



NORTH DAKOTA PUBLIC SERVICE COMMISSION

**APPLICATION OF
ENBRIDGE PIPELINES (NORTH DAKOTA) LLC
for
ROUTE PERMIT**

**BEAVER LODGE LOOP PROJECT
NOVEMBER 2010**

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**APPLICATION FOR ROUTE PERMIT
SECTION A
DESCRIPTION OF PROPOSED FACILITY**

A.1. TYPE OF FACILITY

This is a Consolidated Application for a Corridor Certificate and Route Permit. These matters are discussed in Section A.1 of the Corridor Certificate portion of this Application.

A.2. PRODUCT

This is a Consolidated Application for a Corridor Certificate and Route Permit. These matters are discussed in Section A.2 of the Corridor Certificate portion of this Application.

A.3. SIZE AND DESIGN

This is a Consolidated Application for a Corridor Certificate and Route Permit. These matters are discussed in Section A.3 of the Corridor Certificate portion of this Application.

A.4. TIME SCHEDULE

This is a Consolidated Application for a Corridor Certificate and Route Permit. These matters are discussed in Section A.4 of the Corridor Certificate portion of this Application.

APPLICATION FOR ROUTE PERMIT
SECTION B
LOCATION

B.1. APPLICANT'S POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

Enbridge Pipelines (North Dakota) LLC's ("EPND") Environmental Policy states that protection of the environment is an integral element in the conduct of Company business. The Environmental Policy is a component of Enbridge's overall Corporate Social Responsibility ("CSR") practices which is detailed in an annual CSR report where EPND's performance is disclosed along with other Enbridge business units. Environmental protection efforts will span the entire Beaver Lodge Loop Project or Project, from planning and construction, through restoration and operation.

B.1.a Construction

EPND is proposing to construct, own and operate a new transmission line and associated station facilities as described in more detail in Section A of the Application for a Certificate of Corridor Compatibility. The Project involves the installation of approximately 56 miles of 16-inch diameter pipeline from EPND's existing Beaver Lodge Station and Terminal in Williams County to its existing Berthold Station and Terminal in Ward County. The majority of the Project will be collocated adjacent to an existing pipeline owned and operated by EPND. As part of the Project, EPND is also proposing facility expansions at its Beaver Lodge, Stanley, and Berthold Station and Terminal Facilities, as described in more detail in Sections A.3.b.(7)(i), (ii) and (iii) of its Application for Certificate of Corridor Compatibility of this combined application.

Planning, design, construction, and restoration will incorporate the equipment and mitigation measures discussed in Section B.6. Environmental monitoring, in the form of ongoing environmental inspection, will be conducted during and following construction. Environmental inspectors will monitor compliance with required environmental protection measures, permit conditions, and specifications, and provide ongoing oversight of day-to-day issues that may arise during construction. The environmental inspectors will be trained and well-versed in the implementation of environmental Best Management Practices (BMPs) to be utilized throughout construction. Contract specifications will incorporate environmental protection and mitigation measures, and contractors will implement these measures in the field. Contractor training and Project orientation will also be provided by EPND.

Approximately 95 percent of the proposed pipeline route is located on privately owned land and landowner concerns will be addressed during all phases of construction, including final restoration. EPND has assigned land agents to the Project who will work closely with landowners when exercising rights and to

negotiate necessary agreements and be responsive to issues that may arise during and after the Project.

Environmental data collected to date includes information on soils, land use, wetland and waterbody crossings, protected species, and cultural resources. EPND has also conducted or is planning various field studies, detailed in Sections B.2 and B.4 of the Route Permit, and Section B.1 of the Corridor Certificate. EPND will continue to work with appropriate regulatory agencies to gather comprehensive information during the permitting process.

B.1.b Ongoing Pipeline Operation

The pipeline is a permanent, ongoing interstate common carrier transportation pipeline system; as such, EPND has a continuing commitment to conduct its operations in an environmentally responsible manner and in accordance with national codes and standards, federal pipeline safety rules promulgated in 49 CFR Parts 194 and 195 and extensive EPND Operating and Maintenance Procedures and Emergency Response Plan. Substantial, continual effort is placed on pipeline integrity, operational safeguards, emergency response, and public awareness, all of which reduce the impact of the pipeline to the local and regional environment. Also, EPND's internal environmental staff is dedicated to monitoring compliance with various federal and state environmental regulations, permits, and company policy. A review program is in place to ensure policies and procedures are effective and comply with applicable permit conditions. Additional discussion on operations and safety is provided in Section B.9.c.

B.1.c Energy Conservation Considerations

Energy conservation is a major concern at EPND since energy/power costs represent the largest single recurring expense in pipeline operation. Managing energy costs, including conservation of energy usage, is a high priority in EPND's operations.

EPND works closely with its individual energy providers to assure economical and efficient use of power for its North Dakota pipeline system. EPND also reviews and tracks firm and non-firm power requirements, and works closely with electrical utilities in planning for transmission and generation needs.

EPND's energy conservation goal is to minimize power/energy unit costs through the implementation of internal programs directed at continuous improvement of energy utilization efficiency. EPND has considered several energy efficiency and conservation programs. The following provides a brief explanation of the programs reviewed during the Project development phase:

B.1.c.(1) Pipeline Diameter

EPND proposes to construct, own and operate approximately 56 miles of new 16-inch diameter pipeline, originating at EPND's Beaver Lodge Station in Section 5, Township 155 North, Range 95 West, Williams County, and extending in an easterly direction to end at EPND's Berthold Station in Section 20, Township 156 North, Range 86 West, in Ward County, North Dakota.

B.1.c.(2) Variable Frequency Drives (VFDs)

The installation of variable frequency induction motor drives is a program that has been in place for approximately 16 years. VFDs allow the pipeline operator to vary the pump rotation speed thereby controlling the pressure produced to match the desired flow rate. This eliminates the need to dissipate or waste pressure (energy) with pressure control valves (PCVs). VFDs, however, do introduce energy losses and, therefore, are considered only when there is a range of operating conditions (primarily flow rate, density and viscosity) that would often require dissipation of pressures produced by the pumps. Ideally, under constant operating conditions, the pump would deliver constant pressures eliminating the need for pressure dissipation. Therefore, operating conditions play a key role in designing the pumping stations for optimum efficiency.

VFD's will be specified to control the operating speed of the new mainline pumps being installed at EPND's Beaver Lodge and Stanley Station sites.

B.1.c.(3) Pipeline Control Center

EPND pipeline control operators are trained in applied hydraulics and pipeline control through the use of a computerized pipeline control simulation system. They are trained to operate the pipeline at an optimum flow rate using efficient combinations of pumps, thereby minimizing energy consumption. Operators have the capability to start and stop pumps and monitor pipeline operating conditions to assist in achieving an energy efficient operation.

B.1.c.(4) Energy Efficient Pumps and Motors

For new installations, EPND purchases high efficiency pumps and motors at a premium initial cost in an effort to conserve long range energy requirements. Specifically, a high polish is used on the pump impeller, and motors are custom designed for high efficiency. For example, a fully loaded 2,500 horsepower pump and motor unit, operating 300 days per year at 80% efficiency will consume 17 million kilowatt hours (kWh) of energy annually and sets a demand of 2,331 kW. Increasing the efficiency by only 1% translates into 170,000 kWh of energy savings. With this substantial potential for energy savings, it is desirable to optimize efficiency. Pumps are hydraulically designed and selected to obtain a high best efficiency point (BEP) at the desired flow rates. The forecasts are continually being evaluated and, if the flow rate is outside the BEP range, impeller changes are typically implemented for improved efficiency.

B.1.c.(5) Electric Service Agreements

EPND is presently working with its various energy providers to renegotiate, if applicable, new electric service agreements as required for new facilities proposed for the Project.

B.2. DISCUSS THE FACTORS LISTED IN SECTION 49-22-09 NDCC TO AID THE COMMISSION'S EVALUATION OF THE PROPOSED PIPELINE ROUTE

Factors which the North Dakota Public Service Commission (ND-PSC or Commission) considers in evaluating the designation of corridors and routes include the following:

B.2.a Available Research and Investigations Relating to the Effects of the Location, Construction, and Operation of the Proposed Facility on Public Health and Welfare, Natural Resources, and the Environment

A discussion of the effects of the location, construction, and operation of the proposed pipeline on public health and welfare, natural resources, and the environment is included in Section B.4. Research and investigation relating to these effects have included thorough cultural resource reviews, wetland delineation surveys, and protected species and sensitive habitat area reviews. EPND is also proposing to conduct raptor surveys prior to construction to address concerns raised by North Dakota Game and Fish Department ("NDGF"). Please refer to Section B.2.j.(i) of this application for a more detailed discussion.

B.2.b The Effects of New Energy Conversion and Transmission Technologies and Systems Designed to Minimize Adverse Environmental Effects

The Project does not include new energy conversion or transmission technologies that are expressly designed to minimize adverse environmental effects. As described in EPND's Environmental Mitigation Plan ("EMP"), current construction techniques and mitigation measures will be employed to minimize the effect of construction on environmental resources. EPND's EMP is provided as Exhibit E. These measures are also discussed in Sections B.6 and B.9 of this application.

B.2.c The Potential for Beneficial Uses of Waste Energy from a Proposed Energy Conversion Facility

The Project does not involve new energy conversion facilities; no usable waste energy will result from the Project.

B.2.d Adverse Direct and Indirect Environmental Effects, Which Cannot be Avoided Should the Proposed Site or Route be Designated

Unavoidable adverse direct and indirect environmental effects may include short-term or temporary effects on vegetation, wildlife, agricultural operations, transportation, and noise levels as described in Section B.4. EPND will implement thorough mitigation measures to minimize these impacts as described in Section B.6 and in EPND's EMP (see Exhibit E).

B.2.e Alternatives to the Proposed Site, Corridor or Route, Which are Developed During the Hearing Process and Which Minimize Adverse Effects

During the planning of the proposed Project, EPND considered various alternatives. Those alternatives are discussed in Section C.2 of the Application for Certificate of Corridor Compatibility.

The preference for route selection was to abut the existing EPND Line 82 Right-of-Way ("ROW") wherever practicable. EPND's goals in route selection were to mitigate potential safety concerns, environmental issues, reduce overall construction costs, and ensure the constructability of the potential route alignment.

While route variants were minimized to the extent practicable, a number of qualification drivers were considered when determining whether a deviation from co-located utilities was prudent. Some of these drivers include, but are not limited to, the following: poor waterbody crossing points or alignments, road bore staging areas located within wetlands, improvement of road crossing angles, landowner concerns, congested utility corridors and/or facility encroachments, and environmentally sensitive areas.

While several small route deviations exist around environmentally sensitive areas or potential cultural resources, the largest variant from the existing ROW was the approximately 3-mile route around the town of Stanley's airport and a portion of the town itself. The existing Line 82 traverses a part of the airport near the western end of the runway. Construction of the Project through this area would significantly interrupt airport operations. In addition, east of the airport, several buildings are located within 10 feet of the existing Line 82. Without demolition of several of these buildings, it is not feasible to construct the Project through this area either. As a result, the decision was made to select a route that passes south of the airport and approximately 1/3-mile south of the existing Line 82 ROW. (See Table 9 for a listing of route variances in this application.)

B.2.f Irreversible and Irrecoverable Commitments of Natural Resources Should the Proposed Site, Corridor or Route be Designated

EPND is installing the pipeline within an existing, previously disturbed corridor where possible and, therefore, minimal irreversible or irretrievable commitments of natural resources will result from the Project.

B.2.g The Direct and Indirect Economic Impacts of the Proposed Facility

B.2.g.(1) EPND's Beaver Lodge Loop Project presents an opportunity to meet the immediate and future transportation requirements of its shippers in the most timely and effective manner by adding 145,800 bpd of incremental pipeline capacity to its North Dakota pipeline system.

B.2.g.(2) The Beaver Lodge Loop Project has significant economic benefits

The Project has significant economic benefits, including:

- Minimizing the discount of Williston basin supplies by providing adequate pipeline capacity to producers;
- Providing a stable source of crude oil supplies to the PADD II refineries and supporting a healthy economic environment throughout the entire Upper Midwest; and
- Providing an increase of \$1.3 million in estimated property taxes.

B.2.g.(3) EPND is solely a transportation company

EPND is solely a transportation company. EPND owns and operates a non-shipper-owned liquid hydrocarbon pipeline facility. EPND does not own any of the crude petroleum transported in its pipeline system. EPND does not determine markets or destinations for the crude oil transported. EPND's interstate pipeline transportation business, including the facilities in this proposed

Project, is to provide a transportation service to anyone tendering commodities for transportation pursuant to tariffs published and on file with the FERC and in accordance with their rules and regulations and the Interstate Commerce Act. EPND attempts to anticipate the need for additional pipeline capacity by relying on forecasts for throughput generated by shippers on the system.

B.2.h Existing Plans of the State, Local Government, and Private Entities for Other Developments at or in the Vicinity of the Proposed Site, Corridor, or Route

EPND is not aware of other proposed plans for development by state, local or governmental entities at or in the vicinity of the proposed survey corridor that would conflict with the presence of the proposed survey facilities.

B.2.i The Effect of the Proposed Site or Route on Existing Scenic Areas, Historic Sites and Structures, and Paleontological or Archaeological Sites

Regarding existing scenic areas, the Project area is located in a part of North Dakota that is flat or rolling farm fields or rangeland, with no mountains, valleys, or other topography to break up the landscape. The current land use is predominately agricultural, as detailed in Section B.4.b.(1) of this application. The majority of the Project will result in below ground installation of pipeline, which will not be visible and will not affect the gently rolling vista.

The proposed Project is not expected to affect any paleontological resources. The bedrock of the region is covered with quaternary glacial till, which only rarely contains fossilized material dating to the Quaternary Period.

Kadrmaz, Lee & Jackson (“KL&J”) completed a Class I literature review for the Beaver Lodge Loop Project and a Class III inventory field survey in May 2010. The field survey revisited three previously recorded cultural resources sites, and recorded four newly identified sites. Of the seven archaeological sites visited, two were recommended as not eligible for listing on the National Register of Historic Places (“NRHP”), and five were unevaluated for listing on the NRHP. The report recommended that if the unevaluated sites were avoided during pipeline construction, there would be *No Affects to Historic Properties*. The report further recommended that if any of the unevaluated sites could not be avoided, they should be evaluated for NRHP listing by testing for the presence of subsurface deposits, and datable artifacts or features. In a letter dated August 13, 2010, NDSHPO agreed with the recommendations outlined in the KL&J report. A copy of the NDSHPO concurrence letter is enclosed as Exhibit C.2.

Of the five *unevaluated* sites, EPND has made a minor route deviation near Mile Post 15 to avoid one of the five sites. However, for the remaining four sites, KL&J is conducting further field testing of these sites to determine whether they meet the criteria for listing them on the NRHP, and to further determine if avoidance or

mitigative measures will be necessary. Once the field testing is completed, KL&J will report its findings and recommendations to NDSHPO. EPND and KL&J will carry out any treatment plans agreed to by NDSHPO in order to avoid or minimize impacts to these sites as applicable.

Therefore, since the KL&J's technical report includes sensitive information about the location and character of the five *unevaluated* archaeological sites, EPND is filing a redacted version of this report. All sensitive information has been removed from the public version, which is enclosed herewith as Exhibit C.1. EPND will supplement its application with the final results of the NDSHPO's findings and conclusions as deemed appropriate by this agency.

Additionally, EPND has made some minor route adjustments since the initial corridor surveys were conducted and identified areas (outside of the original survey corridor) where extra workspace may be needed. At this time, KL&J is completing surveys in these areas and will present the results of these surveys to NDSHPO. EPND will continue to work with consultant KL&J to receive NDSHPO concurrence with their cultural resources findings and recommendations for the protection of historic properties. EPND will supplement this filing to the ND-PSC upon receipt of NDSHPO's concurrence letter.

B.2.j The Effect of the Proposed Route on Areas Which Are Unique Because of Biological Wealth or Because They are Habitats for Rare and Endangered Species

EPND routed the pipeline in a manner to minimize impacts to wetlands, woodlands, and other areas containing habitat for rare or endangered species. Through its consultations with USFWS, NDGF, and NDPR, occurrences of unique or protected species were noted within the one-mile study area;¹ however, no unique biological areas, habitats, or protected species were identified as occurring within the survey corridor.

Additionally, EPND conducted biological field surveys, which also did not identify unique species or habitat within the survey corridor. Please refer to additional discussions of biological resources in Sections B.3 of the Application for a Certificate of Corridor Compatibility of this combined application, and the discussion provided below.

Additional Information on USFWS Consultations

The USFWS holds multiple wetland and grassland conservation easements on private land within the study area and directly crossed by the pipeline. These lands

¹ "Study area" is define as a one-mile wide corridor centered over the proposed pipeline route.

are managed by the USFWS as part of the agency's National Wildlife Refuge System. EPND has made efforts to route the pipeline to avoid wetlands located within USFWS wetland easements.

