

Caliber Bear Den Interconnect Pipeline Project As-Built Inspection Report PU-16-420



Prepared for:

North Dakota Public Service
Commission

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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 Caliber Bear Den Interconnect Pipeline (Project) in McKenzie County, North Dakota (ND), constructed by Caliber Bear Den Interconnect, LLC. (Caliber). Wenck reviewed Project documents to identify those aspects that required compliance, and visually inspected the Project area on 27 July 2017.

The Project was well-maintained and appeared to have been constructed as planned with numerous efforts to minimize impacts. The following issues need to be resolved for the Project to be considered complete and in full compliance, including 1) Establishment of vegetation throughout the project area and repair of soil subsidence; 2) Verification that no trees and shrubs were removed and 3) Submission of as-built design drawings. Wenck recommends the PSC take the following steps to resolve these issues.

Recommended Action Steps

▲ Review Internally, Clarify, Then Request if Needed

- Several items may need written verification, but the PSC should review since some may not be needed or may be best verified in some other way (refer to list in Section 4.1).

▲ Request Now

- Documentation that no tree and shrubs were removed from the project corridor.
- As-built maps and associated GIS/CAD files.

▲ Expect Later, Request if Needed

- Written documentation of satisfactory vegetation establishment throughout the project (to be completed one year from planting by PSC contractor).
- Written documentation from Caliber that soil subsidence has been fixed in the area described in Section 3.6.5.

2.0 Background and Scope

2.1 INTRODUCTION

The Caliber Bear Den Interconnect Pipeline, L.L.C. (Caliber) is a subsidiary of Caliber Midstream Partners, L.P. The Caliber Bear Den Interconnect Pipeline Project (Project) originates at the Enable Midstream's Devore Terminal approximately 7.2 miles south of Watford City and extends to the northwest to terminate at Dakota Access Pipeline's (DAPL) Watford City Terminal, located in McKenzie County, North Dakota. The Project includes a 12.75-inch diameter underground steel pipeline with a total length of approximately 5.3 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-16-420 on 2 November 2016, granting a Certificate of Corridor Compatibility No. 195 and Route Permit No. 206 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 Caliber 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 seven (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 2017) 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 27 July 2017. A representative from Caliber, Jeff Skaare, accompanied Wenck staff during the site visit.

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, 6, 7	Located in McKenzie County, originating at the Devore terminal (approximately 7.2 miles south of Watford City), running northwest, and terminating at the Dakota Access Pipelines (DAPL) Watford City terminal. The project will consist of ~5.3 miles of 12.75-inch steel pipeline.	Docket #1, #26, Application and Addendum	Section 3.1.1
ND Admin. Code Article 69-06-08; Findings of Fact 22-31	Siting Criteria analysis – exclusion, avoidance, selection, and policy areas. No exclusion areas within study area. There were avoidance areas within the project area (one residence, geologic instability area).	Docket #1, #26, Application and Addendum	Section 3.1.2
App. p. 28, Appendix G	Impacts upon family farms and ranches will be limited to the construction of the pipeline; no impacts are expected during the operation of the pipeline. Approx. 37.6 acres of agricultural cropland and pasture are expected to be affected by the construction of the route.	Docket #1, #26 Application and Addendum	Section 3.1.3
Findings of Fact 25	Areas within 500ft of inhabited rural residences must be designated avoidance areas.	Docket #1, #26, Application and Addendum, Exhibit D	Section 3.1.4
NDDTL (pending response); App. pp. 12, 31, Appendix C	North Dakota Department of Trust Lands is not affected by the pipeline route. No state parks or NDPR-managed lands are crossed.	Docket #1, #26, Application and Addendum	Section 3.1.5
	PROJECT DESIGN & ENGINEERING		
App. p. 2; Findings of Fact 2, 3, 4	Authorized ~5.3-mile pipeline, one pig launcher and one pig receiver located at each truck offload station. The capacity will be ~75,000 barrels per day with a normal throughput of ~50,000 barrels per day. The pipe will have a 12.75-inch outside diameter steel pipe, a nominal wall thickness of	Docket #1, #26, Application and Addendum	Section 3.2.1

