

Alexander Tank Farm Crude Oil Pipeline

McKenzie County, North Dakota (ND)
Owner: Hiland Crude Oil, Inc.



Prepared for:

North Dakota Public Service Commission PU-15-486

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1.0 Executive Summary

The North Dakota Public Service Commission (PSC) retained Ulteig Engineers, Inc. (Ulteig) to complete a final construction inspection of the Alexander Tank Farm Crude Oil Pipeline (Project) in McKenzie County, North Dakota (ND), constructed by Hiland Crude, Inc. (Hiland) address of business 302 N Independence St., Ste. 100, Enid, OK 73701

Hiland submitted a consolidated application for a Certificate of Corridor Compatibility and Route Permit ("Consolidated Application") for the conversion of an approximately 4.5-mile-long, 8-inch existing crude oil gathering pipeline to a transmission line, known as the Alexander Tank Farm Crude Oil Pipeline (the "Alexander Pipeline") located in McKenzie County, North Dakota on July 7, 2015.

Construction for the Project was reportedly completed in December 2015. However, there are signs that some construction repairs were being made in June 2016.

Ulteig reviewed all Project documents to identify those aspects that required compliance, and visually inspected the Project area on 30 June 2016.

Compliance with siting laws, siting rules and applicable Commission orders:

The Project was well-maintained and appeared to have been constructed as planned with numerous efforts to minimize impacts. However, there were several non-critical issues that may need to be resolved for the Project to be considered complete and in full compliance, including:

- 1) Vegetation establishment thru out the project. Follow-up actions taken by Hiland to address these issues should be corroborated in writing with accompanying photos but should not require a subsequent site visit.

Recommends for resolution of issues: the PSC should require the owner to take the following steps to resolve the following issues.

- 1) Reduced quality and quantity of crop growth between PI#1 and PI#8 station 0+00 thru 29+94 is an indication that top soil was not properly managed during construction. The addition of fertilizer and organics may provide the necessary improvements to the soil to improve crop conditions.
- 2) Reduced quality and quantity of crop growth between PI#10 and PI#14 station 31+82 thru 51+98 is an indication that top soil was not properly managed during construction. The addition of fertilizer and organics may provide the necessary improvements to the soil to improve crop conditions.
- 3) Several Rock of this size and smaller were observed from PI#15 to PI#17 (station 57+78 thru station 75+90) in the easement. The rocks need to be removed. There are also indications of reduced crop growth in sporadic locations within this area. The addition of fertilizer and organics may provide the necessary improvements to the soil to improve crop conditions.
- 4) Reduced quality and quantity of crop growth between stations PI#27 to PI#21 is an indication that top soil was not properly managed during construction. The addition of fertilizer and organics may provide the necessary improvements to the soil to improve crop conditions.

- 5) Reduced quality and quantity of crop growth near station #49 and between stations #41 thru #45 is an indication that the top soil was not properly removed and replaced. The addition of fertilizer and organics may provide the necessary improvements to the soil to improve crop conditions.
- 6) Reduced quality and quantity of crop growth between stations PI#53 and PI#52 is an indication that top soil was not properly managed during construction.
- 7) Station 187+91 thru 204+38: conditions show recent excavation of the subject oil pipeline. It appears that a repair or connection was made to the pipeline at this location. Rehabilitation will need to follow.
- 8) Near the quarter section line of section (25) PI# 55 to PI#56 (Station 215+62 to Station 220+83) the finished grade was not returned to the original ground elevation. This area is some .80 lower, this area needs to be returned to the same elevation and reseeded.
- 9) 1000 feet south of McKenzie County Highway 16, and some 300 feet west of 144th Ave. The surface area appears to have been stripped of vegetation in preparation of installing a pipeline. However, it appears that the pipeline excavation has not started. Inspector was unable to confirm that this surface stripping was part of the subject property.

2.0 Background and Scope

2.1 INTRODUCTION

The Public Service Commission approved Hiland's request that the Commission waive and/or reduce procedures and time schedules required by the Siting Act and Siting Rules that accompanied the Company's filing.