As described in Section A.3.b.(1) of the Application for a Certificate of Corridor Compatibility,, the majority of Beaver Lodge Loop pipeline route is co-located with EPND's existing Line 82 pipeline. In these areas, EPND currently holds existing pipeline right-of-way easements, which are believed to have been acquired prior to the USFWS wetland and grassland easement programs. EPND is presently evaluating the legal status of its easements in comparison with the USFWS wetland and grassland easements, and will continue discussion with USFWS with respect to these areas, as necessary. If USFWS easements are identified in areas of the route which are not co-located with Line 82 and where EPND does not have an existing right-of-way easement, EPND will work with USFWS on preferred crossing methods and/or avoidance measures.

Maps showing the proposed pipeline route in relation to USFWS easements are included as Exhibit J.3.

Habitat Assessment

USFWS identified biological resources concerns during agency consultations. To address those concerns, EPND commissioned a habitat assessment of the pipeline route in August 2010. McCain completed a species of concern habitat assessment within the survey corridor (see Exhibit N).

The assessment did not reveal habitat areas of concern. The proposed Project is not located across or near any significant ecological community and is not likely to adversely affect critical wildlife habitats. Potential impacts to wildlife include temporary displacement due to construction activities and temporary loss of ground cover in native and planted grassland areas. These effects are not likely to cause long-term declines in populations in the area. Ground clearing may temporarily impact habitat for unlisted species, including small migratory birds, ground dwelling mammals, and other wildlife species.

Assessments for federally listed threatened, endangered and candidate species were conducted by evaluating historic and present occurrences, and by determining if potential habitat exists within the Project area. Determinations were made concerning direct and cumulative effects of the proposed activities on each species and their habitat. Currently, six federally listed species have been documented in Williams, Mountrail, and Ward Counties. In addition, critical habitat for the piping plover is listed as present in the three counties.

1. Dakota Skipper (*Hesperia dacotae*) – candidate species in Mountrail and Ward Counties;
2. Gray Wolf (*Canis lupus*) - federally endangered in all counties;
3. Interior Least Tern (*Sterna antillarum*) - federally endangered in Williams and Mountrail counties;
4. Pallid Sturgeon (*Scaphirhynchus albus*) - federally endangered in Williams and Mountrail counties;
5. Piping Plover (*Charadrius melodus*) - federally threatened with designated critical habitat in all counties; and
6. Whooping Crane (*Grus Americana*) - federally endangered in all counties.

Suitable habitat for the interior least tern and the pallid sturgeon is limited to the Missouri River system. Since the Beaver Lodge Loop Project does not cross and is not near the Missouri River, these species were not assessed.

The Dakota Skipper has been determined to be a candidate species under the Endangered Species Act. No legal requirement exists to protect candidate species; however, the USFWS considers this species as worth protecting and having significant value.

Table 1				
County Status of Endangered, Threatened and Candidate Species and Designated Critical Habitat				
Species	Status	County		
		Mountrail	Ward	Williams
Whooping Crane	Endangered	X	X	X
Gray Wolf	Endangered	X	X	X
Piping Plover	Threatened	X	X	X
Dakota Skipper	Candidate	X	X	
Species	Designated Critical Habitat	County		
		Mountrail	Ward	Williams
Piping Plover	Threatened	X	X	X

¹ USFWS (updated March 17, 2010)

B.2.j.(1) Species Assessments

Assessments for Federally-listed threatened, endangered species were conducted by evaluating historic and present occurrences and by determining if potential habitat exists within the Project area. A determination was made concerning direct and cumulative effects of the proposed activities on each species. Determinations made for federally listed species are:

- No effect;
- May affect, but is not likely to adversely affect;
- May affect, and is likely to adversely affect;
- Is likely to jeopardize a proposed species or adversely modify critical habitat; and
- Is not likely to jeopardize a proposed species or adversely modify critical habitat.

The habitat assessment completed by McCain assessed potential Project impacts to the species listed in Table 1 and made the following determinations:

Whooping Crane

The primary nesting area for the whooping crane is in Canada's Wood Buffalo National Park. Arkansas National Wildlife Refuge in Texas is the primary wintering area for whooping cranes. In the spring and fall, the cranes migrate primarily along the Central Flyway. During the migration, cranes make numerous stops, roosting in large shallow marshes, and feeding and loafing in harvested grain fields. The primary threats to whooping cranes are power lines, illegal hunting, and habitat loss (Texas Park and Wildlife 2008).

The proposed Project is located within the Central Flyway, an approximate 90-mile wide corridor which serves as a major bird migration route. Approximately 75% of the whooping crane state sightings in North Dakota occur within the Central Flyway. The habitat assessment revealed that one historic sighting has occurred within one mile, and eleven historic sightings have occurred within five miles of the proposed pipeline. The Project survey corridor is adjacent to large wetlands that may be possible roost areas.

Construction activities may cause migratory cranes to divert from the area, but is not likely to result in any fatalities. The USFWS recommends that construction be stopped if whooping cranes are sighted within one mile of the construction activities and not resume until the birds have left the area. As such, if a whooping crane is sighted by the contractor(s) or environmental inspector(s) within the construction corridor or if the USFWS notifies EPND of a whooping crane sighting, construction activities within one-mile of the sighting will be stopped until the birds have left the area. Any sightings by the contractor(s) or environmental inspector(s) within the construction corridor would be immediately reported to the USFWS and NDGF. Following these guidelines, it is reasonable to expect that the proposed activities may affect, but is not likely to adversely affect whooping cranes.

Gray Wolf

Gray wolves were historically found throughout much of North America, including the Upper Great Plains. Human activities have restricted their present range to the northern forests of Minnesota, Wisconsin, and Michigan and the Northern Rocky Mountains of Idaho, Montana, and Wyoming. They now only occur as occasional visitors in North Dakota. The most suitable habitat for the gray wolf is found around the Turtle Mountains region (approximately 100 miles northeast of Berthold Station) where documented and unconfirmed reports of gray wolves in North Dakota have occurred (Grondahl and Martin, no date). The proposed Project may affect, but is not likely to adversely affect this species.

Piping Plover

Piping plovers are found along the Missouri and Yellowstone River systems and on large alkaline wetlands. Nesting sites and critical habitat have been documented on the shorelines of Lake Sakakawea and on large alkaline wetlands. Suitable nesting habitat is not located within the evaluated route. Uncultivated wetlands within the evaluated route have extensive emergent vegetation growing in them. One large saline lake that may provide suitable habitat is located approximately ½-mile north of the study area in Section 29, Township 156 North, Range 90 West, Mountrail, County.

No piping plovers were observed during the on-site assessment and the Project will not disrupt any designated critical habitat. The proposed Project may affect, but is not likely to adversely affect this species at this time and will have no effect on critical habitat.

Dakota Skipper

Dakota Skippers are currently listed as a candidate species in North Dakota and have been documented in Mountrail and Ward Counties. Larvae of the Dakota Skipper feed on grasses, favoring little bluestem. Adults emerge in mid-June, feeding on the nectar of flowering native forbs. Harebell (*Campanula rotundifolia*), wood lily (*Lilium philadelphicum*), and purple coneflower (*Echinacea angustifolia*) are common components of their diet (Canadian Wildlife Service, 2004). Dakota Skippers are most likely to be found along river valleys or in mesic segments of mixed grass prairie. No Dakota Skippers were seen during the on-site review, although preferred plant species were present along the Beaver Lodge Loop Project in the native prairie areas.

Activities from pipeline installation may temporarily disturb some forage species of the Dakota Skipper but is not likely to cause a decline in the Dakota Skipper population. The proposed Project may affect, but is not likely to adversely affect this species.

Raptors and Migratory Birds

The proposed Project may affect raptor and migratory bird species through direct mortality, habitat degradation, and/or displacement of individual birds. These impacts are regulated in part through the Migratory Bird Treaty Act (916 USC 703-711) and the Bald and Golden Eagle Protection Act (BGEPA).

A ground survey for tree and ground raptor nests was conducted within the survey corridor during the on-site evaluation. No raptor nests were observed during the on-site evaluation but buteos and northern harriers were sighted along the route.

Suitable nesting habitat for migratory birds exists within the proposed pipeline route in native prairie areas and adjacent to wetlands and road crossings. The on-site evaluation was performed outside of the nesting season for migratory birds; therefore, nesting sites were not observed. In addition, EPND is proposing to conduct raptor surveys in Spring 2011 prior to construction.

B.2.k Problems Raised by Federal Agencies, Other State Agencies, and Local Entities

EPND consulted with several federal, state, and local agencies to identify potential environmental resources in the Project area that may be affected. Resource issues raised by agencies included USFWS wetland and grassland easement lands, threatened and endangered species and critical habitat protection, wetland protection, erosion control, and restoration/reseeding procedures. As a result of

these consultations and agency concerns, EPND has incorporated a combination of route adjustments to avoid certain resources, and mitigation measures to address remaining resource issues.

Further discussion on agency consultations and concerns are found in Section B.3.a of the Application for a Certificate of Corridor Compatibility, and discussions on proposed avoidance and mitigation measures are found in Sections B.2.j, B.3 and B.4 of this application.

B.3. IDENTIFY AND MAP CRITERIA LEADING TO PROPOSED PIPELINE ROUTE LOCATION WITHIN CORRIDOR

This section presents EPND's inventory of environmental and land use information consistent with North Dakota Administrative Code (North Dakota Rules) Chapter 69-06-08-02 for evaluating siting criteria, including areas referred to as exclusion and avoidance areas, and the Project's compatibility with selection and policy criteria. Project components include the proposed pipeline, and expansions at the existing Beaver Lodge and Stanley Stations and Terminals. The existing Berthold Pump Station and Terminal has not been included in this assessment, as it has been previously sited and approved by this Commission on August 4, 2010 under Docket No. PU-10-130 under Certificate of Corridor Compatibility No. 114 and Route Permit No. 124. All work activities have been identified in the Corridor Certificate of this combined application, and will be performed within the existing approved and permitted Stanley and Berthold Stations and Terminals sites.

Detailed discussions of these criteria, including descriptions, potential impacts, and mitigation measures where appropriate are provided in Sections B.4, B.5, and B.6 of this application. Route adjustments adopted to avoid identified criteria are also discussed. Siting criteria identified within the study area or along the proposed route are shown on route maps enclosed as Exhibits J.1, J.2 and J.3.

B.4. RELATIVE VALUE AND EFFECTS UPON EACH CRITERION INCLUDING LOCATION, CONSTRUCTION, AND OPERATION OF THE FACILITY

In accordance with North Dakota Rules Chapter 69-06-08-02, the proposed pipeline route has been situated after consideration of its impact on humans and the environment.

B.4.a Exclusion and Avoidance Areas (North Dakota Rules Chapter 69-06-08-02.1 and 69-06-08-02.2)

The ND-PSC has identified certain sensitive or otherwise important environmental features that must be considered during the selection of a route for transmission facilities. These features have been classified as either “Exclusion Areas” or “Avoidance Areas.” As defined in North Dakota Rules Chapter 69-06-08-02.1 and 69-06-08-02.2, “Exclusion Areas” are areas that are to be excluded from consideration for energy conversion sites and transmission facility routes. “Avoidance Areas” are areas not to be considered in the routing of a transmission facility unless it is shown that, under the circumstances, there are no reasonable alternatives. In 1978, the ND-PSC published the Inventory of Exclusion and Avoidance areas for the Siting of Energy Conversion and Transmission Facilities, which lists these areas for each county in North Dakota (see Table 2). EPND has confirmed with ND-PSC staff that no new types of Exclusion or Avoidance Areas have been added to the inventory to date.

Exhibits J.1 contain maps depicting Exclusion and Avoidance Areas within a one mile wide study corridor (“study area”) centered on the proposed pipeline route.

TABLE 2			
North Dakota Public Service Commission Exclusion and Avoidance Areas – Transmission Facility Siting			
Avoidance and Exclusion Area	Category	Crossed By Route	Administering Agency
National Memorial Parks	Exclusion	No	National Park Service (NPS)
National Historic Sites and Landmarks	Exclusion	No	NPS
National Natural Landmarks	Exclusion	No	NPS
National Wilderness Areas	Exclusion	No	NPS and U.S. Forest Service (USFS)
National Parks	Exclusion	No	NPS
National Monuments	Exclusion	No	NPS and State Historical Society
State Parks	Exclusion	No	State Park Service
State Historic Sites	Exclusion	No	State Historical Board
State Historical Markers	Exclusion	No	State Historical Board
State Archaeological Sites	Exclusion	No	State Historical Board
State Monuments	Exclusion	No	State Historical Society
State Nature Preserves	Exclusion	No	State Park Service
Areas Critical to the Life Stages of Threatened or Endangered Animal or Plant Species	Exclusion	No	U.S. Fish and Wildlife Service (USFWS)

TABLE 2			
North Dakota Public Service Commission Exclusion and Avoidance Areas – Transmission Facility Siting			
Avoidance and Exclusion Area	Category	Crossed By Route	Administering Agency
Areas Where Animal or Plant Species Unique or Rare in the State Would be Irreversibly Damaged	Exclusion	No	Various
County Parks and Recreation Areas, Municipal Parks, and Parks under other Governmental Jurisdiction	Exclusion	No	Various
National Wildlife Areas	Avoidance	No	USFWS
National Wildlife Refuges	Avoidance	No	USFWS
National Grasslands	Avoidance	No	USFS
National Historic Districts	Avoidance	No	State Historic Society
National Wild, Scenic or Recreational Rivers	Avoidance	No	Heritage Conservation Recreation Service, State Outdoor Recreation Agency
State Wild, Scenic or Recreational Rivers	Avoidance	No	State of North Dakota Legislative Assembly
State Game Refuges	Avoidance	No	North Dakota Game and Fish Department
State Game Management and Management Areas	Avoidance	No	North Dakota Game and Fish Department
State Forests	Avoidance	No	State Forest Service
State Forest Management Lands	Avoidance	No	State Forest Service
State Grasslands	Avoidance	No	State Park Service
Irrigated Land	Avoidance	No	State Water Commission
Areas of Historic, Archaeological or Paleontological Significance not specifically designated as Exclusion or Avoidance Areas	Avoidance	Yes	State and County Historical Society
Areas of Recreational Significance	Avoidance	Yes	Various
Reservoirs	Avoidance	No	U.S. Army Corps of Engineers and State Water Resource Commission
Municipal Water Supplies	Avoidance	No	State Water Resource Commission
Water Sources for Organized Rural Water Districts	Avoidance	No	State Water Commission
Areas which are Geologically Unstable	Avoidance	No	State Geologist Geological Survey
Within 500 Feet of a Residence, School, or Place of Business	Avoidance	Yes	Landowner

B.4.a.(1) Areas of Historic, Archaeological or Paleontological Significance not specifically designated as Exclusion or Avoidance Areas

No designated or registered state: parks; historic sites; monuments; historical markers; or nature preserves were identified within the study area or within the survey corridor. Seven archaeological sites were identified within the survey corridor. Two of these do not meet the criteria for listing them on the NRHP, and do not require avoidance.

Five prehistoric archaeological sites are present in the survey corridor, but have not been evaluated with regard to significance or eligibility for listing on the NRHP. The sites, or features such as stone circles within the sites, will be avoided during Project routing. If avoidance is not possible, impacts to the sites will be mitigated according to treatment plans developed in consultation with the NDSHPO (see Section B.2.i for more detailed information).

B.4.a.(2) Designated or Registered State: Wild, Scenic, or Recreational Rivers; Game Refuges; Game Management Areas; Management Areas; Forests; Forest Management Lands; Areas of Recreational Significance, and Grasslands

No designated or registered state: wild, scenic or recreational rivers; game refuges; game management areas; forests; forest management areas; or grasslands were identified within the study area or the survey corridor.

The following three types of “management and recreation areas” are crossed by the survey corridor:

B.4.a.(2)(i) School Trust land

Three parcels of North Dakota School Trust Land administered by the North Dakota State Land Department (“NDSL”) - are located within the study area (see Table 4 in the Application for a Certificate of Corridor Compatibility). EPND’s proposed pipeline route crosses portions of these parcels. EPND submitted an online application to NDSL for a permit to cross these lands in October 2010.

The location of the School Trust Lands in relation to the proposed survey corridor and the proposed pipeline route are shown on the avoidance criteria maps in Exhibit J.1. A copy of the submitted application and is enclosed as Exhibit O.

B.4.a.(2)(ii) Conservation Reserve Program (“CRP”) Land and Private Land Open to Sportsmen (“PLOTS”)

With respect to CRP lands, FSA identified 53 fields in Mountrail County that are within the one-mile study area (including 8 which are directly crossed). To date, FSA has not provided information on CRP lands within Ward County, despite follow-up requests from EPND on July 7, 2010. FSA is unable to provide specific geographic data regarding CRP parcels until a signed release from the producer/landowner is obtained.

