line Crossing
826+88.85 P.I. 00°35'13" RT
822+35.23 Section Line Crossing
822+35.23 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System, NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.000147296 to go from grid distance to ground distance.

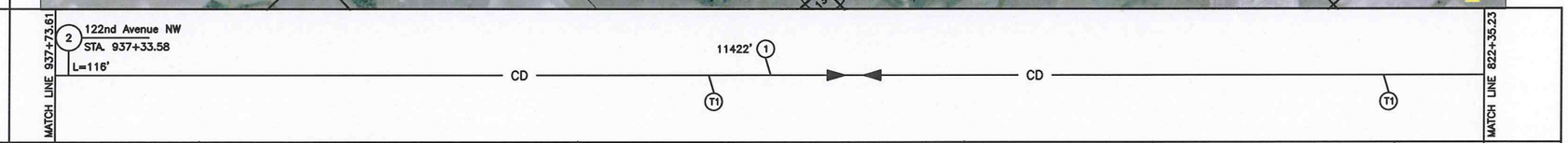
ALIGNMENT



PI #	STATIONING	DEFLECTION
S. Line	822+35.23	
164	826+88.85	00°35'13" RT
1/16 Line	830+33.26	
165	833+13.28	01°15'09" LT
166	838+92.54	01°05'40" RT
167	840+89.54	21°57'20" RT
168	845+15.20	00°35'31" LT
1/4 Line	850+08.12	
169	862+46.28	00°15'29" RT
S. Line	864+14.87	
170	866+60.63	18°09'38" RT
171	866+93.99	15°53'39" RT
172	874+29.13	00°09'02" RT
1/16 Line	879+91.53	
173	887+44.37	00°01'42" LT
S. Line	894+24.38	
1/4 Line	894+54.96	
174	917+72.85	00°08'45" RT
S. Line	923+79.93	
175	923+97.00	15°25'54" LT
176	924+67.10	47°55'16" LT
177	925+55.42	00°41'53" LT
178	936+01.33	06°43'57" LT
179	936+21.42	07°41'43" RT
1/4 Line	937+73.61	

DIRECTION	DISTANCE
190°12'08"	453.62'
190°47'21"	344.41'
190°47'21"	280.02'
189°32'12"	579.26'
190°37'52"	197.00'
212°35'12"	425.66'
211°59'41"	492.92'
211°59'41"	1238.16'
212°15'10"	168.59'
212°15'10"	245.76'
230°24'48"	33.36'
246°18'27"	735.14'
246°27'29"	562.40'
246°27'29"	752.84'
246°25'46"	680.01'
246°25'46"	30.58'
246°25'46"	2317.89'
246°34'31"	607.08'
246°34'31"	17.07'
231°08'37"	70.10'
183°13'21"	88.32'
182°31'29"	1045.91'
175°47'31"	20.09'
183°29'14"	152.19'

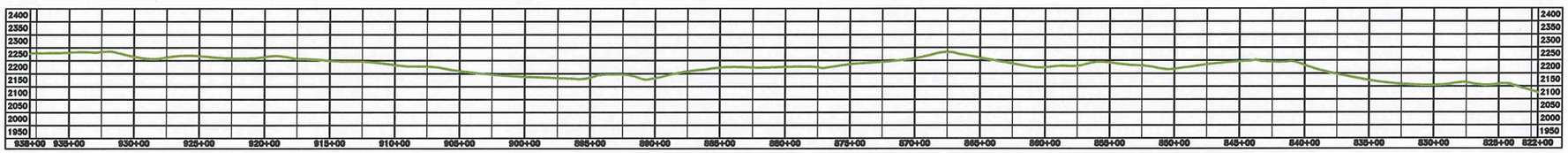
PIPE DATA



EASEMENT / WORKSPACE

Noted: The centerline between the As-Constructed Pipelines in the easement is the Baseline of the Permanent Easement

PROFILE



500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- IRON REBAR & LS 4626 CAP
- REBAR
- ORIGINAL STONE
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – UG
- ELECTRIC – OH
- BARBED WIRE FENCE
- DRAINAGE CROSSING
- GAS – UG
- TELEPHONE
- CRUDE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	11422	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
2	116	CRUDE 8.625"OD * 0.322"w API 5L X52 ARO
T1	2	TYPE T1 TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
T1	A4-7204-1	TYPE T1 TEST LEAD
–	SMK-01-1005	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
1	7/12/12	AS CONSTRUCTED
0	9/20/11	ISSUED FOR CONSTRUCTION

Rev'd. –

Smokey Trunk Line As-built

Sec. 11, 12, 14, 15, T. 149N, R. 98W, 5th PM
McKenzie County, North Dakota

SHEET NO. 10

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Ave, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
Z. HUDGIK	T. Kubas	3710275 BG3	7/12/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

