

VANTAGE WEST SPUR LATERAL PIPELINE PROJECT  
NORTH DAKOTA PSC APPLICATION  
Addendum No. 2 – July 2015  
Docket No. PU-15-142



**VANTAGE WEST SPUR LATERAL PIPELINE**  
**TABLE OF CONTENTS**

<b>Exhibit N</b>	<b>Vantage Pipelines US LP 10-Year Plan</b>
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**VANTAGE PIPELINES US LP, TEN YEAR PLAN**

for

**VANTAGE WEST SPUR LATERAL PIPELINE and VANTAGE PIPELINE  
NORTH DAKOTA**

The following ten year plan was written pursuant to the North Dakota Energy Conversion and Transmission Facility Siting Act, Chapter 49-22, Section 49-22-04 (Ten-year plans contents). Vantage Pipeline US LP (owned/operated by Pembina Pipeline Corporation) submits the following Ten Year Plan for years 2015-2025.

**Section 1. Description of the general location, size, and type of all facilities to be owned or operated by the utility during the ensuing ten years, as well as those facilities to be removed from service during the ten-year period.**

Vantage Pipeline US LP (Vantage) operates the following pipelines in North Dakota.

1. Vantage Pipeline (PU-11-109) Vantage Pipeline US LP (Vantage) constructed and operates approximately 430 miles of high vapor pressure (HVP) steel pipeline and two pump stations to transport ethane from a natural gas processing plant near Tioga, North Dakota to an existing pipeline system near Empress, Alberta, which currently transports ethane to the Alberta petrochemical industry. The Vantage Pipeline is approximately 79.8 miles of 10-inch diameter pipeline in North Dakota, approximately 350 miles in Saskatchewan, Canada, and approximately 2 miles in Alberta, Canada. One pump station would be located at the midpoint of the pipeline near Assiniboia, Saskatchewan. The second pump station would be located at the terminus near Empress, Alberta. The 79.8 miles pipeline alignment in North Dakota is from Tioga, ND to the Canadian border northwest of Fortuna, ND within Divide and Williams Counties (Figure 1). The Vantage Pipeline supplies ethane from natural gas facilities in the Williston Basin to meet the market demand created by the petrochemical industry in Alberta, Canada. The Vantage Pipeline was placed into service in June 2014, and the capacity of the pipeline is from 40,000 to 60,000 barrels per day.
2. Vantage West Spur Lateral Pipeline (PU-15-142): Vantage is currently proposing to construct and operate approximately 46.7 miles of new, high vapor pressure steel pipeline from a natural gas processing plant near Williston, North Dakota to the existing Vantage Pipeline system near Stady, North Dakota, which currently transports ethane to the Alberta petrochemical industry. The proposed Vantage West Spur Lateral Pipeline (West Spur) would include the construction of approximately 46.7 miles of new 8-inch diameter pipeline in Divide and Williams Counties of North Dakota (Figure 1). Vantage has entered into a long-term agreement with NOVA Chemicals Corporation (NOVA) to transport ethane from Stateline II Plant to NOVA's Joffre Petrochemical Complex in Alberta. The Vantage West Spur Lateral Pipeline would provide ethane to this system. The expected construction start date, upon receipt of appropriate approvals, is in the third quarter of 2015 and will extend into the second quarter of 2016. Vantage estimates the in-service date to be in the first or second quarter of 2016.

Vantage does not anticipate retiring any of these facilities in the next ten years.

**Section 2. An identification of the location of the tentative preferred site for all energy conversion facilities and the tentative location of all transmission facilities on which construction is intended to be commenced within the ensuing five years and such other information as may be required by the commission. The site and corridor identification shall be made in compliance with the criteria published by the commission pursuant to section 49-22-05.1.**

No specific or tentative energy conversion facilities are planned for the next 5 years. Should this change, an updated 10-year plan will be developed to cover any further facilities.

