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Andeavor NGL Pipeline Project
As-Built Inspection Report
PU-18-72




Prepared for:

North Dakota
Public Service Commission

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WENCK
Responsive partner.
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1.0 Executive Summary

The North Dakota Public Service Commission (PSC) retained Wenck Associates, Inc. (Wenck) to complete site inspections for the construction of the Andeavor 6 and 8-inch Natural Gas Liquids (NGL) Pipeline (Project) in McKenzie, Billings, and Stark Counties, North Dakota (ND), constructed by Andeavor Field Services LLC (Andeavor). The Project consisted of three segments: a North Segment, a South Segment, and a Transfer Line Segment. The purpose of the inspections was to ensure the project was constructed in compliance with the siting laws and rules and the applicable PSC Orders for the Project.

A pre-construction conference call was held for the Project 15 June 2018; Wenck attended the call. Wenck reviewed Project documents and plans to become familiar with applicable PSC Orders. Construction was finished in November 2018. Wenck conducted an as-built inspection of the Project area 16 August 2019.

As-built conditions in various settings along the route were acceptable. Vegetation was growing well in almost all areas inspected, including wheat crop fields, hayland, and rangeland. No excessive erosion was observed, soil appeared to be restored to original contours, and topsoil replacement was adequate.

One area of concern was identified in the North Segment. Several pipeline corridors, including the Andeavor line, were aligned adjacent to each other at the crossing of Sevenmile Creek and an intermittent tributary to Sevenmile Creek where vegetation growth was minimal and minor erosion was occuring.

The Project was well-maintained and appeared to have been constructed as planned with efforts to minimize impacts. A few issues need to be resolved for the Project to be considered complete and in full compliance, including 1) obtaining written documentation of several items, 2) an area potentially needing erosion control near a stream crossing, and 3) vegetation establishment throughout the project area. See Section 4.0 for further detail. Wenck recommends the PSC take the following steps to resolve these issues.

Recommended Action Steps

→ Request Now

- As-built drawings and GIS files.
- Ten-year plan.
- Monthly construction reports, if any.
- Reseeding documentation or waivers from landowners.
- Verification of permits from regulatory agencies.
- Documentation of route adjustment approval.

2.0 Background and Scope

2.1 INTRODUCTION

The Andeavor 6 and 8-inch mixed natural gas liquids (NGLs) is comprised of four pipeline segments. The first segment, the North Segment, is in McKenzie County and will transport NGLs, or Y-Grade product, approximately 17 miles from Oasis Midstream Services LLC's Wild Basin Gas Plant to an interconnection with an existing 42-mile pipeline previously permitted and constructed by BakkenLink Pipeline, LLC in T149N, R98W, Section 30, McKenzie County. The second segment is the existing BakkenLink Pipeline permitted by the Commission in Case No. PU-10-218. The third segment, the South Segment, interconnects with the existing BakkenLink Pipeline in T142N, R99W, Section 3, Billings County, to transport the NGLs south approximately 22 miles to Andeavor's Belfield Gas Plant in Stark County. At the Belfield Gas Plant, the mixed NGLs are separated into discrete components. The fourth segment, the Transfer Line Segment, is comprised of four pipelines that transport the four discrete components approximately 5 miles from Andeavor's Belfield Gas Plant to the Fryburg Rail Terminal in Billings County. 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-18-72 on 13 June 2018, granting Certificates of Corridor Compatibility No. 205, 206, and 207 and Route Permits No. 215, 216, and 217 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 an as-built, post-construction inspection of the Project.

2.3 METHODS AND SCOPE OF INSPECTION

2.3.1 Project Compliance Identification

Wenck identified a list of "Project Specifications", which Andeavor 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 Consolidated Application for a Certificate of Corridor Compatibility and Route Permit (Application), 3) Project plans described in the Findings of Fact, Conclusions of Law, and Order 4) Certification Relating to Order Provisions, and 5) regulations or recommendations from 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 2019) 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

Jansen Howe, Wenck environmental scientist, inspected the Project route on 16 August 2019. Two representatives from Andeavor, Derek Nichols and Mike Begley, accompanied Wenck staff during the site visit.

The site was inspected by driving to access points and visually inspecting the route within the Project area from those points. Geographic coordinates were recorded at observation points and potential problem areas using a handheld Global Positioning System (GPS) (Trimble GeoExplorer 600 Series; <1m accuracy; NAD83 datum) (**Appendix A, Figure 2**). Digital photographs (Fuji Film FinePix Digital Camera; 16.4 megapixels) were taken showing representative portions of the route, aboveground Project infrastructure, and problem areas (**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

Source of Project Specification	Description of Project Specification	Written Verification	Site Verification
	SITING & LOCATION		
Application 1.0; Findings of Fact 2-5	The Project is an NGL system consisting of approximately 44 miles of new 6-inch and 8-inch steel pipelines extending from an existing natural gas plant in McKenzie County to the Fryburg Rail Terminal in Billings County, North Dakota. Approximately 42 miles of existing 12-inch pipeline owned by BakkenLink will be utilized by Andeavor to connect the North and South Segments of the Project. The North Segment is within McKenzie County, the South Segment originates in Billings County and terminates in Stark County, and the Product Transfer Segment originates in Stark County and terminates in Billings County.	Docket 1: Application	Section 3.1.1
Application 16.2; ND Admin. Code Article 69-06-08; Findings of Fact 12-20	Siting Criteria analysis – exclusion, avoidance, selection, and policy. There were no Exclusion areas within the corridor study area and route survey area. There were no Avoidance areas within the corridor study area and route survey area. The Project avoids or mitigates selection criteria and meets policy criteria.	Docket 1: Application	Section 3.1.2
Application 16.2.5	The Corridor and Route is not located within 500 feet of an inhabited rural residence, school, or place of business.	Docket 1: Application	Section 3.1.3
Application 14.9, Natural Resources and Wetland Delineation Report 1.1	The Project is on privately owned lands, with the exception of a 0.3-mile portion of the North Segment, which is on North Dakota State Trust Land. Andeavor will coordinate with the State Land Department to obtain the ROW.	Docket 1: Application	Section 3.1.4
Application 18.2	The majority of the project will cross range land and land used for agricultural crop production. Once construction is complete, the Andeavor will restore the	Docket 1: Application	Section 3.1.5

Source of Project Specification	Description of Project Specification	Written Verification	Site Verification
	ROW to its prior use. The route will not cross state parks, sites, monuments, or nature preserves.		
	PROJECT DESIGN & ENGINEERING		
Application 1.0, 8.1-8.2; Findings of Fact 2, 4, 5	The Project consists of three (3) separate pipeline segments. The "North Segment" is 17 miles of 8-inch pipeline. The "South Segment" is 22 miles of 8-inch pipeline. The "Product Transfer Segment" is 5 miles of four (4) separate 6-inch pipelines. The maximum operating pressure (MOP) for the North and South Segments is 1,480 pounds per square inch gauge (psig), with the normal operating pressure 400 psig. The MOP for the Transfer Line Segment is 1,480 psig, with the normal operating pressure 180-400 psig. The pipelines are designed to operate at a maximum of 120 degrees Fahrenheit. The maximum design flow rate of the North, South, and BakkenLink segments is 34,000 BPD. The maximum design flow rate of the Transfer Line Segment is 43,000 BPD. Surface facilities will be limited to pipeline markers, cathodic test stations, and block valves along the Route. The cathodic test stations and block valve sites will be secured and fenced and will house power, control and communications systems to allow monitoring and remote operation. Mainline valve assemblies will be spaced according to requirements of 49 CFR, Part 195.	Docket 1: Application; Docket 64: Findings of Fact, Conclusions of Law and Order	Section 3.2.1
Application 8.1.1	The temporary construction right-of-way (ROW) will be generally 100 feet wide. Additional temporary workspace will be acquired at certain locations (e.g., road, railroad, and river crossings). The temporary construction ROW may be reduced in some areas as necessary to avoid impacts to environmentally sensitive areas. The permanent ROW will generally be 50 feet wide. The location of the pipeline within the permanent ROW may vary, depending on terrain, the	Docket 1: Application	Section 3.2.2

Source of Project Specification	Description of Project Specification	Written Verification	Site Verification
	presence of other existing facilities, and landowner concerns. The Project will follow existing pipeline and utility easements where feasible.		
Certification of Order Provision 29	Provide engineering design drawings prior to construction upon request.	Docket 1: Application, Appendix J – Pipeline and Terminal Drawings	N/A
Certification of Order Provision 33	Provide electronic and paper copy, and GIS data, of the corridor approved by the Commission and the facility design specifications for the construction of the transmission facility showing the location of the transmission facility as built within 3 months after completion of construction.	No file on record.	N/A
	PRE-CONSTRUCTION		
ND Century Code Ch. 49-22-07.1; ND Admin. Code Article 69-06-03	Letter of Intent	Docket 1: Application	N/A
ND Century Code Ch. 49-22-04; ND Admin. Code Article 69-06-02	Ten-year Plan	None on file.	N/A
Certification Order Provisions 2, 5, 28, 29	Hold a pre-construction conference. Provide notice of intent to start construction. Provide name and phone number of company representative to each landowner with easement agreement.	Docket 69: Preconstruction Meeting Minutes	N/A
Certification of Order Provisions 32, 35-41	Inform Commission in writing of plans to modify facility or site plan for the facility. Use the procedures pursuant under NDCC 49-22.1-15 to seek a route adjustment before or during construction of the pipeline.	No route adjustments filed.	N/A

Source of Project Specification	Description of Project Specification	Written Verification	Site Verification
Certification of Order Provisions 1, 2	Compliance with rules and regulations of other jurisdictional agencies. Obtain other necessary licenses and permits and provide copies prior to applicable permitted activity.	See Section 3.3.4	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: Application	N/A
ND Century Code Ch. 49-22-07	Certificate of Site Compatibility or Route Permit	Docket 64: Findings of Fact, Conclusions of Law, and Order	N/A
Certification of Order Provisions 34, 35, 42	Participate in ND One-Call Excavation Notice System.	N/A	Section 3.3.5
	CULTURAL RESOURCES		
Application 13.1, Appendix H; Certification Order Provision 8, 15	Complete Class III cultural resources survey of corridor and submit to NDSHPO for review and concurrence. Andeavor committed to submit cultural resource mitigation plans to SHPO prior to construction for approval.	Docket 1: Application, Appendix H – Unanticipated Discovery Plan	Section 3.4.1
Certification Order Provision 15	Report discovery of cultural, archeological, historic, etc. sites and stop construction, consult SHPO and PSC for clearance, and file report to PSC.	No reports on file.	N/A
	NATURAL RESOURCES		
Application 10.2.2-10.2.6	Field surveys found that 14 wetlands and 17 waterbodies would be crossed by the pipeline routes. Andeavor committed to use the horizontal direction drilling construction method at those locations to minimize impacts. Andeavor will comply with the requirements of Nationwide Permit 12.	Docket 1: Application, Appendix I – Natural Resources and Wetland Delineation Report	Section 3.5.1