- A. Description of Proposed Project.** The Alexander Pipeline consists of an existing underground steel pipeline that was previously constructed and currently being utilized for gathering purposes with an interconnection to the Market Center pipeline system ("Market Center System"). Because of the interconnection with the Market Center System, and the status of the Market Center System as a gathering line at the time of planning and construction for the Alexander Pipeline, the Alexander Pipeline was initially constructed as a gathering line.
- B. Market Center System.** The Market Center System has been approved by the PSC for conversion from a gathering pipeline system to a transmission pipeline (Case No. PU-13-136). This change meant that Hiland also needed to convert the 4.5-mile-long lateral segment of the Alexander Pipeline to a transmission line because of its interconnection to the Market Center System
- C. Product.** The Alexander Pipeline will continue to transport crude oil.
- D. Size and Design.** The maximum operating pressure for the pipeline is 1,440 pounds of pressure per square inch gauge with a maximum temperature of 120 degrees Fahrenheit. The Alexander Pipeline will typically operate between 60 and 120 degrees Fahrenheit and will have a maximum design flow rate of 50,000 barrels per day. The steel pipeline used for the Alexander Pipeline meets United States Department of Transportation regulations, specifically the design criteria outlined in 49 CFR Part 195, Subpart C
- E. Operation and Maintenance.** The Alexander Pipeline was constructed, and will be operated and maintained, in accordance with 49 CFR Part 195.
- F. Location.** The total length of the Alexander Pipeline is approximately 4.5 miles located in McKenzie County, North Dakota. The Alexander Pipeline originates five miles north/northeast of Alexander, North Dakota, at a connection with Hiland's Market Center System and runs 4.5 miles to the north to Hiland's Alexander Station.
- G. Geographic Service Area.** As noted above, the Alexander Pipeline is a gathering line located in McKenzie County which interconnects with Hiland's Market Center System. To expand the Market Center System, the Alexander Pipeline is desired to be converted to a transmission line to allow for delivery of crude oil passing through the Market Center System or alternatively to allow for transport of crude oil from Alexander Station to the Market Center System. The Market Center System will transport crude oil from Williams, McKenzie, and Mountrail Counties to major markets. The immediate area served by the Alexander Pipeline will be western North Dakota; however, the crude oil will ultimately be distributed throughout the United States.

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 Ulteig Engineers, Inc. (Ulteig) to complete a construction inspection of the Project.

2.3 METHODS AND SCOPE OF INSPECTION

2.3.1 Project Compliance Items Identified

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

2.3.2 Document Review

Ulteig staff reviewed publicly-available Project documents in the PSC Online Case Search to find written verification of compliance for the Project specifications.

2.3.3 On-Site Inspector

Tom Johnson, Ulteig project inspector, visited the Project site on 30 June 2016.

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 megapixel) 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.

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. Hiland constructed the project entirely within the corridor approved for Hiland Alexander Pipeline in Case Number PU-15-486. This was confirmed during Ulteig inspections.

3.1.2 Siting Criteria

Siting criteria were analyzed in detail in the Applications for the Project (See Docket #1, in on-line case file, Ulteig confirmed during the site inspection that there were no exclusion or avoidance areas impacted by the Project. Ulteig also confirmed that impacts to selection and policy criteria were considered

3.1.3 Land & Agricultural Impacts

The Project was built as proposed within the estimated construction ROW, resulting in the conversion of 30 acres of land to industrial land use.

3.1.4 Setbacks

The Project was in a rural setting with a waiver required from one residence within 500 feet of the pipeline. The residence does not encompass more than fifty percent of the width of the corridor. A waiver was provided as Exhibit 5 at the hearing. (Docket #33,).

3.1.5 ND State-Owned or Managed Lands

Consultation with the ND Game & Fish Department (NDGF) indicated no NDGF-managed lands were within or adjacent to the pipeline corridor (Docket #1, Consolidated Application Tab 3). The ND Parks & Recreation Department (NDPR) indicated that no state parks or other lands they manage were in the vicinity of the Project (Docket #1, Consolidated Application Tab 3). Therefore, no state-owned or -managed lands were potentially impacted by the Project.

In a response dated 3 November 2014, the NDPRD indicated that the Project does not affect state park lands they manage or Land and Water Conservation Fund recreation projects they coordinate (See Exhibit 6 provided at the Hearing, Docket #34).

3.2 PROJECT DESIGN & ENGINEERING

3.2.1 Length & Infrastructure

The Project was authorized as 4.5 miles of 8in diameter underground pipeline, as described in the Application and hearing notice. Surface structures are limited to It is also includes block valves, pipeline markers, and rectifier sites. The site inspection observations coincide with these parameters (Docket #1, Consolidated Application Tab 4).

3.2.2 Right-of-Way Corridor

The Project's temporary construction ROW was 75ft. The permanent ROW for the Project is 50ft wide. The pipeline appeared to have been constructed according to these widths (Docket #1, Consolidated Application Tab 4)

3.2.3 Compliance with US DOT Regulations

There was no written verification or certification of compliance with US DOT 49 CFR Parts 192.

3.2.4 As-built Drawings and GIS Files

As-built alignment drawings were submitted to the PSC (Docket #1, Consolidation Application for certification of corridor compatibility & route permit Tab 4) as "Final As-built Alignment Sheets".

