



# United States Department of the Interior

BUREAU OF INDIAN AFFAIRS  
Great Plains Regional Office  
115 Fourth Avenue S.E.  
Aberdeen, South Dakota 57401



IN REPLY REFER TO:  
DESCRM  
MC-208

JUL 30 2010

## MEMORANDUM

TO: Superintendent, Ft. Berthold Agency

FROM: <sup>Acting</sup> Regional Director, Great Plains Regional Office

SUBJECT: Environmental Assessment and Finding of No Significant Impact

In compliance with the regulations of the National Environmental Policy Act (NEPA) of 1969, as amended, for the proposed Van Hook Gathering System by Zenergy Operating Company, LLC, on the Fort Berthold Reservation, an Environmental Assessment (EA) has been completed and a Finding of No Significant Impact (FONSI) has been issued.

All the necessary requirements of the National Environmental Policy Act have been completed. Attached for your files is a copy of the EA, FONSI and Notice of Availability. The Council on Environmental Quality (CEQ) regulations require that there be a public notice of availability of the FONSI (1506.6(b)). Please post the attached notice of availability at the agency and tribal buildings for 30 days.

If you have any questions, please call Marilyn Bercier, Regional Environmental Scientist, Division of Environment, Safety and Cultural Resources Management, at (605) 226-7656.

Attachment

cc: Marcus Levings, Chairman, Three Affiliated Tribes (with attachment)  
Perry "No Tears" Brady, Tribal Historic Preservation Officer (with attachment)  
Roy Swalling, Bureau of Land Management (with attachment)  
Jonathon Shelman, Corps of Engineers (with attachment)  
Dawn Charging, Virtual One Stop Shop, Fort Berthold Agency  
Jeffrey Towner, Field Supervisor, U.S. Fish and Wildlife Service

**Finding of No Significant Impact**  
**Zenergy Operating Company , LLC**

**Phase 1**  
**Van Hook Gathering System**

The U.S. Bureau of Indian Affairs (BIA) has received a proposal to construct and operate an oil, natural gas, and water gathering system related infrastructure on the Fort Berthold Indian Reservation to be located in Township 150 North, Ranges 91, 92, and 93 West; and Township 151 North, Ranges 91 and 92 West; Mountrail County, North Dakota. Associated federal actions by BIA include determinations of effect regarding cultural resources, approvals of leases, rights-of-way and easements, and a positive recommendation to the Bureau of Land Management regarding the Applications for Permit to Drill.

The potential of the proposed actions to impact the human environment is analyzed in the attached Environmental Assessment (EA), as required by the National Environmental Policy Act. Based on the recently completed EA, I have determined that the proposed projects will not significantly affect the quality of the human environment. No Environmental Impact Statement is required for any portion of the proposed activities.

This determination is based on the following factors:

1. Agency and public involvement was solicited and environmental issues related to the proposal were identified.
2. Protective and prudent measures were designed to minimize impacts to air, water, soil, vegetation, wetlands, wildlife, public safety, water resources, and cultural resources. The remaining potential for impacts was disclosed for both the proposed action and the No Action alternative.
3. Comments U.S. Fish and Wildlife Service have been considered regarding wildlife impacts, particularly in regard to threatened or endangered species. U.S. Fish and Wildlife Service concurred in a letter dated July 23, 2010.
4. The proposed actions are designed to avoid adverse effects to historic, archaeological, cultural and traditional properties, sites and practices. Compliance with the procedures of the National Historic Preservation Act is complete.
5. Environmental justice was fully considered.
6. Cumulative effects to the environment are either mitigated or minimal.
7. No regulatory requirements have been waived or require compensatory mitigation measures.
8. The proposed projects will improve the socio-economic condition of the affected Indian community.

  
Regional Director

7/30/10  
Date

# **ENVIRONMENTAL ASSESSMENT**

**United States Bureau of Indian Affairs**

**Great Plains Regional Office  
Aberdeen, South Dakota**



**Zenergy Operating Company, LLC**

**Phase 1  
Van Hook Gathering System**

**Fort Berthold Indian Reservation**

**July 2010**

For information contact:  
Bureau of Indian Affairs, Great Plains Regional Office  
Division of Environment, Safety and Cultural Resources  
115 4th Avenue SE  
Aberdeen, South Dakota 57401  
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# Environmental Assessment

## Phase 1

### Van Hook Gathering System Zenergy Operating Company, LLC

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**Appendix B** Van Hook Gathering System Agency Comments Received

## 1.0 Purpose and Need for the Proposed Action

Zenergy Operating Company, LLC (Zenergy) is proposing to construct and operate an oil, natural gas and water gathering system on the Fort Berthold Indian Reservation (Reservation), herein referred to as the Van Hook Gathering System (Figure 1). Underground electrical utility lines may also be constructed in the same right-of-way (ROW). Initially the first phase (Phase 1) of The Van Hook Gathering System (Figure 2) will gather just natural gas from existing and proposed oil wells located on the Sanish Peninsula of the Reservation; located in Township 150 North, Ranges 91, 92, and 93 West; and Township 151 North, Ranges 91 and 92 West; Mountrail County, North Dakota.

Phase 1 of the gathering system will include approximately ten miles of 8" trunk and two miles of 3" well tie-in pipelines. The natural gas pipeline will be comprised of polyethylene. The pipeline will be placed in one trench, up to 2.5 feet wide. If a second trench is constructed later for oil and water gathering pipelines, lines it will be spaced five feet from the first trench. The pipelines will share a common ROW.

This document addresses construction and operation of Phase 1 of the proposed system that crosses tribal owned and individual allotted land only in T150N R92W (Figure 3). These tribal and individual allotted land are held in trust by the United States. The Bureau of Indian Affairs (BIA) is the surface management agency for potentially affected tribal land and individual allotments.

The economic development of available resources and associated BIA actions are consistent with BIA's general mission. Leasing and development of mineral resources offers substantial economic benefits to both the Three Affiliated Tribes of the Mandan, Hidatsa, and Arikara Nations and to individual tribal members. The Van Hook Gathering System is being proposed to reduce waste of valuable natural resources through continued flaring of natural gas and to mitigate environmental and public safety concerns – including visual impacts, noise, heavy truck traffic and road deterioration.

Oil and gas exploration and development activities are conducted under authority of the Indian Mineral Leasing Act of 1938 (25 USC 396a, *et seq.*), the Indian Mineral Development Act of 1982 (25 USC 2101, *et seq.*), the Federal Onshore Oil and Gas Royalty Management Act of 1982 (30 USC 1701, *et seq.*), and the Energy Policy Act of 2005 (42 USC 15801, *et seq.*). BIA actions in connection with the proposed project are largely administrative and include approval of ROW and determinations regarding effects on cultural resources.

