

ONEOK 8-inch Bear Creek Pipeline Project As-Built Inspection Report PU-15-801



Prepared for:
**North Dakota Public Service
Commission**

600 E. Boulevard Avenue
Bismarck, ND 58505-0480



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Prepared by:

WENCK Associates, Inc.
301 1st Street NE, Suite 202
Mandan, ND 58554
Phone: 701-751-3370
Fax: 763-479-4242

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1.0 Executive Summary

The North Dakota Public Service Commission (PSC) retained Wenck Associates, Inc. (Wenck) to complete a construction inspection of the ONEOK Bear Creek Pipeline (Project) in Dunn and McKenzie Counties, North Dakota (ND), constructed by ONEOK Bakken Pipeline, LLC. (ONEOK). Wenck reviewed Project documents to identify those aspects that required compliance, and visually inspected the Project area on 9 November 2016.

The Project was well-maintained and appeared to have been constructed as planned with numerous efforts to minimize impacts. However, there were two issues that need to be resolved for the Project to be considered complete and in full compliance, including 1) vegetation establishment throughout the project area and 2) Tree and Shrub mitigation plan and survival rates. Wenck recommends the PSC take the following steps to resolve these issues.

Recommended Action Steps

→ Request Now

- Tree and Shrub Mitigation Plan and/or follow-up tree counts from construction. Tree and Shrub Planting Reports.

→ Expect Later, Request if Needed

- Written documentation of satisfactory vegetation establishment throughout the project (to be completed one year from planting by PSC contractor).
- Documentation of Tree and Shrub Planting and survival rates.

2.0 Background and Scope

2.1 INTRODUCTION

The ONEOK Bakken Pipeline, L.L.C. (ONEOK) a wholly owned subsidiary of ONEOK Partners, L.P., owns and operates natural gas liquids (NGL) assets in North Dakota. The Bear Creek NGL Pipeline Project (Project) originates at the ONEOK Rockies Midstream, L.L.C. Bear Creek Gas Plant in Dunn County, North Dakota and terminates at an interconnection with the Targa NGL Pipeline in McKenzie County, North Dakota. The Project includes an 8-inch diameter underground pipeline with a total length of approximately 37 miles. The Project is under the jurisdiction of the North Dakota Public Service Commission (PSC), which issued its Findings of Fact, Conclusions of Law, and Order in Case No. PU-15-801 on 23 March 2016, granting a Certificate of Corridor Compatibility No. 184 and Route Permit No. 196 for the Project.

2.2 PURPOSE

The North Dakota Energy Conversion and Transmission Facility Act (North Dakota Century Code Chapter 49-22) authorizes the Public Service Commission to determine that the location, construction, and operation of jurisdictional energy conversion and transmission facilities will produce minimal adverse effects on the environment and the welfare of citizens of North Dakota. Post-construction inspections ensure that such projects are constructed in compliance with the siting laws (North Dakota Century Code Chapter 49-22) and rules (North Dakota Administrative Code Article 69-06) and the applicable Commission Findings of Fact, Conclusions of Law, and Order (Order). The North Dakota PSC retained Wenck Associates, Inc. (Wenck) to complete a construction inspection of the Project.

2.3 METHODS AND SCOPE OF INSPECTION

2.3.1 Project Compliance Items Identified

Wenck identified a list of "Project Specifications", which ONEOK is obligated or responsible to follow and that can be verified either in written documentation or by an on-site inspection. These items were taken from 1) siting laws and rules, 2) Project activities or specifications proposed in the Application for a Certificate of Corridor Compatibility and Route Permit (Application), 3) Project plans described in the Findings of Fact, 4) Orders, and 5) recommendations by other agencies. These Project specifications are listed in Table 2.1 under 7 categories: Siting & Location; Project Design & Engineering; Pre-Construction; Cultural Resources; Natural Resources; Construction, Reclamation & Soils; and Operation.

2.3.2 Document Review

Wenck staff reviewed publicly-available Project documents in the PSC Online Case Search (ND PSC 2016) to find written verification of compliance for the Project specifications listed in Table 2.1. If written verification was filed, the findings are described in Section 3 and the source and name of the documentation is listed in Table 2.1, Column 3 (Written Verification). Green shaded boxes in the table represent Project specifications that are potentially non-compliant because they have no written verification.

2.3.3 On-Site Inspection

Samantha Swanberg, Wenck environmental scientist, visited the Project site on 9 November 2016. A representative from ONEOK, Norman Mueller, accompanied Wenck staff during the site visits.

The site was inspected visually by driving to access points and walking within the Project area at those points. Digital photographs (Canon Power Shot SD1300 IS, 12 megapixels) were taken showing typical Project infrastructure and documenting problem areas (**Appendix A**). Geographic coordinates were recorded at observation points or potential problem areas using a handheld Global Positioning System (GPS) (Garmin GPSMAP 60CSx; <10m accuracy; NAD83 datum) (**Appendix B**).

If on-site inspection of a Project specification was completed, the findings are described in Section 3 and referenced in Table 2.1, Column 4 (Site Verification). Green shaded boxes in the table represent Project specifications that are potentially non-compliant based on site verification.

Table 2-1: Project Specifications with Written or Site Verification Information

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
	SITING & LOCATION		
App. p. 1; Findings of Fact 2, 3	Located in McKenzie and Dunn Counties, originated at the Bear Creek Plant (Dunn Co.) moving northwest, and terminating at a receiver site at ONEOK’s Targa Lateral NGLs Pipeline on the east side of Highway 85 (McKenzie Co.). The project will transport Y-grade NGLs.	Docket #1, Consolidated Application	Section 3.1.1
ND Admin. Code Article 69-06-08; Findings of Fact 13, 14, 23, 24, 25	Siting Criteria analysis – exclusion, avoidance, selection, and policy. No exclusion within study area. There were avoidance areas within the project area. The Commission found that crossing the avoidance areas is justified by ONEOK’s management of adverse impacts and absence of alternative routes that would avoid such resources. Meets Policy Criteria.	Docket #1 Consolidated Application	Section 3.1.2
App. p. 39	Construction of the Project will impact approximately 427 acres of private land in North Dakota. Of the 427 acres, approximately 175 acres are located on privately owned cropland.	None	Section 3.1.3
Findings of Fact 18	Areas within 500ft of inhabited rural residence must be designated avoidance areas.	Docket #1, Application, Exhibit E; Docket #26, Late-filed Exhibit 7; Docket #14, Waiver	Section 3.1.4
NDDTL (filed 08-20-2015); App. p. 53	State trust surface or mineral ownership within study area. No state parks or NDPR-managed lands.	Docket #1, Consolidated Application; None	Section 3.1.5
	PROJECT DESIGN & ENGINEERING		
App. p. 2; Findings of Fact 2, 3, 4	Authorized ~36.7 mile pipeline, remote-operated valves at beginning and end of line, four mainline valves, one meter/launcher site and one receiver site. The capacity will be 14,000 barrels of NGLs per day. The pipe will have an 8-	Docket #1, Consolidated Application	Section 3.2.1