The Vantage West Spur Lateral Pipeline transmission facility expected construction start date, upon receipt of appropriate approvals, the third quarter of 2015 and will extend into the second quarter of 2016. Vantage estimates the in-service date to be in the second quarter of 2016. Vantage evaluated a study area to determine the best location for the placement of the corridor and route in order to minimize any potential land use and environmental impacts, maximize public benefits, and take into consideration design and construction limitations and economics. The selected location of the route within the corridor was made in compliance with Chapter 49-22-05.1, as discussed in the Application for a Certificate of Corridor Compatibility and Route Permit.

Vantage has no specific or tentative plans for additional transmission facilities planned for the next 5 years. However, given the production activity in the service area of western North Dakota and the demand for ethane transportation by pipeline, new pipeline projects by Vantage or Pembina Pipeline are possible.

**Section 3. A description of the efforts by the utility to coordinate the plan with other utilities so as to provide a coordinated regional plan for meeting the utility needs of the region.**

Vantage is not attempting to coordinate plans with other utilities serving the area at this time. Vantage does not know of other pipelines carrying ethane in the region where a coordination agreement could be undertaken. Pipelines can compete for the same business which may restrict the ability to coordinate. In the future, additional receipt points to the Vantage Pipeline system may be developed. In this case, Vantage Pipeline will work with the owners of other ethane pipelines to develop interconnects to maximize the efficient use of collective pipeline capacity in the area.

**Section 4. A description of the efforts to involve environmental protection and land-use planning agencies in the planning process, as well as other efforts to identify and minimize environmental problems at the earliest possible stage in the planning process.**

Vantage has completed environmental consultation and an environmental protection plan for their pipeline projects. In addition, the Vantage Pipeline completed an Environmental Assessment. Vantage has consulted with federal, state, and local governments as detailed in the Vantage West Spur Lateral Certificates of Corridor Compatibility Section B and Exhibit H.

Class I and Class III Cultural Resources Inventories were completed to ensure that no historic properties and no significant sites would be affected.

See attached Pembina Environmental Policy.

**Section 5. A statement of the projected demand for the service rendered by the utility for the ensuing ten years and the underlying assumptions for the projection, with that information being as geographically specific as possible, and a description of the manner and extent to which the utility will meet the projected demands.**

Petrochemical consumption in Alberta is the primary driver of ethane demand in Western Canada. Virtually all of the ethane produced in Western Canada is consumed by the Alberta petrochemical industry. There are two large ethylene production complexes, one operated by Dow Chemical Canada LLC (Dow) in Fort Saskatchewan, and the other operated by NOVA in Joffre. There was a significant increase in ethane demand with the expansion of the Dow facility in 1999 and the NOVA facility in 2000. Ethane demand in Canada is expected to reach a new high in 2015 of 325,000 bpd as conventional production of ethane in Western Canada declines. This produces a deficit of approximately 75,000 bpd of ethane to Canadian processing facilities. Imports from the Marcellus shale and Bakken formations in the U.S. are expected to supply the deficit ethane over the next 20 years.

Oil production in the Bakken field reached 1.2 million barrels per day (bpd) in January 2015. An estimated 1.5 billion cubic feet of natural gas was produced with this oil. Despite low oil prices in early 2015, production is expected to increase in the Bakken. The Vantage Pipeline system would help transport ethane from a natural gas plants in Williston and Tioga, ND to processing facilities in Alberta.

Historically, natural gas was flared in the Bakken largely due to a lack of infrastructure to harness and transport the gas. The North Dakota Industrial Commission passed flaring goals in July of 2014. This requires operators to capture 77 percent of the natural gas produced as of January 2015, 85 percent by January 2016, and 90 percent by October 2020 or reduce overall production.

The Williston Basin has seen rapid production increases in recent years due largely to high oil prices and technological improvements, such as horizontal drilling and multistage fracturing. The Bakken geological formation has been the most significant target of Williston Basin exploration activity, although producers are now also looking at the Three Forks formation for production. Associated gas production has increased coincident with the oil production, and this associated gas has high ethane content (typically in excess of 20 percent ethane). Virtually all of the ethane produced with natural gas is currently left in the gas stream.