EPND has also identified 7 NDGF-sponsored PLOTS parcels in the study area, including two which are directly crossed by the proposed pipeline route (see avoidance criteria maps in Exhibit J.1).

The only construction implication of crossing these lands is that the area must be restored to pre-construction conditions, a standard construction mitigation technique described later in this application. Therefore, the consideration of the location of CRP land or PLOTS relative to the route location is not factored into the routing criteria. To minimize project impacts to CRP land and PLOTS, EPND would:

- Restore the lands to preconstruction conditions; and
- Reseed the CRP land following seeding specifications from the NRCS.

Additional mitigation and restoration measures can be found in the Project EMP (See Exhibit E).

B.4.a.(3) Within Five Hundred Feet [152.4 Meters] of a Residence, School, or Place of Business

The new proposed pipeline will installed within 500 feet of seven rural residences and one office (see Table 3 below). EPND has obtained a waiver from each affected party and are enclosed herewith as Exhibit K. No schools were located within 500 feet of the new pipeline or its related station facilities (see Table 3 below).

TABLE 3		
Rural Residences and Businesses Within 500 Feet of the Beaver Lodge Loop Pipeline Route		
Feature	Nearest Milepost	Approximate Distance from Pipeline (feet)
Residence	8.0	360
Residence	18.5	220
Residence	18.6	410
Residence	28.8	420
Residence	30.5	160
Business	31.0	75
Residence	37.3	200
Residence	44.0	350

No residences or other occupied structures will be razed due to construction. Future residential development will not be precluded following completion of the pipeline, except as required by state and/or local setback ordinances and easement restrictions. Construction could temporarily restrict access to residences along the pipeline route. Where this potential exists, EPND will either limit the time such restrictions are in place or will make arrangements to accommodate the landowner's needs.

During construction, residences in close proximity to construction activities will be exposed to short-term increases in construction-related noise and dust. Some minor dust production is inevitable in any construction project; however, if excessive, the construction right-of-way and access roads near residential areas will be watered down to control dust during construction. After construction is complete, measures to stabilize and revegetate the right-of-way promptly will prevent further dust production.

The heavy construction equipment needed to install the pipeline will generate unavoidable short-term increases in ambient noise levels. Increases in ambient noise levels due to equipment operation will be limited to the period of construction and will generally be limited to daylight hours. No noise will be generated along the right-of-way during normal operation of the pipeline.

Although seven rural residences and one office are located within 500 feet of the pipeline route and considered Avoidance Areas, EPND believes there is no reasonable alternative to avoid them. Disturbance of these areas will be temporary and short-term; long-term incremental impacts will be minimal. A new route could possibly avoid these areas, but would result in greater environmental impacts and increase the number of affected landowners.

B.4.b Selection Criteria (North Dakota Rules Chapter 69-06-08-02.3)

State of North Dakota Rules' specify several selection criteria to be considered in designating a pipeline corridor or route. Specifically, the ND-PSC considers whether adverse effects from the location, construction, and maintenance of the facility as they relate to these criteria, will be at an acceptable minimum, and whether these effects will be managed and maintained at an acceptable minimum. Table 4 below identifies the selection criteria that were considered for the Project. Potential impacts, as they relate to each of the selection criteria, are discussed below. EPND will implement several measures to minimize these impacts, which are noted below and discussed in greater detail below.

Table 4 Beaver Lodge Loop Project Selection Criteria Considered	
SELECTION CRITERIA CONSIDERED	CROSSED BY PROPOSED PIPELINE
Agricultural Production	Yes
Family Farms and Ranches	Yes
Land Suitable for Irrigation	Minimal
Surface and Groundwater Flow Patterns	Minimal
Noise Sensitive Areas	Minimal
Visual Effects	Minimal
Extractive and Storage Resources	Minimal
Wetlands	Minimal
Woodlands	Minimal
Communication or Electric Control Facilities	Minimal
Human Health and Safety	Minimal
Animal Health and Safety	Minimal
Plant Life	Minimal

B.4.b.(1) Agricultural Production

Agriculture is the predominant land use, comprising approximately 55 percent of the study area. The maps (see Exhibit J.3) illustrate the location of agricultural land within the study area and along the proposed route.

The effects of construction on agriculture would be minor and short-term. The primary impact would be the loss of standing crops within the construction work area for the growing seasons during which Project-related activities occur. It is possible for construction to result in soil compaction, mixing of topsoil and subsoil, including introduction of rocks into the topsoil from the subsoil; erosion; the introduction of weeds; and damage to irrigation and drainage systems. These impacts may lower soil productivity and reduce crop yields following construction.

Permanent impacts on agriculture production are not anticipated. EPND would bury the pipeline deeper than typical tillage depths to allow continued use of the land.

Following construction, EPND would restore the right-of-way to its pre-construction contours and stabilize the ground until the next growing season. Planting and harvesting would be allowed to continue over the permanent right-of-way. EPND expects that fields would return to normal yields within a year or two following construction.

EPND is proposing to implement mitigation measures to minimize the potential for short-term impacts on agriculture productivity. EPND would:

- bury the pipeline deeper than typical tillage depths to allow continued use of the land for agriculture after construction;
- clean heavy equipment that is capable of transporting weed propagules or soil pests prior to use on the Project;
- prohibit construction during periods of prolonged, heavy rainfall to minimize the potential for soil compaction and reduced soil productivity;
- alleviate soil compaction caused by construction by deep tilling or chisel plowing soils (or alternative methods approved by the landowner or land management agency) where compaction has been shown to have been caused by construction;
- strip the existing amount of topsoil, up to a maximum depth of 12 inches, from over the trench line and subsoil storage area to maintain topsoil integrity and minimize impacts on soil productivity (where there is less than 12 inches of topsoil, strip the existing amount or to the bottom of the plow layer, whichever is deepest);
- store topsoil and subsoil in a manner that prevents mixing, and return topsoil to its original horizon during backfilling;
- implement temporary erosion best management practices (e.g., slope breakers, sediment barriers, and mulch) to minimize the potential for soil loss due to wind or water erosion during construction;
- compensate landowners for crop loss and other associated damages for the year of construction;
- coordinate with landowners to assess crop productivity following construction and provide compensation where crop yields show decline;
- coordinate the interruption of irrigation and drainage systems with each landowner and compensate the landowner for damages and lost

production that result from interruption of irrigation and/or drainage systems;

- repair, replace, or compensate landowners where irrigation and/or drainage systems are damaged by construction; and
- compensate landowners for a permanent easement on their property.

B.4.b.(2) Family Farms and Ranches

Family farms and ranches do occur within the study area. The effects of construction on family farms and ranches would be minor and short-term. The primary impact on family farms would be the loss of standing crops within the work area for the growing seasons during which Project-related activities occur, as well as potential diminished yields for a year or two following construction. EPND would mitigate these temporary effects by following the measures listed above.

Herbaceous rangeland suitable for livestock grazing comprises approximately 42% of the study area. The primary impact on family ranches would be temporary prohibition of livestock grazing in the Project area and restrictions on livestock movement across the Project area during construction. Given the narrow, linear nature of the Project and the alignment of the pipeline along property boundaries, livestock grazing reductions and livestock movement restrictions would be minor.

Long-term or permanent impacts on family farms and ranches are not anticipated. The Project would not result in changes of land ownership. Following construction, the work area would be restored and farming and ranching would be allowed to continue over the permanent right-of-way. Although grazing would be deferred where practical in disturbed areas until right-of-way vegetation becomes reestablished, landowners would be compensated for temporary loss of land use. Grazing activities would return to normal after revegetation.

EPND is proposing to implement mitigation measures to minimize the potential for short-term impacts on livestock grazing and movement. EPND would:

- make arrangements with landowners to keep livestock in fields not affected by the proposed Project where practical;
- cut and brace fences crossed by the proposed pipeline in a manner to prevent slack, and install gates across the opening to prevent livestock passage, if required;
- install temporary fences as necessary to prevent livestock from entering the construction area;

- where there is a poorly established sod layer, strip the existing amount of topsoil, up to a maximum depth of 12 inches, from over the trench and spoil side of the right-of-way (where there is less than 12 inches of topsoil, strip the existing amount);
- where there is a well established sod layer, strip the existing amount of topsoil, up to a maximum depth of 12 inches, from over the trench only (where there is less than 12 inches of topsoil, strip the existing amount);
- store topsoil and subsoil in a manner that prevents mixing, and return topsoil to its original horizon during backfilling;
- restore the work area to its pre-construction contours and reseed with mixtures approved by the landowner;
- where practical, defer grazing in the area until right-of-way vegetation becomes reestablished;
- compensate landowners for temporary loss of land use; and
- compensate landowners for a permanent easement on their property.

B.4.b.(3) Lands Suitable for Irrigation

In addition to impacts on actively cultivated fields, the Project could impact land capable of supporting future cultivation. This includes land which the owner can demonstrate has soil, topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation.

Generally, land suitable for cultivation within the study area, regardless of whether it is actually cultivated or not, is designated as “prime farmland” or “farmland that is of statewide or local importance.” The NRCS has defined prime farmland and farmland that is of statewide or local importance as land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, and oilseed crops. These designations include cultivated land, pasture, woodland, and other land that is either used for food or fiber crops or are available for these uses. Urbanized land and open water are generally excluded from prime farmland and farmland that is of statewide or local importance.

Prime farmland and farmland that is of statewide or local importance typically contains few or no rocks; is not subject to excessive erosion; is relatively permeable to air and water; and is not subject to prolonged periods of flooding during the growing season. Soils that do not meet these criteria may be considered prime or important farmland if the limiting factor is mitigated (e.g., artificial drainage). The NRCS defines the specific criteria for determining prime farmland. State and local

government agencies define the criteria for determining farmland that is of statewide or local importance.

Prime farmland (and areas of prime farmland, if drained) and farmland that is of statewide or local importance does occur within the proposed study area and along the proposed pipeline route (see Exhibit J.3). Approximately 17% of the study area contains prime farmland or farmland that is of statewide or local importance is located within the study area.

A number of factors used to designate prime farmland and farmland that is of statewide or local importance would not be affected by the proposed Project. For example, rainfall and the length of the growing season would not change. Criteria that could be affected by the proposed Project are mainly related to soil productivity and are the same as those discussed for agriculture production. For example, it is possible for construction to result in soil compaction; mixing of topsoil and subsoil, including introduction of rocks into the topsoil from the subsoil; erosion; introduction of weeds; and damage to irrigation and drainage systems.

The actual effects of the proposed Project on prime farmland and farmland that is of statewide or local importance varies by the actual land use and/or land cover affected. For example, effects on actively cultivated land are different than uncultivated land. On actively cultivated land, EPND would implement mitigation measures to minimize effects on agriculture production as noted above and there would be only minor, short-term impacts on the land. Where land is used for other purposes, EPND would implement other mitigation measures suitable to the current land use and/or land cover. Additionally, if construction activities were to adversely affect soil productivity in prime or important farmland, productivity could be reestablished by mitigating for the limiting factors in the future.

Long-term impacts on prime farmland and farmland that is of statewide or local importance would be minor. Following construction, the work area would be restored to its pre-construction condition and stabilized. Future drain and irrigation systems would be allowed on the permanent right-of-way in accordance with specifications that allow for the safe and continued use of the pipeline.

B.4.b.(4) Surface and Groundwater Flow Patterns

B.4.b.(4)(i) Surface Drainage

The majority of the proposed pipeline route and survey corridor lie in the Lake Sakakawea (Missouri River) drainage basin, with a small portion of the eastern section of the Project falling within the Des Lacs River drainage basin. In the portion of the Project within the Lake Sakakawea basin, surface water generally drains south towards Lake Sakakawea. In the eastern portion of the Project within the Des Lacs River basin, surface water generally drains to the northeast into tributaries which flow to Des Lacs Rivers. The proposed Project contains ten waterbody crossing. (See Section B.4.k of this application for more details.)

At the time of this filing, EPND has not completed its wetland and waterbody surveys. Based on a desktop review, the proposed pipeline route will cross nine intermittent waterbodies and one perennial waterbody. EPND is presently working to complete its survey work. EPND's application will be supplemented and provided to the ND-PSC upon completion of its surveys and finalization of all such relevant reports.

Construction methods to be utilized for waterbody crossings are detailed in the Project's EMP (see Exhibit E).

B.4.b.(4)(ii) Groundwater Flow Patterns

Groundwater aquifers within the Project area include unconsolidated-deposit bedrock and glacial drift aquifers. Water in these aquifers moves in response to gravity from recharge areas down the hydraulic gradient to discharge areas. Much of the recharge is from precipitation that falls directly on the aquifers where they are at or near the land surface in topographically high areas, but some of the recharge is by leakage through the beds of streams that cross the aquifers. The water percolates downward, enters the aquifers, and subsequently moves toward discharge areas at lower altitudes. Local aquifers in bedrock receive recharge directly from precipitation; some of the water then moves laterally into the unconsolidated-deposit aquifers that partially fill basins in the bedrock. The water moves through the unconsolidated-deposit aquifers and discharges to surface-water bodies, such as lakes or streams, near the basin centers.

Ground disturbance associated with pipeline construction is generally limited to 6 feet or less below the existing ground surface. Most construction activity would be above surficial aquifers. Construction activities such as trenching, blasting, drilling, dewatering, and backfilling could encounter shallow aquifers and cause minor fluctuations in groundwater levels and/or increased turbidity within the aquifer adjacent to the activity. Given the low permeability of soils crossed by the Project, dewatering activities, if necessary, are not expected to have a significant effect on regional groundwater flow patterns. Since most shallow aquifers exhibit

rapid recharge and groundwater movement, shallow aquifers would quickly reestablish equilibrium if disturbed, and turbidity levels would rapidly subside. Consequently, the effects of construction would be minor and short term. Impacts on deeper aquifers are not anticipated.

B.4.b.(5) Impact of Noise Sensitive Land Uses

The study area and survey corridor are located in a predominately rural setting characterized by an inherently low ambient noise level. Most of the noise generated in any given area is due to human activity, mainly vehicle traffic, train traffic, and agricultural machinery. Lesser amounts of noise can be attributed to natural causes, such as wind, birds, and insects.

The effects of noise on people, livestock, and wildlife is strongly influenced by the level and timing of the noise. Some people become annoyed with noise levels during nighttime hours above 40 decibels (a quiet room). Livestock and wildlife may disperse from an area when the noise levels exceed about 50 decibels (a moderate rainfall).

The heavy equipment needed to construct the pipeline is expected to generate between 80 and 90 decibels within 50 feet of the equipment. Noise sensitive receptors close to construction would be exposed to temporary increases in noise. People living, working, teaching, learning, hunting, or otherwise occupying areas near the work area may become annoyed, and livestock and wildlife may relocate to adjacent areas. The effects of noise would be diminished where the Project is adjacent to existing railroad and roads because these areas already experience increased noise levels from train and car/truck traffic (estimated between 60 and 95 decibels when cars, trucks, and/or trains are traveling on roads/railroads at higher speeds). Nighttime noise levels would normally be unaffected by construction, as most construction is typically restricted to daylight hours.

EPND plans to perform a noise survey at its existing Stanley Pump Station in Mountrail County due to its close proximity to a residence. No noise surveys are planned for the Beaver Lodge and Berthold Stations since the nearest sensitive area (NSA) is over a half-a-mile away (see Table 5 below)

Table 5			
List of Pump Stations and Nearest Sensitive Areas			
Name of Pump Station	County	Distance to Nearest NSA	Noise Study Planned
Beaver Lodge	Williams	3,750 feet - residence	No
Stanley	Mountrail	1,000 feet - residence	Yes
Berthold	Ward	3,000 feet - residence	No

B.4.b.(6) Impact on Visual Effect on the Adjacent Area

No designated scenic outlooks or viewing areas were identified within the study area. The study area and pipeline route traverse a landscape consisting primarily of grasslands and agricultural fields where the line of sight is broken by rolling hills and the occasional wooded draw or shelterbelt. Temporary visual effects would exist during active construction at which time heavy equipment, open trenches, and spoil piles would change the colors and textures of the landscape. The duration of visual impacts would be relatively short-term as the reestablishment of vegetation on grasslands and agricultural land following construction would occur relatively fast. The only permanent impacts on visual resources would be additional structures built in association with expansion of the Beaver Lodge, Stanley, and Berthold Pump Stations and Terminals. These stations are already in existence, and located in rural agricultural areas where the additional structures would have a negligible visual effect on adjacent areas.