1031+45.05 — State of North Dakota — SE1/4 — 2885.00 FEET — 174.85 RODS — SEC. 16 — 1002+60.05

1002+60.05 — Randall Stevenson – 001 — W1/2SE1/4 & SW1/4 — 3993.92 FEET — 242.06 RODS — SEC. 15 — 962+66.13

962+66.13 — Knut Berg Trust – 002 — E1/2SE1/4 — 2492.52 FEET — 151.06 RODS — 937+73.61

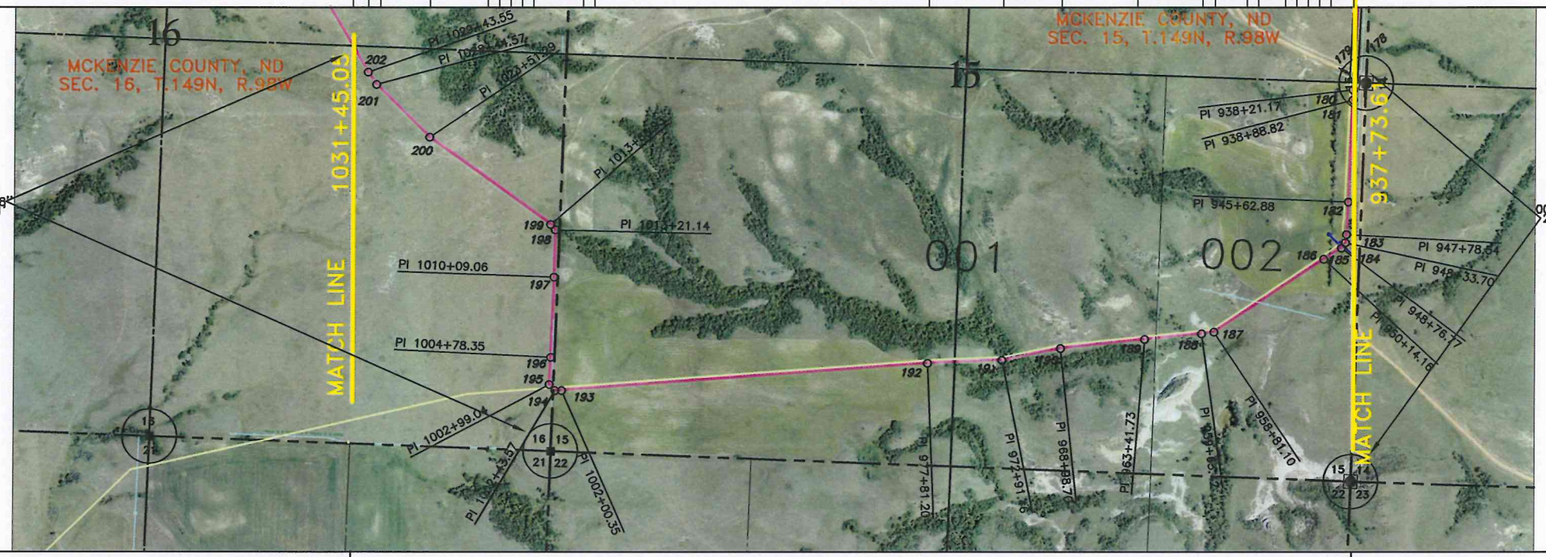
STATIONING

1/4 Line Crossing
1031+45.05 MATCH LINE
1029+43.55 P.I. 04°03'30" RT
1028+44.57 P.I. 10°44'10" RT
1023+51.29 P.I. 09°04'41" RT
1013+68.93 P.I. 13°29'41" LT
1013+21.14 P.I. 42°01'32" LT
1010+09.06 P.I. 40°49'09" LT
1004+78.35 P.I. 00°45'05" LT
1002+99.04 P.I. 45°54'50" RT
1002+68.72 B.W. Fence Crossing
1002+64.88 Pipeline Crossing
1002+60.05 Section Line Crossing
1002+43.57 P.I. 46°27'35" RT
1002+00.35 P.I. 04°42'28" RT
977+81.20 P.I. 01°52'55" LT
976+02.75 1/4 Line Crossing
972+91.46 P.I. 09°06'58" RT
972+86.69 Vegetation Crossing
971+32.85 Vegetation Crossing
968+98.70 P.I. 05°25'16" LT
963+41.73 P.I. 00°32'37" LT
962+66.13 1/16 Line Crossing
962+62.35 B.W. Fence Crossing
961+45.58 Vegetation Crossing
960+24.30 Vegetation Crossing
959+63.42 P.I. 02°32'13" RT
958+81.10 P.I. 25°41'19" RT
955+32.25 B.W. Fence Crossing
950+14.16 P.I. 01°13'26" LT
948+76.77 P.I. 20°42'19" RT
948+58.86 Test Lead
948+33.70 P.I. 29°33'09" RT
947+78.54 P.I. 04°01'07" RT
945+62.88 P.I. 00°49'33" RT
938+88.82 P.I. 01°45'18" RT
938+21.17 P.I. 02°53'09" LT
937+73.61 1/4 Line Crossing
937+73.61 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System, NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.000147296 to go from grid distance to ground distance.