These proposed federal action requires compliance with the *National Environmental Policy Act* of 1969 (NEPA) and regulations of the Council on Environmental Quality (CEQ, 40 CFR 1500-1508). Analysis of the proposal's potential to affect the human environment is expected to both improve and explain federal decision-making. The procedures and practices described in the application are critical elements in both the project proposal and the BIA's decision regarding environmental impacts. This EA will result in either a Finding of No Significant Impact (FONSI) or a decision to prepare an Environmental Impact Statement (EIS).

Any authorized project will comply with all applicable federal, state, and tribal laws, rules, policies, regulations, and agreements. No construction or other ground-disturbing operations will begin until all necessary leases, easements, surveys, clearances, consultations, permissions, determinations, and permits are in place. Additional NEPA analysis, findings, and federal actions are required prior to any other development beyond what is described and analyzed in this EA.

Figure 1. Proposed Van Hook Gathering System



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Figure 2. Phase 1 - Van Hook Gathering System

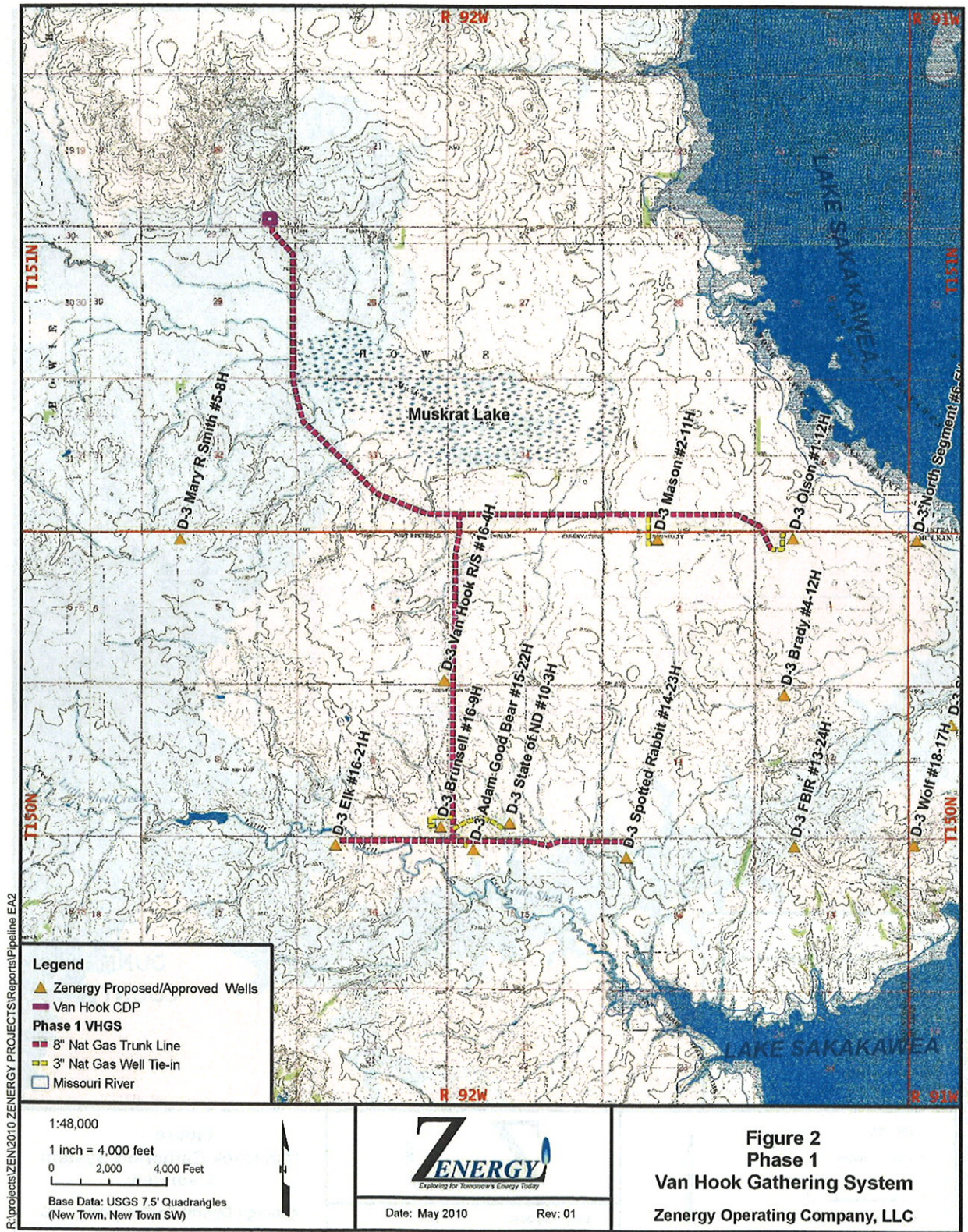
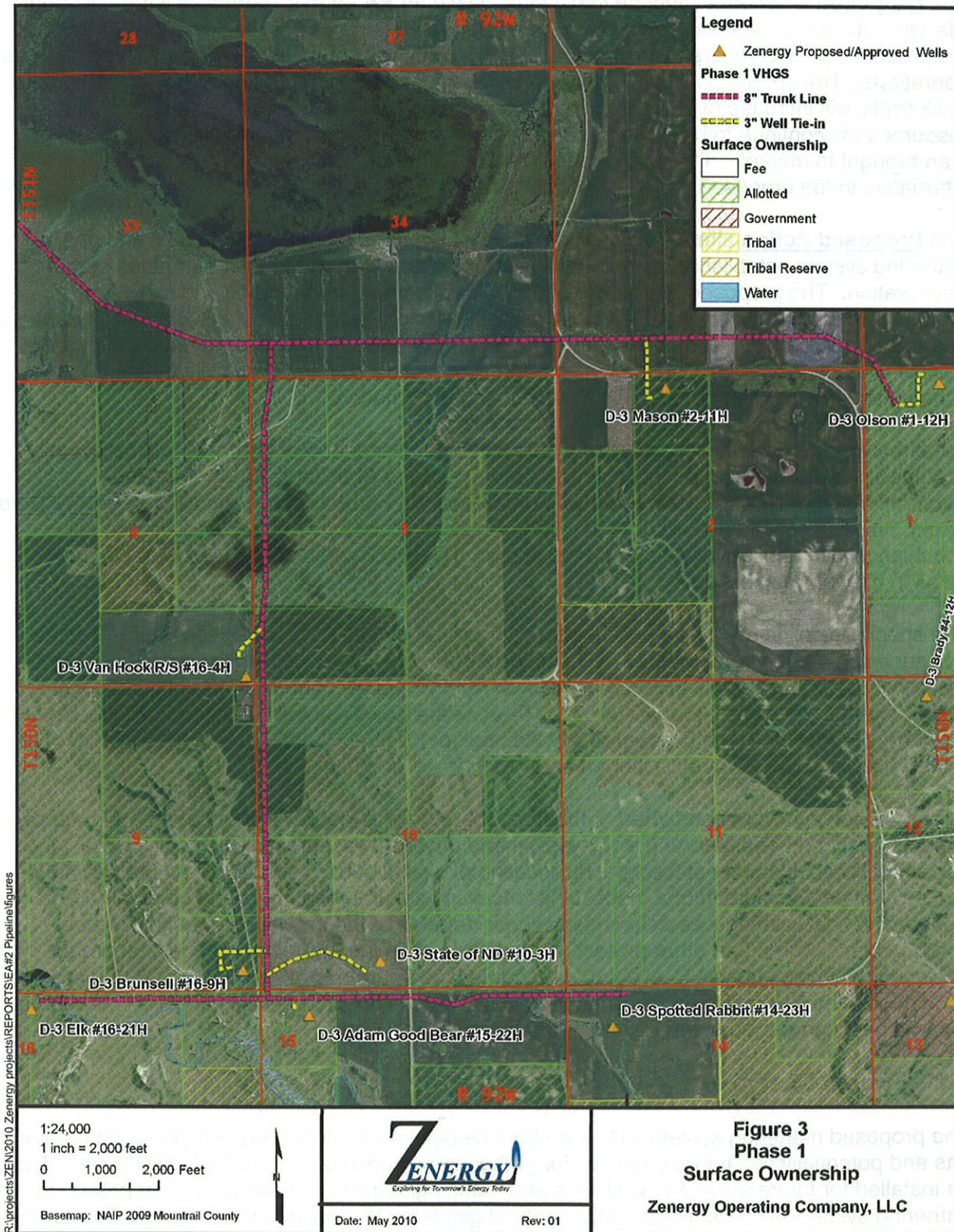