In 2007, oil production in North Dakota was less than 200,000 bpd, compared to the 1.2 million bpd in 2015. North Dakota natural gas production followed a similar trend with less than 200 million cubic feet per day (mmcf) in 2007 to over 1,500 mmcf in 2015. The recovery and sale of specification ethane provides an additional source of revenue to Bakken producers. For example, the Vantage Pipeline supplied 11,507 mmcf ethane to Alberta from June 2014 to October 2014. The Vantage West Spur Pipeline expansion will increase the Vantage mainline capacity from 40,000 bpd to approximately 66,000 bpd.

**Section 6. Any other relevant information as may be requested by the commission.**

No additional relevant information has been requested at this time. If additional information is needed in the future, Vantage will promptly supply the needed materials.

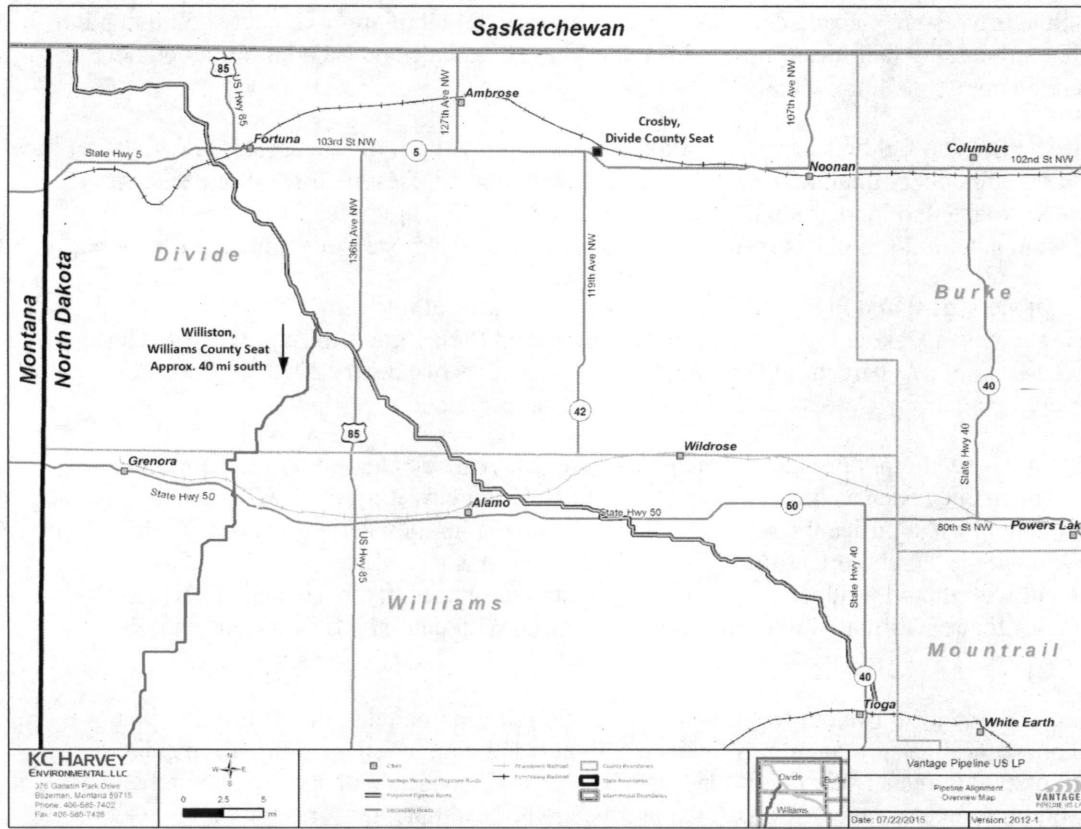


Figure 1. Location of the Vantage Pipeline holdings in Divide and Williams Counties, North Dakota.