N

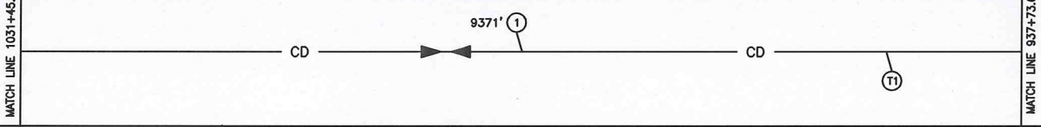
ALIGNMENT



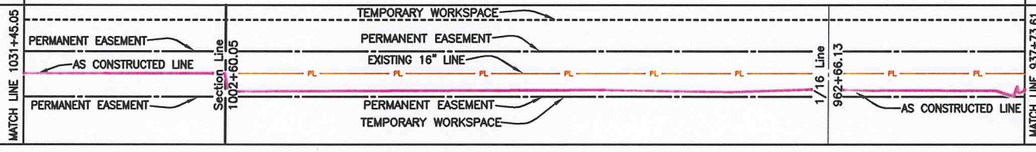
PI #	STATIOINING	DEFLECTION
1/4 Line	937+73.61	
180	938+21.17	02°53'09" LT
181	938+88.82	01°45'18" RT
182	945+62.88	00°49'33" RT
183	947+78.54	04°01'07" RT
184	948+33.70	29°33'09" RT
185	948+76.77	20°42'19" RT
186	950+14.16	01°13'26" LT
187	958+81.10	25°41'19" RT
188	959+63.42	02°32'13" RT
1/16 Line	962+66.13	
189	963+41.73	00°32'37" LT
190	968+98.70	05°25'16" RT
191	972+91.46	09°06'58" RT
192	977+81.20	01°52'55" LT
193	1002+00.35	04°42'28" RT
194	1002+43.57	46°27'35" RT
S. Line	1002+60.05	
195	1002+99.04	45°54'50" RT
196	1004+78.35	00°45'05" LT
197	1010+09.06	00°42'09" LT
198	1013+21.14	42°01'32" LT
199	1013+68.93	13°29'41" LT
200	1023+51.29	09°04'41" RT
201	1028+44.57	10°44'10" RT
202	1029+43.55	04°03'30" RT
1/4 Line	1031+45.05	

DIRECTION	DISTANCE
183°29'14"	47.56'
180°36'05"	67.65'
182°21'23"	674.06'
183°10'56"	215.66'
187°12'03"	55.16'
216°45'11"	43.07'
237°27'30"	137.39'
236°14'05"	866.94'
261°55'24"	82.32'
264°27'36"	302.71'
264°27'36"	75.60'
263°54'59"	556.97'
258°29'43"	392.76'
267°36'42"	489.74'
265°43'47"	2419.15'
270°26'15"	43.22'
316°53'50"	16.48'
316°53'50"	38.99'
002°48'40"	179.31'
002°03'36"	530.71'
001°21'27"	312.08'
319°19'55"	47.79'
305°50'14"	982.36'
314°54'55"	493.28'
325°39'05"	98.98'
329°42'35"	201.50'

PIPE DATA

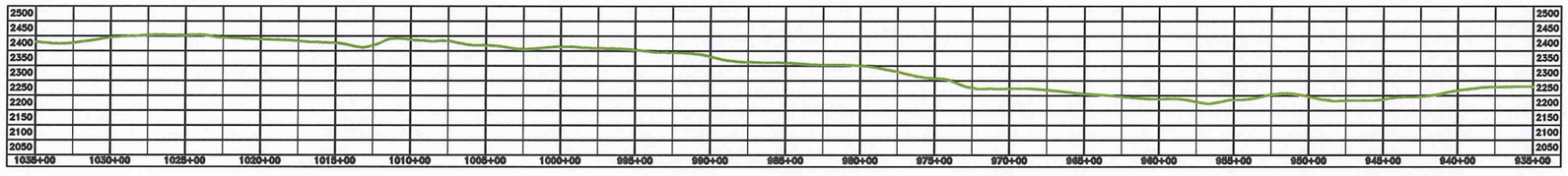


EASEMENT / WORKSPACE



Noted: The centerline between the As-Constructed Pipelines in the easement is the Baseline of the Permanent Easement