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
	0.188-inch, and constructed of FBE coated steel. The line will operate at a maximum pressure of 1440 psi.		
Route App. pp. 5, 40, 42; Certification Order Provisions 14, 16	Permanent ROW is 25ft wide. During construction, a 75-ft ROW was to be utilized. Where additional workspace may be needed for soil stockpiling (at roads, water crossings, etc.), it will occur only within approved additional temporary work space areas. Caliber will repair or replace private roads, drains, fences, and all surface facilities damaged during the construction of the transmission facility.	Docket #1, #26, Application and Addendum	Section 3.2.2
Route App. p.45; Findings of Fact 5	Design, construction, and operation in compliance with US DOT 49 CFR Part 195.	Docket #1, #26 Application and Addendum	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 33	Provide electronic and paper as-built design specifications and associated GIS files within 3 months after construction is complete.	None	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, #26, Application and Addendum	N/A
ND Century Code Ch. 49-22-07	Certificate of Site Compatibility or Route Permit.	Docket #33, Order on Recommended 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.	Docket #1, #26, Application and Addendum; PU-16-629	N/A
Certification Order Provisions 7	Conduct Pre-Construction Conference. Provide notice of intent to start construction.	Docket #36, Pre-construction Conference Notes & Notice of Intent to Begin Construction	N/A
Certification Order Provisions 32	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 #44, Certification, and documentation for route adjustments under NDCC; Docket #45, Supplement to Certification for route adjustments under NDCC; Docket #46, Letter acknowledging December route adjustment notifications; Docket #41, Construction notification – off right-of-way incident and request for route variance	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; #26, Application and Addendum; Exhibit D; Docket #3, Agency concurrence letter; Docket #19, Comments; Docket #42 SHPO letter – cultural site analysis; Docket #47, Comments;	N/A
Certification Order Provisions 34	Participate in ND One-Call Excavation Notice System.	None recorded	Section 3.3.5
CULTURAL RESOURCES			

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
Findings of Fact 11	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, #26, Application and Addendum; Exhibit D; Docket #3, Agency concurrence letter; Docket #42, SHPO letter – cultural site analysis; Docket #47, Comments	Section 3.4.1
Findings of Fact 11; Certification Order Provisions 15	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 #1, #26, Application, Exhibit D; Docket #3, Agency concurrence letter, Docket #42, SHPO letter – cultural site analysis	N/A
NATURAL RESOURCES			
Findings of Fact 10, 12;	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, #26, Application and Addendum; No USFWS and NDGFD Letters, responses pending	Section 3.5.1
Findings of Fact 10, 28; App. pp. 16, 93, 97;	No permanent impacts or minimal 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.	Docket #1, #26, Application and Addendum	Section 3.5.2
Certification Order Provisions 31	Report presence of T+E species, bald or golden eagles during construction and operation.	None	N/A
Certification Order Provisions 20	Reclamation, fertilization, and reseeding according to NRCS (or landowner if approved).	None; Re-vegetation report will need to be completed one year after seeding.	Section 3.5.4

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
App. p. 98; Order 4; Certification Order Provisions 24	Shrubland avoided to extent practicable. Tree and shrub removal and replacement will comply with "Tree and Shrub Mitigation Specifications".	None	Section 3.5.5
Route App. pp. 11, 32	Contractors required to clean equipment and materials prior to entrance to ROW to minimize spread of noxious weeds.	Docket #1, #26, Application and Addendum	Section 3.5.6
CONSTRUCTION, RECLAMATION & SOILS			
Certification Order Provisions 10, 19	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 #49, 50, 51, 52, 53, 55, Caliber Bear Den Interconnect Crude Oil Pipeline progress reports	N/A
Certification Order Provisions 11	Pipeline buried to a minimum depth from the ground surface to the top of the pipe of 48 inches in rangeland, 48 inches for cultivated land, 48 inches at the bottom of the ditch for road crossings, and 72 inches across undeveloped section lines.	Docket #48, Topsoil Inspection	Section 3.6.2
App. pp. 35, 36;	Soil erosion minimized by use of BMPs during and after construction to protect surface water and soils/topsoil.	None	Section 3.6.3
Certification Order Provisions 9, 12	Topsoil and subsoil must be segregated and replaced separately. Topsoil will be removed and replaced to maximum depth of 12 inches. Topsoil removal will begin when the Commission's third-party inspector is present at the project site to observe that topsoil is properly removed and kept segregated from subsoil.	Docket #48, Topsoil Inspection Report	Section 3.6.4