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
	inch outside diameter and wall thickness of 0.188 inches, except that a wall thickness of 0.219 inches will be used for road crossings and a wall thickness of 0.250 inches will be used for crossing the Little Missouri River. The normal operating pressure of the pipeline will be 1100 psig with the maximum operating pressure of the pipeline at 1440 psig.		
Route App. p. 4; Certification Order Provisions 15, 17	Permanent ROW is 50ft wide. During construction, an a 100-ft ROW will be utilized. Additional extra temporary workspace may be needed adjacent to road crossings and sensitive environmental features. ONEOK will repair private roads and farm lanes damaged when moving equipment or when obtaining access to the ROW.	Docket #1, Consolidated Application	Section 3.2.2
Route App. p.2; Findings of Fact 5	Design, construction, and operation in compliance with US DOT 49 CFR Part 195.	None	Section 3.2.3
Certification Order Provisions 25	Provide engineering design drawings prior to construction upon request.	None	Section 3.2.4
Certification Order Provisions 29	Provide electronic and paper as-built design specifications and associated GIS files within 3 months after construction complete.	Docket #56, Post Construction follow up letter and as-built maps	N/A
	PRE-CONSTRUCTION		
ND Century Code Ch. 49-22-07.1; ND Admin. Code Article 69-06-03	Letter of Intent.	None	N/A
ND Century Code Ch. 49-22-08; ND Admin. Code Article 69-06-04	Application for a Certificate of Site or Corridor Compatibility and Route Permit.	Docket #1, Consolidated Application	N/A
ND Century Code Ch. 49-22-07	Certificate of Site Compatibility or Route Permit.	Docket #32, Findings of Fact, Conclusions of Law and Order	N/A

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
ND Century Code Ch. 49-22-04; ND Admin. Code Article 69-06-02	Ten-year Plan.	PU-16-038 and PU-16-480	N/A
Certification Order Provisions 7	Conduct Pre-Construction Conference. Provide notice of intent to start construction.	Docket #38, Preconstruction Meeting Minutes, template letter to landowners	N/A
Certification Order Provisions 28	Inform Commission of plans to modify facility and obtain approval. Any facilities not included in current Application must be applied for in a separate Route or Site Permit.	Docket #40, Certification and documentation for route adjustments under NDCC; Docket #42, Certification and documentation for route adjustments under NDCC; Docket #49, Certification and documentation for route adjustments under NDCC	N/A
Certification Order Provisions 2, 3	Compliance with rules and regulations of other jurisdictional agencies. Obtain permits and approvals from other agencies and provide copies prior to applicable permitted activity.	Docket #1; Docket #13; Docket #39; Docket #48	N/A
Findings of Fact 30; Certification Order Provisions 30	Participate in ND One-Call Excavation Notice System.	None recorded	Section 3.3.5
	CULTURAL RESOURCES		
Route App. pp. 14, 15, 28; Findings of Fact 8, 14	Complete Class III cultural resources survey of corridor. Cultural resource sites determined ineligible for National Register of Historic Places. SHPO concurrence provided with Application. No avoidance or mitigation necessary.	Docket #1, Application, Exhibit D; Docket #41, Correspondence to and from the State Historical Society; Docket #48, SHPO concurrence; Docket #21, Exhibit 5; Docket #22, Exhibit 6	Section 3.4.1

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
Findings of Fact 10, 11; Order 9; Certification Order Provisions 14	Submit cultural resource mitigation plans to SHPO prior to construction for approval. Report discovery of cultural, archeological, historic, etc. sites and stop construction, consult SHPO for clearance, and file report to PSC.	Docket #48, SHPO concurrence; Docket #21, Exhibit 5; Docket #22, Exhibit 6	N/A
NATURAL RESOURCES			
Findings of Fact 7, 25;	Expect temporary displacement of wildlife due to clearing and construction, but no significant impacts. Field survey for listed species and critical habitat assessment were conducted and no threatened or endangered species were observed at the time.	Docket #1, Consolidated Application; No USFWS Letters of Correspondence found in Application	Section 3.5.1
Findings of Fact 7, 9; App. pp. 16, 27; NDGF (09-16-2015)	No permanent impacts to wetlands or waterbodies are anticipated. Spill control, erosion and sediment controls, and other specific construction measures will be used through wetlands, according to permit. NDGF recommends impacts to woody vegetation, wetlands and streams be minimized by workspace modification, narrowing ROW, horizontal drilling, and/or use of Best Management Practices (BMPs). NDGF recommends erosion control, no drainage alteration.	Docket #1, Exhibit D	Section 3.5.2
Certification Order Provisions 27	Report presence of T+E species, bald or golden eagles during construction and operation.	None	N/A
Certification Order Provisions 18;	Reclamation, fertilization, and reseeding according to NRCS (or landowner if approved). Mulch and erosion control fabric will be applied according to desires of landowner.	None; Re-vegetation report will need to be completed in one year.	Section 3.5.4
App. p. 28; Order 4; Certification Order Provisions 20	Shrubland avoided to extent practicable. Tree and shrub removal and replacement will comply with "Tree and Shrub Mitigation Specifications".	None	Section 3.5.5

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
Route App. p. 23	Contractors required to clean equipment and materials prior to entrance to ROW to minimize spread of noxious weeds.	None	Section 3.5.6
CONSTRUCTION, RECLAMATION & SOILS			
Findings of Fact 29; Certification Order Provisions 9, 15	Environmental monitors and inspectors utilized during construction. Construct and operate in accordance with Application and safety requirements. Construction suspended during adverse weather conditions. Provide monthly construction reports.	Docket #43, 46, 51, 52, ONEOK Bakken Pipeline progress report	N/A
Certification Order Provisions 10; App. p. 61;	Pipeline buried to a minimum depth from the ground surface to the top of the pipe of 48 inches in range land, 48 inches for cultivated land, 48 inches at the bottom of the ditch for road crossings, and 72 inches across undeveloped section lines.	Docket #53, Construction Inspection	Section 3.6.2
App. pp. 7, 47;	Soil erosion minimized by use of BMPs during and after construction to protect surface water and soils/topsoils.	None	Section 3.6.3
Certification Order Provisions 11	Topsoil and subsoil must be segregated and replaced separately. Topsoil will be removed and replaced to maximum depth of 12 inches.	Docket #47, Topsoil Inspection Report	Section 3.6.4
App. p. 51; Certification Order Provisions 12, 15, 17, 19	Temporarily disturbed areas and roads will be restored. Pre-existing roads restored to satisfactory condition. Restoration of area to pre-construction contours as soon as practicable upon completion of construction. ROW will be de-compacted/tilled per landowner request. Reclamation and maintenance throughout life of facility. All crossings of graded roads will be bored.	None	Section 3.6.5
App. pp. 7, 51; Certification Order Provisions 19, 21	Temporary fences and gates will be installed as necessary. Repair/replace all damaged fences and gates. Repair/replace damaged drainage tile. Waste removed and disposed regularly. Disturbed areas are to be fenced in until seeding is completed.	None	Section 3.6.6
OPERATION			

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
Certification Order Provisions 5, 26	Construct and operate in accordance with Application and safety requirements. Maintain records of compliance with Order and Certificate of Site Compatibility. Extraordinary events (e.g. injuries, T+E wildlife fatalities) reported as soon as reasonably possible.	None reported to date.	Section 3.7.1
Certification Order Provisions 18, 19	Reclamation and maintenance throughout life of facility. Waste removed & disposed regularly.	None	Section 3.7.2
Findings of Fact 28; Certification Order Provisions 22	Company's existing Emergency Action Plan will include the Project. Safety measures for traffic control or to restrict public access to the transmission facility.	None	Section 3.7.3

***Note: Green shaded boxes represent non-compliance or potential non-compliance issues.**

3.0 Findings

3.1 SITING & LOCATION OF FACILITY

3.1.1 Designated Location & Maps of Corridor

The Project was built as proposed in the designated location described in the Application and Order in McKenzie and Dunn Counties, North Dakota. ONEOK constructed the project entirely within the corridor previously approved for ONEOK's Bear Creek Pipeline in Case Number PU-15-801.