PROFILE



500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- IRON REBAR & LS 4626 CAP
- REBAR
- ORIGINAL STONE
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – UG
- ELECTRIC – OH
- BARBED WIRE FENCE
- DRAINAGE CROSSING
- GAS – UG
- TELEPHONE
- CRUDE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	9371	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
T1	1	TYPE T1 TEST LEAD

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO	DWG. NO.	REFERENCE DESCRIPTION
T1	A4-7204-1	TYPE T1 TEST LEAD
–	SMK-01-1005	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
1	7/12/12	AS CONSTRUCTED
0	9/20/11	ISSUED FOR CONSTRUCTION

Rev'd. –

Smokey Trunk Line As-built
Sec. 15 & 16, T. 149N, R. 98W, 5th PM
McKenzie County, North Dakota

SHEET NO. 11

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Ave, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
Z. HUDGIK	T. Kubas	3710275	6/22/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

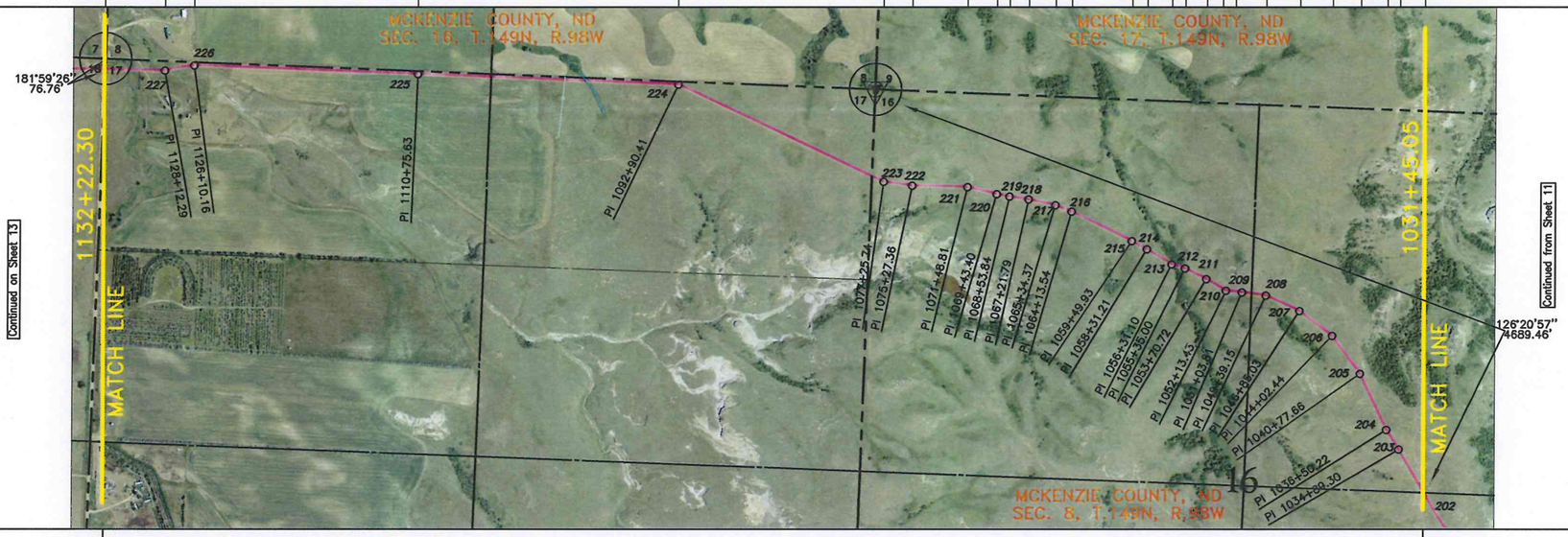
1132+22.30 — Greg Loken, N1/2NW1/4, 2645.98 FEET, 160.36 RODS — 1105+76.32 — Greg Loken, N1/2NE1/4, 2761.40 FEET, 167.36 RODS — 1078+14.32 — State of North Dakota, NW1/4, 2779.46 FEET, 168.45 RODS — 1050+36.46 — State of North Dakota, NE1/4, 1890.41 FEET, 114.57 RODS — 1031+45.05