Figure 3. Phase 1 - Surface Ownership



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## 2.0 Proposed Action and Alternatives

The **No Action** alternative must be considered within an EA. If this alternative were selected, BIA will not approve leases, rights-of-way, or other administrative proposals for one or more of the proposed project routes. Current land use practices will continue, as will current oil and gas operations. Transportation of oil from wells on the reservation will continue using heavy trucks; truck traffic will increase over time as more wells are installed. Additionally, valuable natural resources will continue to be wasted without economic benefit, as natural gas is flared rather than brought to market. The No Action alternative is the only available or reasonable alternative to the proposed development considered in this document.

The **Proposed Action** alternative consists of construction and operation of an oil and gas gathering system established across mixed surface ownership within the boundaries of the Reservation. The proposed gathering system will collect and transport oil and natural gas produced from oil wells drilled in the Middle Bakken Dolomite Member of the Bakken Formation. Site-specific actions will or may include several components, including temporary construction right-of-ways, permanent right-of-ways, compressor station construction, utility (electric) construction, wetland and drainage crossings, and reclamation.

Construction activities will follow lease stipulations, practices, and procedures outlined in this document, guidelines and standards in *Surface Operating Standards for Oil and Gas Explorations and Development* (BLM/US Forest Service, Fourth Edition, also known as the Gold Book), and any conditions added by the BIA. Pipeline operations will be conducted in full compliance with applicable laws and regulations. The proposed action is described in more detail in the following sections.

The specific pipeline route was determined after pre-on-site inspections by the proponent, the civil surveyor, the environmental consultant, the BIA Environmental Specialist, and the Tribal Historic Preservation Office (THPO) monitor on April 15, 2010. Those in attendance included: Environmental Specialist - Daryl Turrcotte (BIA); Adam Kearl (Utah Surveyors); Kelley Bryan (Zenergy); Christina Burns (Beaver Creek Archeology); Tribal Historic Preservation Office (THPO) monitors; and Todd Hartleben and Ryan Krapp (McCain).

Resource surveys were conducted at the time of pre-on-site inspections to determine potential impacts to cultural and natural (i.e., biological and physical) resources. The location was inspected in consideration of topography, location of topsoil/subsoil stockpiles, natural drainage and erosion control, flora, fauna, habitat, historical and cultural resources, and other surface issues. The final location was determined in consideration of the previously identified issues. Avoidance measures and other protective measures were incorporated into the final project design to minimize impacts to evaluated resources, as appropriate (see Section 3). During the inspections, the BIA gathered information needed to develop site-specific mitigation measures that will be incorporated in the Permit to Construct.

### 2.1 System Design

The proposed gathering system will consist of one pipeline for collecting and gathering natural gas and potentially two future pipelines for gathering oil and water. Electrical utilities may also be installed for future service to well sites and pumping/compressor stations. The proposed gathering system will collect and gather natural gas from 18 existing and proposed Zenergy oil wells. The gathering system will connect to a larger gathering and distribution network being considered for construction outside of trust land.

Phase 1 construction will traverse trust land in sections 1, 2, 3, 9, 10, 11, 15 and 16, of T150N R92. This first phase of construction will gather natural gas from eight oil/gas wells - five of which are located on fee land and three on trust land. The north-south component of the proposed project in Sections 3 and 10 and the east-west portion in Sections 9, 10, and 11 will consist of 8" trunk pipeline. Lateral connections to individual wells (tie-ins) will consist of 3" pipelines.

The proposed project is designed to be operated at low pressure (<125 pounds per square inch gauge [psig]). Daily carrying capacity of the gas pipeline is expected to be approximately five million cubic feet per day of natural gas. Low-pressure service will not require the construction of compression or pumping stations and no such facilities are included in the proposed project. Future construction will require additional NEPA analysis and BIA approval. Connections to existing or proposed pipelines located off trust land do not require BIA approval, unless trust land maybe directly or indirectly affected.

Above ground valves and pipeline inspection gauge (PIG) launchers will be constructed on well pad sites to the extent practical. Each well pad will have an above ground valve setting with measuring equipment and appurtenances. PIG launcher sites will be installed at the D-3 Olson #1-12H well pad, the D-3 Spotted Rabbit #14-23H well pad and the D-3 Elk #16-21 well pad. Valves and PIG launchers may be constructed on fee land.