3.3 PRE-CONSTRUCTION

3.3.1 PSC-Required Documents

An Application for Waiver of Procedures and Time Schedules was received and on file with the PSC.

A Ten-Year Plan was filed in Case No. PU-14-530.

Because the pipeline was already built prior to the Company seeking approval for a transmission line, there was no Commission involvement until construction had been completed.

3.3.2 Permits and Approvals from Other Agencies

It was indicated in the Applications that consultation with federal, state, and local agencies would be required to obtain permits for the Project. Hearing Exhibit 6 identifies all the agencies that the Company notified. Below is a list of the agencies that responded and the permits identified as required for the Project:

- U.S. Fish and Wildlife Service (USFWS)
- North Dakota Game and Fish Department (NDGFD)
- North Dakota Parks and Recreation-Natural Heritage Program (NDPRD)
- North Dakota State Water Commission (NDSWC)
- North Dakota State Historical Preservation Office (SHPO)
- North Dakota Department of Health (NDDH)
- U.S. Army Corps of Engineers (USACE)
- McKenzie County Planning Department

The County permit was filed with the PSC as Hearing Exhibit 7.

3.4 CULTURAL RESOURCES

3.4.1 Cultural Site Avoidance

No historic properties were affected by pipeline construction. The ND State Historic Preservation Office (SHPO) concurred with this (See Hearing Exhibit 4).

3.5 NATURAL RESOURCES

3.5.1 Wildlife

The US Fish and Wildlife Service (USFWS) did not identify wildlife issues in the area. The North Dakota Parks and Recreation Department (NDPRD) did not identify parks and recreation issues with the project.

3.5.2 Wetlands

Wetlands, canals, streams and rivers were mapped and impacts to these water bodies were avoided to the extent practicable. During the inspection it was apparent that neither the wetlands nor the waterbodies had been impacted during construction.

3.5.3 Reporting

There were no reports filed documenting the presence of threatened or endangered species or bald or golden eagles during construction or operation to date.

3.5.4 Reclamation & Reseeding

At the time of the site inspection, the pipeline trench had been backfilled, soils had been re-contoured, and the reseeded had been completed in grassland areas (**Appendix A - Photos**).

3.5.5 Tree & Shrub Mitigation

The Company stated on page 47 of Tab 3 in its application that they bored under tree rows and therefore no trees or shrubs were removed.

3.6 CONSTRUCTION, RECLAMATION & SOILS

3.6.1 Construction Management & Safety

The application stated that the Company followed best management practices and safety procedures in the construction of the pipeline.

3.6.2 Pipeline Depth

The pipeline was installed at a minimum depth of 48 inches from the surface contour to minimize the potential for environmental damage. Ulteig could not visually confirm the depth of the pipeline.

3.6.3 Erosion & Sedimentation

The Project Applications stated BMPs would be used during and after construction to minimize soil erosion and protect surface water.

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. Ulteig observed that topsoil appeared to be replaced on the surface, to the required depth but the separation of topsoil from subsoils could not be determined.

3.6.5 Reclamation & Roads

No temporary roads had been used during construction. All roads within the Project area that were bored under appeared to be in good condition and properly maintained.

3.6.6 Fencing, Repairs & Waste

There was no evidence of damage to existing fences and gates. Therefore, no replacement or repair is needed.

3.6.7 Underground Facilities

No reports of damage to underground facilities were reported. Ulteig was unable to determine if damage to facilities occurred during construction.

3.7 OPERATION

3.7.7 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. No reports of extraordinary events were filed to date with the PSC.

3.7.8 Maintenance

There were no waste, debris, or abandoned equipment observed during the inspection. The site appeared to be regularly maintained.

3.7.9 Public Contact & Safety

Warning signs marking the location of the pipeline had been installed and were in place at all fence lines and road crossings.

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 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. Ulteig does not consider any of these items to be critical for Project compliance. However, Ulteig suggests they be on file with the PSC to confirm compliance and recommends the PSC request from Hiland the following list of "Necessary" items, and if the PSC deems appropriate, the list of "Potential" items could also be requested.

Potential Items

Written documentation that Hiland's existing Emergency Action Plan was included in the Project file folder.

4.2 REVEGETATION & CROP PRODUCTION

When the post construction inspection of the project was conducted reseeding of the project had just been completed. Ulteig recommends the PSC request monitoring and documentation to ensure the vegetation is established throughout the project.

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 may need to be resolved before the Project is considered complete and in full compliance. This includes: documentation of satisfactory vegetation establishment throughout the Project, provide written documentation that Hiland's existing Emergency Action Plan will include the Project,. None of these are critical issues, but the PSC should determine which are necessary for the company to comply with and then notify the company what actions are required on their part.