SEC. 17 | SEC. 16

STATIONING

1132+22.30 Section Line Crossing
1132+22.30 MATCH LINE
1128+12.29 P.I. 11°03'02" RT
1126+10.16 P.I. 12°29'29" LT
1110+75.63 P.I. 00°05'20" LT
1105+76.32 1/4 Line Crossing
1100+69.52 B.W. Fence Crossing
1099+23.86 NE-SW Drainage Crossing
1092+90.41 P.I. 23°00'02" LT
1078+14.92 Section Line Crossing
1077+25.74 P.I. 17°36'58" RT
1075+27.36 P.I. 06°15'37" RT
1071+48.81 P.I. 12°05'29" LT
1069+43.40 P.I. 02°36'12" RT
1068+53.84 P.I. 02°46'15" RT
1067+21.79 P.I. 04°08'53" LT
1065+34.37 P.I. 09°05'58" LT
1064+13.54 P.I. 04°29'19" LT
1059+49.93 P.I. 02°45'20" LT
1058+31.21 P.I. 02°28'10" LT
1056+31.10 P.I. 14°23'20" RT
1055+35.00 P.I. 09°48'51" LT
1053+70.72 P.I. 03°59'06" LT
1052+13.43 P.I. 24°28'16" RT
1051+03.81 P.I. 01°37'24" LT
1050+36.46 1/4 Line Crossing
1049+39.15 P.I. 16°56'21" LT
1046+85.03 P.I. 12°47'31" LT
1044+02.44 P.I. 16°08'48" LT
1040+77.66 P.I. 11°09'10" LT
1036+50.22 P.I. 06°56'58" RT
1034+89.30 P.I. 01°55'31" LT
1031+45.05 1/4 Line Crossing
1031+45.05 MATCH LINE

ALIGNMENT



PIPE DATA

MATCH LINE 1132+22.30 — 10077' (1) — CD — CD — MATCH LINE 1031+45.05

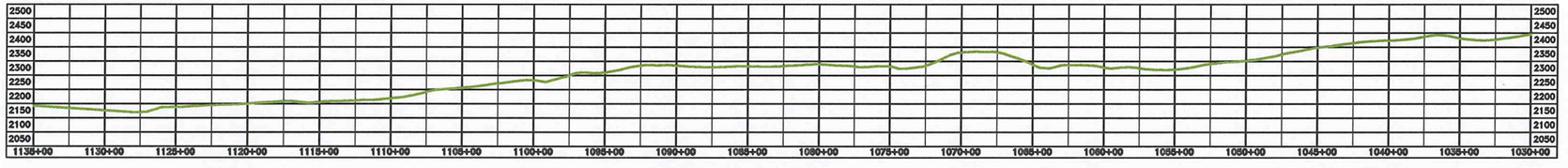
EASEMENT / WORKSPACE

MATCH LINE 1132+22.30 — 1/4 Line 1105+76.32 — Section Line 1078+14.92 — 1/4 Line 1050+36.46 — MATCH LINE 1031+45.05

TEMPORARY WORKSPACE
PERMANENT EASEMENT
AS CONSTRUCTED LINE
PERMANENT EASEMENT
TEMPORARY WORKSPACE

Noted: As-Constructed Pipeline Location is the Centerline of the Permanent Easement.

PROFILE



NOTE:
Survey is based on North Dakota State Plane System, NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.000147296 to go from grid distance to ground distance.

N

PI #	STATIOINING	DEFLECTION
1/4 Line	1031+45.05	
203	1034+89.30	01°55'31" LT
204	1036+50.22	06°56'58" RT
205	1040+77.66	11°09'10" LT
206	1044+02.44	16°08'48" LT
207	1046+85.03	12°47'31" LT
208	1049+39.15	16°56'21" LT
1/4 Line	1050+36.46	
209	1051+03.81	01°37'24" LT
210	1052+13.43	24°28'16" RT
211	1053+70.72	03°59'06" LT
212	1055+35.00	09°48'51" LT
213	1056+31.10	14°23'20" RT
214	1058+31.21	02°28'10" LT
215	1059+49.93	02°45'20" LT
216	1064+13.54	04°29'19" LT
217	1065+34.37	09°05'58" LT
218	1067+21.79	04°08'53" LT
219	1068+53.84	02°46'15" RT
220	1069+43.40	02°36'12" RT
221	1071+48.81	12°05'29" LT
222	1075+27.36	06°15'37" RT
223	1077+25.74	17°36'58" RT
S. Line	1078+14.92	
224	1092+90.41	23°00'02" LT
1/4 Line	1105+76.32	
225	1110+75.63	00°05'20" LT
226	1126+10.16	12°29'29" LT
227	1128+12.29	11°03'02" RT
S. Line	1132+22.30	

DIRECTION	DISTANCE
329°42'35"	344.25'
327°47'03"	160.92'
334°44'01"	427.44'
323°34'51"	324.78'
307°26'03"	282.59'
294°38'32"	254.12'
277°42'10"	97.31'
277°42'10"	67.35'
276°04'47"	109.62'
300°33'02"	157.29'
296°33'56"	164.28'
286°45'06"	96.10'
301°08'26"	200.11'
298°40'16"	118.72'
295°54'56"	463.61'
291°25'38"	120.83'
282°19'39"	187.42'
278°10'46"	132.05'
280°57'01"	89.56'
283°33'13"	205.41'
271°27'44"	378.55'
277°43'21"	198.38'
295°20'18"	89.18'
295°20'18"	1475.49'
272°20'16"	1285.91'
272°20'16"	499.31'
272°14'56"	1534.53'
259°45'26"	202.13'
270°48'29"	410.01'