A main line block valve will be installed in the S/2 of 3-150N-92W to allow a portion of the gas pipeline to be isolated for repairs or any other purpose. A five-foot diameter covered, insulated manhole would allow access to the block valve six feet underground. The manhole would extend about 12 inches above the ground surface.

The proposed route was "soft" staked and was reviewed in consideration of topography, natural drainage and erosion control, flora, fauna, habitat, historical and cultural resources and other surface impacts. Site-specific mitigation measures were discussed and incorporated into the final project design to minimize impacts to evaluated resources, as discussed below.

#### **2.1.1 Sections 1 and 2, T150N, R92W**

Tie-in pipelines will be constructed to connect the D-3 Olson #1-12H and D-3 Mason #2-1H well sites to the gathering system. These wells and associated tie-ins are located on agricultural fields. A Finding of No Significant Impact (FONSI) was issued for the D-3 Olson #1-12H and D-3 Mason #2-1H (formerly the D-3 Olson #4-1H and D-3 Mason #3-2H) on October 30, 2009.

#### **2.1.2 Section 3, T150N, R92W**

The route of the Van Hook R/S to Brunsell trunk line crosses trust land in Section 3, T150N, R52W. This section consists of gently rolling cultivated agricultural land. A private driveway and two gravel roads (north and south section lines) will be crossed (discussed in Section 2.3). The pipeline crosses a grassed waterway (drainage) in the SW ¼, NW ¼ (Figure 4). Dominant vegetation in the drainage is buckbrush (*Symphoricarpos occidentalis*) with Kentucky bluegrass (*Poa pratensis*) understory and smooth brome grass (*Bromus inermis*). BIA personnel determined directional drilling under this drainage is not required due to the intermittent flow regime, upland species, and distance to receiving waters. The company is required to monitor and repair any erosion areas along the entire route for the life of the pipeline.

Best management practices (BMP's) which are defined as soil contouring, silt fencing, erosion waddles and soil compaction will be employed as site specific necessary. Installation of erosion control wattles will be necessary at this location interim during construction and at final

reclamation following trenching activities. The BIA personnel determined that reseeding of smooth brome grass for reclamation of the site is appropriate.



**Figure 4. Proposed route in Section 3.**  
Photo taken in the NW ¼ facing north.

### **2.1.3 Section 10, T150N, R92W**

Trust land is crossed in the NW ¼ and the NW ¼, SW ¼ in this Section. A small part of the NW ¼, NW ¼ is not trust land (approximately 700 feet). The 29<sup>th</sup> Street NW crossing will be directionally drilled as it crosses into Section 10 onto fee surface.

A rural water pipeline has been recently installed near the proposed ROW and crosses the ROW in the NW ¼. The proposed Phase 1 pipeline will be constructed underneath the rural water pipeline. The land use in the NW ¼ is predominantly agricultural.

The pipeline crosses an area of native grassland in the SW ¼ and a portion of the NW ¼. The pipeline route crosses the head of a drainage containing a variety of native grasses and forbs including a stand of chokecherry (*Prunus virginiana*) and skunkbrush sumac (*Rhus aromatica* var. *trilobata*) (Figure 5). Discussion was held regarding avoidance of this thicket but due to the presence of cultural resource sites, it was determined that the route will remain the same and trees will be removed. The construction of the pipeline will work within the confines of the ROW to minimize the amount of disturbance. No further mitigation was required.



**Figure 5. Proposed route in NW 1/4 Section 10.**

Photo taken facing south as the staked route crosses onto native prairie.

The pipeline continues south into a heavily grazed pasture. Portions of this native pasture have been previously disturbed and crested wheatgrass (*Agropyron cristatum*) and smooth brome have been seeded. The route continues onto fee surface as it passes near the Brunsell #16-9H oil/gas well (Figure 6).



**Figure 6. Proposed route in SW 1/4 Section 10.**

Photo taken facing south as across native pastureland. The Brunsell #16-9H well site drill rig is in the background.

#### **2.1.4 Section 9, T150N, R92W**

The D-3 Brunsell #16-9H well site is located on trust land in Section 9. A Finding of No Significant Impact (FONSI) was issued for the well site and adjacent area on October 30, 2009. The tie-in to the well will cross a private driveway and will be directionally drilled unless the ROW lease agreement with the landowner states otherwise.

#### **2.1.5 Section 15, T150N, R92W**

An 8" trunk pipeline (east-west orientation) will be located in the NW ¼ of this Section. The trunk pipeline will connect well sites located along 28<sup>th</sup> Street NW to the north-south segment of trunk pipeline. The pipeline crossing of 28<sup>th</sup> Street will be directionally drilled.

The trunk pipeline will be constructed approximately 100 feet from the 28<sup>th</sup> Street road ROW. The route in Section 15 crosses an area of rolling native prairie. The D-3 Adam Good Bear #15-22H well site is located in the NW ¼ and a tie-in will be constructed to the well. A FONSI was issued for the D-3 Adam Good Bear #15-22H on January 21, 2010.

#### **2.1.6 Section 16, T150N, R92W**

The trunk pipeline route continues east to west across this section. The purview of this EA extends from the east section line to the D-3 Elk #16-21H well site. A private driveway and a shallow drainage will be crossed in the eastern portion of the NE ¼. The private driveway will be directionally drilled unless the ROW lease agreement with the landowner states otherwise. There is no requirement to directionally drill the drainage; however, it may be drilled for ease of construction due to its proximity to the driveway.

The route continues west over the rolling native pasture and approaches a large tributary of Little Shell Creek (NE ¼, NE ¼) (Figure 7). This crossing will be directionally drilled.



**Figure 7. Tributary to Little Shell Creek Crossing.**  
Directional drilling required at crossing.

The route continues west from the tributary and was soft staked on a side-slope of an oxbow of Little Shell Creek (Figure 8). It was suggested that the route be moved approximately 40 feet north, closer to the road ROW, thus reducing erosion potential and reclamation maintenance on the side slope. Mitigation measures suggested include reducing the construction ROW in this area to avoid the highly erodible side-slope and implementation of erosion control BMP's.



**Figure 8. Route staked on side-slope in Section 16.**

Route was moved north (left) to stay on top of bench.