Source of Project Specification	Description of Project Specification	Written Verification	Site Verification
Application 13.3.2; Certification Order Provision 31	Andeavor agrees to report the presence of threatened or endangered species of which it becomes aware and which were not previously reported to the Commission.	No reports filed.	Section 3.5.2
Application 13.3.3-13.3.4; Certification Order Provision 31	Andeavor commits to comply with the Migratory Bird Treaty Act. Andeavor commits to conduct a presence/absence survey for active nests prior to construction, and, as necessary, seek additional consultation with USFWS regarding nesting avian species during construction activities. Any wildlife encountered during work activities will be avoided to the largest extent possible. Andeavor agrees to report presence of bald or golden eagles of which Andeavor becomes aware and which were not previously reported to the Commission.	No reports filed of wildlife encounters. No records of extra consultation with USFWS filed.	Section 3.5.3
Certification Order Provision 20	Reclamation, fertilization, and reseeding is to be done according to the NRCS recommendations, unless otherwise specified by the landowner and approved by the Commission.	No records filed.	Section 3.5.4
Certification of Order Provision 24	Tree and shrub removal and replacement will comply with "Tree and Shrub Mitigation Specifications".	Docket 13: Supplemental Application Information and Tree and Shrub Inventory Sampling Plan; Docket 74: Copy of Letter from Carlson McCain regarding tree and shrub inventory	Section 3.5.5
Certification of Order Provision 12	Andeavor committed to implementation of best practices to prevent or minimize the spread of noxious weeds.	No records filed.	Section 3.5.6
	CONSTRUCTION, RECLAMATION & SOILS		
Certification of Order Provision 10	Once construction has started, Company shall keep the Commission and the Commission's third-party construction inspector updated on construction	No monthly construction reports submitted.	Section 3.6.1

Source of Project Specification	Description of Project Specification	Written Verification	Site Verification
	activities on a monthly basis. Construction activities will be suspended during abnormally wet conditions to prevent excessive rutting or mixing of topsoil with subsurface soils.		
Certification of Order Provision 28	Andeavor understands and agrees that it will file with the commission the name and phone number of the current company representative who is responsible for receiving and resolving landowner issues for the transmission facility. Andeavor will update this information whenever there is a change to the current company representative for the life of all easements for the transmission facility.	Docket 69: Preconstruction Meeting Minutes	Section 3.6.2
Certification of Order Provision 12	All topsoil, up to 12 inches, or topsoil to the depth of cultivation, whichever is greater, over and along trench areas where cuts will be made, must be carefully stripped and segregated from the subsoil. Any area on which excavated subsoil will be placed must also be stripped of topsoil. The stripped topsoil must not be stockpiled in natural drainages, and must be protected from water erosion. Care must be taken to protect topsoil from unnecessary compaction by heavy machinery. Unless otherwise approved by the Commission, topsoil must be removed before topsoil freezes in the late fall/early winter to the point that frost inhibits proper soil segregation. After backfilling with subsoil is completed, any excess subsoil must be placed over the excavation area, blending the grade into existing topography. Topsoil must be replaced over areas from which it was stripped only after the subsoil is replaced.	Docket 71: Topsoil Inspection Report; Docket 72: Construction Inspection Report	Section 3.6.3
Certification Order Provision 11, 13	The pipeline will be 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	Docket 72: Construction Inspection Report	Section 3.6.4

Source of Project Specification	Description of Project Specification	Written Verification	Site Verification
	at the bottom of the ditch for road crossings, and 72 inches across undeveloped section lines.		
Application 10.2.2	Andeavor's SWPPP specifies measures based on BMPs that will address erosion control, equipment refueling, temporary bridge crossings, timing, construction methods, and restoration.	Docket 1: Application, Appendix B – Storm Water Pollution Prevention Plan	Section 3.6.5
Application 10.3; Certification of Order Provisions 13, 18	Andeavor understands and agrees that it shall, as soon as practicable upon the completion of the construction of the transmission facility, restore the area affected by the activities to as near as is practicable to the condition as it existed prior to the beginning of construction. Disturbed areas will be restored to their original contours and condition to the extent practical, unless landowner consent is obtained to do otherwise. Postconstruction reclamation activities include removing and disposing of debris, dismantling temporary facilities, leveling or filling tire ruts, soil decompaction, and reseeding non-cultivated areas. All buried facility crossings of graded roads must be bored unless the responsible governing agency specifically permits Company to open cut the road.	N/A	Section 3.6.6
Certification of Order Provisions 22, 25	Andeavor will repair all fences and gates removed or damaged during all phases of construction and operation of the transmissfon facility. Andeavor also understands and agrees that it shall remove all waste that is a product of construction and operation, restoration, and miaintenance of the site, and properly dispose of it on a regular basis.	N/A	Section 3.6.7
	OPERATION		
Certification of Order Provision 5, 30	Andeavor agrees to maintain records that will demonstrate that it has complied with the requirements of the Commission's order issuing a Certificate of Corridor Compatibility or Route Permit,	None filed to date.	Section 3.7.1

Source of Project Specification	Description of Project Specification	Written Verification	Site Verification
	and that it will preserve these records for Commission inspection at any reasonable time upon reasonable notice.		
Certification of Order Provisions 21-23	Obligation for reclamation and maintenance of the facilities, right-of-way, transmission facilities, and associated facilities continuing throughout the life of the transmission facility.	None	Section 3.7.2
Certification of Order Provision 26	Provide safety measures for traffic control or to restrict public access to the transmission facility.	None	Section 3.7.3
Findings of Fact 29; Application 11.0; Electronic Record of 14 May 2018 Formal Hearing	The pipeline system will be monitored 24 hours per day, 7 days per week by a supervisory control and data acquisition (SCADA) system with a control center in San Antonio, Texas. In case of enmergency, Andeavor has prepared an emergency action plan. Andeavor testified that it will comply with all applicable safety laws and standards.	Docket 1: Application, Appendix D – Emergency Action Plan	Section 3.7.4

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

3.0 Findings

3.1 SITING & LOCATION OF FACILITY

3.1.1 Designated Location & Maps of Corridor

The as-built alignment for the Project devieated in some areas from the proposed alignment described in the Application and Route Permit with Waiver (see Section 3.3.3). Andeavor constructed the majority of the Project within the approved corridor and according to the approved route alignments. (**Figures 1-2**).

3.1.2 Siting Criteria

Siting criteria (exclusion, avoidance, selection, and policy criteria) were analyzed in detail in the Application (Docket 1: Application) for the Project. No exclusion or avoidance areas occurred within the corridor study area or route survey area. Avoidance and mitigation to historic and cultural exclusion areas are discussed in Section 3.4, Cultural Resources.

3.1.3 Occupied Structures

The Project was in a rural setting. The Application specified that no occupied residences, farmyards, schools, or places of business were located within 500-feet of of the Project corridor and route (Docket 1: Application for Certificate of Corridor Compatibility and Route Permit). During the as-built inspection visit, Wenck verified that this statement is accurate.

3.1.4 ND State-Owned or Managed Lands

In a letter dated 16 November 2017, the State Land Department noted that a 0.3-mile portion of the pipeline crosses trust lands in SE ¼ of S 16, T 149N, R 98W and should obtain a pipeline right-of-way for the Project (Docket 1: Application, Appendix J – Agency Correspondence, not labeled, pdf p. 715-726). The as-built alignment crosses only privately owned lands. Andeavor adjusted the pipeline route to avoid impacts to state land and instead cross S 22, T 149N, R 98W. Andeavor did not inform the PSC of the adjustment and did not file proper documentation of a route adjustment or route adjustment approval with the PSC (see Section 3.3.3).

3.1.5 Land & Agricultural Impacts

The proposed alignment impacted a total of approximately 460.88 acres of land (Docket 1: Application). The land use of properties crossed by the as-built alignment of the Project was primarily cropland or rangeland as proposed. Andeavor 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 aboveground facilities) were returned to previous land use, including cropland (**Photos 2, 3, 6, 10, 11, 12, 13, 16, 27, 30**), hayland/CRP (**Photos 1, 5**), and rangeland (**Photos 7, 8, 15, 17, 18, 19, 24, 25, 26, 31**). The condition of most areas of hayland or cropland looked comparable within and outside of the ROW based on density of growth and coloration. Seeded grasses were coming in on areas of rangeland, though in some parcels the seeded grass cover was sparse and may need to be overseeded.

The route does not cross designated or registered State Parks, historic sites, monuments, historical monuments, archaeological sites, and nature preserves (Docket 1: Application).

3.2 PROJECT DESIGN & ENGINEERING

3.2.1 Length & Infrastructure

The Project was authorized as a total of approximately 44 miles of pipeline along three separate segments of pipe. The North Segment, located in McKenzie County, consists of 17 miles of 8-inch pipeline. The South Segment, originating in Billings County and terminating in Stark County, consists of 22 miles of 8-inch pipeline. The Product Transfer Segment, located in Stark County, consists of approximately 5 miles of 4 separate 6-inch pipelines. (Docket 1: Application; Docket 64, Findings of Fact, Conclusions of Law and Order). Multiple points along each of the three pipe segments were observed and the site inspection observations coincide with these parameters (**Figures 1 and 2; Appendix A, Field Observation Coordinates**). The valve station at the north-most point of the South Segment was observed during the as-built inspection. The chain link fence around the station was in good condition, and access was restricted to authorized personnel.

3.2.2 Right-of-Way Corridor

The Consolidated Application described that Andeavor would construct the pipeline within a temporary 100-ft ROW and would typically maintain a 50-foot permanent ROW along the entire length of the pipeline, except as restricted by environmental conditions, foreign lines, and landowner agreements (Docket 1: Application). The pipeline appeared to have been constructed and maintained within these maximum widths. During the as-built inspection, Wenck observed a portion of the ROW that ran adjacent to a wooded draw (**Observation Point 14**). At this point, the ROW seemed narrowed by 10-15 feet in comparison to other sections observed, presumably to avoid the wooded draw (**Photo 27**). No other necked-down portions of the ROW were observed.

3.2.3 Engineering Design Drawings

Engineering design drawings were provided in the Application materials (Docket 1: Application, Appendix J – Pipeline and Terminal Drawings, not labeled, pdf p. 483-500).

3.2.4 As-built Drawings and GIS Files

No as-built alignment drawings or GIS data have been submitted to the PSC to date. Wenck recommends the PSC request the as-built drawings and pertinent GIS files from Andeavor.

3.3 PRE-CONSTRUCTION

3.3.1 PSC-Required Documents

An Application for Waiver or Reduction of Procedures and Time Schedules was filed 5 February 2018 (Docket 1). Certificates of Corridor Compatibility No. 205, 206, and 207; and Route Permits No. 215, 216, and 217 were issued on 14 June 2018 (Docket 64: Findings of Fact, Conclusions of Law, and Order) with the Certification Relating to Order Provisions (Docket 29). Andeavor has not filed a Ten-Year Plan with the PSC. Wenck recommends the PSC request the Ten-year plan for the company.

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

A pre-construction conference call was held on 15 June 2018. Meeting minutes were taken, as well as a list of attendees (Docket 69, Preconstruction Meeting Minutes). The timeframe of the start of construction and construction inspections was discussed during the pre-construction call. A separate notice of intent to start construction was not filed. Contact information for a company representative was provided during the meeting to be provided to landowners.