3.1.2 Siting Criteria

Siting criteria was analyzed in detail in the Application for the Project (Docket #1, Consolidated Application). The route had the following avoidance areas: the Little Missouri National Grasslands, areas of geological instability, and Killdeer Mountain Four Bears Scenic Byway. ONEOK testified that there was no reasonable alternative to crossing these avoidance areas. The Commission found that crossing the avoidance areas was justified by ONEOK's management of adverse impacts, the need for orderly siting of facilities, the need for system reliability and integrity, the efficient use of resources, and the absence of identified alternative routes which would completely avoid such resources. Wenck also confirmed that impacts to selection and policy criteria were considered and kept at a minimum.

3.1.3 Land & Agricultural Impacts

The Project was built as proposed within the estimated construction ROW. The current land use of properties adjacent to the Project was primarily agricultural and range land. Approximately 427 acres of private land was affected, of which 175 acres was privately owned cropland (Docket #1, Consolidated Application). ONEOK negotiated easements with affected landowners and would not be expected to have permanent impacts to farm/ranch operations. At the time of the inspection, the land had been restored to its pre-construction contours. Generally, areas impacted by pipeline construction (except above ground facilities) were returned to previous land use, including cropland, and rangeland.

3.1.4 Setbacks

The Project was in a rural setting. Seven residences and/or farmhouses were within 500 feet of the pipeline, none of which were located in the Project ROW. Per the on-site inspection, these structures appeared to be between 350 ft to 500 ft from the pipeline. ONEOK stated waivers were obtained for all residences (Docket #1, Consolidated Application, Exhibit E; Docket #14, Waiver; Docket #26, Late-filed Exhibit 7).

3.1.5 ND State-Owned or Managed Lands

A response on August 19, 2015 from the ND Department of Trust Lands (NDDTL) Surface Management Division stated that the presence of School Trust lands were within the Project Corridor. Additionally, this response documented that ONEOK had submitted an application to cross an area in McKenzie County and the receipt of draft survey plats for review were pending. The NDDTL Minerals Management Division responded August 20, 2015 confirming the presence of Mineral Trust land tracts within the Project Corridor. The Application stated the ND Parks & Recreation Department (NDPR) response is still pending; no additional information indicating their review was complete was found in the docket. The Application stated that digital data available from the NDPR indicated that there were no designated or

registered state parks, sites, monuments, or nature preserves within the project corridor or route (Docket #1, Application). During the site inspection it was confirmed that the Project crossed State land (**Appendix A**, Photo 19).

3.2 PROJECT DESIGN & ENGINEERING

3.2.1 Length & Infrastructure

The Project was authorized as 36.7 miles of 8-in diameter underground pipeline and associated valves and launcher/receivers, as described in the Application and at the notice of opportunity for hearing (Docket #1, Consolidated Application). The site inspection observations coincide with these parameters (**Appendix A**, Photos 10, 24).

3.2.2 Right-of-Way Corridor

The Order for the Project authorized construction within a temporary 100-ft ROW. The permanent ROW for the Project was 50ft wide except as restricted by environmental conditions, foreign lines, and landowner agreements (Docket #1, Consolidated Application). The pipeline appeared to have been constructed within these maximum widths (**Appendix A**, Photos 1, 3, 6, 9, 13, 20-22).

3.2.3 Compliance with US DOT Regulations

There was no written verification or certification of compliance with US DOT 49 CFR Parts 195. In the application, it stated the steel pipeline will meet U.S. Department of Transportation (DOT) regulations, specifically the design criteria outlined in 49 Code of Federal Regulations (CFR) part 195 subpart C, constructed per 49 CFR part 195 subpart D, and operated and maintained per 49 CFR part 195 subpart F (Docket #1, Consolidated Application).

3.2.4 Engineering Design Drawings

No engineering design drawings were provided in the Application materials. There was no documentation of a request from the PSC for the company to provide design drawings prior to construction.

3.2.5 As-built Drawings and GIS Files

As-built alignment drawings were submitted to the PSC with USB drive (Docket #56, Post construction follow-up letter and as-built maps). It is assumed associated CAD/GIS files were included on the USB based on statements in the letter.

3.3 PRE-CONSTRUCTION

3.3.1 PSC-Required Documents

A Consolidated Application for the Project was filed on 29 December 2015. A Certificate of Corridor Compatibility No. 184 and Route Permit No. 196 were issued on 23 March 2016 (Docket #32, Findings of Fact, Conclusions of Law, and Order), with the Order and Certification Relating to Order Provisions.

A Ten-Year Plan was filed in dockets PU-16-038 and PU-16-480.

3.3.2 Pre-Construction Conference/Notice of Intent to Start Construction

A pre-construction conference was held on 12 April 2016. Meeting minutes were taken, as well as a list of attendees (Docket #38, Preconstruction Meeting Minutes, template letter to landowners). The landowner letter template (Docket #38, Preconstruction Meeting Minutes,

template letter to landowners) also stated that the initial construction phase was due to begin on Monday April 18th.

3.3.3 PSC Approval of Modifications

On 19 April 2016, 10 May 2016, 29 June 2016 ONEOK Bakken Pipeline, L.L.C. filed notifications of project route adjustments (Docket #40, #42, #49, Certification and documentation for route adjustments under NDCC). The route adjustments were necessary under N.D.C.C. 49-22-16.3(1). The Commission acknowledged that they received ONEOK's filing (Docket #44, #50, Letter acknowledging certification and documentation adjustments). Route adjustments for the Project were all located inside the designated corridor in McKenzie and Dunn Counties.

3.3.4 Permits and Approvals from Other Agencies

It was indicated in the Applications that consultation with federal, state, and local agencies would be required to obtain permits for the Project. Agencies consulted with and permits identified as required for the Project included:

- U.S. Fish and Wildlife Service (USFWS)
- U.S. Forest Service (USFS)
- North Dakota Game and Fish Department (NDGFD)
- North Dakota Parks and Recreation-Natural Heritage Program (NDPRD)
- North Dakota State Historical Preservation Office (SHPO)
- North Dakota State Land Department (NDSL D) – School Trust
- NDSL D – Mineral Trust
- McKenzie County Building and Planning Department
- Dunn County Planning and Zoning
- North Dakota Department of Health (NDDH)

Associated permits were filed with the PSC as required (Docket #1, Consolidated Application, Docket #13, Comments, Docket #23, Letter enclosing Feb. 22, 2016 SHPO letter, Docket #39, US Forest Service Special Use Permit, Docket #48, SHPO concurrence). All consultations with the above-mentioned agencies and their approval have been documented with the PSC. Not all agencies responded or commented back (Docket #1, Consolidated Application).