Little Shell Creek meanders from the northwest to the southeast through the area and crosses under 28<sup>th</sup> Street NW through large concrete box culverts in the NE  $\frac{1}{4}$ , NW  $\frac{1}{4}$ . The pipeline route crosses Little Shell Creek approximately 100 feet south of the road ROW. There is standing/flowing water in the creek and buffalo berry (*Shepherdia argentea*) thickets are located along the creek banks (Figure 9). The creek crossing will be directionally drilled from beyond the high water banks.



**Figure 9. Route crossing of Little Shell Creek.**  
Direction drilling required at crossing.

The D-3 Elk #16-21H well site is located approximately 600 feet west of the Little Shell Creek crossing. A tie-in will be constructed to connect this well with the gathering system. A FONSI was issued for the D-3 Elk #16-21H on October 1, 2009.

## **2.2 Construction Procedures**

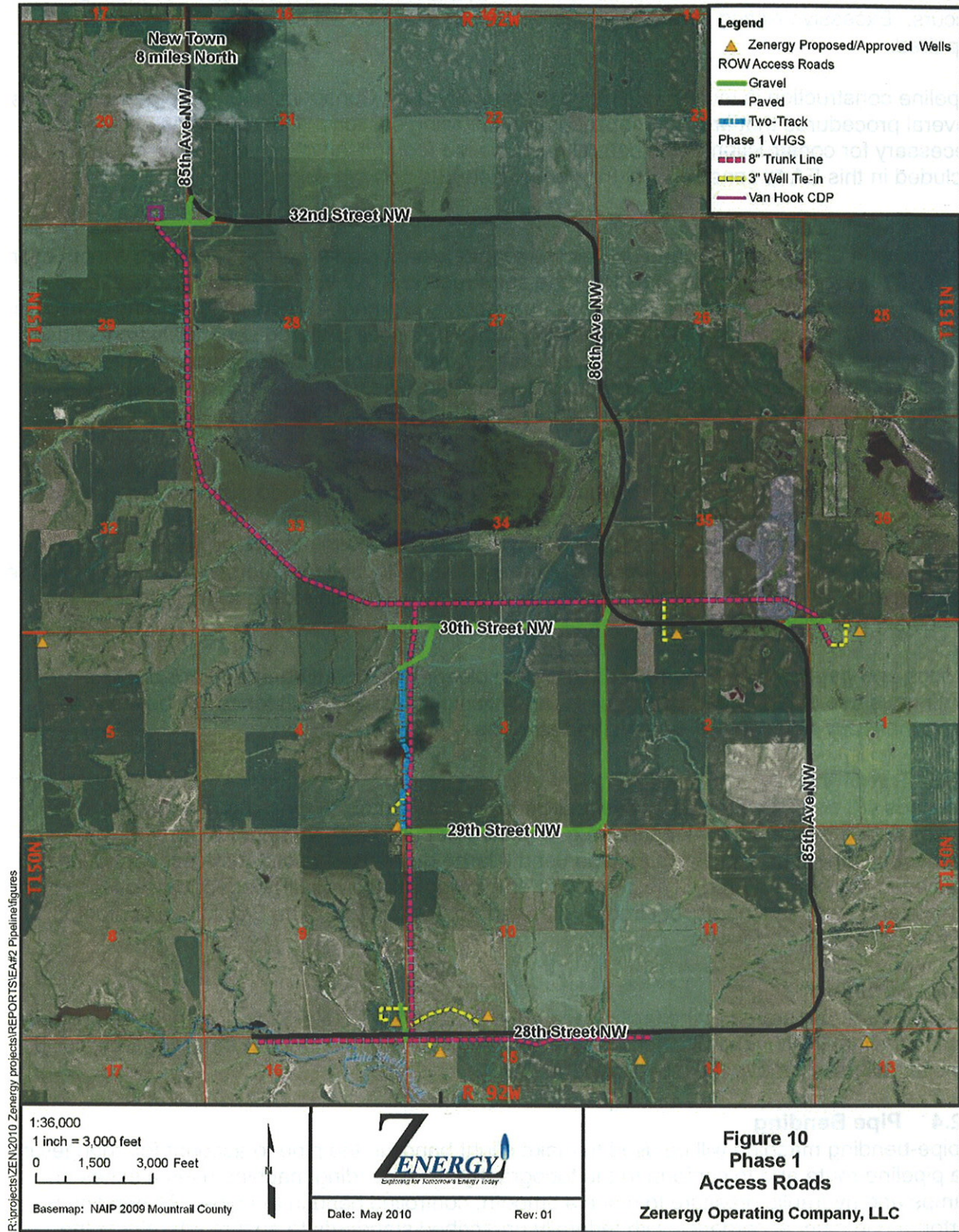
The gathering system will initially consist of one pipeline. Any future pipelines will be placed five feet apart within a common ROW. The pipelines will be installed at a minimum depth of six feet except as needed at road and stream crossings or as needed for safety considerations. The construction ROW will be 100 feet wide. The permanent ROW will be 50 feet wide.

The pipelines will be designed, assembled, and installed in accordance with U.S. Department of Transportation (DOT) regulations (DOT Title 49 CFR Parts 195 and 192) and other standards as applicable. The gas pipeline will be constructed of polyethylene composite rated and tested to at least 250 psig.

Pipeline materials will be staged at a gas transfer and storage facility located in Section 20 T151N R92W or at existing oil/gas well sites along the route and/or trucked directly to the construction ROW via existing federal, state, and private roads (Figure 10). No new roads will be constructed for the installation of these pipelines. Existing roads used to access the ROW will be maintained until final abandonment and reclamation of the ROW occurs. Off-road driving, other than within the ROW, will be strictly prohibited. Signs may be installed on approved access roads and will be used to identify roads where access is prohibited.



Figure 10. Phase 1 - Access Roads



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County, state, private and BIA roads used during Phase 1 construction will be maintained in the same or better condition as existed prior to the start of the operations. Maintenance of roads used to access the ROW will continue until final abandonment and reclamation of the ROW occurs. Excessive rutting or other surface disturbing activities will be avoided or immediately repaired.

Pipeline construction is much like a moving assembly line. Construction of the pipeline involves several procedures that are summarized in the following sections. Not all of these steps are necessary for construction of the natural gas pipeline (comprised of polyethylene) but are included in this EA to consider construction procedures as a whole.

### **2.2.1 Clearing and Grading**

Construction of the pipelines and utilities will require clearing and grading within the construction ROW. Trees, boulders, and debris from the construction ROW will be removed and a level working surface will be prepared for the construction equipment. To avoid soil mixing, topsoil is removed and segregated from the underlying subsoil. Topsoil is stored separately from subsoil and protected from construction-related activities. After pipeline installation is complete, the subsoil is replaced in the pipeline trench and adjacent areas to restore the land's natural contours. Only then is the topsoil replaced where it had been before.