500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- IRON REBAR & LS 4626 CAP
- REBAR
- ORIGINAL STONE
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – UG
- ELECTRIC – OH
- BARBED WIRE FENCE
- DRAINAGE CROSSING
- GAS – UG
- TELEPHONE
- CRUDE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	10077	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO.	DWG. NO.	REFERENCE DESCRIPTION
–	SMK-01-1005	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
1	7/12/12	AS CONSTRUCTED
0	9/20/11	ISSUED FOR CONSTRUCTION

Rev'd. –

Smokey Trunk Line As-built
Sec. 16 & 17, T. 149N, R. 98W, 5th PM
McKenzie County, North Dakota

SHEET NO. 12

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Ave, Suite 301
Durango, CO 81301

DRWN. BY	CHK'D BY	PROJECT NO.	DATE
Z. HUDGIK	T. Kubas	3710275	7/12/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

© Kadrmas, Lee & Jackson 2012

OWNERSHIP

1183+65.08 — 1177+47.34: Vicky & Ardis Stenshjem, SE1/4SW1/4, 1308.36 FEET, 79.29 RODS — 1164+38.98

SEC. 7

1156+33.34 — 1132+22.30: State of North Dakota, NE1/4, 2411.04 FEET, 146.12 RODS

SEC. 18

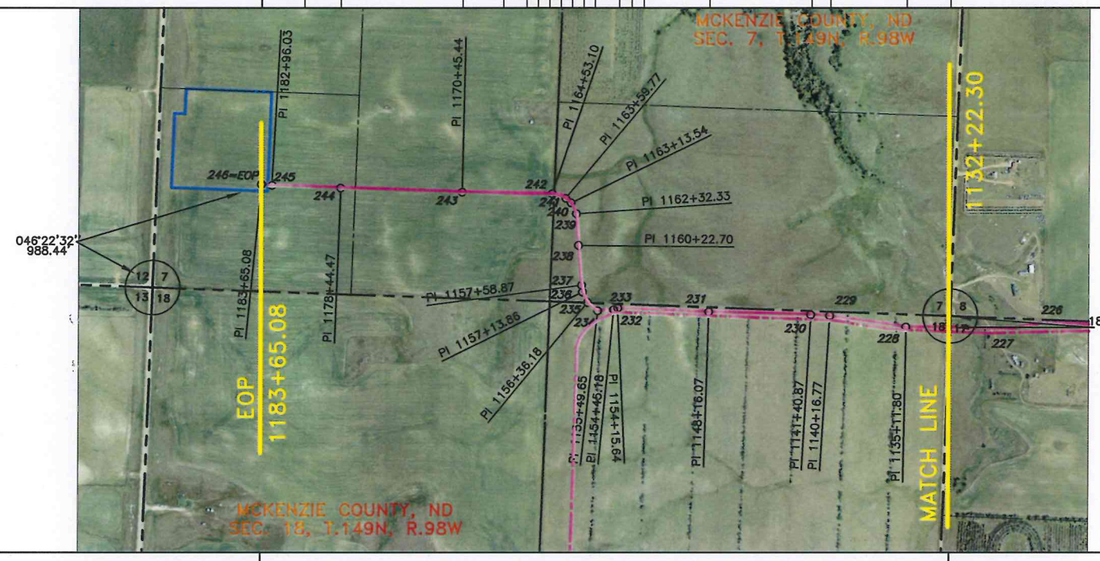
STATIONING

1183+65.08 EOP
1182+97.85 8" Launcher
1182+96.03 P.I. 03°17'01" RT
1178+44.47 P.I. 00°16'08" RT
1177+47.34 1/16 Line Crossing
1170+45.44 P.I. 00°52'36" RT
1164+53.10 P.I. 17°37'07" LT
1164+38.98 1/4 Line Crossing
1163+59.77 P.I. 21°00'07" LT
1163+13.54 P.I. 24°20'25" LT
1162+32.33 P.I. 21°56'31" LT
1157+58.87 P.I. 02°53'21" RT
1157+13.86 P.I. 18°59'43" RT
1156+36.18 P.I. 24°18'58" RT
1156+33.34 Section Line Crossing
1155+49.65 P.I. 43°12'01" RT
1154+45.18 P.I. 15°39'55" RT
1154+15.64 P.I. 21°55'25" LT
1148+16.07 P.I. 00°44'40" RT
1141+40.87 P.I. 01°31'00" LT
1140+16.77 P.I. 05°16'00" LT
1135+11.80 P.I. 07°34'15" RT
Section Line Crossing
1132+22.30 MATCH LINE

NOTE:
Survey is based on North Dakota State Plane System, NAD83 (96), North Dakota North Zone, International Foot. Azimuths shown are Grid Azimuths, distances shown are grid distance. Combined scale factor = 1.000147296 to go from grid distance to ground distance.