B.4.b.(7) Impact on Extractive and Storage Resources

A review of the Project study area identified two types of actively mined extractive resources at various locations within the study area: oil and gas and sand and gravel. Neither of these extractive resources would be affected by the proposed route. Although these resources may exist within the study area, mines for these

resources were not identified. Additionally, storage resources within the proposed survey corridor were not identified.

B.4.b.(7)(i) Oil and gas

Known oil and gas reserves in North Dakota are associated with the Williston Basin in the western half of the state. The Williston Basin is a structurally simple basin. It is roughly circular, deepest in its center, and the strata become both shallower and thinner towards its margins. It is a large basin, covering approximately 300,000 square miles over parts of North Dakota, South Dakota, Montana, and the adjacent Canadian provinces of Saskatchewan and Manitoba.

The proposed pipeline route will pass over the Bakken Formation, a thin but widespread unit within the central and deeper portions of the Williston Basin. There are an estimated 47 oil wells within the study area. Four wells are adjacent to the proposed route within the survey corridor (see Exhibit J.3).

Typically, the pipeline trench would be less than 6 feet deep to account for the pipe and adequate cover. Because oil and gas is generally produced from depths in excess of 1,000 feet, construction of the pipeline would not be expected to affect the ability of the wells to produce petroleum and/or natural gas. Rather, any construction-related damage that could occur would be limited to surface or near-surface components of the wells and gathering systems, which could temporarily disrupt production until repairs are made. To minimize the potential for impacting surface and near-surface components, EPND would:

- avoid direct impact to the four wells located within the vicinity of the construction right-of-way; and
- identify any associated underground gathering lines along the proposed route and take appropriate precautions to protect the integrity of such facilities.

B.4.b.(7)(ii) Sand and Gravel

A review of the Project study area identified one potential sand and/or gravel mining operation (identified on USGS topographic maps) within the study area near Milepost 20. However, based on review of recent high-resolution aerial photography, this area appears to be actively farmed, and it is believed the gravel mine is no longer active. Neither short- nor long-term impacts associated with the proposed pipeline are anticipated.

B.4.b.(8) Impact on Wetlands

EPND commissioned McCain and Associates Inc. (“McCain”) to complete a wetland and waterbody assessment based on an initial pipeline route established in May 2010. Since the surveys were conducted, EPND has made some minor route adjustments and identified areas (outside of the original survey corridor) where additional surveys are required. EPND is completing surveys in these areas and will submit the wetland delineation report to the ND-PSC upon completion. Preliminary data obtained from the initial delineation is included below.

EPND also commissioned Merjent, Inc. of Minneapolis (“Merjent”) to complete a wetland assessment of the Beaver Lodge, Stanley, and Berthold (outside existing fence line) Pump Stations and Terminals (see Exhibit D.3, Merjent Report), and Barr Engineering Company (“Barr”) of Duluth, Minnesota, to complete a wetland assessment of Berthold Station and Terminal (within existing fence line, (see Exhibit D.2). For more detailed information see Section B.4.b.(8)(ii).

B.4.b.(8)(i) Route

A total of 184 wetlands were identified and delineated during the field delineation completed by McCain based on the initial pipeline route. The pipeline route directly crosses 92 wetlands totaling approximately 3.03 miles in length. A list of wetlands crossing by milepost is provided in Table 6 below.

TABLE 6			
Field Delineated Wetlands Crossed by the Beaver Lodge Loop Pipeline Route			
Milepost In	Milepost Out	Crossing Length (ft)	Wetland Type ^a
0.93	0.93	24	PEMC
0.95	0.95	24	PEMC
1.02	1.05	143	PEMC
1.09	1.10	69	PEMC
2.19	2.23	209	PEMF
2.36	2.36	11	PEMF
2.40	2.42	93	PEMA
2.67	2.68	75	PEMC
2.72	2.74	99	PEMC
2.84	2.88	161	PEMA
2.90	2.91	45	PEMA
3.17	3.25	419	PEM/ABF, PEMCd
3.54	3.56	67	PEMC
3.66	3.75	490	L2ABG
4.60	4.66	306	PABF
5.38	5.38	8	PEMFd
5.75	5.76	22	PEMFd
5.96	5.97	55	PEM/ABF
6.12	6.25	663	PEM/ABF
6.44	6.45	84	PABF
6.70	6.75	257	PEMC

TABLE 6			
Field Delineated Wetlands Crossed by the Beaver Lodge Loop Pipeline Route			
Milepost In	Milepost Out	Crossing Length (ft)	Wetland Type^a
6.86	6.87	42	PEMA
7.18	7.24	319	PEMF
7.37	7.41	222	PEMC
7.46	7.52	300	PEMC
7.68	7.71	159	PEMCd
7.81	7.81	32	PEM/ABF
8.01	8.08	357	PEMC
8.26	8.26	3	PEMCd
8.41	8.46	231	PEMF
8.61	8.62	53	L2ABG
8.79	8.84	231	L2ABG
9.71	9.76	268	L2ABG
10.15	10.32	900	PEMCd
11.32	11.34	119	PEMC
11.41	11.50	491	PEMC
11.59	11.64	263	PEMC
11.72	11.74	94	PEMC
13.07	13.09	145	PEMC
15.55	15.57	84	PEMC
15.65	15.65	10	PEMC
15.80	15.84	211	PEMC
15.96	15.98	146	PEMC
16.83	16.86	129	PEMC
17.12	17.14	114	PEMC
17.23	17.25	73	PEMC
17.34	17.36	100	PEMC
17.91	17.93	69	PEMC
18.20	18.26	312	PEM/ABF
18.35	18.38	152	PEMF
19.04	19.08	235	PEMC
19.28	19.33	236	PEM/ABF
19.51	19.53	100	PEMC
19.59	19.61	113	PEMC
19.66	19.67	43	PEMC
19.94	19.97	154	PABF
20.07	20.11	178	PEMC
20.91	20.94	196	PEMC
21.33	21.37	228	PEMC
23.19	23.25	301	PEMC
23.51	23.52	62	PEMC
23.59	23.66	368	PEMC
24.36	24.38	102	PEMC
24.99	24.99	9	PEMC
27.23	27.24	75	PEMC
27.57	27.57	32	PEMA
28.37	28.43	280	PEM/ABFh

TABLE 6			
Field Delineated Wetlands Crossed by the Beaver Lodge Loop Pipeline Route			
Milepost In	Milepost Out	Crossing Length (ft)	Wetland Type ^a
29.50	29.51	55	PEMA
30.06	30.09	184	PEMC
32.83	32.85	69	PEM/ABF
33.94	34.00	303	PEMC
34.55	34.58	172	PEMC
34.71	34.73	97	PEMAd
35.14	35.15	37	PEMA
35.47	35.48	64	PEMCd
36.13	36.21	409	L2ABG
36.29	36.34	262	L2ABG
36.35	36.44	483	L2ABG
37.06	37.06	30	PEMC
37.26	37.36	526	PEMC
37.74	37.75	48	PEMA
37.89	37.89	26	PEMAd
38.04	38.04	30	PEMC
38.26	38.30	236	PEMC
38.91	38.93	129	PEMC
39.20	39.23	153	PEMC
39.84	39.85	52	PEMA
40.92	40.94	83	PEMAd
41.22	41.23	52	PEMA
41.79	41.92	685	PEMF, PEM/ABF
50.13	50.14	84	PEMC
53.58	53.59	45	PABFh
	TOTAL	15,981	

^a Wetland Types based on Cowardin et al. wetland classification system, 1979.

To minimize impacts to wetlands along the pipeline route, EPND is planning to reduce its construction right-of-way width to 85 feet in wetlands (see EMP in Exhibit E). Assuming this reduction of right-of-way width in wetlands, approximately 31.1 acres² of wetlands would be impacted along the pipeline route during construction. Actual temporary disturbance to wetlands will be determined upon completion of the wetland delineation surveys. Such information will be filed with the ND-PSC upon completion.

² Calculated as crossing length listed in Table 6 (15,981 ft) * Reduced Construction right-of-way width (85 ft)

B.4.b.(8)(ii) Stations

A wetland delineation completed by Merjent in May 2010 determined that wetlands are present within the boundary of the Stanley and Berthold Station and Terminal facilities; however, no permanent impacts to these delineated wetlands are anticipated. In its wetlands delineation of the Berthold Station and Terminal, Barr identified wetlands within the existing fence line; however, no permanent impacts are anticipated.

Merjent conducted a wetland delineation of the Beaver Lodge Station and Terminal site in May 2010, and did not identify any wetlands (see Exhibit D.3). However, since this survey was conducted, EPND has decided to site herein, the remaining 29 acres for which it owns in fee at the existing Beaver Lodge Station and Terminal Facility in Williams County (for more details, see Section A.3.b.(7)(i) of the Application for a Certificate of Corridor Compatibility). EPND is presently completing its wetland delineations in this area, and will supplement this application filing upon the completion of such surveys and finalization of all relevant reports.

B.4.b.(8)(iii) Impacts to wetlands as a result of construction will be mitigated as follows

EPND completed a desktop wetland review of the proposed survey corridor and field verified wetland boundaries along the proposed route (field survey results are discussed in Sections B.4.b.(8)(i) and B.4.b.(8)(ii)). Wetlands are scattered throughout the proposed survey corridor and along the proposed route (see Exhibit J.3). Based on USFWS National Wetland Inventory (NWI) data, wetlands occupy about 3,080 acres (8.4 percent) of the study area.

The most common wetlands within the Project area are freshwater emergent wetlands, which are characterized by rooted herbaceous vegetation. Water sources for these wetland communities include seepage from ditches and drainages, irrigation runoff, and ponding on poorly drained soils. Common emergent wetland species along the pipeline route are foxtail barley, water smartweed, spike rush, curly dock, upright sedge, inland rush, and bluegrass. In addition to emergent wetlands, freshwater ponds and lakes occur within the study area.

Construction in wetlands would primarily result in short-term impacts including temporary loss of wetland vegetation, soil disturbance, and increases in turbidity and fluctuations in wetland hydrology. Additionally, wetlands could be contaminated by accidental spills during vehicle refueling and maintenance, or from other potential hazardous material spills that might occur during construction. EPND is proposing to implement mitigation measures to minimize

impacts on wetlands, as detailed in the Project's EMP (see Exhibit E). To minimize impacts on wetlands, EPND would:

- mark wetland boundaries prior to construction;
- reduce the width of the construction work area to 85 feet or less through wetland areas;
- restrict the equipment working in and passing through wetlands to the extent practical;
- strip the existing amount of topsoil, up to a maximum depth of 12 inches, from over the trench in unsaturated wetlands (where there is less than 12 inches of topsoil, strip the existing amount);
- in unsaturated wetlands, store topsoil and subsoil in a manner that prevents mixing, and return topsoil to its original horizon during backfilling;
- implement temporary erosion best management practices (e.g., slope breakers, and sediment barriers) to minimize the potential for erosion and sedimentation in wetlands during and after construction;
- use equipment pads or timber riprap as needed to support construction equipment in saturated wetlands and reduce the potential for soil compaction;
- prohibit equipment refueling and the storage of fuels and hazardous substances in or within 100 feet of wetlands; and
- reseed unsaturated wetlands with annual ryegrass or similar cover crop at a rate of 40 pounds per acre to temporarily stabilize the soils and allow native vegetation to reestablish without excessive competition; and
- prohibit installation of surface facilities within wetlands as requested by the NDGF.

B.4.b.(9) Impact on Woodlands and Wooded Areas

The U.S. Geological Survey (“USGS”), National Land Cover Data Set (2001) did not identify wooded areas within the study area (see Exhibit J.2 Selection Criteria Land Use map set). As such, impacts to wooded areas and woody vegetation are expected to be minimal. Actual acreages will be determined prior to construction when EPND conducts a tree and shrub survey along the pipeline route.

If required, clearing of woody vegetation within the construction work area would result in some long-term change. In this region, it is anticipated that re-growth of trees to mature conditions could take up to 50 years, depending on the species. Permanent impacts would be limited to the permanent right-of-way and easements, which EPND would maintain in an herbaceous state by occasional mowing or brush clearing. EPND is also proposing to implement additional mitigation to minimize impacts on wooded areas. EPND would:

- reduce the width of the construction work area to 85 feet or less in wooded areas;
- conduct a tree and shrub survey prior to clearing;
- selectively cut and remove shrubs and trees within the 85-foot-wide construction work area leaving mature shrubs and trees in place where practical;
- cut woody vegetation flush with the surface of the ground such that root stock is left in place to aid in re-vegetation after construction (except over the trench line, in areas requiring grading, and where necessary to provide a safe work surface); and
- replace shrubs and trees affected by construction with bare root seedlings of similar species on a 2 to 1 basis as recommended by the NDGF provided that the shrubs and trees replaced are outside the permanent right-of-way, not within other utility rights-of-way, and authorized by the landowner or land management agency.

B.4.b.(10) Impact on Radio and Television Reception, and Other Communication of Electronic Control Facilities

A review of the Project study area did not identify radio, television, or other communication or control facilities within the proposed corridor or route. No effects on radio or television reception, or other communication or electronic control facilities are expected as a result of the proposed Project.

B.4.b.(11) Impact on Human Health and Human Safety

Presently, EPND owns and operates a 968-mile existing underground petroleum gathering and mainline pipeline system that extends from eastern Montana through North Dakota to Clearbrook, Minnesota and to the international boundary between the U.S. and Canadian. EPND has successfully completed and placed into operation a number of expansion projects since 2006, and is experienced in managing construction and operating pipeline systems that protect the public's health and safety.

EPND will design, construct, test, operate, and maintain the proposed Project in accordance with all applicable laws and standards. The U.S. Department of Transportation's pipeline standards are published in Parts 194 and 195 of Title 49 of the Code of Federal Regulations. The regulations are intended to ensure adequate protection of the public and to prevent accidents and failures. Part 195 specifically addresses petroleum pipeline safety issues. It specifies material selection and qualification; minimum design requirements; and protection from internal, external, and atmospheric corrosion. Part 194 prescribes emergency planning to prepare for prompt shutdown, containment and cleanup to minimize the effects of a pipeline release, should one occur.

Air Permitting Requirements

As discussed in Section B.4.g of the Corridor Certificate, EPND will be required to obtain an air pollution control Permit to Construct from the NDDH for construction of new storage tanks and associated equipment being proposed at each of its Beaver Lodge, Stanley and Berthold Station and Terminal sites. EPND plans to submit its applications prior to the initiation of its construction activities at each location. A complete inspection of each tank will be performed to verify information used for estimating emissions and documenting compliance with the permit will be completed prior to bringing these tanks into service.

The Beaver Lodge, Stanley, and Berthold Stations and Terminals currently operate under an air pollution control minor source Permit to Operate. Upon completion of the Project, EPND will notify the NDDH within 15 days after completing the Project to allow for an inspection by NDDH. Once the Permit to Construct requirements are verified, the NDDH will issue a revised minor source Permit to Operate which includes the new storage tank(s) for each Station and Terminal.

EPND will provide a copy of the NDDH Permit to Construct prior to the commencement of any construction activities.

Causes of and Prevention of Accidents on Pipelines

The major causes of pipeline leaks in the United States are corrosion (both internal and external), excavation damage, pipe or weld failure, incorrect operations, or natural causes (e.g. floods or outside force). To prevent these categories of failures, EPND will construct and maintain the Beaver Lodge Loop pipeline to meet or exceed industry and governmental requirements and standards. Specifically, the steel pipe will meet U.S. Department of Transportation (USDOT), Pipeline and Hazardous Material Safety Administration (PHMSA) federal codes under 49 CFR Part 195, follow standards issued by the American Society of Mechanical Engineers, National Association for Corrosion Engineers and American Petroleum Institute (API). As a safety factor, the proposed Beaver Lodge Loop Project is designed to withstand pressures over and above its normal operating pressures and will operate according to codes and regulations. All pipe is inspected and integrity-tested at the factory and transported per the highest technical standards. All of the pipe will be manufactured with fusion-bonded epoxy coating to protect against corrosion. The actual installation of the pipeline and all construction and testing records will be subject to regulatory inspection, including by PHMSA inspectors. PHMSA also conducts regularly scheduled field inspections of the pipeline facilities to ensure compliance with federal regulatory requirements, including the integrity testing of the pipeline through the use of internal inspection devices.

Once installed, the pipeline will be subjected to thorough testing to verify its integrity and compliance with specifications. Such testing will include checking coating integrity, using X-ray to examine 100% of field welds (over and above the 10% required by regulations), internally inspecting the entire length of each line by using an in-line inspection tool known as a caliper pig, and hydrostatically testing the line to qualify the maximum allowable operating pressure. The pipeline will only be placed into service after all construction standards and requirements are met and confirmed.

This pipeline is maintained and inspected according to PHMSA regulations, industry codes and prudent pipeline operating techniques. All of EPND's mainline liquids pipelines are externally coated to resist corrosion, internally inspected at regular intervals using in-line inspection technology, and equipped with a cathodic-protection system to prevent external corrosion. EPND's cathodic protection system and internal inspection program were implemented prior to these techniques becoming a regulatory standard.