The depth of topsoil stripping will vary according to the ROW landscape position (discussed in following sections of this EA). Construction activities will be suspended during abnormally wet conditions to prevent excessive rutting or mixing of topsoil with subsurface soils. Topsoil is typically stored at the far edge of the right-of-way on the opposite side of the trench from where construction machinery does its work. In some instances, topsoil may be stored off site or on the "working side" of the trench. In the latter case, the topsoil is again stored away from where machinery will operate (Figure 11).

Fences and gates will be constructed during the clearing and grading operations to allow continuous use of pastures, grazing units, and livestock facilities. Silt fence will be installed along the ROW adjacent to wetlands and streams.

### **2.2.2 Trenching**

Trenches will be excavated using a wheel trencher or backhoe. Trenching is expected to be accomplished by mechanical means (e.g. backhoe or bulldozer with ripper tooth); however, special equipment or explosives may be used if large quantities of solid rock that cannot be excavated are encountered. The contractor employing explosives (if needed) will possess any permits and certifications as required by state and/or federal law. The BIA will be contacted prior to using any explosives.

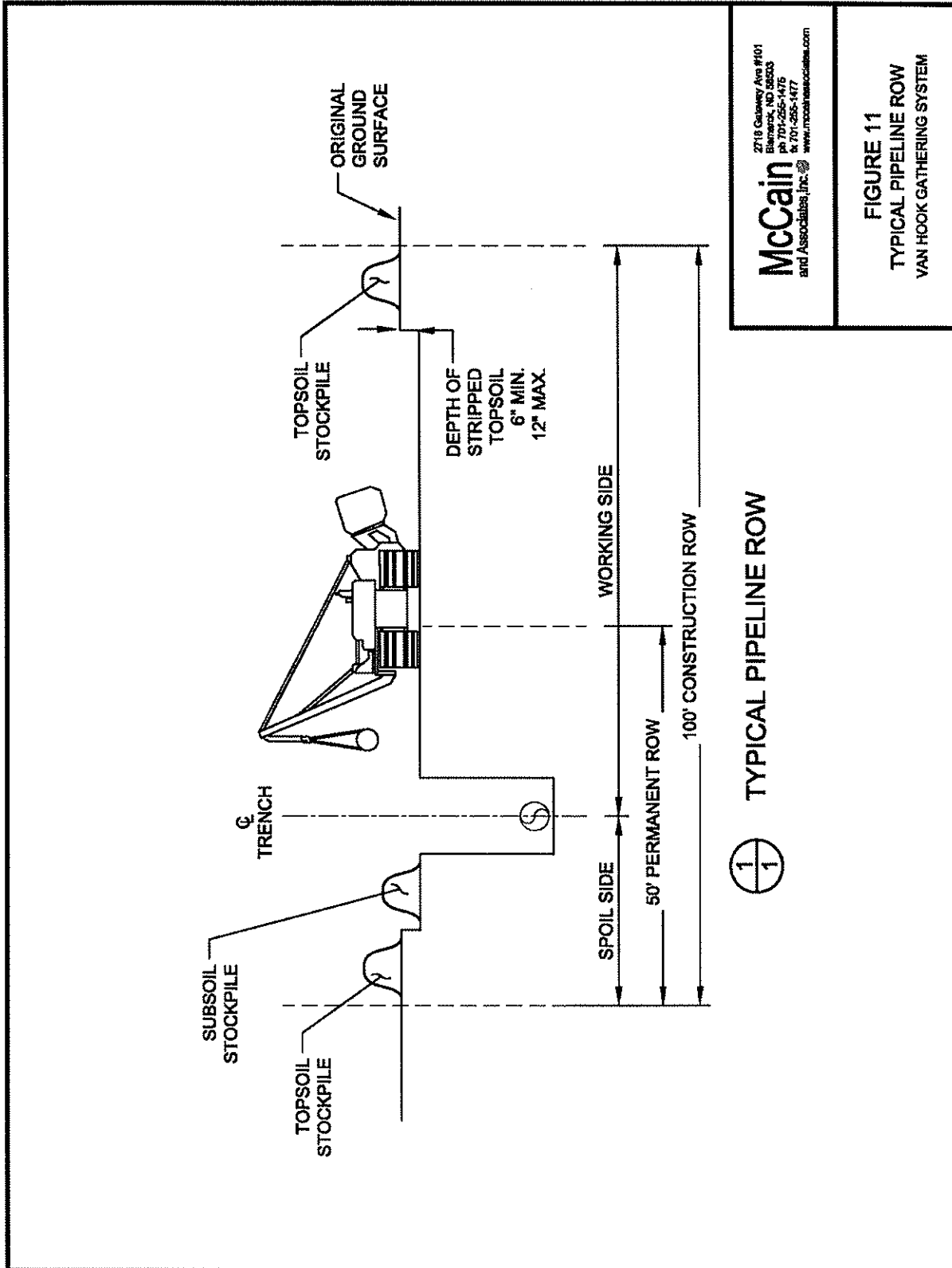
### **2.2.3 Stringing**

Pipe will either be stored at the facility located in Section 20 T51N R92W or transported directly to the pipeline ROW. The pipe lengths are typically 40 to 80 feet long. A stringing crew using special trailers will move the pipe along the ROW.

### **2.2.4 Pipe Bending**

A pipe-bending machine will be used to make slight bends in the pipe to account for changes in the pipeline route and to conform to the topography. The bending machine uses a series of clamps and hydraulic pressure to make a smooth, controlled bend in the pipe. All bending is performed in strict accordance with federally prescribed standards to ensure integrity of the bend.

Figure 11. Typical Pipeline ROW



### **2.2.5 Welding**

Welding is the process that joins the various sections of the pipe together into one continuous length. Each welder must pass qualification tests to work on a particular pipeline job and each weld procedure must be approved for use on that job in accordance with federally adopted welding standards.

### **2.2.6 X-ray/Inspection**

A certified welding inspector will visually inspect each weld. In addition, qualified technicians take X-rays of the pipe welds to ensure completed welds meet federally prescribed quality standards. The X-ray technician processes the film in a small, portable darkroom at the site. Any welds that do not pass the inspection process are repaired or cut out, and a new weld is made.