# HEALTH, SAFETY & ENVIRONMENT POLICY



Pembina Pipeline Corporation (the "Corporation") together with its affiliated entities (collectively "Pembina") are committed to protecting the health and safety of workers, the public and safeguarding the environment affected by Pembina's activities. These areas are of paramount importance to management, employees and contractors at the Corporation. Pembina believes that excellence in health, safety and environmental practices is essential to the well being of the Corporation. To achieve this Pembina will endeavor to:

- Identify risks to health, safety and the environment, and establish appropriate programs and procedures to reduce these risks to an acceptable level.
- Develop and maintain standards of performance, which meet or exceed legal, regulatory requirements and industry standards, and provide the training necessary for employees and contractors to understand and meet these standards.
- Ensure that our employees and contractors conduct their activities safely and responsibly in accordance with Pembina standards.
- Hold all levels of management accountable for providing leadership, visible commitment, direction and resources to meet our health, safety and environmental goals.
- Maintain regular monitoring and reporting on health, safety and environmental performance to ensure timely improvement in operating practices.
- Promote and maintain communications with the public affected by our operations so we can address their concerns.
- Develop and maintain emergency response plans appropriate for our operations and test their effectiveness on a regular basis.
- Emphasize reducing, reusing, recovering and recycling materials used in our day to day operations.
- Favour the selection of industrial and business partners on the basis of their ability to comply with this Policy.

Pembina takes this commitment to health, safety and environment seriously, and employees and contractors are expected to live up to this commitment.

The HSE Manual, emergency response plans, ongoing training, and other tools have been implemented to assist you in meeting Pembina's expectations. Employees and contractors are expected to familiarize themselves with these resources and use them to assist them in fulfilling your job responsibilities.

M.H. Dilger  
President and Chief Executive  
Officer

D. Sulkers  
Vice President, Corporate  
Services

A. Charlesworth  
Vice President, Technical  
Services

J. Sprott  
Vice President, Gas  
Services

R.M. Jones  
Vice President, Midstream

P.J. Murphy  
Senior Vice President,  
Pipeline & Crude Oil Facilities

S.V. Taylor  
Senior Vice President, NGL  
& Natural Gas Facilities

B. Smith  
Vice President,  
Operating Services

A. Gruzsecki  
Vice President, Oil Sands &  
Heavy Oil

B. Lock  
Vice President, NGL

J. Wiun  
Vice President,  
Conventional Pipelines

**Notice of Filing**

As required by Chapter 69-06-02 of the North Dakota Administrative Code, ten copies have been filed with the NDPSC at:

North Dakota Public Service Commission  
600 E. Boulevard Avenue, Dept. 408  
Bismarck, ND 58505

In addition, one copy each has been filed with the following County auditors:

Gayle Jastrzebski  
DIVIDE COUNTY AUDITOR  
P0 Box 68  
Crosby, ND 58730

Beth M. Innis  
WILLIAMS COUNTY AUDITOR  
P0 Box 2047  
Williston, ND 58802

In accordance with Chapter 69-06-01-05 of the North Dakota Administrative Code, notice of filing has also been mailed, directed to the persons to be served at their last known post office address, to the following designated state agencies and offices entitled to notice when so referred to in this article:

Kyle Wanner, Director  
NORTH DAKOTA STATE AERONAUTICS COMMISSION  
Box 5020  
Bismarck, ND 58502

Wayne Stenehjem, Attorney General  
OFFICE OF THE ATTORNEY GENERAL  
600 E. Boulevard Ave., Dept. 125  
Bismarck, ND 58505-0040

Doug Goehring, Agriculture Commissioner  
DEPARTMENT OF AGRICULTURE  
600 E. Boulevard, Dept. 602  
Bismarck, ND 58505-0020

Terry L. Dwelle, M.D., State Health Officer  
ND DEPARTMENT OF HEALTH  
600 E. Boulevard Avenue  
Bismarck, ND 58505-0200

Maggie Anderson, Executive Director  
DEPARTMENT OF HUMAN SERVICES  
600 E. Boulevard Avenue, Dept. 325  
Bismarck, ND 58505-0250

Bonnie Storbakken, Commissioner  
ND DEPT. OF LABOR DEPARTMENT AND HUMAN RIGHTS  
600 E. Boulevard, Dept. 406  
Bismarck, ND 58505-0340