EPND's pipeline system is patrolled and inspected by air at least every three weeks but not less than 26 times per year to watch for abnormal conditions or dangerous activities, e.g., unauthorized excavation along the pipelines' routes. EPND also conducts extensive public education and outreach programs that exceed industry (API Recommended Practice 1162) and federal (49 CFR 195.440) requirements concerning public awareness of pipelines and pipeline-safety matters. All EPND

lines are marked with signage and warnings, per federal regulations, at road and highway crossings, railroad crossings, navigable rivers, and other locations to alert the public to the presence of underground lines and to provide information, contact numbers, and emergency data.

Pipeline workers and contractors performing critical tasks are qualified under OSHA safety standards and PHMSA “operator qualification” rules and are subjected to federal drug and alcohol testing requirements. EPND meets, and often exceeds, these requirements so that human error in construction and operation is avoided.

Baseline Transportation Accident Rates

Releases from interstate liquid petroleum pipelines are reportable to PHMSA as required by 49 CFR Part 195 Subpart B. Currently, the federal regulations require reporting any release greater than 5 gallons (and/or if other threshold reporting criteria are met), which becomes public record. In addition, EPND is required by North Dakota to report releases to the North Dakota Department of Health.

There is no alternative mode of transportation or route to transport the equivalent daily volumes proposed by the Beaver Lodge Loop Project. However, it is illustrative to compare pipeline safety to other modes of transportation. Pipelines operate more safely than any other mode of oil transportation. In Table 7, the numbers show how much more likely a transportation mode is to have an accident of a particular type compared to an oil pipeline. For example, truck accidents result in deaths at least 87 times more often than pipeline accidents. Likewise, truck accidents result in fires and/or explosions about 35 times more frequently per barrel of oil transported per mile. (These figures include only accidents involving petroleum shipments, not all accidents for a given transportation mode).

Table 7			
Accident Rates of Petroleum Transportation Methods ^a			
Method	Death	Fire/Explosion	Injury
Truck	87.3	34.7	2.3
Rail	2.7	8.6	0.1
Barge	0.2	4.0	3.6
Tank Ship	4.0	1.2	3.1

^a Values less/more than 1.0 indicate risk of accident is lower/greater than pipeline transportation. Comparisons based on calculated rates per ton-mile.

Source: Allegro Energy Group as posted on the Association of Oil Pipelines website: <http://www.aopl.org>

Crude Oil Pipeline Accident Rates

An analysis of the historical record shows that the liquid petroleum pipeline industry's safety performance has improved significantly over the last 30 years. These improvements correlate with advancements in technology as well as increased environmental awareness. The annual number of spills has decreased by nearly 40%. Over the last 30 years, the number of spills has also dropped from an average of 318 in the first six years (1969 to 1974) to the most recent six year running average of 197 spills nationwide. The median size of a spill has greatly decreased. The annual volume of oil spilled from pipeline systems has fallen by about 60%, based on six year running averages (PHMSA website and Association of Oil Pipelines website).

EPND Pipeline Incidents and Public Safety

According to available records or knowledge of staff, there have been no deaths or major injuries of landowners or members of the public as a direct result of a pipeline leak on the EPND's North Dakota Pipeline System since the system began operations in the U.S. in 1965 (previously named Portal Pipeline Company).

B.4.b.(12) Impact on Animal Health and Safety

General construction-related effects on domestic animals and wildlife will result primarily from activity in the Project area during construction. The clearing of herbaceous and woody vegetation will temporarily reduce cover, nesting, and foraging habitat for some species. Clearing may also result in the loss of some members of small, slower moving species. However, most will move into adjacent undisturbed habitats until construction and restoration are complete. Overall habitat availability is not expected to change in the long term. Pipeline trenching activities and associated spoil piles may result in a short-term barrier to movement of some wildlife species (typically two to four weeks at any one area). Except for short-term interruptions during construction, existing public roads, farm lanes, and livestock crossings will be kept open, providing crossing access. Shelter belts and trees will be protected to the extent practicable in a manner compatible with the safe operation, maintenance, and inspection of the pipeline. Mitigation measures will be implemented to avoid or minimize potential adverse impacts on animal health and safety as described in EPND's EMP (see Exhibit E).

B.4.b.(13) Impact on Plant Life

During construction, vegetation will be removed from the construction right-of-way. Where extra workspace is required, additional vegetation will be removed. In nonagricultural areas, trees and shrubs cleared from extra workspace will be allowed to reestablish after construction, and the implementation of revegetation measures will take into account recommendations from applicable regulatory agencies and

arrangements with landowners. Overall, significant change in plant life is not anticipated.

B.4.c Policy Criteria (North Dakota Rules Chapter 69-06-08-02.4)

The ND-PSC may give preference to an applicant that will maximize benefits resulting from the adoption of policies and practices of the ND-PSC. These policies, and the extent to which the Project aligns with or reinforces these policies, are described below.

B.4.c.(1) Location and Design

EPND has designed the proposed Project to take advantage of its existing facilities to the extent practical. No designated Exclusion Areas are crossed by the route. Mitigation measures will be implemented to avoid or minimize potential adverse impacts on Avoidance Areas crossed.

The Project is designed and will be operated in a manner that meets or exceeds state and federal engineering, safety and operational design standards.

B.4.c.(2) Training and Utilization of Available Labor in this State for the General and Specialized Skills Required

No training of local labor is anticipated as a direct result of this pipeline expansion. During construction of the proposed facility, skilled and unskilled labor, both local and non-local workers will be employed by EPND or by the General Contractor selected to construct this proposed pipeline.

B.4.c.(3) Economies of Construction and Operation

Crude oil and natural gas are North Dakota's leading mineral products, and North Dakota is the fourth largest producer of crude oil in the country. The proposed Project would boost the state's economy and allow the state to capitalize on tax revenue gathered from production and extraction taxes.

Beneficial impacts on the economy would also result during construction from temporarily hiring local employees, and from a relatively large-scale, temporary influx of non-local construction workers. Unemployment in the area would see a temporary drop, and payroll taxes would temporarily rise.

Also, based on economic modeling by the Federal Bureau of Economic Analysis and consultation with EPND's economic expert, it is estimated that the Project construction will lead to 2,271 person-years of jobs and \$263 million in economic activity in North Dakota over the 2011 and 2012 period. This activity will be concentrated in the northwest part of the state. Additionally, the incremental

capacity, as proposed herein, is expected to lead to an increase in average annual revenues over the 2013-2022 periods of nearly \$58 million, which will further generate an estimated 423 jobs and nearly \$85 million in average annual state economic activity over that period.

Local businesses would benefit from the demand for goods and services generated by the temporary workforce's need for food and lodging. In addition, EPND would purchase some of the materials necessary for construction of the Project locally. EPND estimates that local purchases made for construction of the Project would primarily include consumables, fuel, equipment rental, and miscellaneous construction-related materials (e.g., office supplies).

B.4.c.(4) Use of Citizen Coordinating Committees

No Citizen Coordinating Committee is anticipated as a result of the Project.

B.4.c.(5) Commitment of a Portion of the Transmitted Product for Use in this State

EPND does not own any of the crude oil in its system, and does not determine the destinations for the products transported by its system. The nature of EPND's business is to provide transportation service to its customers as a common carrier, and to receive a fee for that service pursuant to tariffs authorized by the Federal Energy Regulatory Commission under the Interstate Commerce Act.

B.4.c.(6) Labor Relations

The Project will have no anticipated effect on labor relations within North Dakota.

B.4.c.(7) Coordination of Facilities

As previously mentioned, EPND has designed the proposed expansion Project to take advantage of its existing facilities to the maximum extent practical and site new facilities to minimize human and environmental impacts to the greatest extent possible.

B.4.c.(8) Monitoring of Impacts

EPND is committed to protecting the environment and complying with all applicable environmental laws, regulations, and standards. EPND plans to implement the following procedures for environmental training and environmental inspection throughout the course of the Project.

B.4.c.(8)(i) Environmental Training

EPND will communicate the environmental requirements of the Project to Project personnel, and implement the following procedures to ensure that environmental compliance is maintained at the construction site.

- require environmental training for all Project personnel (both contractor and EPND) prior to construction;
- require Project personnel visiting the work site to receive environmental training;
- require everyone who attends training to sign an acknowledgement form and receive, as a proof-of-training, a copy of the training booklet and a hardhat sticker; and
- require all personnel to display a hardhat sticker when on a job site or dismiss personnel from the job site until the person obtains a hardhat sticker through completion of training.

B.4.c.(8)(ii) Environmental Monitoring

Environmental monitoring, in the form of ongoing site inspection, will be conducted during and following construction. Contract specifications will incorporate environmental protection and mitigation measures, and contractors will be expected to implement these measures in the field. Contractor training and project orientation will also be provided by EPND.

Environmental data has been assessed, specifically cultural resources, wetlands and protected species, as described in Section B of the Application for Certificate for Corridor Compatibility. EPND will continue to work with appropriate regulatory agencies and gather comprehensive information during the permitting process.

EPND believes that construction-related impacts will be adequately mitigated throughout the Project route by the use of best management practices, industry accepted construction techniques, and environmental inspection. Therefore, long-term monitoring of impacts directly related to the Project is not anticipated. Following the installation of the pipeline, a thorough inspection will be performed to ensure restoration efforts have been completed.

B.4.c.(9) Utilization of Existing and Proposed Rights-of-way and Corridors

EPND plans to install the majority of its new 16-inch diameter transmission line parallel to its existing Line 82 pipeline from the Beaver Lodge Station and Terminal Facility in Williams County to the Berthold Station and Terminal Facility in Ward County. However, there will be certain areas along the proposed pipeline route where deviations from the existing Line 82 pipeline will require new right-of-way to route around specific areas, such as encroachments near the existing pipeline or to avoid certain land features.

Of the total 56 miles, approximately 43.7 miles of the new 16-inch diameter pipeline will be co-located parallel to the EPND's existing Line 82 pipeline, thus no new pipeline right-of-way will be required. The new pipeline will be installed with a 25-foot offset or buffer from EPND's existing Line 82, and will have the following right-of-way requirements and construction footprint (see Table 8).

<p align="center">Table 8 Right-of-Way Requirements and Construction Workspace Co-located with Line 82</p>					
Land Type	Study Area	Survey Corridor	Typical Construction Footprint	Extra Temporary Work Space at Crossings	Offset Between New & Existing Pipelines
Upland	1-mile	250 feet	110 feet	75 feet	25 feet
Wetland	1-mile	250 feet	85 feet	75 feet	25 feet

For the remaining 12.3 miles of new 16-inch diameter pipeline, new right-of-way easements will be required in certain areas where route variances are necessary to avoid specific areas of encroachment near EPND's existing pipeline or to avoid certain land features (see Table 9 below).

Table 9: Proposed Route Variances					
Route Map Sheet No.	Beginning Location	Ending Location	County	Avoidance of Certain Special Features	Distance
1, 2	Section 20, T-156-N, R-86-W	Section 24, T-156-N, R-87-W	Ward	Avoid USAF cable	2.6
4	Section 24, T-156-N, R-88-W	Section 24, T-156-N, R-88-W	Mountrail	Avoid USAF cable	0.4
6	Section 24, T-156N, R-89-W	Section 24, T-156N, R-89-W	Mountrail	Avoid Cultural Resource	0.5
7	Section 19, T-156-N, R-89-W	Section 19, T-156-N, R-89-W	Mountrail	Avoid ponds/wetlands	0.2
8	Section 24, T-156-N, R-90-W	Section 24, T-156-N, R-90-W	Mountrail	Avoid ponds/wetlands	0.4
10, 11, 12	Section 27, T-156-N, R-91-W	Section 25, T-156-N, R-92-W	Mountrail	Avoid town of Stanley, Stanley airport	4.2
12, 13	Section 27, T-156-N, R-92-W	Section 28, T-156-N, R-92-W	Mountrail	Avoid well pad	0.3
15	Section 31, T-156-N, R-93-W	Section 31, T-156-N, R-93-W	Mountrail	Avoid residence	0.6
16,17	Section 36, T-156-N, R-94-W	Section 33, T-156-N, R-94-W	Mountrail	Minimize crossings of White Earth River	2.8
19	Section 33, T-156-N, R-95-W	Section 5, T-155-N, R-95-W	Williams	Terminus at Beaver Lodge Station expansion	0.3

For the route variances shown above, EPND will have the following right-of-way requirements and construction footprint (see Table 10).

Table 10 Right-of-Way Requirements and Construction Workspace Route Variances						
Land Type	Study Area	Surveyed Project Corridor	Typical Construction Footprint	Typical Temporary Work Space	Extra Temporary Work Space at Crossings	New Permanent Right-of-Way
Upland	1-mile	250 feet	110 feet	60 feet	75 feet	50 feet
Wetland	1-mile	250 feet	85 feet	35 feet	75 feet	50 feet

Enclosed herewith as Exhibit M are typical right-of-way configuration drawings showing the typical right-of-way requirements as indicated on Tables 8 and 10 of this application.

At this time, EPND has not identified its pipe storage yards nor determined any private or new access roads needed for this Project. This detailed information will be filed prior to construction. EPND will acquire additional workspace from the landowners where necessary; use of unauthorized workspace is prohibited without the landowner and EPND's approval. In all cases, the size of additional temporary workspace will be kept to the minimum necessary to safely conduct work. Temporary working areas will not be subject to permanent easement restrictions upon completion of construction.

B.4.c.(10) Other Existing and Proposed Transmission Facilities

No other existing or proposed transmission facilities will be involved in the Project within North Dakota.

B.4.d Design and Construction Limitations

See Section A.3 of the Application for Corridor Certificate.

B.4.e Economic Considerations

See Section B.2.g of this Application and Section C of the Application for Corridor Certificate.

B.4.f Human Environment

The Project area is sparsely populated and farming is the predominant economic activity. With the exception of a few parcels of land owned by the State of North Dakota and the road crossings, the land crossed by the route is privately owned. Seven rural residences and one office are located within 500 feet of the proposed pipeline (see Table 3 in Section B.4.a.(3)). With the exception of passing through the incorporated limits of the City of Stanley, the route does not pass through the incorporated limits of cities or public parks or public recreation areas.

The pipeline route crosses 50 roads, including 1 state highway (North Dakota State Highway 8). The pipeline crosses an active Burlington Northern Santa Fe Railroad in two locations. Paved roads and the railroad crossings will be bored; therefore, use of these facilities will not be disrupted as a result of the Project. Gravel roads will be open cut. Open cutting a road will temporarily close it to traffic; however, the road network throughout the Project area is sufficient that suitable alternative routes are readily available.

Road and railroad crossings for the route are summarized in Table 11 below. All road crossings will be bored unless the applicable permitting agency specifically permits EPND to open cut the road.

TABLE 11	
Roads Crossed by the Beaver Lodge Loop Project Route	
Milepost	Roadway Name
0.04	BURLINGTON NORTHERN SANTA FE RAILROAD
0.93	CR 9 / 310TH ST NW
2.37	BURLINGTON NORTHERN SANTA FE RAILROAD
2.98	338TH ST NW
3.98	352ND ST NW
4.72	FIELD ROAD
5.02	366TH ST NW
6.02	380TH ST NW
7.97	408TH ST NW / WARD - MONTRAIL C/L
9.00	61ST AVE NW
11.18	62ND AVE NW
14.02	66TH AVE NW
15.08	52ND ST NW
18.02	70TH AVE NW
20.02	72ND AVE NW

TABLE 11	
Roads Crossed by the Beaver Lodge Loop Project Route	
Milepost	Roadway Name
20.69	62ND ST NW
22.10	74TH AVE NW
22.47	FIELD ROAD
23.11	75TH AVE NW
25.11	77TH AVE NW
26.06	78TH AVE NW
27.06	79TH AVE NW
28.07	80TH AVE NW
29.45	UNNAMED ROAD
29.53	NORTH DAKOTA STATE HWY 8
29.72	GRAVEL PIT ROAD
29.98	FIELD ROAD
30.52	61ST NW
30.56	82ND AVE NW
31.06	UNNAMED ROAD
31.56	83RD AVE NW
32.52	84TH AVE NW
33.59	85TH AVE NW
34.59	86TH AVE NW
35.61	87TH AVE NW
36.63	88TH AVE NW
37.63	89TH AVE NW
38.60	90TH AVE NW
39.60	91ST AVE NW
40.61	92ND AVE NW
41.61	93RD AVE NW
42.10	FIELD ROAD
42.61	94TH AVE NW
44.11	61ST NW
48.03	UNNAMED ROAD
49.06	UNNAMED ROAD
50.06	101ST AVE NW
51.03	102ND AVE NW - MONTRAIL(E)/ WILLIAMS(W) COUNTY LINE
51.99	102A AVE NW

TABLE 11	
Roads Crossed by the Beaver Lodge Loop Project Route	
Milepost	Roadway Name
53.03	102B AVE NW
54.03	102C AVE NW / CR 23
55.07	60TH ST NW/103RD AVE NW INTERSECTION

B.4.g Terrain and Geology

The Beaver Lodge Loop Project is located in northwestern North Dakota, traversing four miles of eastern Williams County, the entire length of Mountrail County, and nine miles of western Ward County. This location places the Project in the center of the Williston Basin, a bedrock shale deposit formed in the Tertiary Period (65 million years ago). The surface geology was formed by Pleistocene glaciations, characterized by mixed sediment and variable surface formations. The Project lies in the Great Plains Province, a physiographic region defined by ridges, valleys, small streams, and wind action contributing to soil formation.