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
App. p. 35; Certification Order Provisions 13, 18, 19, 21,	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. Reclamation and maintenance throughout life of facility. All crossings of graded roads will be bored.	None; (Soil subsidence)	Section 3.6.5
App. pp. 40, 42; Certification Order Provisions 22, 23, 25	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		
Certification Order Provisions 5, 30	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 21, 25	Reclamation and maintenance throughout life of facility. Waste removed & disposed regularly.	None	Section 3.7.2
Findings of Fact 34; Certification Order Provisions 26	Company's existing Emergency Action Plan will include the Project. Safety measures for traffic control or to restrict public access to the transmission facility.	Docket #1, #26, Application and Addendum, Appendix E, Emergency Response Plan	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 County, North Dakota. Caliber constructed the project entirely within the corridor previously approved for Caliber's Bear Den Pipeline in Case Number PU-16-420.

3.1.2 Siting Criteria

Siting criteria was analyzed in detail in the Application for the Project (Docket #1, #26, Application and Addendum). The route had the following avoidance areas: areas of geological instability, and areas within 500-ft of a residence. A waiver was signed by owner of the one residence within 500-ft of the pipeline (Docket #1, #26, Application and Addendum). The one area of geological instability consisted of potential landslide deposits located within the study area, but the area is avoided and not crossed by the pipeline route. 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 rangeland. Approximately 37.6 acres of agricultural cropland and pasture are expected to be affected by the construction of the route (Docket #1, #26, Application and Addendum). Caliber negotiated easements with affected landowners. The pipeline 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 and had been seeded in May 2017. Generally, areas impacted by pipeline construction (except above ground facilities) were returned to previous land use, including cropland and rangeland. However, there was currently a lack of vegetation likely due to drought conditions combined with the area needing more time for vegetation to reestablish.

3.1.4 Setbacks

The Project was in a sparsely populated area near Watford City Extraterritorial Zoning Authority (ETA). Land use is primarily agriculture and pastureland along with some industrial development. One residence and/or farmhouse was identified within 422-ft on the pipeline centerline, not located in the Project ROW. Caliber stated a waiver was obtained for this residence (Docket #1, #26, Application and Addendum, Exhibit D).

3.1.5 ND State-Owned or Managed Lands

The Application stated the ND Department of Trust Lands (NDDTL) was pending response and it also stated the proposed route does not affect NDDTL lands. The Application stated the ND Parks & Recreation Department (NDPR) response is still pending; and the application stated no county, state or national parks or wildlife management area are located in the



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study area. During the site inspection, it was confirmed that the Project did not cross any parks.

3.2 PROJECT DESIGN & ENGINEERING

3.2.1 Length & Infrastructure

The Project was authorized as 5.3 miles of 12.75-in diameter underground pipeline and one pig launcher and one pig receiver located at each truck offload station, as described in the Application and at the notice of opportunity for hearing (Docket #1, #26, Application and Addendum). The site inspection observations coincide with these parameters.

3.2.2 Right-of-Way Corridor

The Order for the Project authorized construction within a temporary 75-ft ROW, additional temporary workspace was sometimes used for bore locations, this was dependent on the landowner agreement. The permanent ROW for the Project was 25-ft. Approximately 1.4 miles of the route is co-located with existing utility corridors (Docket #1, #26, Application and Addendum). The pipeline appeared to have been constructed within these maximum widths (**Appendix A**, Photos 1-10, 12-15, 17).