3.3.3 PSC Approval of Modifications

No route adjustment requests were filed with the PSC as per NDCC 49-22.1-15(1). However, Wenck compared the as-built pipeline alignments with the proposed alignments approved by the PSC. The as-built alignment deviated from the approved alignment in the following areas:

- NE ¼ and NW ¼ S 22, T 149N, R 98W (Docket 1: Application, pdf p. 76-77). The as-built alignment is diverted to the south in SE ¼ S 15, enters the NE ¼ of S 22, turns west through NE ¼ and NW ¼ S 22, and turns south to re-align with the approved alignment in NE ¼ S 21. The approved alignment crossed through ND State Trust Lands in SE ¼ S 16 and avoided S 22 altogether.
- SW ¼ S 34, T 141N, R 99W (Docket 1: Application, pdf p. 82). The as-built alignment diverts southeast near the north/south section midline of S 34 and turns due south near the section east/west section midline of S 34, and crosses the section line on the east/west section midline. The approved alignment crossed the section midline in the SW ¼ S 34.
- S 06, T 140N, R 99W (Docket 1: Application, pdf p. 82). The as-built alignment enters through NE ¼ S 06 and continues due south. The approved alignment enters though the east/west section midline of S 06, diverts to the south east, and then turns due south in the NE ¼ S 06.
- S 10 and S 11, T 139N, R 100W (Docket 1: Application, pdf p. 86). The as-built alignment turns due north in NW ¼ S 11, diverts northeast and enters NE ¼ S 10, turns due east in NE ¼ S 10, and ends in NE ¼ S 10. The approved alignment ended in NW ¼ S 11.

3.3.4 Permits and Approvals from Other Agencies

It was indicated in the Application that consultation with federal, state, and local agencies would be required to obtain permits for the Project. The agencies consulted for the Project and required permits are summarized below (Docket 1: Application; Docket 42: Exhibit 4 – Permits and Approvals Table):

- Department of Transportation, Federal Highway Administration: Permit to cross federal-aid highways
- ND Public Service Commission: Certificate of Corridor Compatibility and Route Permit
- ND Department of Health (NDDH), Water Quality Division: NPDES Permit to Discharge Hydrostatic Test Water
- ND Dakota State Historical Society: Cultural Resource Review
- ND Department of Transportation (NDDOT): Utility Occupancy Permit
- Billings County: Conditional Use/Pipeline Permit
- McKenzie County: Conditional Use/Pipeline Permit

Records of correspondence with the Public Service Commission, State Historical Society, Billings County, and McKenzie County and associated permits were filed with the PSC (Docket 1: Application, Appendix J – Agency Correspondence, not labeled, pdf p. 714-726; Appendix G – SHPO Concurrence Letter, not labeled, pdf p. 606; Docket 28: Letter Regarding Permits; Docket 50: McKenzie County Conditional Use Permit Approval Letter; Docket 66: Affidavit of Service, Cert. Mail – Order, Certificates, and Route Permits). In a letter to Andeavor, McKenzie County specified the sections, townships, and ranges in which Andeavor was permitted to construct the pipeline (Docket 50: McKenzie County Conditional Use Permit Approval Letter); however, Andeavor adjusted the pipeline route to cross through S 22, T 149N, R 98W, which was not among the approved sections. Andeavor filed no request of approval or verification of approval from McKenzie County to construct the

pipeline in S 22, T 149N, R 98W. Additionally, Andeavor did not submit verification of permit application and permit approval for the Transfer Line Segment. Andeavor did file verification of permit application and permit approval from Billings County, but these documents mention only the South Segment and do not include the Transfer Line Segment (Docket 48: Exhibit 7 – Billings County Permit Application; Docket 49: Billings County Taxing and Zoning Director Letter). Andeavor did not submit verification of a permit from the Department of Transportation (DOT), Federal Highway Administration, ND Department of Health (NDDH) Water Division, or NDDOT as required. Wenck recommends the PSC request verification of these permits to enter into the file.

3.3.5 North Dakota One-Call Participation

Andeavor committed to participate in North Dakota One-Call utility locates according to the Certification of Order Provisions (Docket 29) per verbal review of those provisions during the pre-construction conference call (Docket 69). Andeavor filed no notices with the PSC of broken utility lines during construction procedures.

3.4 CULTURAL RESOURCES

3.4.1 Cultural Site Avoidance

Class I Literature Reviews and Class III Cultural Resource Inventories were completed for the original proposed route and amendments or modifications to the route (Docket 1: Application, Appendix F – Cultural Resources Report, partial report filed, pdf p. 591). Three (3) sites were identified in the Cultural Resource Survey. Avoidance plans were created for each site and submitted to the NDSHPO. Andeavor received concurrence of "No Significant Sites Affected" from the NDSHPO for the proposed route on 22 January, 2018 (Docket 1: Application, Appendix G – SHPO Concurrence Letter, not labeled, pdf p. 606). Previous topsoil and construction inspections did not indicate whether cultural resource sites near the route were marked with temporary fencing or whether other measures were used (Docket 108, Topsoil Inspection Report; Docket 112, Construction Inspection Report).

3.4.2 Unanticipated Discoveries

Andeavor did not report any unanticipated cultural discoveries during construction.

3.5 NATURAL RESOURCES

3.5.1 Wetlands and Waterbodies

During the consultation process, the North Dakota Game and Fish Department (NDGFD) recommended the following:

- Native prairie and wooded draws should be avoided to the extent possible.
- Green River and Cherry Creek should be crossed by directional boring to protect resources.
- Additional precautions be implemented into the designs of pipes crossing state waterways.
- Wetlands should be avoided, but if they cannot be, no alterations should be made to existing drainage patterns.
- Unavoidable destruction or degradation of wetland acres should be mitigated in kind.

Additionally, the NDDH recommended that Andeavor protect against compaction, vegetation loss, and unnecessary damage wetlands, riparian zones, and other sensitive areas; however, the NDDH did not list specific BMPs that Andeavor should follow (Docket 1: Application, Appendix J – Agency Correspondence, not labeled, pdf p. 714-726).

Field surveys identified and recorded 14 wetlands and 17 waterbodies within the 100-foot-wide construction ROW, some of which were jurisdictional (Docket 1: Application, Appendix I – Natural Resources and Wetland Delineation Report, not labeled, pdf p. 611). Andeavor committed to use horizontal direction drilling construction method to minimize impacts or avoid these features, as well as best management practices to minimize erosion and to prevent sediment discharge (Docket 1: Application).

During the as-built inspection, two locations were observed where the Andeavor line was horizontally bored underneath stream channels. At station 439+63.17 of the North Segment, the Andeavor line was adjacent to two other parallel pipeline corridors which crossed Sevenmile Creek and an intermittent stream tributary to Sevenmile Creek (**Observation Point 17; Photo 26**). According to Andeavor representative Mike Begley, Andeavor bored underneath both stream channels in this area while other pipelines trenched through it. Vegetative regrowth in the Andeavor ROW in this area was about 70-80% cover with 20-30% bare ground, compared to 20-60% vegetation cover and 40-80% bare ground in adjacent pipeline corridors. During the site inspection it appeared that the frequent excavation of this area has left portions of it with bare soil and sparsely vegetated, with about 70-90% bare ground. Despite the limited regrowth in this area, no major erosion had occurred at the time of the as-built inspection.

Wenck inspected an additional point where Andeavor bored underneath Northfork Creek near station 265+74.75 on the North Segment. As-built conditions were acceptable in this area, as the stream bank seemed intact with no visible erosion. Near the bore exit point at station 269+02.83, the corridor was trenched as the ROW continued over a hill slope. Vegetation regrowth the hill slope and the temporary workspace have been successful. The topsoil on the hillside has been recountored to original conditions and showed no signs of erosion (**Observation Point 16; Photos 32, 33**).

3.5.2 Threatened or Endangered Species

Natural resource reports for the Project are included information of threatened and endangered species in and around the Project area. The Survey Corridor and 1-mile-wide study area was inventoried for sensitive species and their critical habitat. No sensitive species or critical habitat occurred in either area (Docket 1: Application, Appendix I – Nattural Resources and Wetland Delineation Report, not labeled, pdf p. 611).

The habitat assessment performed by the USFWS and reported in the Natural Resources and Wetland Delineation Report determined that the Project "may affect, but is not likely to adversely affect" interior least tern, whooping crane, gray wolf, piping plover/piping plover habitat, and Dakota skipper/Dakota skipper habitat. Additionally, the habitat assessment and Natural Resources and Wetland Delineation Report for the project determined that the project would have "No effect" on black-footed ferret, pallid sturgeon, northern long-eared bat, and rufa red knot (Docket 1: Application, Appendix I – Natural Resources and Wetlnd Delineation Report, not labeled, pdf p. 611). The USFWS acknowledged receipt of a consultation letter prepared for the Project, but provided no additional comments (Docket 1: Application, Appendix J – Agency Correspondence, not labeled, pdf p. 714-726).

No reports of observations of threatened or endangered species were filed during construction.

3.5.3 MBTA and BGEPA

To avoid impacts to migratory birds in the Project area, Andeavor agreed to perform a presence/absence survey for active nests prior to construction; however, no documentation of a presence/absence survey of active nests was submitted to the PSC. Additionally, no documentation of extra consulation with the USFWS was filed for the Project.

Prior to construction, a review of the NDGFD eagle nest database revealed that no eagle nests occur within 1-mile of the project (Docket 1: Application, Appendix I – Natural Resources and Wetland Delineation Report, not labeled, pdf p. 611). According to the Natural Resource Report prepared for the Project, no adverse impacts are anticipated for bald and golden eagles.

3.5.4 Reclamation & Reseeding

At the time of the site inspection, the pipeline trench had been backfilled, soils had been recontoured, cropland had been planted and some parcels harvested for the season, and reseeding had been completed in non-cropland areas. According to Mr. Derek Nichols, representative of Andeavor, backfilling was complete on all the spreads by November 2018. Upon completion of construction, Andeavor reseeded private land according to the request of the landowner. Reseeding occurred during May and June of 2019. Mr. Begley also mentioned that some landowners requested that their land not be reseeded after the Project was finished. No waivers from landowners or no other documentation was on file to verify this. Areas that were supposedly not reseeded occurred mainly in rangeland and had ground cover between approximately 30% to 50%. The dominant species included smooth brome (*Bromus inermis*), crested wheatgrass (*Agropyron cristatum*), curlycup gumweed (*Grindelia squarrosa*), alfalfa (*Medicago sativa*), and annual sunflower (*Helianthus annuus*). No significant erosion was observed in these areas, despite lower vegetation growth (**Photos 4, 7, 8, 18, 25, 26**).

Vegetation in reseeded rangeland parcels grew well this year, exhibiting 60% to 80% ground cover. Dominant species included yellow sweet clover (*Melilotus officinalis*), smooth brome (*Bromus inermis*), and alfalfa (*Medicago sativa*) (**Photos 14, 23, 24, 29, 31**).

Vegatative growth was particularly successful in croplands and haylands, as this years growth exhibited 80% - 100% ground cover and was visually indistinguishable within and outside of the ROW (**Photos 1, 2, 3, 5, 6, 12, 11, 12, 13, 15, 16, 21, 27, 28**).

A revegetation inspection contracted by the PSC is planned one year from the last date of seeding to document establishment of vegetation.

3.5.5 Tree & Shrub Mitigation

Field surveys included pre-construction tree and shrub inventories in a 300-foot wide project corridor (Docket 13: Supplemental Application Information and Tree and Shrub Inventory and Sampling Plan). Andeavor refined or necked down the project ROW so that trees and shrubs were avoided during construction, and reported to the commission that no trees and/or shrubs were removed during construction (Docket 74: Copy of letter from Carlson McCain regarding tree and shrub inventory). During the as-built inspection, this appeared to be accurate. In general, major woody areas or planted shelterbelts were avoided through Project siting or construction width was necked down. One woody draw was observed during the as-built inspection. In this area, the ROW appeared to be somewhat necked-down in comparison to other portions of the ROW, and woody vegetation in the draw appeared undisturbed (**Photo 28**).