On its eastern side, the Project area crosses the Missouri Coteau, which runs northwesterly through North Dakota into Saskatchewan. The Coteau is a hilly formation that rises to over 2000 feet in elevation. It has a closed drainage system, with numerous sloughs and lakes, but no streams. The Missouri Coteau forms the continental divide, separating drainage north to Hudson Bay and south to the Gulf of Mexico. On the southern side of the Coteau, the Missouri Slope declines in elevation as it approaches the Missouri River trench. The topography of the Missouri Slope is gently sloping to hilly, with drainages like the White Earth River and the Little Knife River near Stanley flowing into the Missouri River.

The development of the soils of the Project area differed according to the two distinct underlying geological structures. Soils along the Missouri Coteau are exceptionally thick because they formed in the Coteau’s non-integrated drainage system. This formation also resulted in numerous isolated lakes and low areas. By contrast, soil formation along the Missouri Slope tends to be thinner (although certain soils types can be up to 60 inches in depth) because of the sloping drainage towards the Missouri River, and resulting soil run-off.

B.4.h Soils

The route crosses the Northern Black Glaciated Plains Major Land Resource Area (“MLRA”). The nearly level to gently rolling till plains include areas of kettle holes, kames, and moraines. Some of the depressions contain lakes. Nearly level glacial lake plains and some steep slopes adjacent to streams are also in the area. The dominant soils in this MLRA are Mollisols. These generally very deep, well drained

to poorly drained soils have a loamy or clayey texture and a frigid temperature regime. In general, the pipeline route crosses soils that formed in glacial till deposits.

Detailed soil characteristics within the survey corridor were identified and assessed using the Soil Survey Geographic database (SSURGO; U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), 2008). The SSURGO database is a digital version of the original county soil surveys developed by the NRCS for use with geographic information systems (GIS). It provides the most detailed level of soils information for natural resource planning and management. SSURGO is linked to an attribute database that gives the proportionate extent of the component soils and their properties for each map unit (USDA, NRCS 1995). The SSURGO database was used to define soil characteristics along the pipeline route in Williams, Mountrail and Ward Counties. SSURGO attribute data consist of physical properties, chemical properties, and interpretive groupings. Attribute data apply to the whole soil (e.g., listed hydric, prime farmland soils, slope class) as well as to layer data for soil horizons (e.g., texture, permeability). The soil attribute data can be used in conjunction with spatial data to describe the soils in a particular area.

Tables 12, 13, and 14 list the soil associations, the approximate acreage of each soil association, and provides a summary of soil limitations for the pipeline route. Approximately 1.9 percent of the soils crossed by the pipeline route are NRCS-classified prime farmland, provided there is sufficient artificial drainage to remove excess surface water.

TABLE 12
Soil Characteristics in the Beaver Lodge Loop Pipeline Survey Corridor ^a

Total Acres within Survey Corridor	Prime Farmland ^a	Hydric Soils	Compact. Prone	Highly Erodible		Reveg. Concerns	Stony/Rocky	Shallow to Bedrock
				Water	Wind			
				Acres (percent)				
1974	38 (1.9)	0 (0)	36 (1.8)	1085 (55.5)	70 (3.5)	1014 (51.8)	1 (<0.1)	122 (6.2)

^a Prime farmland includes soils that are designated as prime farmland or prime farmland if drained or irrigated. "Farmlands of Statewide or Local Importance" were not included in this estimate.

^b The value above includes soils which had a depth to a restrictive layer (e.g., bedrock, cemented layers, heavy clay, and frozen layers) of 60 inches or less.

TABLE 13
Topsoil Depths and Slope Class in the Beaver Lodge Loop Pipeline Survey Corridor ^a

Total Acres	Topsoil Depth (inches)				Slope Class (percent)				
	0-6	>6-12	>12-18	>18	0-5	>5-8	>8-15	>15-30	>30
	Acres (percent)								
1974	1828 (92.6)	83 (4.2)	64 (3.2)	0 (0)	890 (45)	430 (21.8)	37 (1.9)	504 (25.6)	112 (5.7)

TABLE 14				
Topsoil Depths on Prime Agricultural Land in the Beaver Lodge Loop Pipeline Survey Corridor ^a				
	Topsoil Depth (inches)			
	0-6	>6-12	>12-18	>18
Total Acres	Acres (percent)			
1974	20 (1.0)	22 (1.1)	2 (0.1)	0 (0)

Potential temporary effects on soil resources include the loss of soil productivity due to erosion, soil mixing, or soil compaction. Soil disturbances associated with clearing, grading and trenching will expose soils to water and wind, increasing the potential for erosion. During construction, the effects of erosion will be mitigated by use of silt fence and other erosion control measures as described in EPND's EMP (see Exhibit E).

Soil productivity could potentially be affected if topsoil were to become mixed with subsoil during construction. EPND will segregate topsoil in agricultural lands, and other lands where soil productivity is an important concern, during trench excavation to minimize potential soil mixing. In cropland, topsoil will be removed to a maximum depth of 12 inches from the trench and spoil storage area unless otherwise requested by the landowner. Topsoil will be stored separately from the trench spoil and will be returned to its approximate original location after the trench is backfilled. Heavy equipment used to construct the pipeline may cause soil compaction along the right-of-way. Soils will be tilled with a chisel plow or other deep-tillage equipment to loosen the soil to the reasonable satisfaction of the landowner.

B.4.i Vegetation and Wildlife

Vegetation

As discussed in Sections B.4.b.(1) and B.4.j, the study area is comprised predominantly of agricultural land (cropland and pasture) and grasslands (herbaceous rangeland). Non-agricultural areas include wetlands, waterbodies, and a small amount of developed land.

The primary impact on vegetation will result from construction-related removal or disturbance of vegetation on the right-of-way. Vegetation will also be removed from areas where extra workspace is required (e.g., road and waterbody crossings).

EPND will clear the right-of-way only to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the pipeline. At waterbody crossings, EPND will maintain a 10-foot-wide vegetative cover until the actual crossing of the waterbody takes place.

In areas that require permanent revegetation, EPND will specify appropriate seed mixes, application rates, and seeding dates, taking into account recommendations of appropriate state and federal agencies and landowner requests.

During construction in unsaturated wetlands, topsoil will be segregated from the trench line to preserve natural sources of seed and rootstock. After the trench is backfilled, the topsoil will be replaced to facilitate the natural revegetation process. Consequently, significant changes in cover types are not anticipated.

Wildlife

As discussed in Section B.2.j of the Route Permit application and Section B.3 of the Application for a Corridor Certificate, EPND contacted NDGF and USFWS to identify known occurrences of state and federally listed threatened or endangered species and critical habitat located within the study area. USFWS identified that the Project study area contains known nesting sites, and designated critical habitat for the piping plover (approximately 0.2 mile from the Project centerline). To address biological resources concerns that the NDGF and USFWS identified during agency consultations, EPND commissioned a habitat assessment of the Project area in August 2010.

The assessment did not reveal threatened and endangered species or critical habitat areas of concern, and concluded the Project is not located across or near any significant ecological community and is not likely to adversely affect critical wildlife habitats. Suitable nesting habitat for migratory birds was identified within the proposed pipeline route. The majority of the suitable habitat is located adjacent to wetlands and road crossings, and within portions of the Project that cross native prairies.

A ground survey for tree and ground raptor nests was conducted within the survey corridor during the on-site evaluation. Shelter belt tree plantings, which may provide nesting habitat for raptors were observed around farmsteads and scattered in crop fields along the route. No raptor nests were observed during the on-site evaluation; however, the on-site evaluation was performed outside of the nesting season for migratory birds; therefore, nesting sites were not observed. EPND is proposing to conduct raptor surveys in Spring 2011, prior to construction.

Although some loss of members of smaller, slower moving species may occur during construction, most species will move away from the right-of-way into adjacent undisturbed habitats until construction and restoration are complete. Long-term habitat availability is not expected to change as a result of the Project, as the right-of-way will be restored to pre-construction conditions to the extent feasible. Construction-related impacts on aquatic species will be temporary and limited primarily to areas immediately at or downstream from the pipeline crossings.

B.4.j Land Use

Agricultural production is the predominant land use (55%) in the study area. Principal crops include wheat, barley, dry beans, sunflowers, sugar beets, canola, flaxseed, peas, and alfalfa. The Project will have only a temporary effect on agricultural land use. Crop production will be temporarily disrupted in cases where the construction period overlaps with the growing season. Landowners will be compensated for crop loss or reduced yields caused by construction of the pipeline. Deep tillage or other measures will be implemented as necessary to mitigate effects of soil compaction.

Herbaceous rangeland suitable for livestock grazing comprises approximately 42% of the study area. The primary impact would be temporary prohibition of livestock grazing in the Project area and restrictions on livestock movement across the Project area during construction. Given the narrow, linear nature of the Project and the alignment of the pipeline along property boundaries, where possible, livestock grazing reductions and livestock movement restrictions are expected to be minor.

Urban, built-up and barren land comprises less than one percent of the study area, the vast majority of which occurs along the outer edges of the one-mile wide study area. Construction of the proposed pipeline is not anticipated to affect developed or barren land.

Construction and operation of the pipeline will preclude future unrelated industrial development on lands occupied by the permanent maintained right-of-way; the majority of the Project (approximately 80%) will be located on or adjacent to existing right-of-way; therefore, impacts to land use are anticipated to be minimal. Furthermore, after installation of the pipeline, disturbed areas will be restored to preconstruction conditions to the extent practicable, and will generally revert to preconstruction uses. Therefore, no long-term change in land use is anticipated.

B.4.k Water Resources

Ground Water

No wells will be installed or abandoned as part of this Project, nor will connection to a municipal water supply be required. Groundwater can be adversely affected by pipeline construction that involves blasting. For the Project, no blasting of bedrock is anticipated, and other construction-related disturbance of soils is not expected to adversely affect groundwater.

A potential source of adverse impacts on groundwater is the introduction of contaminants resulting from accidental spills of construction-related chemicals, fuels, or hydraulic fluid. This potential effect is greatest near water wells. EPND's EMP and Spill Prevention, Control and Countermeasure ("SPCC") Plan (see Exhibits E

and I) describe preventative measures that EPND will implement to prevent accidental discharges of fuels or other hazardous substances, including specific storage and handling requirements. The SPCC Plan also describes response, containment, and reporting and clean-up procedures. With the implementation of these protected measures, contamination of groundwater due to construction activities is not anticipated.

Surface Waters

Topographic maps and current aerial photos were reviewed to identify streams, rivers, and lakes crossed by the pipeline route. One perennial waterbody is crossed by the pipeline route (White Earth River). The pipeline route also crosses several drainage ditches and intermittent waterbodies. No state or federally designated wild or scenic rivers are crossed by the pipeline route. Waterbodies crossed by the Project are listed in Table 15.

TABLE 15				
Waterbodies Crossed by the Beaver Lodge Loop Project Route				
Milepost	Waterbody Name	Type	Hydrology	County
3.68	Unnamed Tributary	Lake/Pond	Intermittent	Ward
26.02	Little Knife River	River	Intermittent	Mountrail
28.38	Little Knife River	River	Intermittent	Mountrail
41.88	Unnamed Tributary	Stream	Intermittent	Mountrail
43.04	Unnamed Tributary	Stream	Intermittent	Mountrail
44.88	Unnamed Tributary	Stream	Intermittent	Mountrail
46.90	White Earth River	River	Perennial	Mountrail
48.50	Unnamed Tributary	Stream	Intermittent	Mountrail
53.58	Dry Fork Creek	Stream	Intermittent	Williams
54.37	Unnamed Tributary	Stream	Intermittent	Williams

Waterbody crossings are planned to be constructed using either directional bore or open-cut construction techniques, with most waterbodies crossed by the open-cut method. EPND plans to use a directional bore method to cross the White Earth River, and is presently working with applicable permitting agencies to determine the best crossing methodology for the Little Knife River.

With the exception of the White Earth and Little Knife Rivers, the waterbodies crossed by the route are much smaller and these waterbodies will be crossed by means of the “wet trench” (open-cut) construction technique. In a wet trench crossing, backhoes excavate a trench in the waterbody channel, leaving “hard plugs” of soil in place on each bank of the crossing. When the trench has been excavated and the crossing section fabricated, the hard plugs are removed and the pipe segment is moved into place. The newly installed pipeline is welded in place and the trench is backfilled with native materials or as required by applicable permits.

Temporary, incremental increases in sediment load can be expected downstream of open-cut waterbody crossings during the excavation and backfilling phases of construction. Additionally, some incremental increase in surface run-off sedimentation may be expected to occur at each of the crossings due to the close proximity of exposed soils. No significant or long-term increase in sedimentation is expected from construction of the waterbody crossings.

EPND will obtain applicable permits for waterbody crossings. One or more environmental inspector(s) will be retained to monitor compliance with applicable permit requirements and specifications required by EPND's EMP.

Wetlands

EPND commissioned a wetland and waterbody assessment of the survey corridor based on the initial pipeline route established in May 2010. McCain completed a wetland delineation survey along the proposed route within a 250-foot-wide corridor, and is currently completing surveys in other specific areas as discussed in this application. Results of the delineation are discussed in Section B.4.b.(8).

Construction of the Project will not result in the permanent drainage or filling of wetlands. EPND will implement the measures identified in its EMP to minimize adverse effects on wetlands during construction and restore wetlands following construction. Therefore, effects on wetlands are expected to be short-term and minor. During trenching, water quality of inundated wetlands will be temporarily affected due to the suspension of sediments and organic matter. Construction of the Project will result in temporary disturbance to some of the existing vegetation along the pipeline route and within the right-of-way.

During construction in unsaturated wetlands, topsoil will be segregated from the trench line to preserve natural sources of seed and rootstock. After the trench is backfilled, the topsoil will be replaced to facilitate the natural revegetation process. The long-term operation and maintenance of the pipeline will not have adverse effects on wetland function or value.

Construction in wetlands will require authorization by the COE-Omaha District. EPND will obtain necessary authorization for wetland crossings. Work in wetlands will be conducted in accordance with applicable permit conditions.

Water Use

The Project will not significantly affect water use patterns. Following construction, drains, swales, creeks and rivers will be restored to preconstruction conditions to the extent practicable to minimize disruption of water resources.

The Project will require temporary appropriations of water (likely surface water) for use in the hydrostatic testing of the newly installed pipeline. Additionally, some temporary trench dewatering may be required, particularly during road bores. No significant effect on existing and future water uses is anticipated.

Discharge of water used to hydrostatically test the new pipeline is not expected to have an impact on the environment or receiving waters. The discharge is regulated by the NDDH under a North Dakota Pollutant Discharge Elimination System (NDPDES) general permit issued for the discharge temporary trench dewatering and hydrostatic testing activities (Permit No. NDG-07-0000). Water appropriated for hydrostatic testing will be subject to permit conditions from the NDSWC and is not expected to have an environmental impact.

Surface Water Runoff

Potential construction-related effects on surface waters are primarily related to sedimentation from uncontrolled erosion of disturbed areas. Much of the pipeline route is level or only gently sloping, which limits the potential for runoff effects. Because the right-of-way will be restored to preconstruction conditions, area runoff following construction will generally reflect surrounding land use and pre-existing conditions.

EPND will obtain authorization under a general permit for Storm Water Discharges Associated with Construction Activity from the NDDH (NDPDES Permit No. NDR-10-0000). EPND's EMP, which was developed in part to meet requirements of this permit, describes best management practices EPND will implement to minimize off-site erosion from site storm water runoff. These practices will protect surface water and soil resources within the Project area. EPND's EMP will be included in the construction specifications for the Project and enforced by one or more environmental inspectors during construction.

Discharges to Surface Waters

During construction, point source wastewater discharge will be generated from hydrostatically testing the new pipeline prior to placing it in service. Discharges will also occur as needed for trench dewatering during construction. The NDDH has developed a General Permit (NDPDES Permit No. NDG-070000) which authorizes the discharge of waters related to temporary dewatering and hydrostatic testing. EPND will obtain authorization for construction-related discharges and will conduct trench dewatering and hydrotest water discharges in a manner consistent with the NDPDES General Permit.

