ND PSC Case No. PU-12-190

6-Inch Natural Gas Residue Pipeline
Certificate of Corridor Compatibility Application

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INTRODUCTION

Hiland Operating, LLC (Hiland Operating), submits this Certificate of Corridor Compatibility Application to the North Dakota Public Service Commission (Commission) for an approximately 6.5-mile-long, 6-inch natural gas residue pipeline project located in Burke and Divide Counties, North Dakota (the Project). The Project is located approximately 8.5 miles northwest of Powers Lake, North Dakota and transports pipeline quality natural gas from Hiland Operating's Norse natural gas processing plant (Norse Plant) near Powers Lake, North Dakota to a point of interconnection with a Williston Basin Interstate Pipeline Company (WBI) transmission.

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

SECTION A DESCRIPTION OF PROPOSED FACILITY

A.1 DESCRIBE THE TYPE OF TRANSMISSION FACILITY ADDRESSED IN THIS APPLICATION. THE DESCRIPTION SHALL INCLUDE THE PURPOSE OF THE FACILITY AND THE TECHNOLOGY TO BE EMPLOYED

The Project consists of an underground line that transports pipeline quality natural gas. The line utilizes 6-inch steel pipeline. The 6.5-mile-long pipeline originates at the Norse Plant eight miles north and twelve miles west of Powers Lake, North Dakota, and terminates at an interconnect to WBI's transmission pipeline at the Hiland Operating-WBI Tap Site, approximately 8.5 miles northwest of Powers Lake, North Dakota. The Project is located in Burke and Divide Counties, North Dakota. Figure 1.A.1 shows the general location of the Project.

Surface facilities installed as part of the Project are limited to pipeline markers, rectifiers, a "pig" launcher/receiver and block valves. Some small fenced-in enclosures to house associated power and control systems are installed to allow valves to be operated remotely.

The Project enables the transportation of natural gas produced in northwestern North Dakota to local markets via WBI's Transmission System. The Project provides the needed capacity to transport increased production of processed natural gas from the Bakken and Three Forks formations.

The cost of the Project was $1.5 million.