3.3.5 North Dakota One-Call Participation

There was no written documentation that ONEOK participated in North Dakota One-Call. ONEOK does state that they will stake utilities in the Application (Docket #1, Consolidated Application). Pin flags were observed on site during previous inspections which would indicate buried utilities had been marked. No reports of damage to underground facilities were reported to the PSC. It appeared no damage to facilities occurred during construction. Based on these indications, it can be assumed that ONEOK participated in ND One-Call as required.

3.4 CULTURAL RESOURCES

3.4.1 Cultural Site Avoidance

The North Dakota State Historical Preservation Office (SHPO) reviewed the Class III Cultural Resources Survey and concurred with a "No significant sites affected" determination for the Project, except for the eight (8) specific site locations listed (February 16th letter) that they find acceptable, provided the project is of the nature stated and that it takes place in the location mapped and plotted in the overall documentation (Docket #21, Exhibit 5). A letter dated April 21, 2016 stated the North Dakota SHPO concurred with the evaluation that

portions are not significant and are not eligible for listing in the National Register of Historic Places; however, they concur that two sites should be monitored by a professional archaeologist during construction activities involving Holocene-age sediments (Docket #41, Correspondence to and from the State Historical Society). A letter dated June 21, 2016 stated a corridor monitoring program in accord with an approved monitoring plan will be implemented. Also, a "No Adverse Effect" determination provided that the site recommendations found in prior December 30, 2015 project letter correspondence are followed, and that an approved project corridor monitoring plan that is forthcoming is implemented (Docket #48, SHPO concurrence).

During the on-site inspection, ONEOK stated that they had an archaeologist on site for most of the project, and they always had one on-call. No discoveries of cultural or archeological sites were reported during construction.

3.5 NATURAL RESOURCES

3.5.1 Wildlife

The North Dakota Game and Fish Department (NDGFD) was contacted to assist in identifying species and ecologically significant habitats within the Project Corridor. The NDGFD response indicated their primary concern was the possible disturbance of native prairie and wooded draws. They requested every effort is made to prevent destruction of these areas and disturbed areas be reclaimed to pre-project conditions. The NDGFD identified that the Project will cross the Little Missouri River and recommended directional boring crossing method and controls should be implemented to minimize erosion and sedimentation. The NDGFD recommended implementing precautions to minimize the potential for a pipeline failure such as pressure sensing valves on both sides of the waterway. They also requested appropriate precautions are taken to prevent the introduction or movement of aquatic nuisance species and steps taken to protect wetland that cannot be avoided. The NDGFD noted the Project is located adjacent to the Bureau of Land Management bighorn sheep herd and suggested construction activities be avoided in areas within line-of-sight of bighorn sheep lambing areas from April 1 through July 15 to minimize potential impacts to the population. Also, the NDGFD noted the need for raptor surveys and appropriate construction buffers (Docket #1, Consolidated Application). During the site visit, erosion control devices, block valves, and the Missouri River bore location was observed.

A review of the US Fish and Wildlife Services (FWS) Endangered Species Information, Planning, and Conservation System (IPaC) website and the FWS North Dakota Field Office website was conducted to determine the potential for listed species and critical habitat that may be present in Dunn and McKenzie Counties, ND. Field surveys for listed species and a general habitat assessment of the Project area were conducted in June and August 2015. No threatened or endangered species or critical habitats were observed at the time of the on-site assessments (Docket #1, Consolidated Application). ONEOK provided the FWS with the project notification on August 19, 2015, which included a description of the Project, and an assessment of its impacts relative to the interest of the FWS. Formal written responses have not yet been received (Docket #1, Consolidated Application).

3.5.2 Wetlands

Wetland and waterbody surveys were conducted within the project corridor in June and August 2015. Approximately 21 wetlands and 7 waterbodies were crossed. No permanent impacts to the areas are expected (Docket #1, Consolidated Application). ONEOK implemented mitigation measures, which included avoidance, workspace modification, HDD,

construction mats or other best management practices (BMP) to minimize impacts when working in or near wetlands and waterways. Periodic site inspections confirmed the use of these measures for the Project.

The NDGFD requested appropriate precautions are taken to prevent the introduction or movement of aquatic nuisance species and that steps are taken to protect any wetlands that cannot be avoided (Docket #1, Consolidated Application). During the inspection it appeared that neither the wetlands nor the waterbodies had been negatively impacted during construction.

3.5.3 Reporting

Monthly construction reports were submitted and there were no other reports submitted indicating disturbance or presence of T+E species or eagles during construction or operation.

3.5.4 Reclamation & Reseeding

At the time of the site inspection, the pipeline trench had been backfilled, soils had been recontoured, and reseeded had been completed in cropland and non-cropland areas. Grasses appeared to be growing well in most areas though it was not fully established, as much of it had recently been seeded and it did not yet have time to grow (**Appendix A**, Photo 1, 3, 6, 7, 9, 11, 12, 17, 18-21). The pipeline ROW was seeded and mulched in all areas except one small area the contractor had not yet gotten to at the time of inspection (**Appendix A**, Photo 14, 15). Seeding began around the third week in July and would be completed in November. A revegetation inspection contracted by the PSC is planned one year from seeding to document establishment of vegetation.

3.5.5 Tree & Shrub Mitigation

It appeared that in general, major woody areas were avoided through Project siting (**Appendix A**, Photo 7, 9). A tree and shrub count was done within the area expected to be impacted by construction (Docket #1, Consolidated Application, Appendix C). It was estimated that approximately 11,343 tree and shrubs would be disturbed by the 50-ft construction ROW and 22,686 saplings would need to be replanted to fulfill the 2:1 mitigation requirement (Docket #1, Consolidated Application). ONEOK states in their Application that replacement of trees and shrubs will be based upon actual impacts due to construction and will meet the 2:1 ratio specified and will be documented. A replacement plan or follow-up tree and shrub count report was not found in the documentation. It is recommended that the PSC follow up with ONEOK to ensure that tree mitigation efforts are in progress.

3.5.6 Noxious Weeds

Contractors were required to clean equipment and materials prior to arriving on the construction spread to prevent the introduction of undesirable species (noxious weeds) to the Project area (Docket #1, Application). No large patches of weeds or noxious weeds were observed while on site.

3.6 CONSTRUCTION, RECLAMATION & SOILS

3.6.1 Construction Management & Safety

Monthly construction reports were submitted for the duration of construction (Docket #43, 46, 51, 52, ONEOK Bakken Pipeline progress report). Reports indicated whether any safety or environmental incidents had occurred and documented that construction of the Project

proceeded in accordance with the Application and safety requirements. Progress reports did not indicate any delays in construction due to weather.

3.6.2 Pipeline Depth

The pipeline must be buried to 48 inches in range land and 48 inches at the bottom of ditch for road crossings. The Application specifies that ONEOK uses a minimum 48 inches (of soil cover) from the surface contour (Docket #1, Consolidated Application). Wenck visually confirmed pipeline depth at a few locations during previous construction inspections and pipe depth appeared to be buried to at least the specified depth (Docket #53, Construction Inspection).