Testing and discharge is anticipated to be consistent with past practices and experience. Discharges of hydrostatic test water typically are controlled discharges directly to the ground surface or occasionally into Waters of the State. Specific

discharge point(s) for hydrostatic test water for the pipeline have not been determined at this time. In most cases, it is anticipated that this water will be acquired from a river crossed by the pipeline route and discharged back to the original source. The NDPDES permit specifies that discharge water must be free from process and other wastewater discharge.

Protection from Fuel Spills

EPND has developed a SPCC Plan to minimize the potential for accidental releases of petroleum or other substances during construction. Water resources will be protected from fuel spills by prohibiting the storage of fuel within 100 feet of a wetland or surface water body. Refueling and overnight parking of equipment will not be allowed within this zone unless, due to site-specific conditions, there is no practical alternative. EPND's EMP and SPCC Plan describe protective measures that must be implemented. Contractors will be required to provide adequately trained personnel, and proper equipment and materials to contain and clean up spills of fuel, lubricating oil or hydraulic fluid that result from equipment failure.

B.4.I Cultural Resources

Kadmas, Lee & Jackson ("KL&J") completed a literature review for the Beaver Lodge Loop Project in May 2010. There were 228 cultural resources identified within a one-mile radius of the proposed pipeline route. Three of the previously recorded cultural resources are located within the 250-foot survey corridor itself. The literature review also revealed that 60 previous cultural resources inventories have been conducted within one mile of the proposed pipeline route.

KL&J conducted a Class III inventory field survey of the pipeline corridor in May 2010. The survey consisted of pedestrian survey at 20-meter transects of a 250-foot wide corridor. Ground visibility was variable, but adequate, during the survey, averaging 35 percent. Auger probes were excavated at several locations where ground visibility was zero percent. The field survey revisited the three previously recorded cultural resources sites, and recorded four newly identified sites. All the cultural resources recorded are archaeological sites, that is, they are buried and ground surface resources. No above ground properties were recorded. KL&J prepared a technical report of their methods, findings and recommendations for site treatment, and submitted it to the NDSHPO on July 20, 2010. Of the seven archaeological sites visited, two were recommended as *not eligible for listing* on the National Register of Historic Places ("NRHP"), and five were *unevaluated for listing* on the NRHP. The report recommended that if the unevaluated sites were avoided during pipeline construction, there would be *No Affects to Historic Properties*. The report further recommended that if any of the unevaluated sites could not be avoided, they should be evaluated for NRHP listing by testing for the presence of subsurface deposits, and datable artifacts or features. In a letter dated August 13, 2010, NDSHPO agreed with the recommendations outlined in the report.

Of the five *unevaluated* sites, EPND has made a minor route deviation near Mile Post 15 to avoid one of the five sites. However, for the remaining four sites, KL&J is conducting further field testing of these sites to determine whether they meet the criteria for being listed on the NRHP, and to further determine if avoidance or mitigative measures will be necessary at these locations. Once the field testing is completed, KL&J will report its findings and recommendations to NDSHPO. EPND and KL&J will carry out any treatment plans agreed to by NDSHPO in order to avoid or minimize impacts to these sites as applicable.

Therefore, since KL&J's technical report includes sensitive information about the location and character of the five *unevaluated* archaeological sites, EPND is filing a redacted version of this report. All sensitive information has been removed from the public version (see Exhibit C.1). EPND will supplement its application with the final results of the NDSHPO's findings and conclusions, as deemed appropriate by this agency.

Since conducting the initial corridor surveys, EPND has made some minor route adjustments and identified areas (outside of the original survey corridor) where extra workspace may be needed. The extra workspace areas will require cultural surveys. Presently, KL&J is completing surveys in these areas and will present those results to NDSHPO. EPND will continue to work with consultant KL&J to receive NDSHPO concurrence with their cultural resources findings and recommendations for the protection of historic properties. EPND will provide the ND-PSC with the NDSHPO's concurrence letter its upon receipt.

B.5. THE CRITERIA TO BE EVALUATED SHALL INCLUDE AT A MINIMUM ALL OF THE FOLLOWING, WHICH ARE WITHIN THE DESIGNATED CORRIDOR:

- Exclusion Areas;
- Avoidance Areas;
- Selection Criteria;
- Policy Criteria;
- Design and Construction Limitations; and
- Economic Considerations.

Complete descriptions, potential impacts, and mitigation measures relevant to the six criteria cited above are provided in section B.4 in conjunction with the descriptions of potential impacts. Below is a discussion of additional measures EPND will employ.

B.6. MITIGATION MEASURES

B.6.a Measures to Preserve the Human Environment

EPND will require its construction contractor to clean up on a daily basis personal litter, bottles and paper deposited by right-of-way preparation and construction crews. Waste and scrap that is the product of pipeline construction will be removed and properly disposed of in accordance with applicable regulations before construction is completed.

To the maximum extent practicable, EPND will minimize noise and dust resulting from construction near residential areas.

EPND will obtain applicable permits prior to conducting road crossings. Temporary signs will be posted at each crossing as appropriate to alert motorists of construction activity. Paved roads and railroads will be bored which will minimize interference with traffic flow caused by construction activities.

B.6.b Measures to Protect Terrain and Geological Resources

EPND will, to the extent practicable, restore the area affected by pipeline construction to the natural conditions that existed immediately before construction of the pipeline. Restoration will be compatible with the safe operation, maintenance, and inspection of the pipeline.

To the extent practicable, EPND will restore the construction area to pre-construction contours. Measures such as slope breakers, erosion control blankets and revegetation will be employed to maintain the stability of slopes along the right-of-way. No crown of backfill material will be left over the trench in wetlands.

Fuel and all other hazardous materials will be stored in accordance with the requirements of EPND's SPCC Plan (Exhibit I). The SPCC Plan also describes response, containment, and cleanup measures.

B.6.c Measures to Protect Soils

EPND will implement temporary and permanent erosion control measures as specified in the EMP (Exhibit E). The EMP will be included in contract documents and enforced as such throughout the Project.

Temporary erosion and sedimentation control measures may include installation of silt fence, straw bales, slope breakers, trench breakers, erosion control fabric and mulch.

To minimize potential impacts on soil productivity, topsoil will be segregated during trench excavation in agricultural land, unsaturated wetlands, and if applicable, other

areas where soil productivity is an important consideration. Unless otherwise requested by the landowner, topsoil in cropland will be removed to a maximum depth of 12 inches from the trench and spoil storage area and stored separately from the trench spoil. After the trench is backfilled, topsoil will be returned to its approximate original location in the soil horizon.

Compaction of agricultural soils will be minimized by restricting construction activities during periods of prolonged rainfall. Where unacceptable levels of compaction occur in agricultural lands, deep tillage, a chisel plow or other deep tillage equipment will be utilized to loosen the soil to the reasonable satisfaction of the landowner.

EPND will retain environmental inspectors to monitor the contractor's compliance with applicable requirements to protect soil resources during construction of the Project.

B.6.d Measures to Protect Vegetation and Wildlife

EPND will clear the right-of-way to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the pipeline.

In areas that require permanent revegetation, EPND will specify appropriate seed mixes, application rates, and seeding dates, taking into account recommendations of appropriate state and federal agencies and landowner requests. In non-agricultural areas, vegetation cleared from extra workspace will be allowed to revegetate after construction depending on arrangements with the landowner. Consequently, significant changes in cover types are not anticipated.

After completion of waterbody crossings, EPND will revegetate disturbed stream banks in accordance with the EMP and requirements of applicable state or federal permits. During construction in unsaturated wetlands, topsoil will be segregated from the trench line to preserve natural sources of seed and rootstock. After the trench is backfilled, the topsoil will be replaced to facilitate the natural revegetation process.

EPND will take appropriate precautions to protect livestock and crops affected by construction. Operation of the proposed pipeline is not anticipated to significantly affect terrestrial wildlife, fisheries resources, or other aquatic species. Shelter belts and trees will be protected and restored by EPND to the extent practicable in a manner compatible with the safe operation, maintenance, and inspection of the pipeline.

B.6.e Measures to Protect Land Use

EPND will obtain and comply with applicable county permits regulating zoning and land use. These permits may include, but are not limited to grade and fill permits, ditch crossing permits, road and utility permits and conditional use permits. EPND will retain one or more environmental inspectors to monitor compliance with environmental conditions of county permits.

EPND will repair surface drains disturbed during right-of-way preparation, construction and maintenance activities. EPND will repair private roads and farm lanes damaged when moving equipment or when obtaining access to the right-of-way. EPND will repair or replace fences and gates removed or damaged as a result of right-of-way preparation, construction or maintenance activities.

The Project will be installed at a minimum depth of 48 inches from the surface contour to minimize the potential for environmental damage resulting from deep tillage activities unless modified to accommodate special construction issues at the site.

Shelter belts and trees will be protected by EPND to the extent possible in a manner compatible with the safe operation, maintenance, and inspection of the pipeline.

B.6.f Measures to Protect Water Resources

EPND will obtain applicable permits for crossing wetlands and waterbodies and for water appropriations related to hydrostatic testing and trench dewatering. Environmental inspectors will monitor compliance with applicable waterbody and wetland protection requirements during construction of the facilities.

Measures to protect water resources have been discussed to some extent in Section B.4.k and in previous mitigation sections on soils (see Section B.6.c) and vegetation and wildlife (see Section B.6.d). EPND's EMP describes these measures in detail, and contains illustrations of how sediment control devices are typically installed at waterbody crossings. Additionally, EPND will maintain a 20-foot-wide vegetative buffer until the actual crossing of the waterbody takes place. Temporary sediment control measures such as silt fence installed at each crossing will minimize the introduction of sediment into waterbodies during construction and minimize the movement of spoil and sediment from surface runoff during and after construction. Permanent erosion control measures, such as vegetation and installation of slope breakers, will effectively stabilize riparian zones. EPND will stabilize stream banks disturbed during construction using methods as directed by applicable state and/or federal permits.

For open-cut crossings, "hard plugs" of soil prevent the flow of water from the waterbody into the adjacent trench and the migration of sediment from the adjacent trench into the waterbody. After the pipe is installed, the trench will be backfilled in

such a manner to restore the natural contours of the waterbody to the extent practicable. EPND plans to use a directional bore method to cross the White Earth River, and is presently working with applicable permitting agencies to determine the best crossing methodology for the Little Knife River.

Wetland crossings will be conducted in accordance with applicable regulatory requirements. If construction mats or timbers are placed in wetlands to support equipment, they will be removed after construction is completed. In order to maintain surface water hydrology within wetlands, preconstruction contours will be restored and no crown will be left over the trench. If there is a potential for a wetland to be drained by trenching, trench plugs will be installed as needed at the edge of a wetland. In unsaturated wetlands, topsoil will be replaced to facilitate the natural revegetation process.

EPND's EMP and SPCC Plan specify several measures to protect wetlands and waterbodies from becoming polluted with fuels or other hazardous materials during construction. These plans prohibit the storage of fuel or other hazardous materials within 100 feet of a wetland or waterbody. The EMP also specifies that equipment must be refueled at least 100 feet from waterbodies unless, due to site-specific conditions, there is no practical alternative. In that case, the contractor must implement site-specific protective measures and containment procedures described in the SPCC Plan. Contractors will be required to provide trained personnel, appropriate equipment and materials to contain and clean up spills of fuel, lubricating oil or hydraulic fluid that result from equipment failure when working in or near wetlands or surface waterbodies.

Water appropriations for hydrostatic testing will be conducted in accordance with applicable permits. EPND will conduct trench dewatering and hydrostatic test discharges in a manner consistent with the NDPDES General Permit NDG-070000. EPND's EMP describes best management practices that will be implemented to minimize off-site erosion from surface water runoff, and protect water and soil resources within the Project area.

Much of the concerns associated with the quality of the water being discharged are addressed by the fact that no additives to the water are permitted unless written approval is received from EPND and applicable permits authorize such additives. Environmental Inspectors will monitor compliance with permits. Where appropriate, water will be discharged into an energy dissipation and/or filtering device to remove sediment and to reduce the erosive energy of the discharge.

B.6.g Measures to Protect Cultural Resources

EPND has initiated consultation with the NDSHPO, and will comply with the recommendations of the NDSHPO and take appropriate measures to avoid Project-related effects to sites eligible for listing on the NRHP. If additional cultural resource

surveys are recommended by NDSHPO in order to assess Project effects, EPND will complete those surveys in accordance with state-approved protocols and provide the results of those surveys to the NDSHPO and other appropriate agencies.

B.7. QUALIFICATIONS OF PERSONS CONTRIBUTING TO THE STUDY

See Section D.6 of the Application for Corridor Certificate.

B.8. MAPS

See Section D.7 of the Application for Corridor Certificate.

B.9. OTHER MATTERS

The information provided below is in accordance with North Dakota Century Code 49-22-08.1 Sections 1.e, 1.f, and 1.g.

B.9.a Right-of-Way Preparation, Construction and Reclamation Procedures

This section provides a general overview of the typical construction sequence for a pipeline. Figure 1 shows the typical steps of cross-country pipeline construction. Standard pipeline construction proceeds in the manner of an outdoor assembly line composed of specific activities that make up the linear construction sequence. These operations collectively include survey and staking of the right-of-way, clearing and grading, topsoil stripping, pipe stringing and bending, welding and coating, trenching, lowering-in and backfilling, hydrostatic testing, cleanup, and restoration and revegetation.

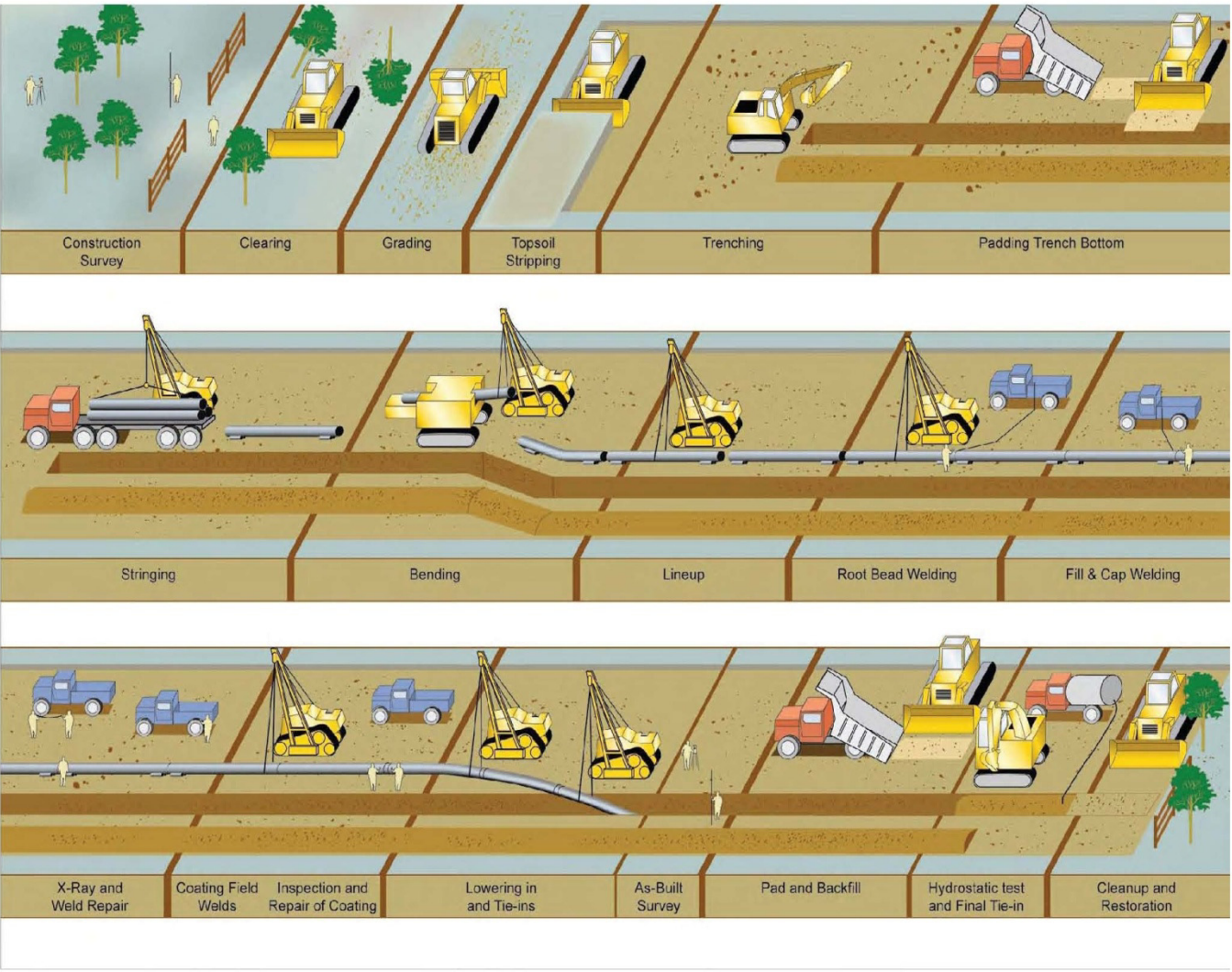


Figure 1 – Typical Pipeline Construction Sequence

B.9.a.(1) Survey and Staking

Before construction, EPND crews will survey and stake the location of the proposed pipeline and the exterior boundaries of the construction right-of-way. The exterior boundary stakes will mark the limit of approved disturbance areas, which will be maintained throughout the construction period. The North Dakota One Call system will be contacted to identify and mark the locations of underground utilities. During this period, equipment involved in pipeline construction will be moved onto the right-of-way using existing roads for access wherever practicable.