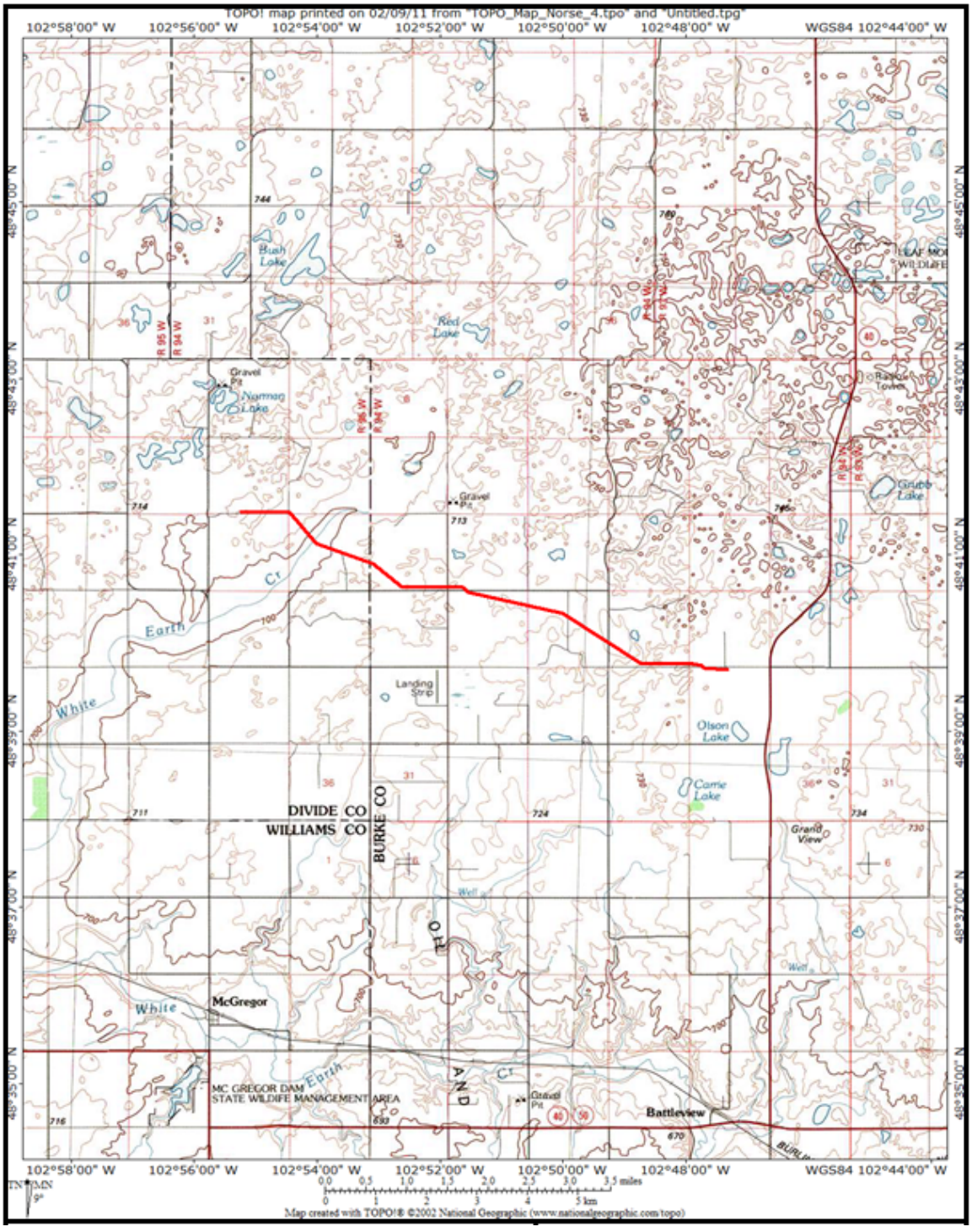

FIGURE 1.A.1 – General Project Location Map

A.2 DESCRIBE THE TYPE, SOURCE AND FINAL DESTINATION OF THE PRODUCT TO BE TRANSMITTED BY THE PROPOSED FACILITY

Hiland Operating's Norse Plant has a 25 million standard cubic feet per day capacity to purify and fractionate raw natural gas produced from oil fields in western North Dakota. The Norse Plant delivers pipeline-quality natural gas that can be used as fuel by residential, commercial and industrial consumers. As noted above, the Project enables transportation of natural gas via pipeline from the Norse Plant to a WBI transmission system sales point where it is delivered for in-state and possibly out-of-state sale.

A.3 PROVIDE A DESCRIPTION OF THE SIZE AND DESIGN OF THE PIPEINE FACILITY

A.3 (a) Width of the Right of Way

The Project right-of-way (ROW) was generally 125 feet wide to allow adequate room for topsoil separation, work equipment and pipe stringing. This ROW consists of both a permanent easement and temporary workspace, which was utilized only during construction and included material staging areas and temporary access roads. The ROW width was required to provide areas for prefabrication of a section of pipeline and storage of topsoil/subsoil material. To support construction activities, Hiland Operating temporarily used property at the Norse Plant as a contractor staging and pipe storage area. Hiland Operating used existing public roads to access the ROW, and did not modify roads or construct new permanent access roads.

Hiland Operating has acquired a 125-foot permanent easement for the Project, as well as for possible future liquid pipeline(s) installation. The permanent easement width was selected based on the following criteria:

- Provision of adequate space and line separation for future line maintenance; and
- Allowance of adequate space to facilitate construction of additional lines, while minimizing potential damage to the existing line(s), if additional lines are installed in the future.

A.3 (b) Estimated Distances Between Surface Structures

The Project's pipeline is buried underground. Unlike power transmission lines with towers, only a few surface structures are associated with an underground pipeline system. In this case, the gas compressors are located at the natural gas plant, along with an associated pipeline "pig" launcher, block valves and pressure and flow controllers. A "pig" trap and isolation valves are installed at each of the Project's points of interconnection.

With the exception of pipeline markers, main line valve settings, and rectifiers and test stations associated with the cathodic protection systems, no surface structures were installed between the start and the end of the pipeline.

Estimated distances between surface structures along the route is 6.5 miles.