### **2.2.7 Lowering In**

A series of side-boom tractors will simultaneously lift welded sections of the pipe and carefully lower the sections into the trench. Non-metallic slings protect the pipe and coating as it is raised and moved into position. In rocky areas, the contractor may place sandbags or foam blocks at the bottom of the trench prior to lowering-in to protect the pipe and coating from damage.

### **2.2.8 Backfilling**

The trench can be backfilled once the pipe has been placed. Soil is returned to the trench in the reverse order of excavation. Subsoil is placed first, followed by topsoil. The trench line (subsoil) will be compacted with a wheeled-roller. A 3- to 6- inch crown will be left over the trench line to allow for natural subsidence. Trench breakers or water stops will be installed, as necessary, adjacent to wetlands and stream crossings to eliminate groundwater migration along the trench.

### **2.2.9 Hydrostatic Testing**

The entire length of the pipeline(s) will be hydrostatically tested before being placed into service. Requirements for this test are prescribed in the DOT's federal regulations. Depending on the varying elevation of the terrain and the location of available water sources, the pipeline may be divided into sections to facilitate the test.

Each pipe section is field with water and pressured to a level higher than the operating pressure. The test pressure is held for a specific period to determine if it meets the design strength requirements and if any leaks are present. Once a test section successfully passes the hydrostatic test, the water is emptied from the pipeline in accordance with federal requirements. The pipeline is then dried to assure it has no water in it before oil or natural gas is put into the pipeline. In lieu of a water test, Zenergy may conduct an air test to the same pressure as the water test.

### **2.2.10 Restoration**

The final step in the construction process is restoring the ROW as closely as possible to its original condition. Depending on the project requirements, this typically involves relieving subsoil compaction/scarifying in construction work areas, replacing the topsoil, and seeding non-tilled land.

Scarifying will be performed using an agricultural ripper/subsoiler or other similar tillage equipment until the soil density is comparable to areas off the construction ROW. If ripped, the ripper shanks will be set 12 to 18 inches apart. The ROW will be ripped to a depth of 12 inches

in pasture and non-agricultural land. The ROW will be ripped to a depth of 18 inches in cropland.

Topsoil will be replaced after scarifying is completed. Sandy soils will not be scarified.

Rock may be used as backfill in the excavated trench except immediately surrounding the pipe or within the top 12 inches of backfill. The contractor will remove excess rock from the top 12 inches of soil to the extent practical. The size, density, and distribution of rock on the construction work area shall be similar to adjacent areas not disturbed by construction. Segregated rock will be collected and disposed of off the ROW or at a location designated by the landowner or BIA.

### 2.3 Directional Drilling

Directional drilling – sometimes referred to as horizontal drilling or boring – can reduce or mitigate surface disturbance, traffic interruptions, damage to roads, and environmental impacts to streams, wetlands, cultural resources or other sensitive areas. Directional drilling involves drilling a hole in a shallow arch from one surface location to another, beneath the feature to be avoided. The pipeline is then pulled through the hole or through a casing installed in the hole.

The BIA is requiring all “improved road” crossings be directionally drilled to avoid surface disturbance and traffic disruptions. Private driveway crossings will be directionally drilled unless the ROW lease agreement with the landowner states otherwise.

Directional drilling locations for Phase 1 of the Van Hook Gathering System are identified in Table 1. These locations include six road crossings and two stream crossings. The stream crossing(s) is discussed in more detail in Section 3 of this EA.

**Table 1. Directional Drill Locations**

Location	Pipeline Segment	Feature
NW ¼, NW ¼, Section 3, T150N, R92W	D-3 Van Hook R/S #16-4H Trunk	Gravel Road
NW ¼, NW ¼, Section 3, T150N, R92W	D-3 Van Hook R/S #16-4H Trunk	Private Drive
SW ¼, SW ¼, Section 3, T150N, R92W	D-3 Van Hook R/S #16-4H Trunk	Gravel Road
SE ¼, SE ¼, Section 9, T150N, R92W	D-3 Brunsell #16-9H Tie-In	Private Drive
NW ¼, NW ¼, Section 15, T150N, R92W	D-3 Brunsell #16-9H Trunk	Paved Road
NE ¼, NE ¼, Section 16, T150N, R92W	D-3 Elk #16-2H Trunk	Private Drive
NE ¼, NE ¼, Section 16, T150N, R92W	D-3 Elk #16-2H Trunk	Tributary to Little Shell Creek
NE ¼, NW ¼, Section 16, T150N, R92W	D-3 Elk #16-2H Trunk	Little Shell Creek

### 2.4 Reclamation

Reclamation will take place throughout the project lifespan. Reclamation will be required after the initial construction, after any maintenance work or addition of auxiliary infrastructure, and before final abandonment of the decommissioned system. Successful reclamation will remain the obligation and responsibility of the system operator.

Trenches will be backfilled immediately after pipe and utility installation and testing, waiting only if soils are overly wet or frozen. Appropriate temporary and long-term measures will be applied to all disturbed areas to minimize and control erosion. Field practices will conform with prescribed Best Management Practices (BMP's) and may include 1) installing silt fences and erosion fabric, mats or logs; 2) construction of ditches and/or water bars; 3) seeding, planting, mulching and creation of buffer strips; and 4) any other measures required by BIA to minimize erosion and soil loss.

After subsoil scarified to alleviate compaction, stockpiled topsoil will be redistributed over the ROW. Re-contouring and reclamation of disturbed areas will be accomplished as soon as possible after construction is completed, and no later than by the next appropriate planting season (fall or spring). The ROW on non-tilled land will be re-seeded with certified, weed-free seed mixtures established by BIA. Native species will be used to the extent possible and seeding and planting will comply with BIA directions to ensure successful reclamation.

The ROW will be monitored to identify areas of excessive erosion, subsidence, or invasion of noxious weeds. Periodic monitoring will be performed - and repeated reclamation efforts will be undertaken in problem areas – until BIA has certified the ROW as successfully reclaimed. Successful reclamation is defined by the BIA to include the following observable factors: 1) reproduction of seeded and re-established species; 2) natural invasion of plants from undisturbed adjacent communities; and 3) control or exclusion of noxious weeds.

The BIA has developed a weed management plan to facilitate the treatment of known and likely noxious/invasive weed species. If seeding is not successful within two growing seasons, BIA may require extra efforts to stabilize the site, such as matting the entire affected area, or using a mix of rapidly growing forbs and annual grasses, followed by reseeding with grasses, forbs, and shrubs with rapidly expanding, deep root systems.