6.0 References

North Dakota Public Service Commission (ND PSC). 2015. Online Case Search. Available from: http://www.psc.nd.gov/database/company_case_list.php. Accessed July 2016-October 2016.

7.0 Signatures

The services performed by Ulteig 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 Principal, Steve Windish, P.E.; and Senior Project Engineer, Robert J. Youness, P.E.

Robert J. Youness, Project Engineer

Date

Table 2-1

Project Specifications with Written or Site Verification Information

Photographs



Station 0+00 (South End)



Station 3+00

Station 5+50



Station 1+00

Station 4+50

Station 6+00





Station 8+00



Station 15+96



Station 17+86



Station 26+99



Station 31+82



Station 51+48



Station 57+71



Station 65+12 Looking South



Station 65+12 Looking North



Station 70+99



Station 96+25 thru Station 114+52



Station 123+95



Station 143+18



Station 179+95



Station 187+91



Station 204+38



Station 187+91 thru 208+04



Station 204+38



Station 187+91 thru 208+04



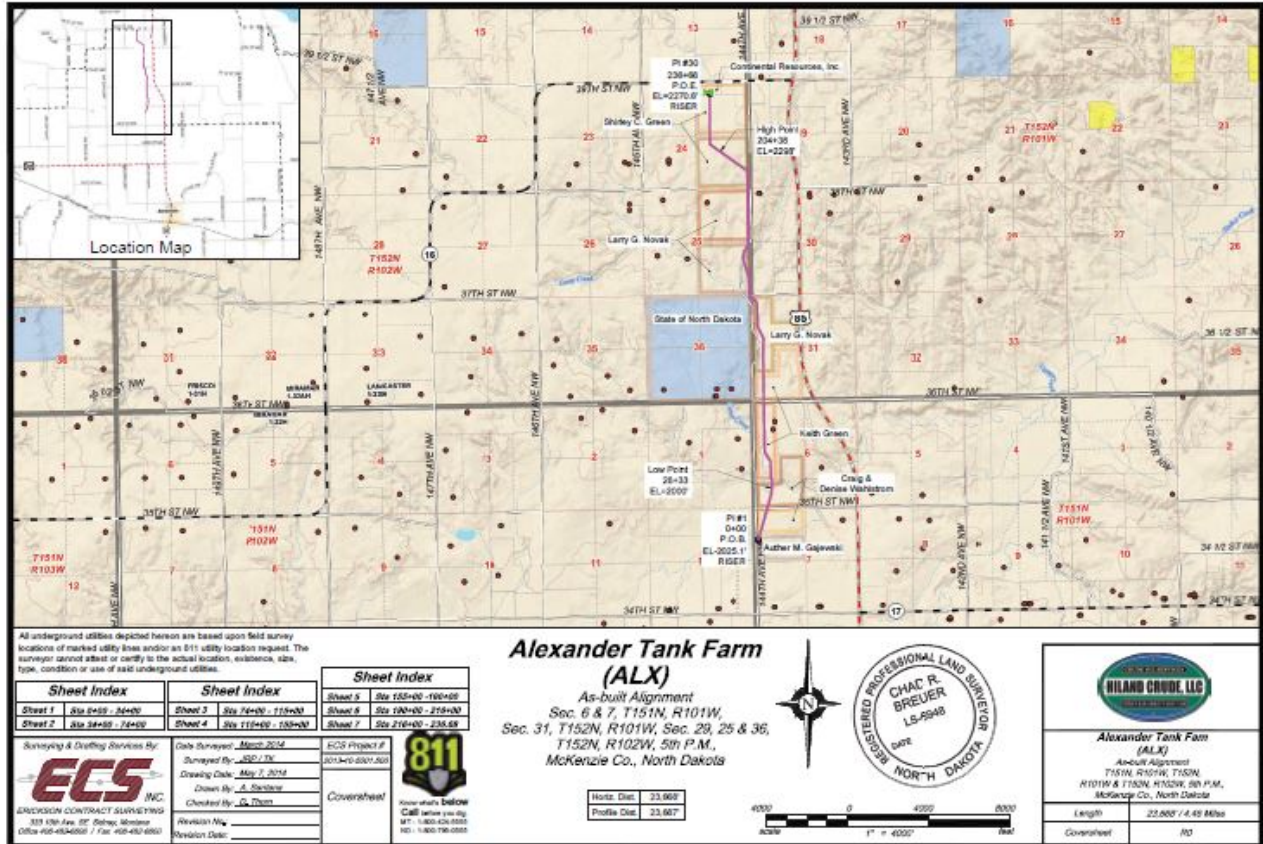
Station 204+38



Station 208+04

"Location Maps are shown in Appendix C"

Pipeline Map North



South

Pipe Line Station Plans

Insert 11X17 sheets