A.3 (c) Pipe Size

The Project involved the installation of 6-inch nominal diameter pipeline with a nominal wall thickness of 0.188 inches denoted as American Petroleum Institute (API) Code 5LX specification X52/X42 pipeline pipe. The maximum allowable operating pressure (MAOP) is

1200 pounds of pressure per square inch gauge (psig). The maximum temperature of the gas is 120°F which is within design parameters. However, the Project will typically operate between 60°F to 120°F.

The valves are 6-inch ANSI 300, flange end by flange end, full port, rising stem gate valves. These valves were manufactured in accordance with American Petroleum Institute (API) Standard 6D "API Specification for Steel, Gate, Plug, Ball and Check Valves for Pipeline Service." The MAOP of the valves is 1440 psig.

The steel pipeline utilized for the Project meets United States Department of Transportation (US DOT) regulations, specifically the design criteria outlined in 49 CFR Subpart 195.(C). The Project was constructed per 49 CFR Subpart 195(D), and will be operated and maintained per 49 CFR Subpart 195(F).

A.3 (d) Approximate Length of Facility

The Project required the installation of approximately 6.5 miles of pipe.

A.3 (e) Maximum Design Operating Pressure and Temperature

The Maximum Allowable Operating Pressure (MAOP) of the pipe is 1200 psig. The maximum temperature of the gas is 120°F which is within design parameters. However, the Project will typically operate at 1000 psig and between 60°F to 120°F.

A.3 (f) Maximum Design Flow Rate

The pipeline has a maximum capacity of 20 million standard cubic feet per stream day with a typical operating flow of volume of 10 to 20 million standard cubic feet per day.

A.3 (g) The Number and General Location of Compressor Stations

The only compressor units associated with the Project are installed at the Norse Plant, located on the west end of the Project.

A.4 TIME SCHEDULE

Hiland Operating proposes to develop the Project on the following time schedule:

A.4 (a) Certificate of Corridor Compatibility

The Certificate of Corridor Compatibility Application is being submitted in January 2013 as part of this consolidated Certificate of Corridor Compatibility and Route Permit Application.

A.4 (b) Route Application

The Route Permit Application is being submitted in January 2013 as part of this consolidated Certificate of Corridor Compatibility and Route Permit Application.

A.4 (c) ROW Acquisition Date

ROW acquisition was completed in November 2008.

A.4 (d) Issuance of Certificate of Corridor Compatibility and Route Permit

A Certificate of Corridor Compatibility and a Route Permit for the Project are expected to be issued on or before January 31, 2013.

A.4 (e) Construction Start Date

Project construction began in November 2008.

A.4 (f) Construction Complete

Project construction was completed in March 2009.

A.4 (g) Test Operations

Test operations were performed in March 2009.

A.4 (h) In-Service Date

The in-service date for the Project was March 2009.

SECTION B STUDIES

Section 69-06-04-02(1)(b) of the North Dakota Administrative Code requires that a corridor's width be at least ten percent of the length of the proposed Project (i.e., 0.66 miles), but not less than one mile or greater than six miles wide unless approved by the Commission. A mile wide field corridor was studied.

Studies were undertaken to evaluate the Project's potential impacts to recreational, environmental and cultural resources. Specific study findings for the proposed corridor are discussed in detail in the Route Application (see Tab 3) and associated exhibits (see Tab 4). Significant features are depicted in Tab 4 on Figures 4.A.1a to 4.A.5a which are overlaid on an aerial photograph taken in 2010. The route is also presented superimposed on a USGS Topographic map as Figures 4.A.1b to Figure 4.A.5b in Tab 4. This information is also presented as shapefiles on the enclosed CD-ROM disk in Tab 7 suitable for viewing with ESRI's ArcGIS mapping software.

Hiland Operating engaged Keitu Engineers & Consultants, Inc. and Beaver Creek Archaeology, Inc. to perform the cultural resource siting studies for the Project.

Beaver Creek Archaeology, Inc. performed an archeological file search in June 2011 using a 2-survey, twice the construction ROW width, was performed in June 2011 on the entire 6.5 miles of the pipeline route.