3.6.3 Erosion & Sedimentation

The Project Application states BMPs would be used during and after construction to minimize soil erosion and protect surface water. At the time of inspection there were two areas where some sedimentation and rills were starting to form (**Appendix A**, Photo 4). The ONEOK representative immediately called their reclamation department to come address the issue. During the site inspection it was evident that BMPs had and were being used to minimize erosion and maintain drainage because there were minimal to no erosion or drainage problems observed (**Appendix A**, Photo 2, 5, 6, 8, 19).

3.6.4 Soil Segregation & Staging

In general, it appeared that measures were taken to minimize the overall impact of the Project and the extent of land and soil disturbance. Wenck observed that topsoil appeared to be replaced to the required depth and separately from subsoils (Docket #47, Topsoil Inspection Report).

3.6.5 Reclamation & Roads

There were monthly construction reports to indicate that cleanup and reclamation had occurred concurrently with construction activities. At the time of the inspection, construction and re-seeding was completed (except one small location had not been re-seeded yet). All roads within the Project area that were bored under appeared to be in good condition and properly maintained.

3.6.6 Fencing, Repairs & Waste

Existing fences or gates that were impacted by pipeline construction appeared to be replaced or repaired as needed.

3.7 OPERATION

3.7.1 Safety & Record-keeping

No concerns were identified during the site review that would indicate that Project operation was out of compliance with the Application or safety regulations. Examples of operational safety measures observed at the site include: use of personal protective equipment and warning signs marking the pipeline route (**Appendix A**, Photos 2, 3, 6, 7, 9, 10, 12, 13, 16, 19, 24). No reports of extraordinary events were filed to date with the PSC.

3.7.2 Maintenance

ONEOK indicated that the pipeline would be regularly inspected and maintained (Docket #1, Consolidated Application). There was no waste, debris, or abandoned equipment observed during the inspection. The site appeared to be regularly maintained.

3.7.3 Public Contact & Safety

Warning signs marking the location of the pipeline had been installed and were in place at fence lines and road crossings (**Appendix A**, Photos 2, 3, 12, 19). ONEOK indicated that resident/landowner concerns and issues are handled promptly and makes every reasonable attempt to alleviate problems caused by the Project. ONEOK sent out a letter to landowners and listed a number to call for any landowner concerns to be listened to and addressed (Docket #38, Preconstruction meeting minutes, template letter to landowners). No project-specific emergency response plan was filed in this docket. ONEOK testified that it will incorporate this Project into its existing Emergency Response plan and will coordinate with local authorities and emergency managers regarding emergency response measures (Docket #32, Findings of Fact, Conclusion of Law and Order).

4.0 Issues to Resolve and Recommendations

4.1 VEGETATION ESTABLISHMENT

Vegetation has not fully established along the project area, as it was planted this year (2016). A revegetation inspection contracted by the PSC is planned one year from seeding to document establishment of vegetation.

4.2 TREE AND SHRUB MITIGATION

ONEOK stated in their Application that replacement of trees and shrubs will be based upon actual impacts due to construction and will meet the 2:1 ratio specified and will be documented. A replacement plan or follow-up tree and shrub count report was not found in the documentation. This mitigation and subsequent survival reports will need to be done for the Project to be considered complete.

5.0 Conclusions

Overall, the Project appeared to have been constructed as designed with minimal impacts to the surrounding natural or human environment. The Project site was well-maintained and in good condition. There were a few minor issues that need to be resolved before the Project is considered complete and in full compliance, including the following: documentation of satisfactory vegetation establishment throughout the project and written documentation of a Tree and Shrub Mitigation plan, planting reports, and survival reports. Vegetation establishment will be verified in a PSC-contracted inspection one year from the date of planting. Tree and shrub mitigation information needs to be submitted by ONEOK.

6.0 References

North Dakota Public Service Commission (ND PSC). 2017. Online Case Search. Available from: http://www.psc.nd.gov/database/company_case_list.php. Accessed November-December 2016.

Mueller, Norman. 2016. ONEOK Partners. Personal Communication: discussion during site visit on 9 November 2016.

7.0 Signatures

The services performed by Wenck staff for this project have been conducted in a manner consistent with the degree of care and technical skill appropriately exercised by professionals currently practicing in this area under similar time and budget constraints. Recommendations and findings contained in this report represent our professional judgment and are based upon available information and technically accepted practices at the present time and location. Other than this, no warranty is implied or expressed.

Lead Project Manager, Kevin Magstadt, and Environmental Scientist, Samantha Swanberg, prepared the report.

Kevin Magstadt, P.E., Principal/Regional Manager

Date

Samantha Swanberg, Environmental Scientist

Date

Photographs



Photo 1. (near GPS Point #495) – Pipeline ROW, contours appear adequate. Area has been seeded and mulched. Direction: North.



Photo 2. (GPS Point #495) – Approach to field/pipeline ROW from road. Area has fence with gate, pipeline marker, culvert, straw wattles, and mulch.



Photo 3. (GPS Point #496) – Pipeline ROW through field. Area has been mulched and seeded. Pipeline marker/sign (near center of photo) along fence line. Direction: East.



Photo 4. (GPS Point #497) – This area had some sedimentation and rills forming (erosional features) within the pipeline ROW. The area was sandy. While on-site the ONEOK representative called their reclamation team to come address the problem. Direction: East.



Photo 5. (GPS Point #498) –Grasses starting to grow within the pipeline ROW. The waterbar (shown to the left center of photo) helps divert or slow water from the drainage area away from the pipeline ROW. Direction: West.



Photo 6. (GPS Point #498) – Grasses growing within the ROW. Shown above is a waterbar, near the top of the hill, and a pipeline marker at the top of the hill. Direction: West.



Photo 7. (GPS Point #499) – Ravine area, with pipeline markers. Trees and shrubs were removed. Direction: East.



Photo 8. (GPS Point #500) – ROW through field. A straw wattle is shown above, with a small amount of erosion below it. Direction: Northwest.



Photo 9. (GPS Point #501) – Ravine area with pipeline markers. Trees and shrubs were removed. Direction: West.



Photo 10. (GPS Point #502) – Pipeline ROW with fenced in block valve. Pipeline marker to the left of photo, area has been mulched and seeded. Direction: West.



Photo 11. (GPS Point #502) – It appeared that the farmer had driven through the ROW (see tire marks on the lower left of photo). Area has been lightly grazed. Grasses are growing. Direction: East.



Photo 12. (GPS Point #502) – Pipeline ROW with fence gate and pipeline marker. Area was seeded and mulched. Grasses are growing. Direction: East.



Photo 13. (GPS Point #503) – River bore location. Pipeline markers go through riparian area. Trees and shrubs were removed. Direction: East.



Photo 14. (GPS Point #503) – River bore location. This area has not been seeded and mulched yet, it was the only area during the inspection that had not yet had reclamation work completed on it. Reclamation work will be completed on this area very soon. Direction: Northeast.



Photo 15. (GPS Point #503) – Bore location (river and cliff/hill bore, same area as above photo #14). Direction: Northwest.