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 all bending, welding, and coating in the field will comply with USDOT 49 CFR Part 195 and will also comply with the latest edition of the API Standard No. 1104 and Caliber's specifications (Docket #1, #26, Application and Addendum).

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

No as-built alignment drawings were submitted to the PSC to date. No associated GIS or CAD files (acceptable alternative to GIS) have been received. The PSC should pursue receipt of the drawings and their accuracy should be confirmed.

3.3 PRE-CONSTRUCTION

3.3.1 PSC-Required Documents

An Application for the Project was filed on 5 July 2016 (Docket #1, Application) and an addendum to the Application was filed on 7 October 2016 (Docket #26, Exhibit 1 – Application and Addendum). A Certificate of Corridor Compatibility No. 195 and Route Permit No. 206 were issued on 2 November 2016 (Docket #33, Order on Recommended Findings of Fact, Conclusions of Law, and Order), with the Order and Certification Relating to Order Provisions.

A Ten-Year Plan was filed in docket PU-16-629.

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

A pre-construction conference was held on 2 November 2016. Meeting minutes were taken, as well as a list of attendees (Docket #36, Pre-Construction Conference Notes & Notice of Intent to Begin Construction). Caliber's Land Agent Contact was listed in the meeting minutes. The minutes stated that the initial construction phase was due to begin on 7 November 2016.

3.3.3 PSC Approval of Modifications

On 12 December 2016 and 16 December 2016 Caliber filed notifications of project route adjustments (Docket #44, #45, Certification and documentation for route adjustments under NDCC and Supplement). The route adjustments were necessary under N.D.C.C. 49-22-16.3(1). The Commission acknowledged that they received Caliber's filing (Docket #46, Letter acknowledging December route adjustment notifications). The route adjustment was needed because DAPL was installed in the same ROW corridor that Caliber Bear Den Interconnect intended to construct its pipeline (Docket #41, Construction notification – off right-of-way incident and request for route variance). Route adjustments for the Project were all located inside the designated corridor in McKenzie County.

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. Agencies consulted with and permits identified as required for the Project included:

- ▲ U.S. Fish and Wildlife Service (USFWS)
- ▲ U.S. Army Corps of Engineers
- ▲ North Dakota Game and Fish Department (NDGFD)
- ▲ North Dakota Parks and Recreation-Natural Resources Management (NDPRD)
- ▲ North Dakota State Historical Preservation Office (SHPO)
- ▲ North Dakota Department of Trust Lands
- ▲ McKenzie County Utility Permit
- ▲ McKenzie County Weed Control Board
- ▲ McKenzie County Office of Emergency Management
- ▲ McKenzie County Rural Fire Department
- ▲ McKenzie County Sheriff's Office
- ▲ North Dakota Department of Health (NDDH)
- ▲ North Dakota Department of Transportation
- ▲ North Dakota State Water Commission – Water Resource Planner
- ▲ North Dakota Industrial Commission – Pipeline Program

Associated permits were filed with the PSC as required (Docket #1, #26, Application; Docket #3, Agency concurrence letters; Docket #19, Comments; Docket #42, SHPO letter-cultural site analysis; Docket #47, Comments). Consultations with the above-mentioned agencies and their approval have been documented with the PSC. Not all agencies responded or commented back (Docket #1, #26, Application and Addendum).

3.3.5 North Dakota One-Call Participation

There was no written documentation that Caliber participated in North Dakota One-Call. Pin flags were observed on site during previous inspections which would indicate buried utilities had been marked (Docket #48, Topsoil Inspection Report). 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 Caliber participated in ND One-Call as required.

3.4 CULTURAL RESOURCES

3.4.1 Cultural Site Avoidance

Class III cultural resources surveys were completed for the proposed corridor (Docket #1, #26, Application and Addendum). 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 (Docket #3, Agency concurrence letters).

The pipeline had a re-route due to another pipeline that had been recently built in the area. This re-routed section of pipeline included a potential cultural avoidance area that could potentially be impacted by construction. Caliber notified SHPO and had a third party archeological professional assess the impacts to the site. After review SHPO concluded "No significant Sites Affected" in the re-route incident area (Docket #42, SHPO letter – cultural site analysis, Docket #47, Comments).