3.5.6 Noxious Weeds

At least five areas of Canada thistle and five areas of musk thistle, both noxious weeds, were identified within the Survey corridor during natural resource surveys (Docket 1: Application, Appendix I – Natural Resources and Wetland Delineation Report, not labeled, pdf p. 611). Wenck was unable to visit these areas during the as-built inspection. No noxious weeds were observed at points observed during the as-built inspection; however, annual weeds dominated the ROW in some areas of the corridor (**Photos 7, 8, 17, 18, 31**). Noxious weeds will continue to be monitored next year during revegetation inspections.

3.6 CONSTRUCTION, RECLAMATION & SOILS

3.6.1 Construction Management & Safety

No monthly construction reports were submitted during the project. Wenck recommends that the PSC requests the monthly construction reports from Andeavor or any type of documentation from the period of construction.

3.6.2 Landowner Coordination

Contact information for a company representative was provided during the pre-construction conference call to be provided to landowners (Docket 69, Preconstruction Meeting Minutes). Equipment and staging areas in the vicinity of the as-built inspection points had been cleaned up post-construction. No landowner or community concerns had been filed with the PSC to date.

3.6.3 Soil Segregation

Previous topsoil and construction inspections indicated that topsoil was removed, stored, and replaced properly for the majority of the length of the ROW (Docket 71: Topsoil Inspection Report; Docket 72: Construction Inspection Report). The main concerns identified in the Construction Inspection Report were occurrences of minor mixing of subsoil with topsoil. Observations during the as-built inspection indicated that minor issues were resolved upon backfilling of trenches, and that topsoil replacement was adequate to support establishment of crops in cropland and grasses seeded in rangeland (**Appendix B**). However, vegetative regrowth was sparser in some areas (see section 3.1.5), which could possibly indicate improper backfilling of the trench, but it is more likely due to inadequate seeding practices based on discussions with Andeavor.

3.6.4 Pipeline Depth

The pipeline must be buried to specified depths depending on the surface use. Wenck visually confirmed pipeline depth at a few locations during construction inspections and pipe depth appeared to be buried to at least the specified depth (Docket 72: Construction Inspection). Wenck visually confirmed boring operations across several roads during construction inspections (Docket 72: Construction Inspection) and also verified several additional crossings during the as-built inspections.

3.6.5 Erosion & Sedimentation

The Project Application states BMPs would be used during and after construction to minimize soil erosion and protect surface water (Docket 1: Application). The NDDH recommended that Andeavor prevent the erosion of exposed soil surfaces and trapping sediments being transported, but did not list any specific BMPs (Docket 1: Application, Appendix J – Agency Correspondence, not labeled, pdf p. 714-726).

Topsoil and construction inspections did not note any locations where erosion controls were improperly installed. During the construction report, Wenck reported that Andeavor reduced

sediment tracking from vehicles by placing wooden mats along the ROW entry points and by having crew members remove any tracked soil by shovel (Docket 71: Topsoil Inspection Report; Docket 72: Construction Inspection Report).

During the as-built inspection, an area of erosion concern was identified near station 439+63.17 of the North Segment where Andeavor horizontally drilled underneath Sevenmile Creek and an intermittent stream tributary to Sevenmile Creek, as described in Section 3.5.3 (**Observation Point 17, Photo 26**). Andeavor may need to install additional erosion controls in this area to prevent erosion and sediment release in the Andeavor pipeline corridor.

3.6.6 Reclamation & Roads

Andeavor committed to bore under all graded roads and post-construction reclamation as described in their Certification of Order Provisions (Docket 29). At the time of the as-built inspection, construction and re-seeding was complete along the pipeline trench and within staging areas. Roads had been bored underneath and appeared to be in good condition; however, vegetation growth within the ROW adjacent to roads was sparse in most areas (**Photos 1, 9, 12, 19, 24, 27, 29**). Contouring in the ROW near roads matched adjacent topography (**Photo 25**).

3.6.7 Fencing, Repairs & Waste

Existing fences or gates that were impacted by pipeline construction appeared to be replaced or repaired as needed (**Photos 8, 9, 14, 15, 16, 17, 19, 22**). During the time of inspection, the ROW was free of waste and debris. Valve sites were surrounded with chain link fence which appeared to be maintained well and in good condition. Foxtail barley, a co-native, weedy grass, dominated the ROW near the fence surrounding the Oasis Wild Basin natural gas plant, comprising approximately 80% of existing vegetation cover (**Photo 22**).

3.7 OPERATION

3.7.1 Record-keeping & Compliance

No concerns were identified during the site review that would indicate that Project operation was out of compliance with the Order or Certificate of Site Compatibility. No reports of extraordinary events during operation were filed to date with the PSC.

3.7.2 Maintenance

Andeavor indicated that the pipeline and facilities would be regularly inspected and maintained (Docket 1: Application). There was no waste, debris, or abandoned equipment observed during the inspection. The route appeared to be regularly maintained.

3.7.3 Public Access & Safety

During the as-built inspection, it appeared that Andeavor had implemented examples of operational safety measures during construction, including the use of personal protective equipment and warning signs marking the pipeline route. Fences with locked gates and warning signs were in place around all observed valve settings to prevent access by the public (**Photo 22**).

3.7.4 Spill Prevention & Response

Andeavor has commited to monitor the pipeline system 24 hours per day, 7 days per week by a supervisory control and data acquisition (SCADA) system with a control center in San Antonio, Texas (Docket 1: Application). Additionally, Andeavor has prepared an Emergency

Action Plan (Docket 1: Appendix D – Emergency Action Plan, not labeled, pdf p. 537). No spills or leaks have been reported to date.

4.0 Issues to Resolve and Recommendations

4.1 AS-BUILT FILES AND REQUIRED DOCUMENTATION

Wenck recommends that Andeavor submits the following documentation to the PSC:

- Electronic and paper copy, and associated GIS data, of the corridor approved by the Commission and the facility design specifications for the construction of the transmission facility showing the location of the transmission facility as-built;
- Ten-year plan;
- Monthly construction reports or some type of documentation summarizing the completion dates of major milestones during construction;
- Documentation of reseeding and reclamation or verification/waivers from landowners that requested no reseeding on their land.
- Route adjustment requests as per NDCC 49-22.1-15(1).
- Verification of a permit or approval from the following agencies:
    - Department of Transportation
    - Federal Highway Administration
    - North Dakota Department of Health Water Division
    - North Dakota Department of Transportation

4.2 STREAM CROSSING REPAIR

One location was observed where Andeavor horizontally bored underneath Sevenmile Creek and an intermittent stream tributary to Sevenmile Creek near station 439+63.17 of the North Segment (refer to Section 3.5.3) (**Observation Point 17, Photo 26**). The Andeavor line was adjacent to two other parallel pipeline corridors; according to Andeavor the other pipelines had been trenched through the streams. It appeared the Andeavor ROW had more vegetation compared to the other ROWs at approximately 70-80% cover compared to 20-60% cover; however, erosion on the adjacent ROWs will likely affect the Andeavor ROW when sediments are deposited and begin to affect the seeded bore workspace area. To prevent erosion and sediment deposition into the stream and the adjacent Andeavor ROW, Wenck recommends that Andeavor work with the other pipeline companies to re-seed the area and perhaps stabilize the soils with other erosion control measures as determined appropriate.

4.3 VEGETATION ESTABLISHMENT

At the time of the inspection, the land had been restored to its pre-construction contours. Areas impacted by pipeline construction (except aboveground facilities) were returned to previous land use, including cropland, hayland/CRP, and rangeland. The condition of most areas of hayland or cropland looked better or comparable within and outside of the ROW; however, there were some portions of the ROW that were not reseeded (according to Andeavor) where additional remediation may be required. Andeavor should consider overseeding these areas in spring 2020 per landowner desires; if landowners do not want reseeding, written verification of this request should be provided to the PSC. The revegetation inspection contracted by the PSC is planned in 2020 to further document the establishment of vegetation and identify recommendations to improve revegetation in the pipeline corridor.

5.0 References

North Dakota Public Service Commission (ND PSC). 2019. Online Case Search. Available from: http://www.psc.nd.gov/database/company_case_list.php. Accessed September-October 2019.

Begley, Mike. 2019. Andeavor Pipeline Representative. Personal Communication: discussion during site visit on 16 September 2019.

Nichols, Derek. 2019. Andeavor Pipeline Representative. Personal Communication: discussion during site visit on 16 September 2019.

6.0 Signatures

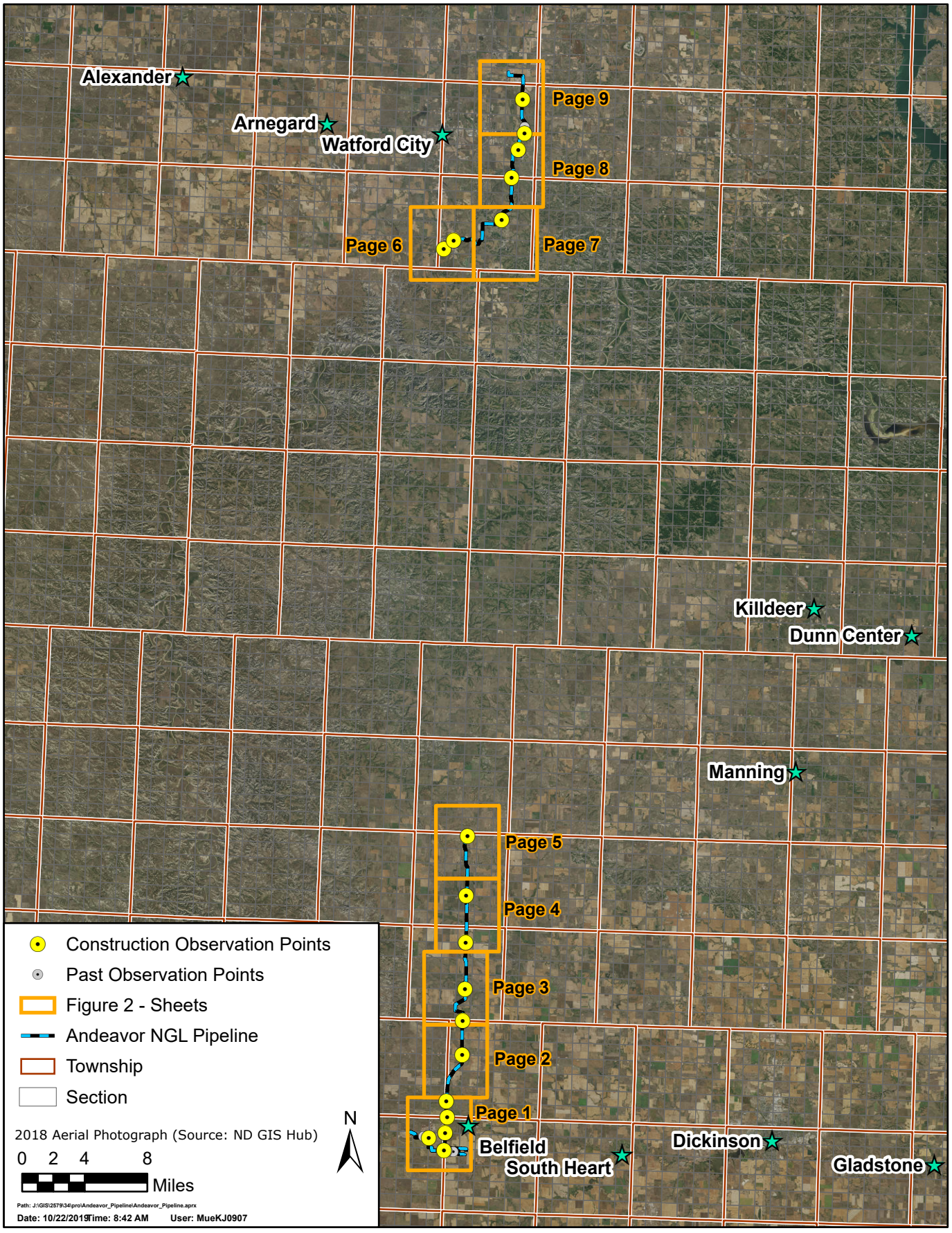
The services performed by Wenck staff for this project have been conducted in a manner consistent with the degree of care and technical skill appropriately exercised by professionals currently practicing in this area under similar time and budget constraints. Recommendations and findings contained in 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 and Environmental Scientist, Sara Simmers, and Environmental Scientist, Jansen Howe, prepared the report.