Photo 16. (GPS Point #503) – Pipeline ROW. Pipeline bored through hill/cliff area, bored with over 600 ft of elevation change. Pipeline markers were observed on hill tops. Direction: West.



Photo 17. (GPS Point #504) – Pipeline ROW going through rangeland. Area was seeded and mulched, contours appear adequate. Area is being grazed. Direction: Southwest.



Photo 18. (GPS Point #504) – Pipeline ROW going through pasture. Grasses are growing.



Photo 19. (GPS Point #505) – Pipeline ROW on state land with straw wattles for erosion control. Direction: Northwest.



Photo 20. (GPS Point #505) – Pipeline ROW through state land. Contours appear adequate. Grasses are starting to grow. Direction: Southeast.



Photo 21. (GPS Point #506) – ROW through field. Grasses growing very well. Direction: Northwest.



Photo 22. (GPS Point #506) – Pipeline ROW through field. Area mulched and seeded. The area did have grasses growing previously. It appears that it was potentially sprayed, or when the adjacent field was sprayed the wind carried the herbicide over to this area. Direction: Southeast.

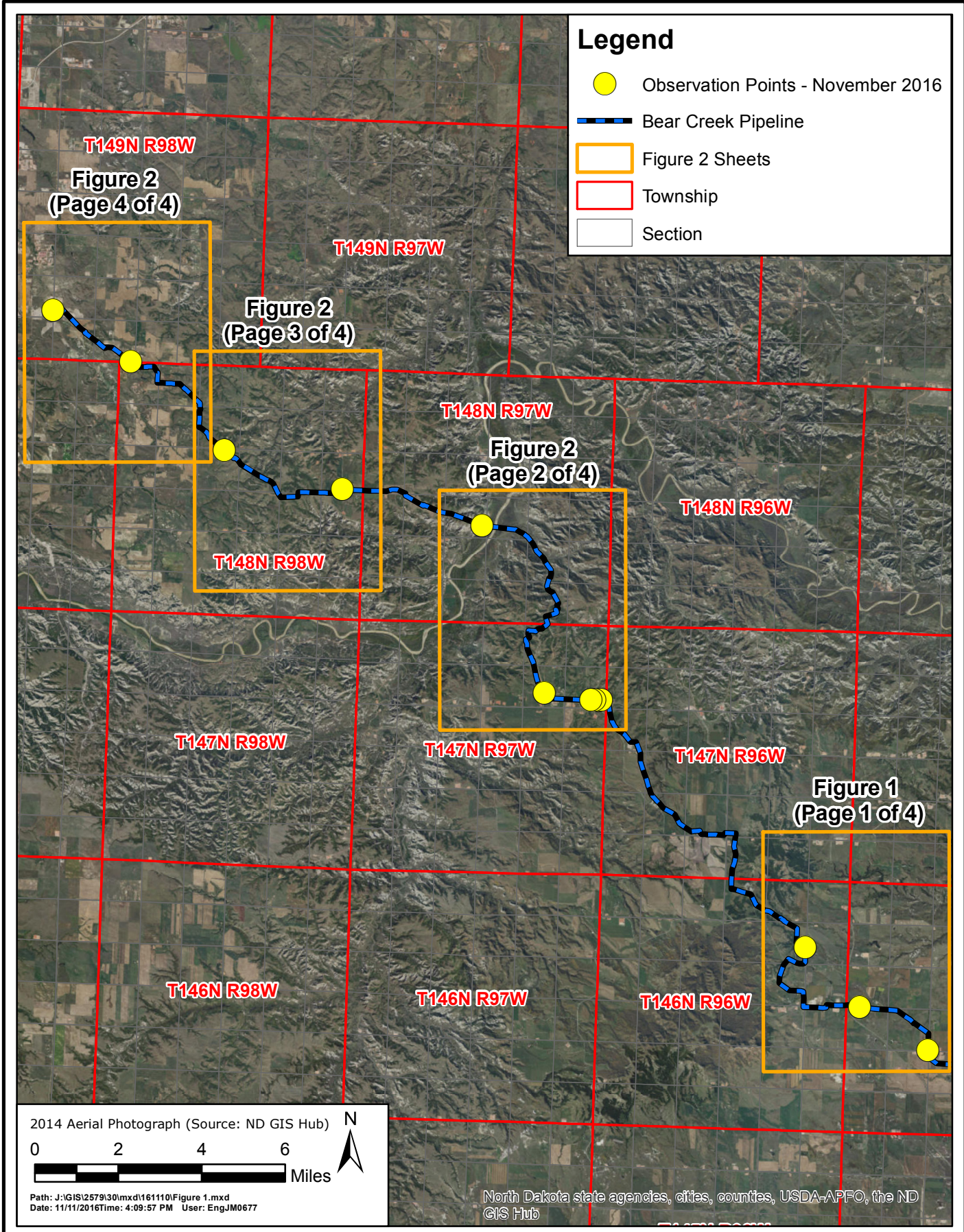


Photo 23. (GPS Point #506) – Pipeline ROW through field (same area as photo #22). Grasses had started to grow, now they are mostly dead and tan in color and blend in with the mulch.



Photo 24. (GPS Point #507) – End of the pipeline, this is where it ties into the Targa NGL Pipeline. Direction: Northwest

Field Observation Points



Legend

- Observation Points - November 2016
- - - Bear Creek Pipeline
- Figure 2 Sheets
- Township
- Section

T149N R98W
 Figure 2 (Page 4 of 4)

T149N R97W

Figure 2 (Page 3 of 4)

T148N R97W
 Figure 2 (Page 2 of 4)

T148N R96W

T148N R98W

T147N R98W

T147N R97W

T147N R96W
 Figure 1 (Page 1 of 4)