Keitu Engineers & Consultants, Inc. conducted a database search using a 1-mile wide study corridor for all remaining items outlined as either exclusion or avoidance areas in the North Dakota Administrative Code along the pipeline route. Items reviewed included federal and state parks, protected and sensitive plant and animals as well as civil and social structures such as recreational areas and rural homes and farmsteads. In May 2011 a field study using a 1-mile wide study corridor was performed on the pipeline route.

SECTION C NEED FOR FACILITY

C.1 DESCRIBE THE NEED FOR THE FACILITY BASED ON CURRENT AND PROJECTED DEMAND FOR THE PRODUCT TRANSMITTED BY THE FACILITY, INCLUDING THE MOST RECENT SYSTEM STUDIES SUPPORTING THE ANALYSIS OF THE NEED

C.1 (a) Planned Use and Purpose

Raw natural gas produced at the well sites contains varying levels of sulfur compounds and other contaminates (including water) as well as varying heat content. This raw gas must either be flared or processed to meet standardized specifications prior to sale.

The Norse Plant produces pipeline grade natural gas, liquefied petroleum gas (LPG) (i.e., a propane and butane mixture), and natural gasoline liquid. The pipeline grade natural gas consists of primarily methane with some ethane and trace amounts of heavier petroleum compounds. The Project connects the Norse Plant to sale points via the existing WBI Transmission System.

C.1 (b) Statement Concerning Deviations from Most Recent 10-year Plan

Hiland Operating's Ten-Year Plan for 2012-2022 was filed with the Commission on June 28, 2012. The Project is consistent with that plan.

C.1 (c) Recent System Studies Supporting the Analysis of the Need

A copy of the Executive Summary of "The Williston Basin: Greasing the Gears for Growth in North Dakota" prepared by Bentek Energy, LLC under contract from the ND Pipeline Authority is presented in Tab 2 as Appendix 2.A. The 129-page report released July 25, 2012 predicts natural gas production could quintuple to some 3 billion cubic feet by 2025 in the Williston Basin, which includes the Dakotas and Montana.[1] The ND Industrial Commission requested the $120,000 study in March 2012 to forecast the state's future natural gas production potential.

Three key slides from the September 20, 2012 presentation of North Dakota Pipeline Authority Director Justin Kringstad to the ND Petroleum Council is presented in Tab 2 as Appendix 2.B. The slides outline the key findings from the July 2012 Bentek study. In both 2009 at the start of operation of the Norse Plant and in today's operating environment as depicted in the August 2012 production numbers, a significant gap remains between natural gas production and natural gas process capacity in the state. The 2012 data for open capacity at all the current operating gas plants is also presented. The demand for additional natural gas processing capacity is apparent from the data presented.

The state produced a record 155 billion cubic feet of natural gas in 2011, up from 37.1% from the year before.[2] At the end of August 2012, per the latest North Dakota Industrial Commission statistics, 33.3% of natural gas produced in North Dakota was flared as an unmarketable byproduct of oil production. [2]

[1] Bentek Energy, LLC. "The Williston Basin: Greasing the Gears for Growth in North Dakota;" July 25, 2012, page 4.
[2] NDIC. "North Dakota Monthly Gas Production and Sales."Available at: https://www.dmr.nd.gov/oilgas/stats/Gas1990ToPresent.pdf (accessed October 6, 2012).

C.2 ALTERNATIVES TO THE PROPOSED FACILITY

While it is generally accepted that pipeline transportation is the only practical alternative for transporting natural gas to and from a processing plant, Hiland Operating did consider and dismiss one alternative destination and an alternative pipe design/size. The route used for the pipeline route does represent the most direct route to the nearest transmission pipeline, with minor adjustments to accommodate efficient land use and landowner requests.

C.2 (a) Alternative Destination – Routing to Prairie Rose Pipeline

Pecan Pipeline (North Dakota), Inc., began operation of the Prairie Rose Pipeline in February 2010, which transports under-processed natural gas from its origin in Mountrail County to the Alliance Pipeline near Bantry, North Dakota. Selecting the Prairie Rose Pipeline as an interconnection point was dismissed for two reasons: (1) the full value of the processed natural gas produced at the Hiland Operating Plant would not be monetized by delivery into a “rich gas” system; and (2) the pipeline length would need to be expanded to over 70 miles in length with proportional increases in installation costs.