Therefore, no historic properties were affected by pipeline construction and no mitigation plans were deemed necessary. No discoveries of cultural or historic materials 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 application states the response is still pending from the NDGFD (Docket #26, Application). Also, the US Fish and Wildlife Services (FWS) was contacted but no formal written responses have been received (Docket #1, #26, Application and Addendum).

No state parks or wildlife management areas are located within the study area. No state wild, scenic, or recreational rivers, state game refuges or game management areas, state forests or forest management lands, or state grasslands are located within the study area. No national historic districts, wildlife areas or refuges, national grasslands, or national wild, scenic, or recreational rivers are located within the study area. The Little Missouri National Grasslands are located approximately 0.87 miles to the southwest of the study area. The closest state park, Little Missouri State Park, is located 24 miles to the southeast. The closest wildlife management area (WMA), the Killdeer Mountains WMA, is located approximately 14.5 miles to the southeast. The Little Missouri Wild and Scenic River is located approximately 5.3 miles to the south of the study area, but is shielded from the viewshed by local topography (Docket #1, #26, Application and Addendum).

During the site inspection, potential wildlife habitat observed to be affected by construction of the pipeline was open grassland, which was in the process of being reclaimed with no long-term effects anticipated for typical wildlife of the area.

3.5.2 Wetlands

The Application states there were three wetland/waterbodies identified within the survey area. One wetland (WMK-001) will be crossed via open cut, and the other two identified features (WMK-002 and SMK-001) will be crossed by horizontal drilling or conventional bore techniques, which would minimize adverse impacts (Docket #1, #26, Application and Addendum). The site visit confirmed these plans; it appeared that one waterbody was bored, a wetland along a road was bored, and another wetland was open cut. Impacts to these wetlands are expected to be minimal during operation of the pipeline, and a SWPPP and spill response plan has been developed to prevent discharge of sediments or pollutants to surface water bodies (Docket #1, #26, Application and Addendum, Appendix G).

3.5.3 Reporting

Monthly construction reports were submitted and there were no other reports submitted indicating disturbance or presence of threatened or endangered species or eagles during construction or operation (Docket #49-53, #55, Caliber Bear Den Interconnect Crude Oil Pipeline progress reports).

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. Reseeding had finished in May. Seeded grasses were not growing well in most areas and were not fully established. The poor vegetation growth is most likely due to the severe to extreme drought conditions in the area at the time of the inspection (**Appendix A**, Photo 1, 2, 8, 9-17). Through previous communication with the Caliber representative, he stated the seed list was recommended by NRCS and landowners. The typical seed mix included western wheatgrass, green needlegrass, slender wheatgrass, big bluestem, sideoats grama, blue grama, prairie sandreed and oats as a cover crop. 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. A tree and shrub count was done within the area expected to be impacted by construction which stated the woody vegetation would not be affected by construction activities in the latest proposed pipeline route (Docket #1, #26, Application and Addendum). Caliber stated during the site inspection that no trees and shrubs were removed during construction, so there will be no need for tree and shrub replacement.

3.5.6 Noxious Weeds

It was stated in the Application that noxious weeds currently growing along the proposed route will be removed prior to the start of construction activities. A weed control plan has been developed in conjunction with the McKenzie County Weed Control Board (Docket #1,

#26, Application and Addendum, Appendix F). Best practices will be implemented to prevent the spread of noxious weeds. Areas of disturbed soil will be re-vegetated with a native seed mix developed in conjunction with the local landowners (Docket #1, #26, Application and Addendum). There was a patch of noxious weeds (Canada thistle) found along the pipeline ROW (**Appendix A**, Photo 7, GPS Point #524). Caliber's representative stated they are in contact with a company to spray the noxious weeds.