T146N R98W

T146N R97W

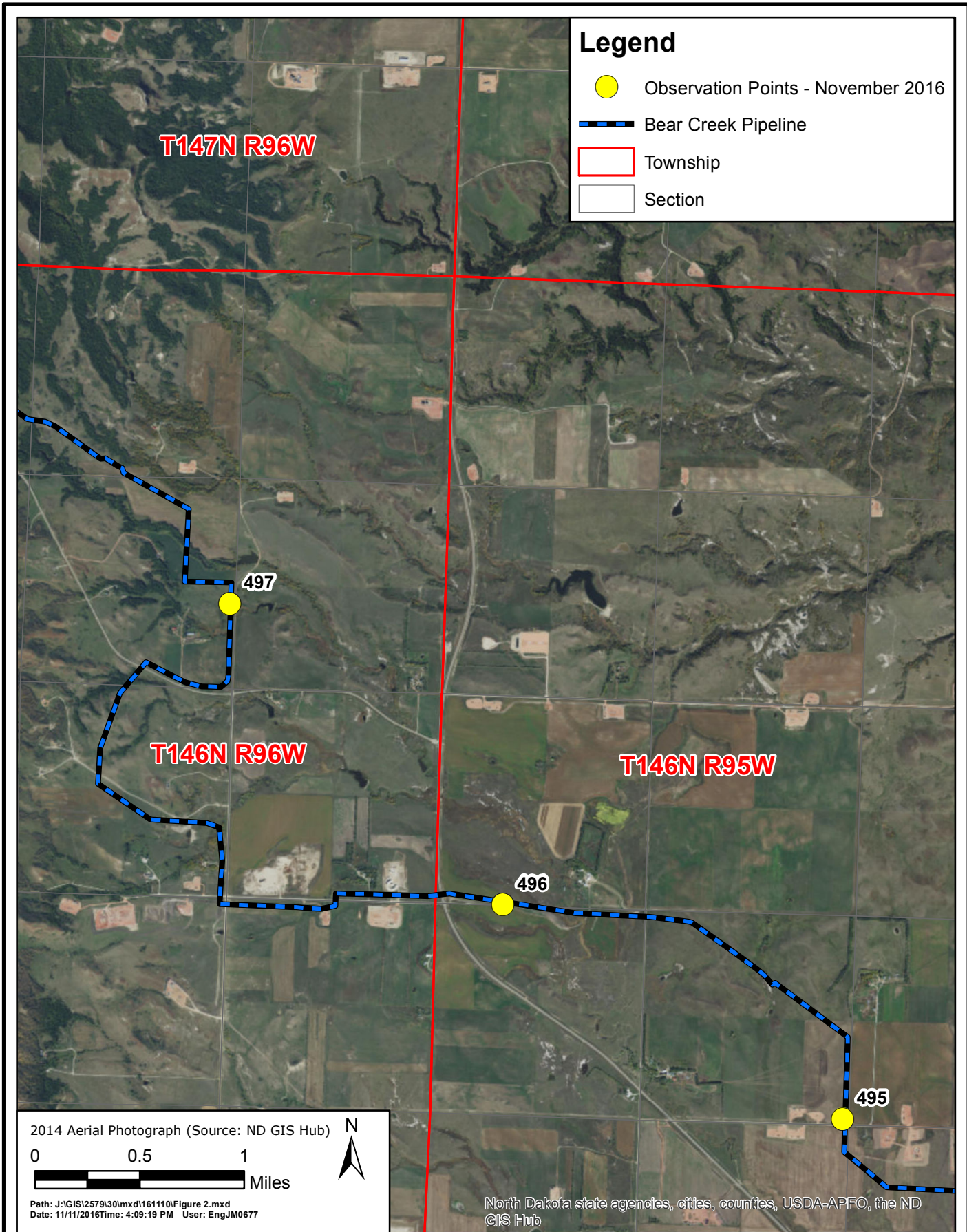
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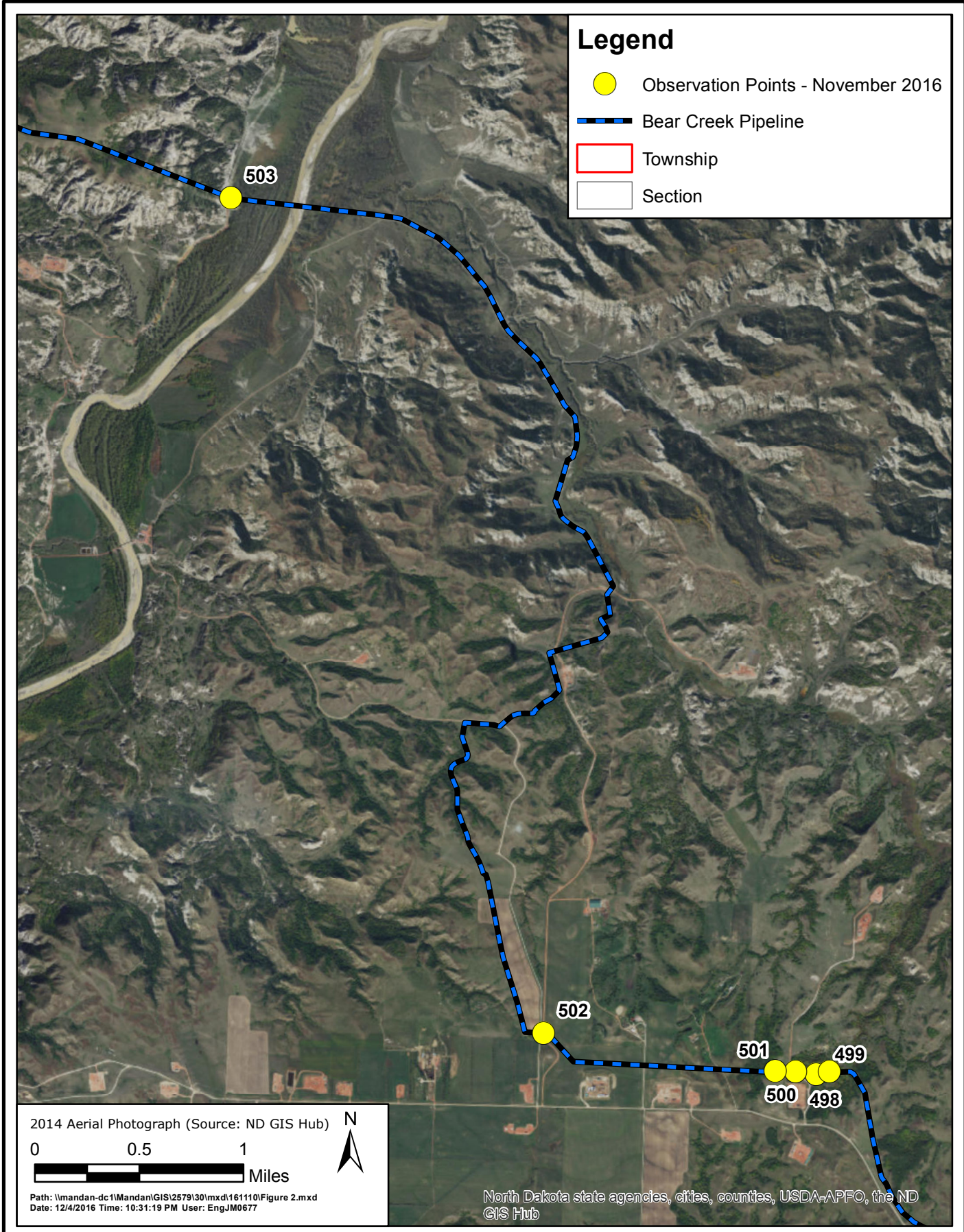
2014 Aerial Photograph (Source: ND GIS Hub)