Sara Simmers, Environmental Scientist — October 29, 2019 Date

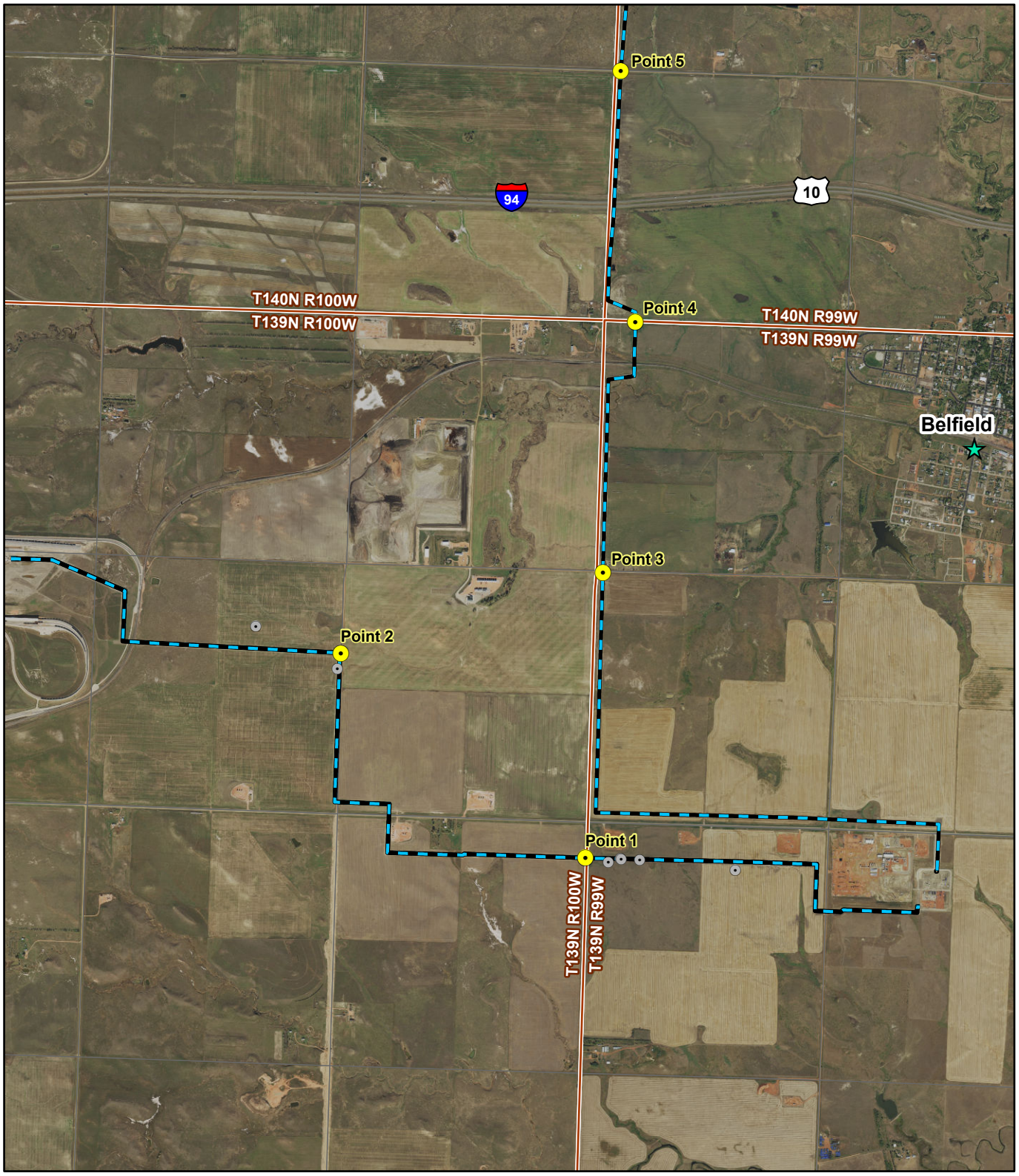
Jansen Howe, Environmental Scientist — October 29, 2019 Date

Figure 1



NORTH DAKOTA PUBLIC SERVICE COMMISSION	WENCK Responsive partner. Exceptional outcomes.	OCT 2019
Overview Map		Figure 1

Figure 2



2018 Aerial Photograph (Source: ND GIS Hub)

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Construction Observation Points

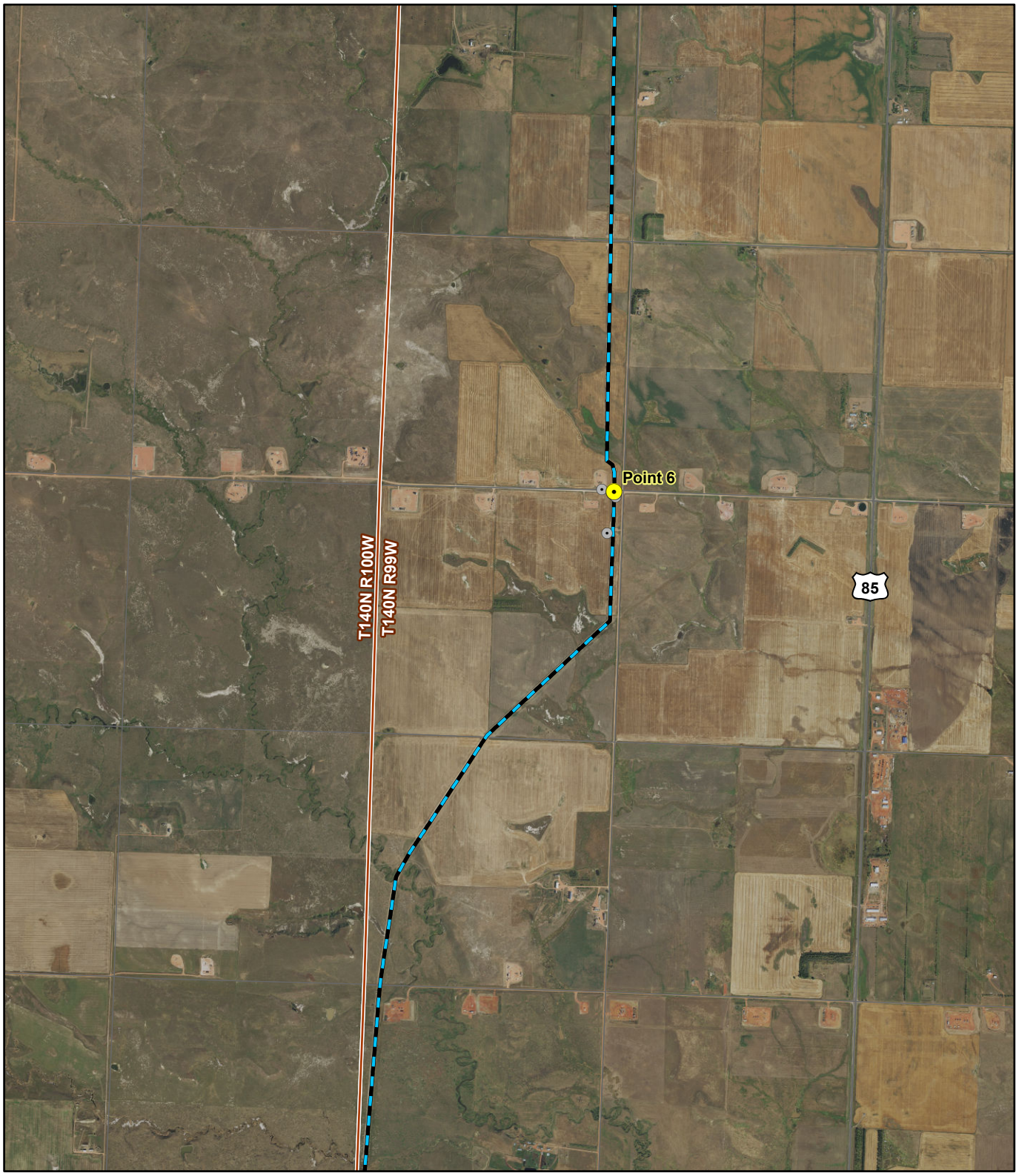
Previous Observation Points

Andeavor NGL Pipeline

Township

Section

NORTH DAKOTA PUBLIC SERVICE COMMISSION	WENCK Responsive partner. Exceptional outcomes.	OCT 2019
Field Observation Map (Page 1 of 9)		Figure 2



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Construction Observation Points