3.6 CONSTRUCTION, RECLAMATION & SOILS

3.6.1 Construction Management & Safety

Monthly construction reports were submitted for the duration of construction (Docket #49, 50, 51, 52, 53, 55, Caliber Bear Den Interconnect Crude Oil Pipeline progress reports). 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 indicate multiple delays in construction due to weather (Docket #49, Caliber Bear Den Interconnect Crude Oil Pipeline progress report).

3.6.2 Pipeline Depth

The pipeline must be buried to 48 inches in rangeland or cultivated land, 48 inches at the bottom of ditch for road crossings, and 72 inches across undeveloped section lines. 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 #48, Topsoil 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 straw wattles were observed at wetlands/waterbodies and along a steep hillside (**Appendix A**, Photos 1, 9, 12, 13, 14). Caliber stated that erosion control devices were installed in the spring when reclamation work began, and were not in place over the winter. BMPs had and were being used to minimize erosion and maintain drainage because there were minimal to no erosion or drainage problems observed during the site inspection.

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 during previous inspections that topsoil appeared to be replaced to the required depth and separately from subsoils (Docket #47, Topsoil Inspection Report). Wenck was on-site during the first day of topsoil removal, as required.

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. All roads within the Project area that were bored under appeared to be in good condition and properly maintained.

There was an area that has some soil subsidence, the soil subsidence was only a couple of inches deep and it was at a bore location (**Appendix A**, Photo 4). Caliber will be addressing the soil subsidence issue after harvest as agreed upon with the landowner.

3.6.6 Fencing, Repairs & Waste

Existing fences or gates that were impacted by pipeline construction appeared to be replaced or repaired as needed (**Appendix A**, Photos 4, 6). No drainage tile was impacted by the project. No waste debris was observed during the inspection.

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 by Caliber representatives and warning signs marking the pipeline route (**Appendix A**, Photos 5, 6, 9, 12, 15, 17). No reports of extraordinary events were filed to date with the PSC.

3.7.2 Maintenance

The Application states that as part of its operational activities, Caliber will conduct routine inspections of the pipeline to determine that the system is operating properly and in compliance with PHMSA regulations (Docket #1, #26, Application and Addendum). 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 4, 5, 6, 9, 17). Caliber indicated that resident/landowner concerns and issues are handled promptly and makes every reasonable attempt to alleviate problems caused by the Project. Caliber's land agent contact information can be found in the pre-construction meeting minutes (Docket #36, Pre-Construction Conference notes & notice of intent to begin construction). An emergency response plan was developed in conjunction with the McKenzie County Emergency Manager (Docket #1, #26, Application Addendum, Appendix E).

4.0 Issues to Resolve and Recommendations

4.1 PROJECT SPECIFICATIONS NEEDING WRITTEN VERIFICATION

Several components of the Project were asserted in the Application or proposed construction plans and could be verified in writing, but have not been filed with the PSC. Table 2-1 summarizes these items, which are indicated as those shaded in the “Written Verification” column, indicating no written verification was provided where applicable and necessary. Wenck does not consider any of these items to be critical for Project compliance. However, Wenck suggests they be on file with the PSC to confirm compliance and recommends the PSC request from Caliber the following list of “Necessary” items, and if the PSC deems appropriate, the list of “Potential” items could also be requested.

Necessary Items

- ▲ Provide as-built maps and associated GIS/CAD files.
- ▲ Verification that no trees or shrubs were removed during project construction.

4.2 VEGETATION ESTABLISHMENT

When the as-built construction inspection of the project was conducted, reseeding of the project had been completed a few months prior. The seeded vegetation was poorly established most likely due to the severe to extreme drought conditions in the area. A revegetation inspection contracted by the PSC is planned one year from seeding to document establishment of vegetation.

4.3 SOIL SUBSIDENCE AREA

An area of soil subsidence was noted during the inspection (Section 3.6.5; **Appendix A**, Photo 4, GPS Point #522). Caliber is planning to address this area after harvest as agreed upon with landowners. Caliber should submit photos or other form of documentation that the subsidence has been resolved once the repair is 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 that the soil subsidence area has been fixed, written documentation that no trees and shrubs were removed, and as-built design drawings. Vegetation establishment will be verified in a PSC-contracted inspection one year from the date of planting.