N

ALIGNMENT

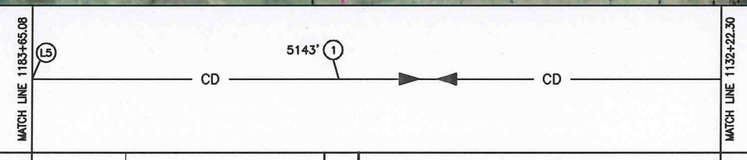


Continued from Sheet 12

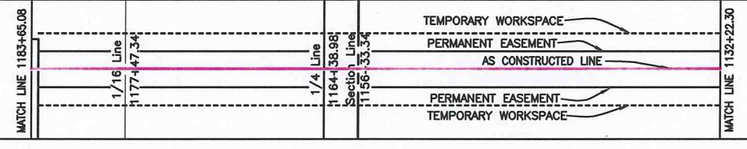
PI #	STATIOINING	DEFLECTION
S. Line	1132+22.30	
228	1135+11.80	07°34'15" RT
229	1140+16.77	05°16'00" LT
230	1141+40.87	01°31'00" LT
231	1148+16.07	00°44'40" RT
232	1154+15.64	21°55'25" LT
233	1154+45.18	15°39'55" RT
234	1155+49.65	43°12'01" RT
S. Line	1156+33.34	
235	1156+36.18	24°18'58" RT
236	1157+13.86	18°59'43" RT
237	1157+58.87	02°53'21" RT
238	1160+22.70	00°29'40" RT
239	1162+32.33	21°56'31" LT
240	1163+13.54	24°20'25" LT
241	1163+59.77	21°00'07" LT
1/4 Line	1164+38.98	
242	1164+53.10	17°37'07" LT
243	1170+45.44	00°52'36" RT
1/16 Line	1177+47.34	
244	1178+44.47	00°16'08" RT
245	1182+96.03	03°17'01" RT
246=EOP	1183+65.08	

DIRECTION	DISTANCE
270°48'29"	289.50'
278°22'44"	504.97'
273°06'44"	124.10'
271°35'44"	675.20'
272°20'24"	599.57'
250°24'59"	29.54'
266°04'55"	104.47'
309°16'56"	83.69'
309°16'56"	2.84'
333°35'54"	77.68'
352°35'36"	45.01'
355°28'57"	263.83'
355°58'37"	209.63'
334°02'06"	81.21'
309°41'41"	46.23'
288°41'34"	79.21'
288°41'34"	14.12'
271°04'27"	592.34'
271°57'03"	701.90'
271°57'03"	97.13'
272°13'11"	451.56'
275°30'12"	69.05'

PIPE DATA

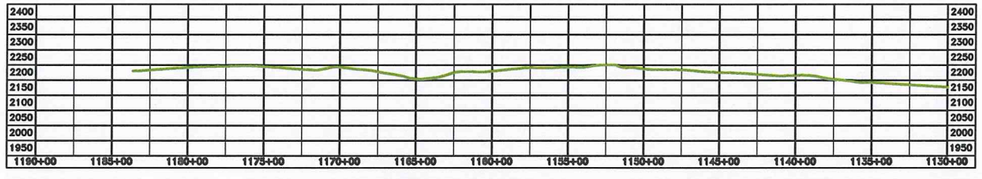


EASEMENT / WORKSPACE



Noted: As-Constructed Pipeline Location is the Centerline of the Permanent Easement.

PROFILE



500' 0 500' 1000'
scale feet

LEGEND

- AS CONSTRUCTED LINE
- PIPELINE PROFILE
- IRON REBAR & LS 4626 CAP
- REBAR
- ORIGINAL STONE
- TEST LEAD
- FUTURE TIE-IN
- ELECTRIC – UG
- ELECTRIC – OH
- BARBED WIRE FENCE
- DRAINAGE CROSSING
- GAS – UG
- TELEPHONE
- CRUDE

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION
1	5143	CRUDE 8.625"OD * 0.219"w API 5L X52 FBE
L5	1	8" LAUNCHER

SUMMARY OF MATERIALS

MK. NO.	QTY.	SUMMARY DESCRIPTION

REFERENCE DRAWINGS

MK. NO	DWG. NO.	REFERENCE DESCRIPTION
L5	SBP-PL-806	8" LAUNCHER
–	SMK-01-1005	FLOW SCHEMATIC

REVISIONS

NO.	DATE	REVISION DESCRIPTION
1	7/12/12	AS CONSTRUCTED
0	9/20/11	ISSUED FOR CONSTRUCTION

Rev'd. –

Smokey Trunk Line As-built
Sec. 7 & 18, T. 149N, R. 98W, 5th PM
McKenzie County, North Dakota