C.2 (b) Alternative Pipeline Design/Size

Alternatives were examined with respect to the size of the pipeline, but the 6-inch line is best suited to match the capacity of the Hiland Operating Plant and is the most economically suited to meet the shipping requirements of the Northern Border and WBI transmission pipelines.

SECTION D LOCATION

D.1 STUDY AREA

The Project area is located approximately 29 miles northwest of Stanley, 22 miles southeast of Crosby, 32 miles west of Kenmare and 18 miles north of Tioga in unincorporated rural Burke and Divide Counties, North Dakota.

D.2 MAP OF PROPOSED CORRIDOR

Since a consolidated application for a Certificate of Corridor Compatibility and a Route Permit is being submitted, maps (including U.S.G.S. Quad and Aerial Maps) of the proposed corridor and route for the Project can be found in Appendix 4.B of the Route Application (see Tab 4). The location of Exclusion and Avoidance Areas, as defined in Section 69-06-08-02 of the North Dakota Administrative Code, within the corridor are also depicted on the maps provided.

D.3 RELATIVE VALUE OF EACH OF THE CRITERIA

Since this application is part of a consolidated application for a Certificate of Corridor Compatibility and a Route Permit, these matters are discussed in Sections B.4, B.5 and B.6 of the Route Permit portion of the application (see Tab 3).

D.4 CRITERIA TO BE EVALUATED

Since this application is part of a consolidated application for a Certificate of Corridor Compatibility and Route Permit, the relative value of each of the criteria considered is discussed in Sections B.4, B.5 and B.6 of the Route Permit portion of the application (see Tab 3).

D.5 GENERAL MITIGATIVE MEASURES TO BE TAKEN

Since this application is part of a consolidated application for a Certificate of Corridor Compatibility and a Route Permit, the mitigative measures that Hiland Operating proposes to take with respect to the Project are discussed in Sections B.4, B.5 and B.6 of the Route Permit application (see Tab 3).

D.6 QUALIFICATIONS OF PERSONS CONTRIBUTING TO THE STUDY

The qualifications of the personnel who contributed to the corridor location study are:

(1) Kent Christopherson, Vice President/Chief Operations Officer - Hiland Operating, LP

Degrees: B.S. in Mining Engineering & Geology
South Dakota School of Mines and Technology
Masters of Business Administration
Nova Southeastern University

Qualifications: Certified Maintenance & Reliability Professional by the Society of Maintenance & Reliability Professionals

Experience: 33 years in petroleum transportation field

(2) Michael Higgins, Director Project Management – Hiland Operating, LLC

Degree: Bachelor of Business Administration, Kennedy Western University

Experience: 18 years experience in petroleum transportation field

(3) Kathleen Spilman, Managing Director – Keitu Engineers & Consultants, Inc.

Degrees: Bachelor of Science - Chemical Engineering, University of North Dakota
Masters in Management, University of Mary

Experience: 32 years experience in petroleum refining and fuels transportation field as well as regulatory affairs and compliance.

Professional License
Registered Professional Engineer: North Dakota, South Dakota, Montana

D.7 MAPS

D.7 (a) Map of Criteria Within Study Area

Since a consolidated application for a Certificate of Corridor Compatibility and a Route Permit is being submitted, the maps (including U.S.G.S. Quad and Aerial Maps) of the proposed corridor and route of the Project can be found in Appendix B of the Route Permit portion of the application (see Tab 4). The location of Exclusion and Avoidance Areas, as defined in Section 69-06-08-02 of the North Dakota Administrative Code, within the corridor are also depicted on the maps provided.

D.7 (b) Mylar Maps of Study Area

Use of Mylar® maps for recording and transmitting survey information has been replaced by geographic information systems (GIS) data management technology. A waiver request from this requirement is submitted in conjunction with this Consolidated Application.

The GIS software in current use by the Commission staff is ESRI's ArcGIS and companion software packages. A CD-ROM containing electronic copies of ArcGIS shapefiles outlining the proposed corridor has been included with this application in lieu of providing Mylar® map documentation and can be found in Tab 7.