6.0 References

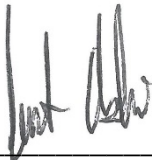
North Dakota Public Service Commission (ND PSC). 2017. Online Case Search. Available from: http://www.psc.nd.gov/database/company_case_list.php. Accessed July-August 2017.

Skaare, Jeff. 2017. Caliber Midstream. Personal Communication: discussion during site visit on 27 July 2017.

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.

Project Manager, Justin Askim, and Lead Inspector/Environmental Scientist, Sam Swanberg, prepared the report.



Justin Askim, Principal/Project Manager

8/24/2017

Date

8/24/2017

Sam Swanberg, Lead Inspector/Environmental Scientist Date

Photographs



Photo 1. (GPS Point #519) – Stream/wetland crossing along pipeline ROW. This area was bored, and had swamp mats along it during construction. Straw wattles are present on either side of the stream. Direction: Northeast.



Photo 2. (GPS Point #520) – This area was used as an access road to get to the stream. There are few grasses and some weeds growing. Weeds are typical in the first year of re-seeding. Due to the drought conditions, most of the pipeline has a lack of vegetative growth. Direction: Northeast.



Photo 3. (GPS Point #521) – Pipeline ROW through grassland. There is a berm (near center of photo) from another pipeline crossing the area. Contours were matched. Direction: Southwest.



Photo 4. (GPS Point #522) – This area had some soil subsidence a couple of inches deep and was within the pipeline ROW, near a bore location. There are also berms going through the area from other pipelines. This soil subsidence will be fixed after harvest as agreed upon with landowners. Direction: South.



Photo 5. (GPS Point #523) – The loading station is surrounded by a fence (photo taken from within the loading station). Pipeline marker is located along the crop field edge, the ROW has poor crop growth. Direction: South.



Photo 6. (GPS Point #524) – Caliber installed this fence/gate. Pipeline markers are observed near it. The wheat crop appears thin. Direction: Northwest.



Photo 7. (GPS Point #524) – Canada thistle, a noxious weed, was observed along the edge of the ROW and in the nearby field and ditch. Caliber’s representative stated they are in contact with a company to make a weed plan and spray the noxious weeds. Direction: West.



Photo 8. (GPS Point #526) – Pipeline ROW with a lot of bare ground, mostly annual weeds growing and very few grasses. Vegetation growth was poor, most likely due to drought conditions. Direction: South.



Photo 9. (GPS Point #527) – Pipeline ROW area with pipeline markers. Straw wattles were observed near the bottom and the middle of the hill. Direction: South.



Photo 10. (GPS Point #528) – Pipeline ROW with bare ground, mostly annual weeds growing and few grasses. Vegetation growth from re-seeding was poor most likely due to drought conditions. Direction: North.



Photo 11. (GPS Point #502) – Pipeline ROW typical vegetative growth in this area. Bare ground with some annual weeds (Kochia, pigeon grass) and few grasses.



Photo 12. (GPS Point #529) – View of wetland area that was double ditched. Width of pipeline disturbance was necked down to cross wetland. Straw wattles were observed. Pipeline markers are along the ROW. Direction: West.



Photo 13. (GPS Point near #529) – View of wetland area above. Area is poorly vegetated, with weeds and some non-planted species growing in from nearby area such as foxtail barley (observed to the left of photo outside of ROW). Direction: East.



Photo 14. (GPS Point near #529) – View near wetland area. Straw wattles were observed. Area is poorly vegetated, with weeds and some native plants along the lower portion of the wetland. Poor vegetation most likely due to drought conditions. Direction: East.



Photo 15. (GPS Point #530) – Pipeline ROW going through cropland, with pipeline marker in the distance. Direction: South.



Photo 16. (GPS Point #530) – Pipeline ROW, with wheat growing and some weeds. Weeds are typical in the first year of re-seeding ROW.