SHEET NO. 13

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Saddle Butte Pipeline, LLC
858 Main Ave, Suite 301
Durango, CO 81301

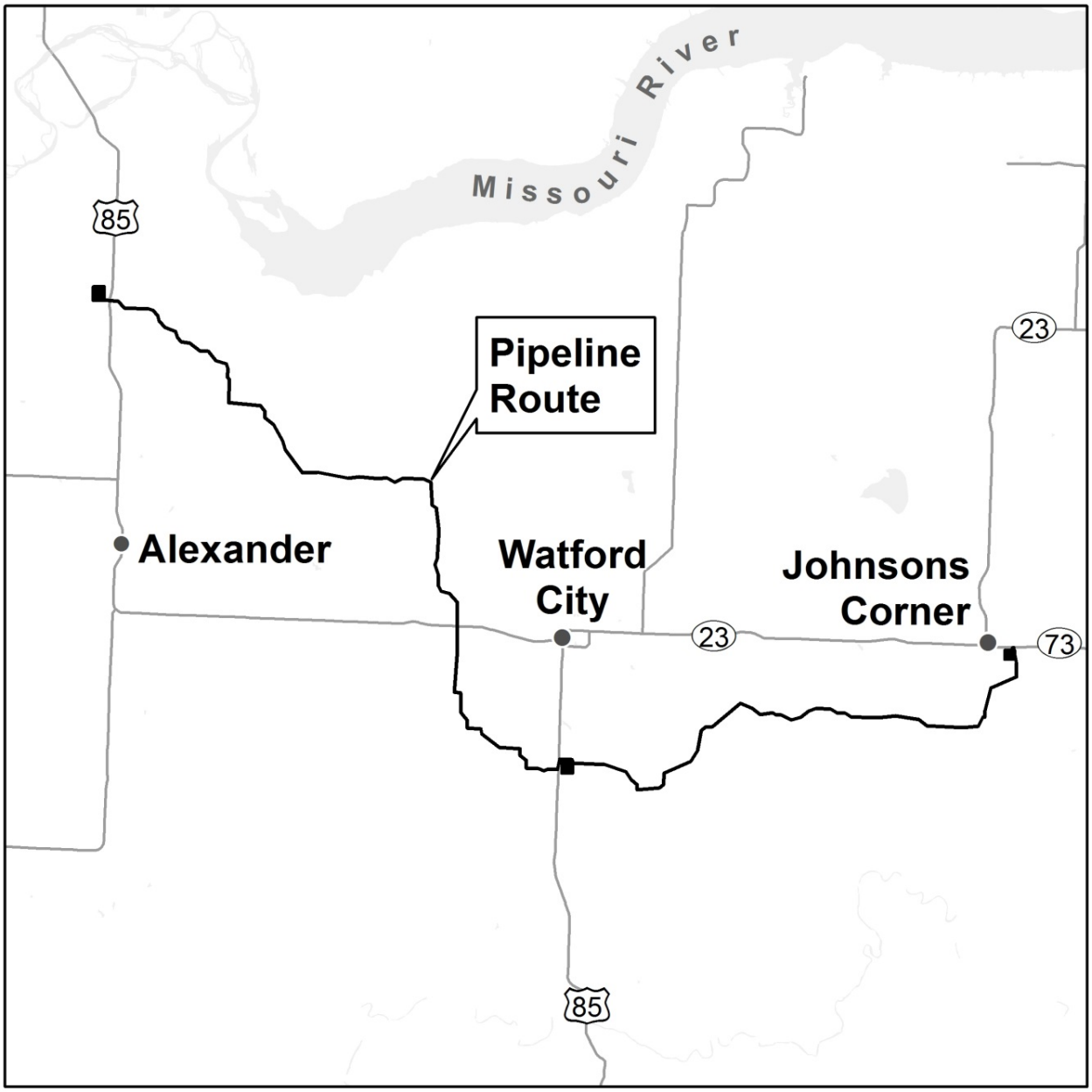
DRWN. BY	CHK'D BY	PROJECT NO.	DATE
Z. HUDGIK	T. Kubas	3710275	7/12/2012

J:\oilfield\Saddle Butte Pipeline\3710275\Smokey Trunk Line\Cad\Smokey Trunk Asbuilt Take Two.dwg

© Kadrmas, Lee & Jackson 2012

APPENDIX Q

BLACK & WHITE MAP


Missouri River
85
Pipeline Route
23
Alexander
Watford City
Johnsons Corner
23
73
85