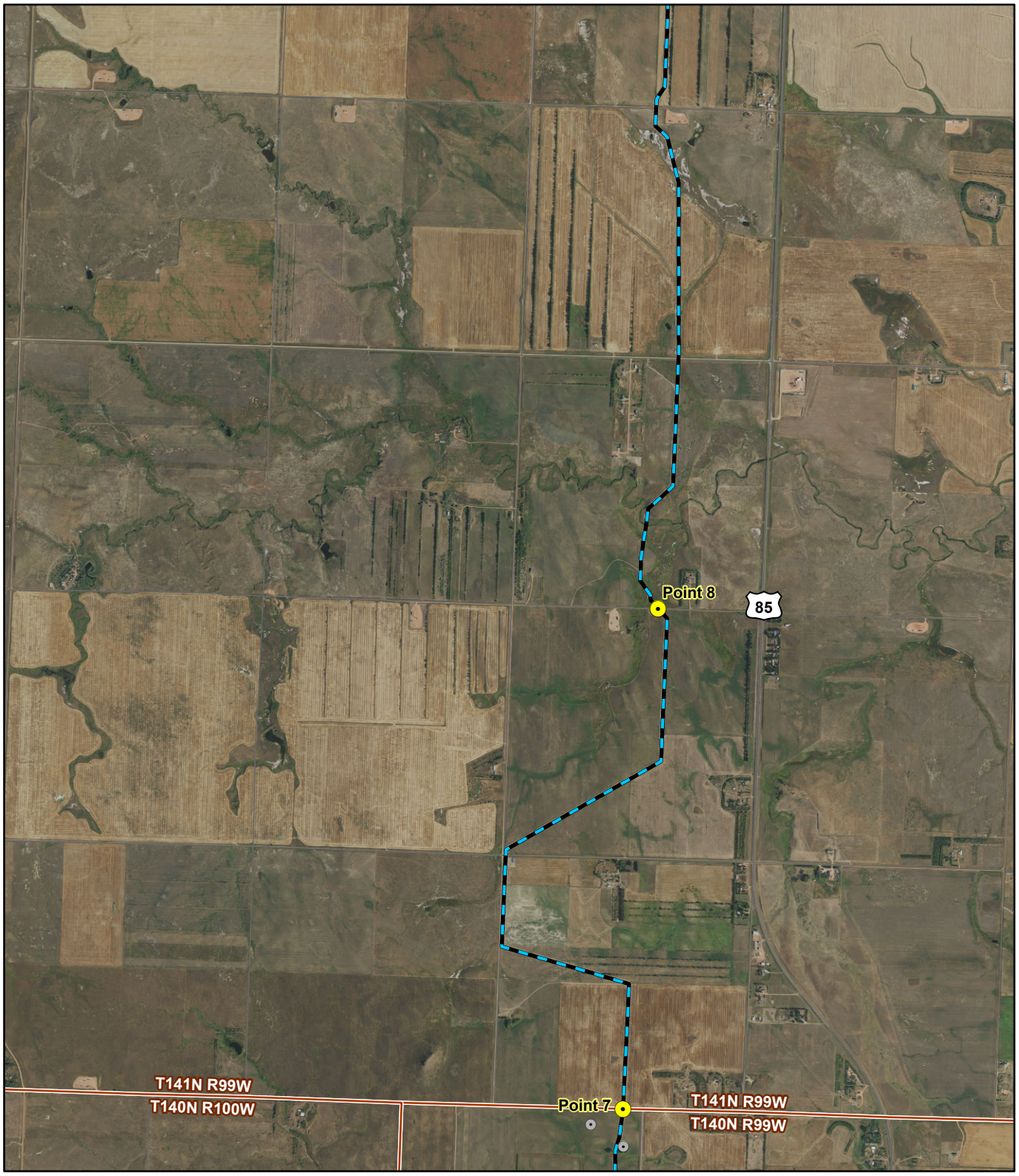
Previous Observation Points

Andeavor NGL Pipeline

Township

Section

NORTH DAKOTA PUBLIC SERVICE COMMISSION	WENCK Responsive partner. Exceptional outcomes.	OCT 2019
Field Observation Map (Page 2 of 9)		Figure 2



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- Construction Observation Points
- Previous Observation Points
- Andeavor NGL Pipeline
- Township
- Section

NORTH DAKOTA PUBLIC SERVICE COMMISSION

Field Observation Map (Page 3 of 9)

WENCK
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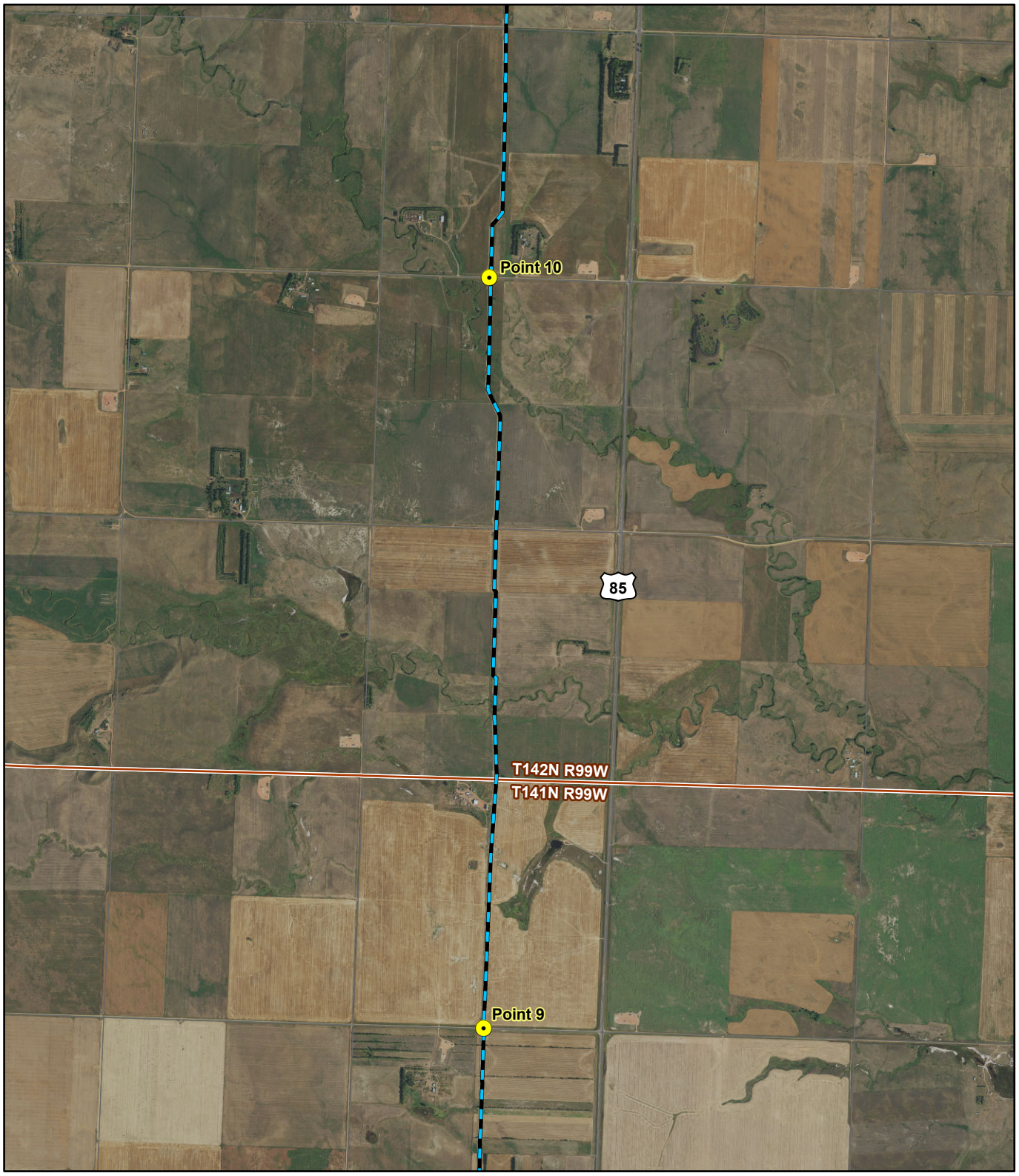
OCT 2019

Figure 2



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Construction Observation Points

Previous Observation Points

Andeavor NGL Pipeline

Township

Section

NORTH DAKOTA PUBLIC SERVICE COMMISSION

Field Observation Map (Page 4 of 9)

WENCK

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OCT 2019

Figure 2

2018 Aerial Photograph (Source: ND GIS Hub)

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Construction Observation Points

Previous Observation Points

Andeavor NGL Pipeline

Township

Section

NORTH DAKOTA PUBLIC SERVICE COMMISSION

Field Observation Map (Page 5 of 9)

WENCK

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OCT 2019

Figure 2

2018 Aerial Photograph (Source: ND GIS Hub)

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Construction Observation Points

Previous Observation Points

Andeavor NGL Pipeline

Township

Section

NORTH DAKOTA PUBLIC SERVICE COMMISSION

Field Observation Map (Page 6 of 9)

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OCT 2019

Figure 2

2018 Aerial Photograph (Source: ND GIS Hub)

3,000 1,500 0 3,000 Feet

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Construction Observation Points

Previous Observation Points

Andeavor NGL Pipeline

Township

Section

NORTH DAKOTA PUBLIC SERVICE COMMISSION

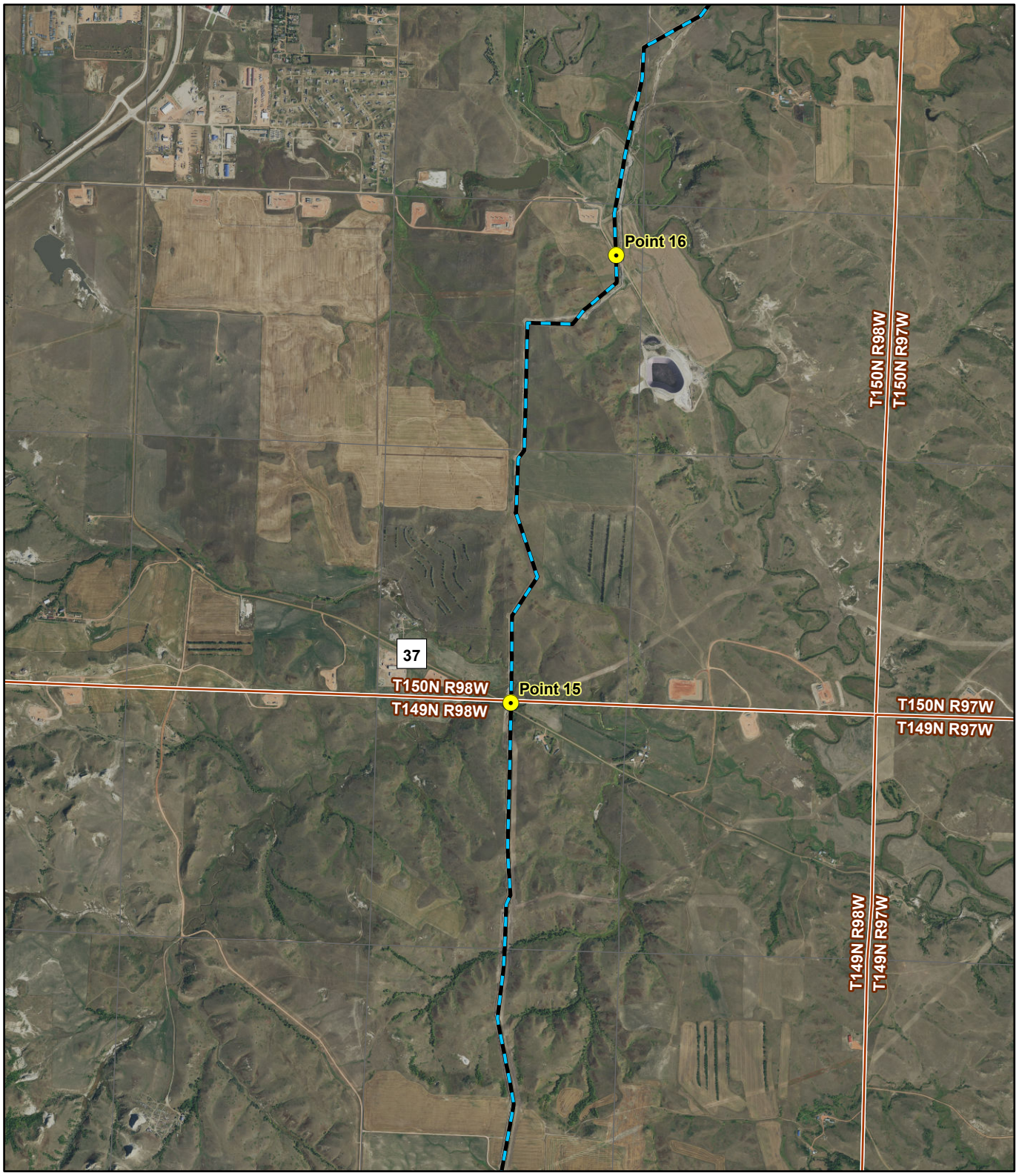
Field Observation Map (Page 7 of 9)

WENCK

Responsive partner. Exceptional outcomes.