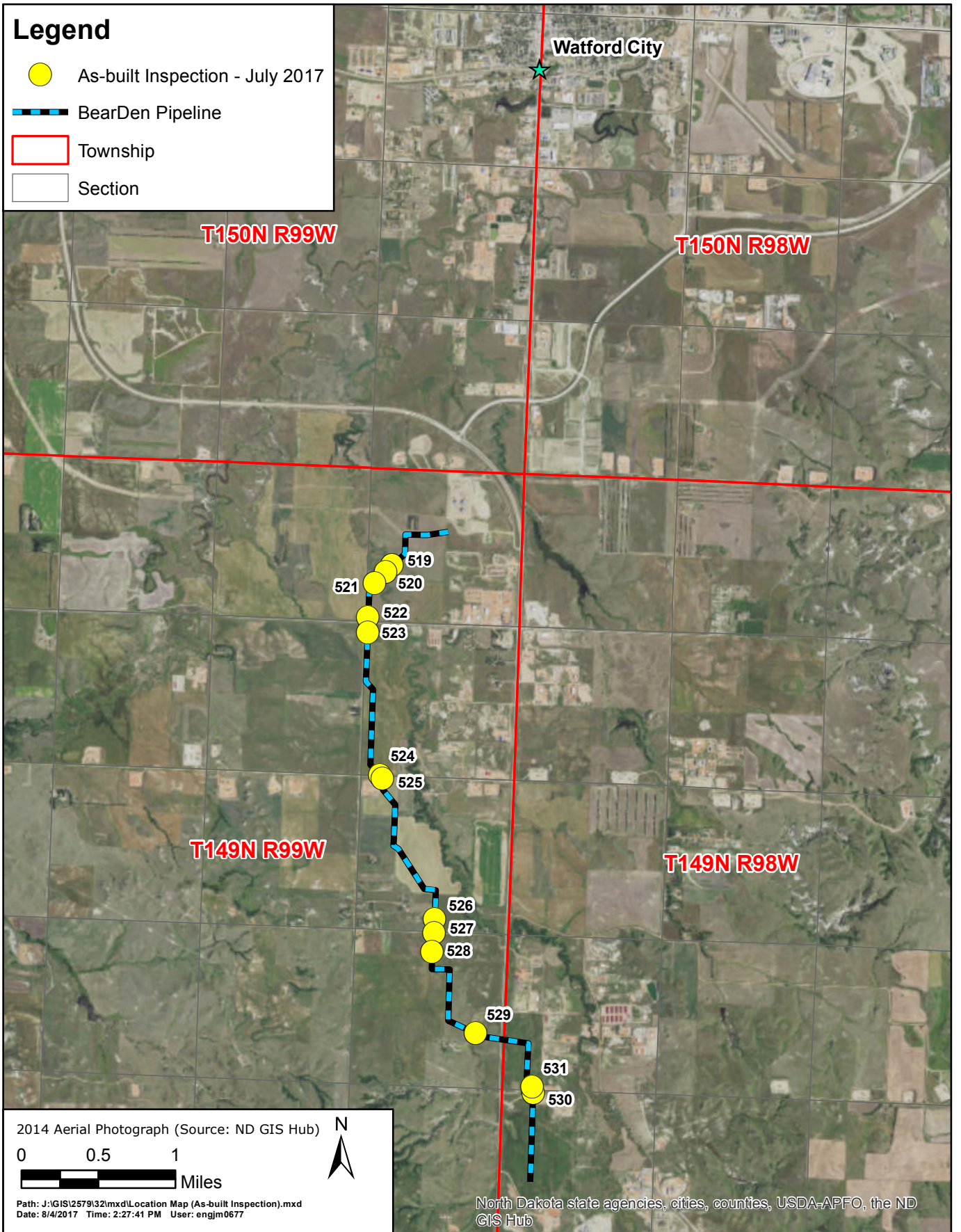


Photo 17. (GPS Point #531) – Pipeline ROW going through cropland, with good vegetative growth and few weeds. Pipeline marker observed and contours appear adequate. Direction: North-northwest.

Field Observation Points

Legend

- As-built Inspection - July 2017
- ▬ BearDen Pipeline
- ▭ Township
- ▭ Section





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