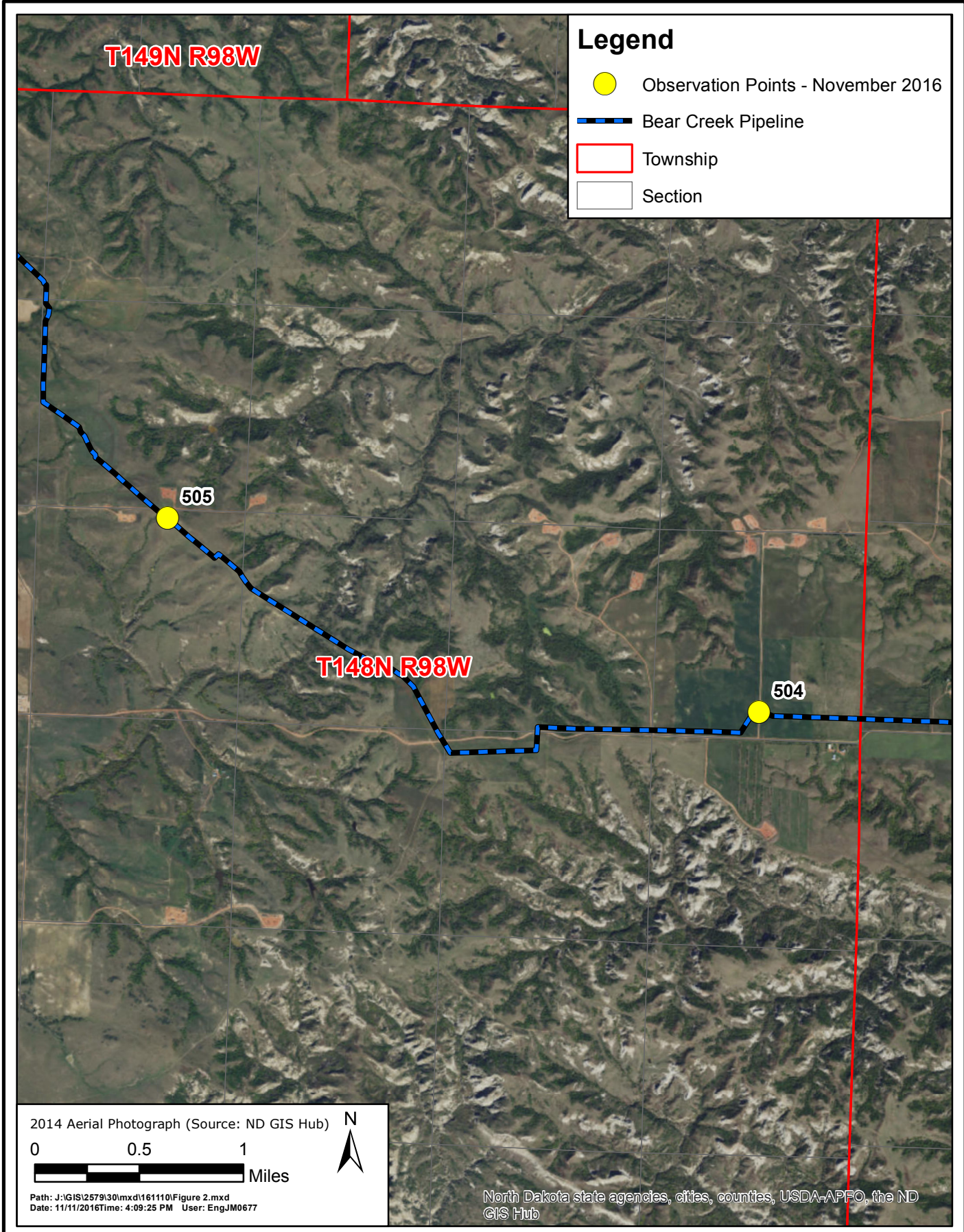
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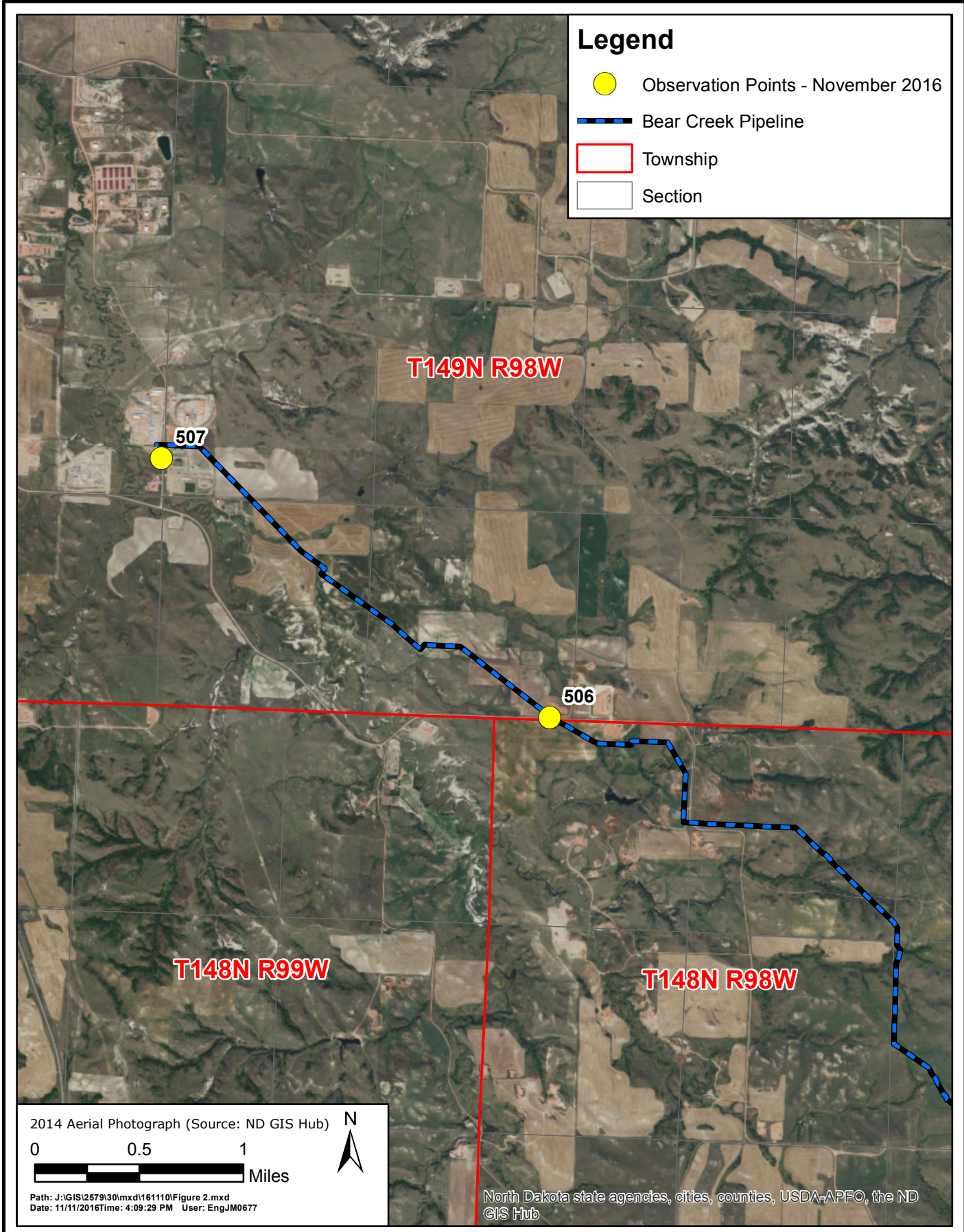
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North Dakota state agencies, cities, counties, USDA-APFO, the ND GIS Hub









Legend

- Observation Points - November 2016
- - - Bear Creek Pipeline
- Township
- Section

T149N R98W

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Phone: 701-751-3370

Email: sswanberg@wenck.com

Web: wenck.com

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Windom
507-831-2703

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