OCT 2019

Figure 2



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Construction Observation Points

Previous Observation Points

Andeavor NGL Pipeline

Township

Section

NORTH DAKOTA PUBLIC SERVICE COMMISSION

Field Observation Map (Page 8 of 9)

WENCK

Responsive partner. Exceptional outcomes.

OCT 2019

Figure 2

2018 Aerial Photograph (Source: ND GIS Hub)

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Construction Observation Points

Previous Observation Points

Andeavor NGL Pipeline

Township

Section

NORTH DAKOTA PUBLIC SERVICE COMMISSION

Field Observation Map (Page 9 of 9)

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OCT 2019

Figure 2

Field Observation Points

Observation Point #	Latitude	Longitude	Photos Taken at Point
1	46.85960742	-103.2313563	1, 2
2	46.87091257	-103.25257	3
3	46.87610701	-103.2307191	4
4	46.89066345	-103.2287556	5, 6
5	46.90513506	-103.2307318	7, 8, 9
6	46.94861068	-103.2114525	10, 11
7	46.98034393	-103.2123446	12, 13
8	47.0093338	-103.2108627	14, 15
9	47.05271928	-103.2119278	16
10	47.09609589	-103.2136699	17, 18, 19
11	47.15080106	-103.2145408	20, 21
12	47.69275353	-103.2756242	22
13	47.70105395	-103.262488	23, 24
14	47.72125391	-103.1975267	25
15	47.76087549	-103.1859697	26
16	47.78694671	-103.1782689	27, 28
17	47.80220214	-103.1705114	29
18	47.83335156	-103.1744993	30, 31

Appendix B

Photographs

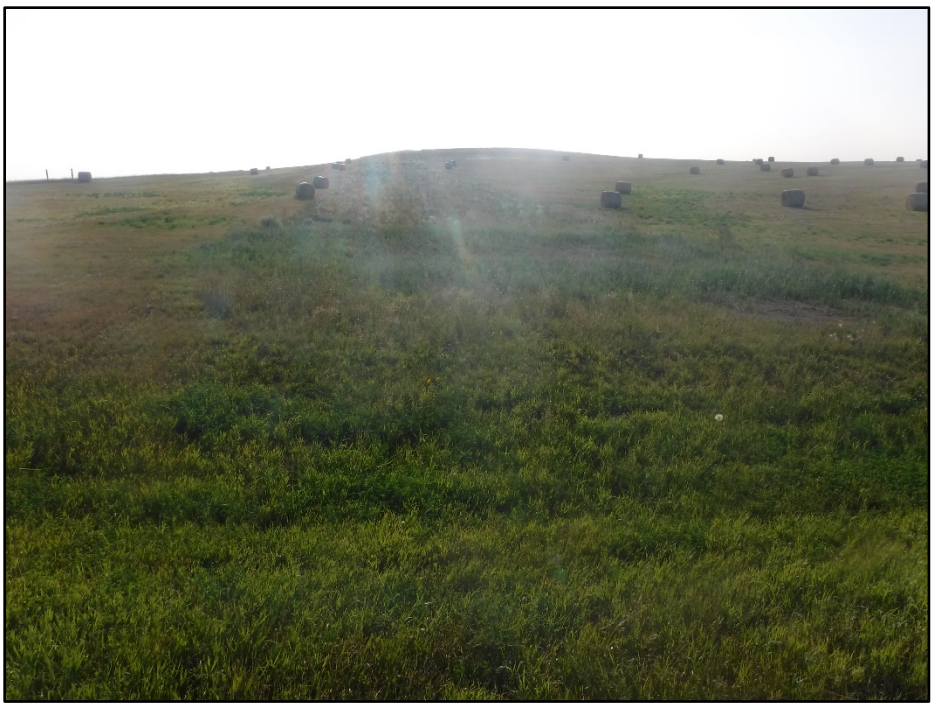

Photo 1. (Observation Point 1) Direction: East. View of reclaimed hayland along the Product Transfer Segment. The dominant vegetation in this area was smooth brome (*Bromus inermis*).

Photo 2. (Observation Point 1) Direction: West. View of the reclaimed pipeline corridor through a wheat field. Regrowth in the reclaimed corridor was especially successful in wheat agricultural fields. Note pipeline markers in foreground.

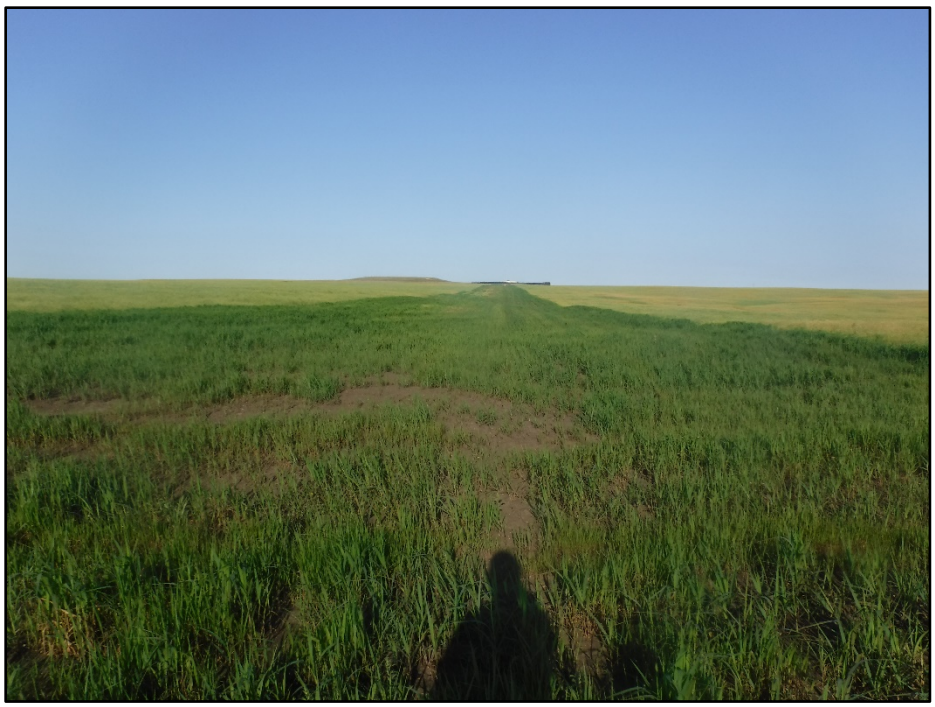

Photo 3. (Observation Point 2) Direction: West. View of reclaimed pipeline ROW through a canola field. According to Mr. Mike Begley of Andeavor, the landowner of this field requested that the ROW be reseeded with a forage crop. Cover was patchy with about 70% vegetation cover and 30% bare ground.

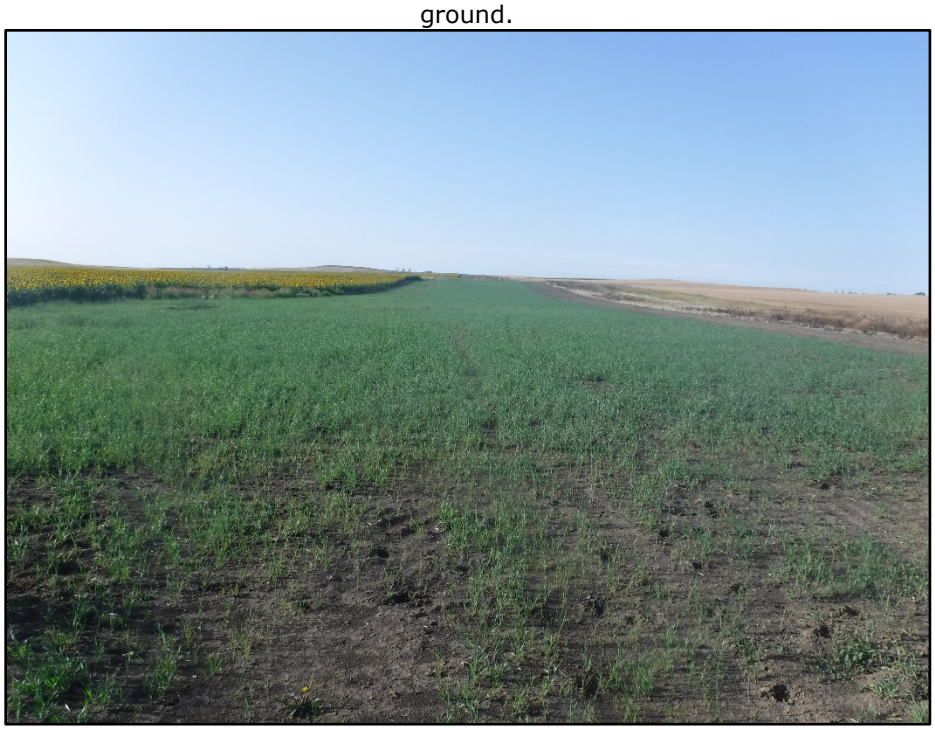

Photo 4. (Observation Point 3) Direction: South. View of the reclaimed ROW through an agricultural field on the South Segment of the pipeline. Smooth brome was planted in this area. Vegetative cover was approximately 40%, compared to 60% bare ground. No weeds were present.

Photo 5. (Observation Point 4) Direction: South. View of reclaimed pipeline ROW through hayland. Smooth brome was growing in the center of the field, with annual sunflower (*Helianthus annus*) growing near the edges. Vegetative cover was approximately 50% with 50% bare ground.

Photo 6. (Observation Point 4) Direction: North. View of the reclaimed ROW through a wheat field on the South Segment of the pipeline.

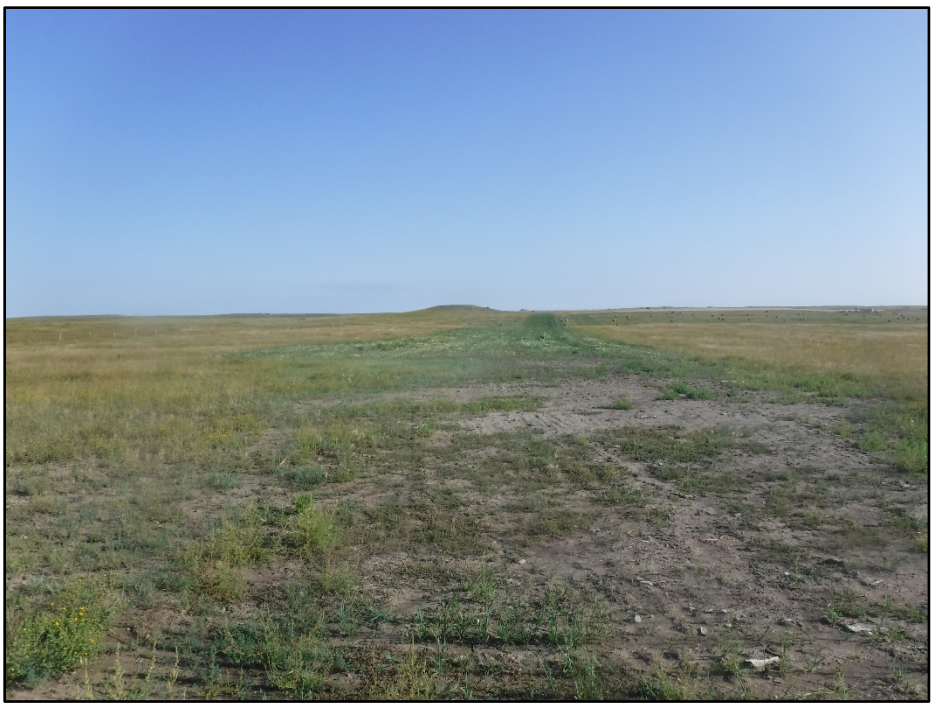

Photo 7. (Observation Point 5) Direction: North. View of reclaimed pipeline ROW through range/grazing land along the South Segment. Planted grasses were growing in this area at about 20% cover. Annual weed species dominated the reclaimed ROW at approximately 30-40% cover, with 50% bare ground. Further reclamation may be necessary in this area.