Wayne Kutzer, Director  
ND DEPARTMENT OF CAREER AND TECHNICAL EDUCATION  
600 E. Boulevard Ave. Dept. 270  
Bismarck, ND 58505-0610

Al Anderson, Commissioner  
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1600 East Century Avenue, Suite 2  
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Bismarck, ND 58506-5523

Terry Steinwand, Director  
GAME AND FISH DEPARTMENT  
100 North Bismarck Expressway  
Bismarck, ND 58501-5095

Edward Murphy, State Geologist  
NORTH DAKOTA INDUSTRIAL COMMISSION  
1016 E. Calgary Avenue  
Bismarck, ND 58503

Honorable Jack Dalrymple  
OFFICE OF THE GOVERNOR  
First Floor, State Capitol  
600 E. Boulevard Ave., Dept. 101  
Bismarck, ND 58505-0001

Grant Levi, Director  
DEPARTMENT OF TRANSPORTATION  
608 E. Boulevard Ave.  
Bismarck, ND 58505-0700

Merlan E. Paaverud, Jr., Director  
STATE HISTORICAL SOCIETY OF NORTH DAKOTA  
612 E. Boulevard Ave.  
P.O. Box 1976  
Bismarck, ND 58505-0830

Scott J. Davis, Executive Director  
INDIAN AFFAIRS COMMISSION  
600 E. Boulevard Ave. Room #117  
Bismarck, ND 58505-0300

Cheri Giesen, Executive Director  
JOB SERVICE NORTH DAKOTA  
1000 East Divide, P.O. Box 5507  
Bismarck, ND 58506-5507

Lance Gaebe, Land Commissioner  
DEPARTMENT OF TRUST LANDS  
1707 N. 9th St.  
P.O. Box 5523  
Bismarck, ND 58506-5523

Mark Zimmerman, Director  
PARKS AND RECREATION DEPARTMENT  
1600 East Century Avenue, Suite 3  
Bismarck, ND 58503-0649

Scott Hochhalter, Soil Conservation Specialist  
SOIL CONSERVATION COMMITTEE  
2718 Gateway Ave., Ste. 104  
Bismarck, ND 58503-0585

Todd Sando, State Engineer  
STATE WATER COMMISSION  
900 East Boulevard, Dept. 770  
Bismarck, ND 58505-0850

UNITED STATES DEPARTMENT OF DEFENSE  
MINOT AIR FORCE BASE  
201 Summit Drive  
Minot, ND 58701

Kevin Shelley, ND Supervisor  
UNITED STATES FISH AND WILDLIFE SERVICE  
3425 Miriam Avenue  
Bismarck, ND 58501

Daniel Cimarosti  
UNITED STATES ARMY CORPS OF ENGINEERS  
1513 South 12th Street  
Bismarck, ND 58504

FEDERAL AVIATION ADMINISTRATION  
Bismarck Airports District Office, BIS-ADO-600  
2301 University Drive, Building 23B  
Bismarck, ND 58504

DIVIDE COUNTY COMMISSION  
P0 Box 68  
Crosby, ND 58730

WILLIAMS COUNTY COMMISSION  
P0 Box 2047  
Williston, ND 58802

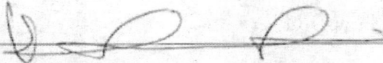
NORTH DAKOTA TRANSMISSION and PIPELINE AUTHORITY  
North Dakota Industrial Commission  
600 E. Boulevard Ave., Dept. 405  
Bismarck, ND 58505-0840



**Notice of Filing Ten Year Plan 2015-2025**  
**Vantage Pipeline US LP**

Please take notice that Vantage Pipeline US LP has, this date, in accordance with Section 49-22-04 of the North Dakota Century Code and Chapter 69-06-02 of the North Dakota Administrative Code, filed with the North Dakota Public Service Commission, a Ten Year Plan for planning years 2015- 2025.

Dated this 24<sup>th</sup> day of July, 2015.

By: 

Keith Learmonth  
Project Manager  
585-8th Avenue SW Suite 4000  
Calgary, AB, T2P1G1, Canada