B.9.a.(2) Clearing and Grading

EPND will clear the 110-foot-wide construction right-of-way and additional temporary extra workspaces of shrubs and trees. The clearing crew will typically mow, chip, mulch and/or haul off all non-merchantable timber. Burning of non-merchantable wood may be allowed when the contractor has obtained the necessary permits and approvals. All merchantable timber will be property of the EPND unless other arrangements are made with the landowner.

Following clearing, grading of the ground surface may be done to provide a relatively smooth working surface and a safe working area. Typically, a 20-foot wide buffer will be left relatively undisturbed at waterbody crossings, except where grading is needed for bridge installation, until immediately before the pipelines are installed across the waterbody.

Following clearing and grading, temporary bridges will be installed at waterbodies, except for drainage ditches, intermittent waterbodies, and other non-fisheries water, along the pipeline route to provide temporary access for equipment traveling along the construction right-of-way. In addition, temporary erosion control measures will be installed in accordance with EPND's EMP (see Exhibit E).

B.9.a.(3) Topsoil Stripping

Topsoil will be stripped and segregated in agricultural areas, cropland, hayfields, pasture, residential areas, and other areas as requested by the landowner along the pipeline route in accordance with EPND's EMP. In unsaturated wetlands, a maximum of 12-inches of surficial soils will also be stripped from the trench areas. Topsoil will be stripped to a maximum depth of 12-inches in cultivated lands.

B.9.a.(4) Stringing and Bending

Before excavating pipeline trenches, individual joints of pipe will be strung along the construction right-of-way and arranged to be accessible to construction personnel. This operation typically involves specially designed stringing trucks to deliver pipe from pipe yards to the right-of-way. Small portable cranes and/or side-boom tractors are used to unload the stringing trucks and place pipe along the right-of-way. A mechanical pipe-bending machine will bend individual joints of pipe to the desired angle to accommodate natural ground contours or pipeline alignment. In certain areas, prefabricated fittings will be used where field bending is not practicable.

B.9.a.(5) Welding and Coating

After stringing and bending are complete, pipe sections will be aligned, welded together, and placed on temporary supports along the edge of the proposed trench. EPND will inspect the welds, both visually and radiographically. The pipe is typically delivered with a factory coating of fusion-bonded epoxy or similar material to prevent corrosion. EPND will apply coating at welded joints and will electronically inspect the pipeline coating before the pipe is lowered into the trench.

B.9.a.(6) Trenching

Backhoes and/or ditching machines will be used to excavate trenches in accordance with the United States Department of Transportation 49CFR 195, which stipulates a minimum 36-inches of cover for normal excavations and 30-inches of cover in areas of rock excavation³. However, since this Project will be installed at a minimum depth of 48 inches from the surface contour to minimize the potential for environmental damage resulting from deep tillage activities in agricultural areas, (unless modified to accommodate special construction issues at the site), the trench walls will generally be kept vertical to the extent practicable and the trenches will typically be between 30 to 36-inches wide. In unstable and saturated soils, trenches may be wider.

Where trench dewatering is needed, water will be discharged directly to the ground if there is adequate vegetation along the right-of-way to filter the water effectively. Where vegetation is sparse or absent, or in environmentally sensitive areas (e.g., adjacent to waterbodies or wetlands), straw bale dewatering structures or suitable filtering alternatives will be used to minimize siltation in adjacent waterbodies.

B.9.a.(7) Lowering In, Padding, and Backfilling

After welding and coating are completed and the trench is excavated, the pipe will be lowered into the trench by side-boom tractors. Bladed equipment or a specially designed backfilling machine will be used to backfill the trench to the approximate ground surface elevation. This generally consists of replacing the material

³ Rock excavation is defined as any excavation that requires blasting or removal by equivalent means.

excavated from the trench. In areas where topsoil has been segregated, subsoil will be replaced first, and topsoil will be spread uniformly on top. Directly above the pipeline, an excess of soil or “crown” will be placed to allow for future settling, excluding wetlands. Construction debris, including wooden supports, welding rods, containers, brush, trees, or refuse of any kind, will not be permitted in the backfill. If an excessive amount of rocks are present in the backfill, the pipeline will be protected with rock shield or similar protective coating and/or backfilled with clean padding prior to backfilling with the rocky material.

B.9.a.(8) Hydrostatic Testing

After backfilling, EPND will hydrostatically test the pipelines in accordance with the Office of Pipeline Safety (OPS) within the USDOT’s Pipeline and Hazardous Materials Safety Administration regulations to ensure that the system is capable of operating at the design pressure. The testing process will involve filling a segment of the pipeline with water and maintaining a prescribed pressure for a specified amount of time.

The length of individual test segments will be determined by topography and water availability. Water withdrawals used to fill and test the pipelines will be consistent with state regulations and EPND’s EMP. EPND will obtain hydrostatic test water from major waterbodies crossed by the pipeline and/or municipal sources along the pipeline route. Adequate flow will be maintained to protect aquatic life and allow for downstream uses. The test water will be discharged through energy dissipation devices to the ground surface or to a nearby waterbody. These discharges will be done in accordance with EPND’s EMP and permits issued by the state agencies.

B.9.a.(9) Cleanup

After the backfilling is completed, EPND will regrade and restore work areas as nearly as practicable to the original contour of the land. Topsoil will be redistributed over areas from which it was originally removed. Permanent soil stabilization efforts will primarily include revegetation of the right-of-way. Fences that are removed to install the pipelines will be reconstructed across the right-of-way.

B.9.a.(10) Restoration and Revegetation

Following installation and final cleanup of the pipelines, original grade and contours will be restored to the extent practicable and temporary and permanent erosion controls will be installed. Disturbed areas will be revegetated in accordance with EPND’s Revegetation Plan, other permit requirements, and site-specific landowner requests.

B.9.b Landowner Issues

B.9.b.(1) Procedures for Landowner Relations

EPND engaged experienced land agents to support the land acquisition efforts for the proposed Project. Landowners along the 56-mile segment were contacted by mail to advise them of the proposed Project and associated upcoming field activity. The landowners have also been personally contacted and made aware of the proposed Project and EPND's land agents received 100% survey permission to perform civil and environmental survey work activities. In addition to the proposed Project information that has been provided and discussed with landowners during the personal visits, EPND is committed to giving landowners complete information about the Project and keeping them informed throughout construction. EPND has secured an option agreement to purchase the land needed for the new proposed facilities at Beaver Lodge and, EPND's land agents are beginning direct negotiations with landowners to secure option agreements for the new pipeline easements along the Greenfield segments of the route.

B.9.c Operations and Safety

B.9.c.(1) Pipeline Operation and Control

The EPND pipeline control center is located in Estevan, Saskatchewan.

The Control Center is manned by pipeline operators 24 hours a day. A computerized pipeline control system allows these operators to remotely monitor and control the pipeline and related facilities. The Control Center also serves as an emergency center to receive calls from employees, the public or public officials reporting unusual conditions or pipeline failures.

The computerized pipeline control system has been designed to control the pipeline within pre-established minimum and maximum operating pressures. Both the computer system and operating practices include procedures for abnormal operating conditions, including emergency shutdown and isolation of the pipeline and notification procedures in the event of suspected emergencies.

B.9.c.(2) Communications Capabilities

Land lines are used to exchange the necessary computerized data for pipeline monitoring and control. EPND maintains a UHF radio system, supplemented by cellular phones, to facilitate personnel communications during operation, maintenance, or emergency activities.

B.9.c.(3) Protection of the Pipe from Damage

EPND has an aggressive program in educating excavators and the public about the presence of the pipeline and preventing damage to the pipeline from excavating equipment. As in all other states where EPND and affiliates have existing facilities, EPND has joined and supports the North Dakota One-Call system.

The pipeline is protected from corrosion in a number of ways. Pipelines are covered with a protective coating. In addition, all buried or submerged metallic structures (pipeline systems) are under a cathodic protection system, as required by Pipeline Safety Regulations.

B.9.c.(4) Inspections

EPND conducts routine inspections of the pipeline and facilities to ensure that the system is operating properly, in compliance with 49 CFR Part 195.

Each calendar year (not to exceed a 15-month interval), the cathodic protection system is monitored by taking pipe/structure-to-soil and line current (where possible) readings. Additionally, each rectifier and anode ground bed used to impose cathodic protection on the pipeline and associated below-grade facilities is inspected to ensure proper operation. Repairs and adjustments to the cathodic protection system are either made during the annual survey or during later maintenance activities. At least six times per year, each rectifier and critical cathodic protection interference bond to foreign structures is inspected and corrective measures taken, if needed.

In addition, EPND periodically evaluates the effectiveness of its cathodic protection system by conducting supplemental close interval surveys (e.g., close interval pipe to soil, etc.) of the system. Although not required by regulation, this method allows EPND to assess the overall effectiveness of the pipeline system.

The pipeline route including pump stations and related facilities is patrolled by air at least 26 times per year to inspect the surface conditions of land on or adjacent to the pipeline right-of-way. If weather and other conditions permit, this aerial inspection is conducted weekly. Line walking inspection of the right-of-way is sometimes used to supplement aerial inspections in congested areas. This inspection also assists in identifying unknown construction or other unsafe activity on the pipeline right-of-way.

Transmission pipeline isolating valves are inspected at least twice per year to ensure proper operation. In the event of a leak, it is important for valves to close properly to isolate the section of pipeline and minimize the amount of petroleum that may escape. Other components of the pipeline, such as tanks and pump stations are also routinely inspected.

EPND periodically completes an integrity assessment test on the transmission segments of its pipeline system designated as high consequence area (HCA), in

accordance with the integrity management standards under 49 CFR Part 195. EPND exceeds these regulations by expanding these assessments with the use of an internal electronic inspection tool – called “instrument pigs.” These devices travel through the inside of the pipeline and are used to examine the condition (dents, gouges, corrosion, or cracks) of the pipe by on-board computers. Results of the inspection are analyzed, the pipe is inspected to verify preliminary findings, as necessary, and repairs are then made, as required.

All overpressure safety devices capable of limiting, regulating, controlling, and/or relieving operating pressures are inspected and tested to ensure the device is in good mechanical condition and functioning properly.

Periodically, PHMSA inspectors examine EPND’s compliance with applicable federal regulations. Inspections of the EPND’s written procedures, records, facilities and new construction are also periodically conducted by PHMSA.

B.9.c.(5) Maintenance

Many other maintenance activities are performed on the pipeline and related facilities. EPND has a comprehensive preventative maintenance program that meets and, in many cases exceeds, minimum federal safety standards set forth in 49 CFR Part 195. When facilities are added or replaced, there are comprehensive standards for their design and installation in both EPND procedure manuals and contract specifications. Repair pipe is pre-tested and other components used to repair the pipeline meet national standards and regulatory requirements. Other procedures, such as welding procedures, movement of the pipe, coating repair, corrosion control, and tank maintenance are all guided by written procedures, which have been reviewed by the PHMSA inspectors.

B.9.c.(6) Training of Personnel

EPND has established a comprehensive orientation, technical, safety, emergency, and on-the-job training program that is in compliance with the Operator Qualification rules issued under 49 CFR Part 195. As personnel progress in pipeline operation and maintenance positions, they receive hundreds of hours of formal and on-the-job training. Demonstrations of competence are shown through review of job performance, periodic pipeline control system simulators, emergency exercises, welding certification tests, and other functions required to maintain safe pipeline operation and maintenance.

B.9.c.(7) Public Awareness Program

EPND conducts a comprehensive public education program to ensure that the affected public (those who work and live in the vicinity of the pipeline), excavators, local public officials, and emergency units of government are aware of how to recognize and avoid or respond to a pipeline emergency. EPND has also been active at the local, county, and state level in emergency response planning and joint training/exercises to prepare all potential responders to deal with emergencies.

The pipeline route is marked at all public roads and railway crossings (at a minimum) to increase the public's awareness of the underground pipeline. Additional markings are posted at valves, other pipeline facilities, and stations along the pipeline route.

B.9.c.(8) Emergency Preparedness

EPND's operating and maintenance practices are aimed at preventing emergencies. However, it is imperative that EPND be prepared to respond to an emergency. In addition to preventative activities described above, EPND's emergency response program has been prepared in compliance with PHMSA rules under 49 CFR Part 194. The Emergency Response Plan has been submitted, and approved by PHMSA and includes pre-planning, equipment staging, notifications, and emergency and leak containment procedures.

B.9.d.(9) Spill Response

EPND has developed a SPCC Plan (see Exhibit I) that describes planning, prevention and control measures to minimize impacts of Project-related spills.

B.9.e Status of Required Permits

As discussed herein, EPND is working with various federal, state and local agencies to secure the appropriate permits required for the Beaver Lodge Loop Project. (See Table 16 which shows EPND's current status in obtaining those permits).

Table 16	
Status of Environmental Permits	
Permit/Authorization	Status of Permit/Authorization
FEDERAL	
1. U.S. Army Corps of Engineers (COE) Omaha District - Nationwide Permit (NWP) 12 Section 404 Permit	Anticipated submittal: February 2011 Anticipated issuance: May 2011
2. North Dakota State Historic Preservation Office (NDSHPO) National Historic Preservation Act (NHPA), Section 106 Compliance	<p>EPND has completed cultural surveys on the initial route and has been in active consultation with the NDSHPO. In an August 2010 response, NDSHPO concurred with a “No Historic Properties Affected” determination, provided certain identified sites are avoided or mitigated properly.</p> <p>EPND is currently surveying additional areas which were not included in the original consultation with NDSHPO, and will continue to work with NDSHPO to ensure no historic properties will be impacted. EPND expects NDSHPO clearance for these areas in December 2010.</p>
3. U.S. Fish and Wildlife Service Agency (USFWS) – Endangered Species Act Section 7 Compliance	Consultation initiated April 2010. To address biological resources concerns, EPND commissioned a habitat assessment of the study area in August 2010; aerial raptor surveys to be conducted prior to construction (Spring 2011).
4. USFWS - Wetland and Grassland Easements	The majority of pipeline route is co-located with EPND’s existing Line 82 pipeline, where EPND has existing permanent land easements which pre-date USFWS wetland and grassland easements. EPND is presently evaluating the legal status of its existing easements in comparison the USFWS wetland and grassland easements. If USFWS easements are identified in areas of the route which are not co-located with Line 82 and where EPND does not have an existing easement, EPND will work with USFWS on preferred crossing methods and/or avoidance measures.

Table 16	
Status of Environmental Permits	
Permit/Authorization	Status of Permit/Authorization
STATE	
1. NDDH - Air Quality Permit to Construct (Berthold, Stanley, and Beaver Lodge Stations)	Anticipated submittal: December 2010 Anticipated issuance: May 2011
NDDH - Air Quality Permit to Operate (Berthold, Stanley, and Beaver Lodge Stations)	Anticipated submittal: 3 rd Quarter 2012 Anticipated issuance: 4 th Quarter 2012
2. NDDH -Construction Stormwater and Temporary Dewatering General Permit (NDR10-0000) and Stormwater Pollution Prevention Plan (SWPPP)	Anticipated submittal: April 2011 Anticipated issuance: May 2011
3. NDDH - Hydrostatic Discharge Permit (General Permit NDG-070000)	Anticipated submittal: 3 rd Quarter 2011 Anticipated issuance: 4 th Quarter 2011
4. North Dakota State Land Department (NDSLDD) – License to Cross School Trust Lands	Submitted: October 2010 Anticipated issuance: 4 th Quarter 2010
5. North Dakota Game and Fish (NDGF) – State-Protected Species and Critical Habitat Review	Consultation initiated April 2010; aerial raptor surveys to be conducted prior to construction (Spring 2011) to address agency concerns.
6. North Dakota State Water Commission (NDSWC) -Temporary Water Permit/Water Withdrawal Permit	Anticipated submittal: 3 rd Quarter 2011 Anticipated issuance: 4 th Quarter 2011