Photo 8. (Observation Point 5) Direction: North. View of reclaimed pipeline ROW through range/grazing land along the South Segment. This photo was taken from 35th St near Belfield. The pipeline was horizontally drilled under the road near this point. Annual weed species dominated the reclaimed ROW, and further reclamation may be necessary in this area. Note the pipeline marker in the background.

Photo 9. (Observation Point 5) Direction: South. View of a bore exit point and the pipeline ROW through cropland on the south segment. The growth of the wheat crop was visually indistinguishable within and outside of the ROW. Planted grasses were growing in the road ditch at approximately 60% cover, with 40% bare ground. Some annual weed species were present in the road ditch, growing at about 5% cover. Note the pipeline marker in the background.

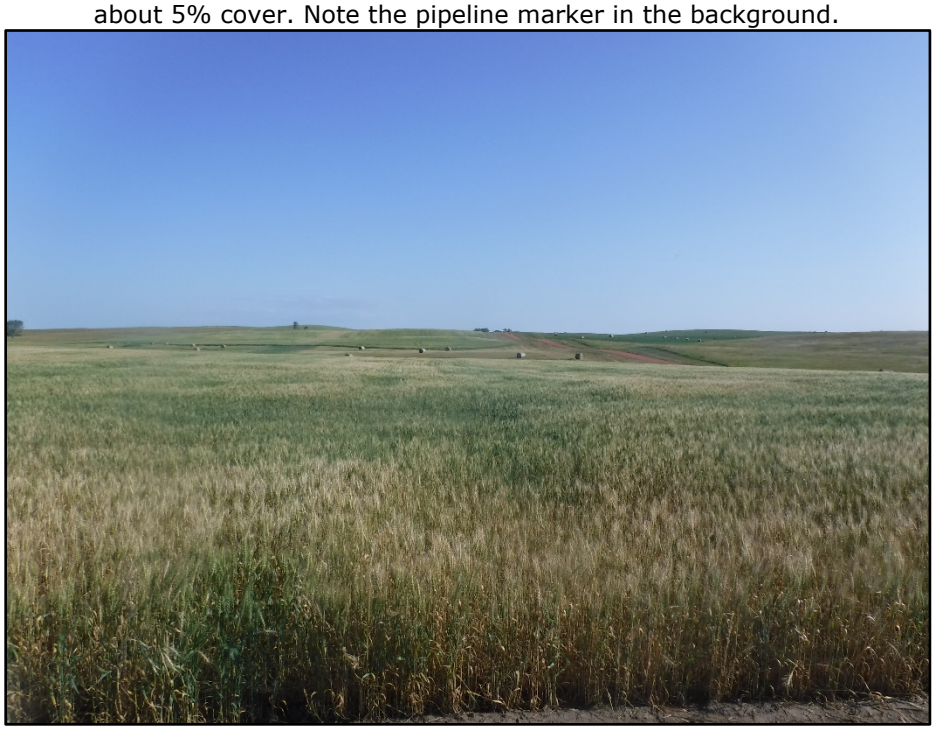

Photo 10. (Observation Point 6) Direction: North. View of the pipeline ROW through cropland along the South Segment.

Photo 11. (Observation Point 6) Direction: South. View of pipeline ROW through cropland along the South Segment. The wheat in this field had already been cut, and the stubble indicated successful regrowth in the ROW, with comparable density within and outside of the ROW.

Photo 12. (Observation Point 7) Direction: South. View of pipeline ROW through cropland. The ROW was reseeded with wheat and the stand was dense and even; adjacent vegetation was cut alfalfa.

Photo 13. (Observation Point 7) Direction: North. View of pipeline ROW through cropland along the South Segment. As typical of the project area, wheat growth was comparable within and outside of the ROW. Note the pipeline marker in the foreground.

Photo 14. (Observation Point 8) Direction: North. View of pipeline ROW through rangeland along the South Segment. Dominant species consisted of yellow sweet clover (*Melilotus officinalis*) and smooth brome. Vegetation cover within the ROW was approximately 95% with 5% bare ground. Note pipeline marker in the foreground.

Photo 15. (Observation Point 8) Direction: South. View of pipeline ROW through hayland. Vegetation growth in the ROW was uniform with growth outside the ROW.

Photo 16. (Observation Point 9) Direction: North. Pipeline ROW through cropland on the South Segment. Wheat grew successfully in the field, and annual weeds grew in the bore temporary workspace area in the foreground. Note the pipeline marker in the foreground

Photo 17. (Observation Point 10) Direction: South. View of temporary workspace on side of 22nd St. SW in the foreground and pipeline ROW through range/grazing land in the background. Dominant species in the temporary workspace area consisted of oats (*Avena* sp.) and crested wheat grass (*Agropyron cristatum*), growing at approximately 30% cover with 70% bare ground.

Photo 18. (Observation Point 10) Direction: South. View of pipeline ROW through range/grazing land on the South Segment. Growth of seeded grasses was about 30-50%, with 50-80% bare ground; notably, annual weed cover was minimal. Dominant species consisted of oats and crested wheat grass. Additional reclamation may be necessary in this area.

Photo 19. (Observation Point 10) Direction: North. View of temporary workspace on north side of 22nd St. SW in the foreground ROW through cropland in the background. Dominant species in the temporary workspace and cropland included a cover crop of oats (*Avena sp.*), growing at about 40-70% cover with 30-60% bare ground. Dominant species growing adjacent to the ROW in the crop field were smooth brome and crested wheat grass. Note the pipeline marker in the background.

Photo 20. (Observation Point 11) Direction: Southwest. The northernmost point of the South Segment of the pipeline. View of the temporary workspace in hayland where the bore for the Andeavor pressure station exited. Vegetative growth in the ROW of this section was about 80% cover and soil was replaced to existing topography.

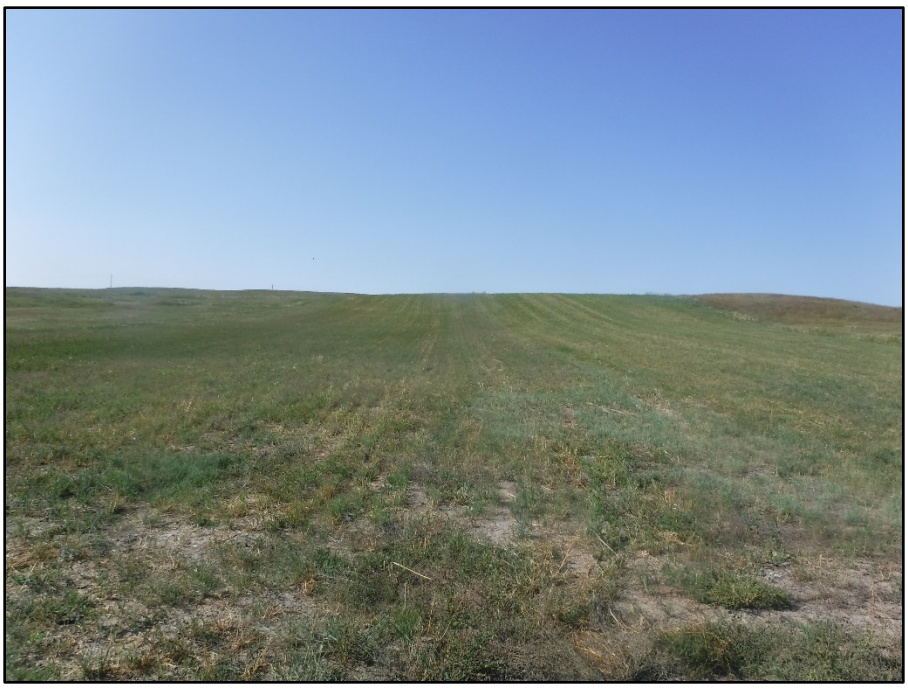

Photo 21. (Observation Point 11) Direction: South. Additional view of ROW shown in Photo 20. Vegetation cover was at approximately 70%, with 30% bare ground. Dominant species included smooth brome and alfalfa. Some annual weed species were present inside the ROW corridor.

Photo 22. (Observation Point 12) Direction: Northeast. View of pipeline ROW from the Oasis Wild Basin natural gas processing plant at the southern-most point of the North Segment. Vegetation growth was 90%, though the co-native, weedy grass foxtail barley (*Hordeum jubatum*) was the dominant species. Soil was replaced to match topography. Note the chain link fence for public safety.

Photo 23. (Observation Point 13) Direction: Southwest. View of Pipeline ROW through rangeland on the North Segment. Vegetative growth was approximately 50-60% ground cover with minimal annual weeds. Dominant species included smooth brome, crested wheat grass, and oats.

Photo 24. (Observation Point 13) Direction: Northeast. View of Pipeline ROW through rangeland on the North Segment. Vegetative growth was approximately 60% ground cover. Dominant species included smooth brome, crested wheat grass, and oats. Soil was replaced to match existing topography.

Photo 25. (Observation Point 14) Direction: Northeast. View of pipeline ROW along a slope on the Northern Segment. Vegetative growth was limited in this area, growing to about 40% cover with 60% bare ground. These conditions could make this hillslope susceptible to erosion. Note the woody draw on the right hand of the photo.

Photo 26. (Observation Point 15) Direction: North. Three adjacent pipeline corridors run north and south, crossing Sevenmile Creek and an intermittent stream tributary to Sevenmile Creek. According to Mr. Begley, Andeavor horizontally drilled underneath the streams in this area. Vegetation growth within the Andeavor ROW has been somewhat successful (Andeavor ROW depicted by red line), with 60-80% cover. Andeavor may need to conduct additional remediation measures if it contributed to the bare soil in this area. Only minor erosion had occurred during the time of the inspection.

Photo 27. (Observation Point 16) Direction: Southeast. Pipeline ROW through cornfield on the North Segment. Vegetative growth within the ROW is similar to growth outside the ROW.

Photo 28. (Observation Point 16) Direction: Northwest. View of Pipeline ROW through cropland. The ROW was seeded with grasses. A difference in color was noted between vegetation in the ROW and vegetation outside, but regrowth is generally the same throughout the field. Note the pipeline marker in the foreground.

Photo 29. (Observation Point 17) Direction: South. View of a temporary workspace along the North Segment where Andeavor horizontally drilled under Northfork Creek. Vegetative regrowth was successful in the ROW. Disturbance along the stream bank was caused by wood mats Andeavor laid across the stream bank for transportation of heavy construction equipment. Note the red line depicting the Andeavor ROW continuing to the southwest, up the slope on the other side of the channel.

Photo 30. (Observation Point 18) Direction: South. View of pipeline ROW through a corn field.

Photo 31. (Observation Point 18) Direction: North. Note the red line which indicates the ROW corridor through rangeland on the North segment. Vegetation cover in the ROW was 95% with 5% bare ground. Dominant species within the ROW included alfalfa and crested wheat grass. Annual weeds, particularly kochia (*Kochia scoparia*), were dominant outside the ROW corridor.

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