Decommissioning of the pipeline will result in mandatory final reclamation of the ROW. Cement foundations will be broken and hauled to an approved disposal site. Gravel pads will be buried onsite or hauled to a disposal site. Compacted areas will be scarified and re-contoured. Stockpiled topsoil will be redistributed and re-vegetated. Due to economic and environmental disturbance costs associated with excavation and removal, pipelines will be purged with water to remove hydrocarbons, and then abandoned in place. Long term monitoring will be required to ensure successful reclamation and implementation of any necessary remedial efforts.

## **2.5 Operations and Maintenance**

Maintenance of pipelines and utilities will be confined to the 50-foot permanent ROW. Corrosion or leaking may require replacement of system sections. Loss of products or waste products may require excavation of contaminated soils and other remedial projects. Applicable regulations, including immediately notifying BIA and BMP's, will be implemented aggressively to minimize waste of resources and environmental damage.

### 3.0 The Affected Environment and Potential Impacts

The Fort Berthold Indian Reservation is the home of the Three Affiliated Tribes of the MHA Nation. Located in west-central North Dakota, the Reservation encompasses more than one million acres, of which almost half are held in trust by the United States for either the MHA Nation or individual allottees. The remainder of the land is owned in fee simple title, sometimes by the MHA Nation or tribal members, but usually by non-Indians. The Reservation occupies portions of six counties, including Dunn, McKenzie, McLean, Mercer, Mountrail, and Ward. In 1945, the Garrison Dam was completed inundating much of the Reservation. The remaining land was divided into three sections by Lake Sakakawea, an impoundment of the Missouri River upstream of the Garrison Dam.

The Reservation is located within the northern Great Plains ecoregion, which consists of four physiographic units:

- Missouri Coteau Slope north of Lake Sakakawea;
- Missouri River Trench (not flooded);
- Little Missouri River Badlands; and
- Missouri Plateau south and west of Lake Sakakawea

Much of the Reservation is located on the Missouri Coteau Slope and is comprised of a glaciated gently rolling landscape. Elevations of the Reservation range from 1,838 feet at Lake Sakakawea to over 2,600 feet on Phaelan's Butte near Mandaree. Annual precipitation on the plateau averages between 15 to 17 inches. Mean temperatures fluctuate between -3° and 21°F in January and between 55° to 83° in July, with 95 to 130 frost-free days each year (Bryce et al. 1998; High Plains Regional Climate Center 2008).

The Van Hook Gathering System is situated geologically within the Williston Basin, where the shallow structure consists of sandstones, silts and shales dating to the Tertiary Period (65 to 2 million years ago), including the Sentinel Butte and Golden Valley Formations. The underlying Bakken Formation is a well-known source of hydrocarbons; its middle member is targeted by the proposed project(s). Although earlier oil/gas exploration activities within the Reservation were limited and commercially unproductive, recent economic and technological advancement have created feasible access to the Bakken Formation.

The proposed gathering system is located in a rural area consisting primarily of grassland, shrubland, and cropland that is currently farmed, idle or used to graze livestock. The landscape has been previously disturbed by dirt trails and gravel or paved roadways.

The broad definition of human and natural environment under NEPA leads to the consideration of the following elements:

- Air quality;
- Public health and safety;
- Water resources;
- Wetland/riparian habitat;
- Threatened and endangered species;
- Soils;
- Vegetation and invasive species;
- Cultural resources;

- Socioeconomic conditions; and
- Environmental justice.

Potential impacts to these elements are analyzed for both the No Action Alternative and the Preferred Alternative. Impacts may be beneficial or detrimental, direct or indirect, and short-term or long-term. The EA also analyzes the potential for cumulative impacts and ultimately makes a determination as to the significance of any impacts. In the absence of significant negative consequences, it should be noted that a significant benefit from the project does *not* in itself require preparation of an EIS. After consideration of the no-action alternative, existing conditions and potential impacts from proposed projects are described below.

### 3.1 The No Action Alternative

Under the No Action Alternative, the proposed project will not be installed or operated. Truck traffic transporting oil and gas products will progressively increase on local roads as proposed wells begin production. Flaring of produced gas at the well sites will be necessary to continue, as it is the only alternative at this time without a pipeline gathering system.

Existing conditions could be impacted for the following critical elements if the No Active Alternative is selected:

- Air quality;
- Public health and safety;
- Socioeconomic conditions; and
- Environmental justice.

Flaring of gas from increasing numbers of wells may lead over time to measurable degradation of air quality. Increasing truck traffic will result increased degradation of public roadways, traffic safety concerns, and even allow for potential spreading of invasive weed species. The No Action alternative will exacerbate the waste of resources and loss of potential revenue. Gas income loss due to flaring is estimated at 2 million dollars over the life of each well (Energy Information Administration, 2009). Under the No Action Alternative, the MHA Nation, tribal members, and allottees will not have the opportunity to realize potential financial gains resulting from the flaring of gas resources at these well locations.

### 3.2 Air Quality

The North Dakota Department of Health (NDDH) network of Ambient Air Quality Monitoring (AAQM) stations includes Watford City in McKenzie County, Dunn Center in Dunn County, and Beulah in Mercer County. These stations are located west, south, and southeast of proposed well sites. Criteria pollutants tracked under National Ambient Air Quality Standards (NAAQS) of the *Clean Air Act* include sulfur dioxide (SO<sub>2</sub>), particulate matter (PM<sub>10</sub>), nitrogen dioxide (NO<sub>2</sub>), and ozone (O<sub>3</sub>). Two other criteria pollutants – lead (Pb) and carbon monoxide (CO) – are not monitored by any of three stations. Table 2 summarizes federal air quality standards and available air quality data from the three-county study area.



**Table 2. Summary of Federal Air Quality Standards**

Pollutant	Averaging Period	NAAQS ( $\mu\text{g}/\text{m}^3$ )	NAAQS (ppm)	County		
				Dunn	McKenzie	Mercer
SO <sub>2</sub>	24-Hour	365	0.14	0.004 ppm	0.004 ppm	0.011 ppm
	Annual Mean	80	0.3	0.001 ppm	0.001 ppm	0.002 ppm
PM <sub>10</sub>	24-Hour	150	--	50 ( $\mu\text{g}/\text{m}^3$ )	35 ( $\mu\text{g}/\text{m}^3$ )	35 ( $\mu\text{g}/\text{m}^3$ )
	Annual Mean	50	--	--	--	--
PM <sub>2.5</sub>	24-Hour	35	--	--	--	--
	Weighted Annual Mean	15	--	--	--	--
NO <sub>2</sub>	Annual Mean	100	0.053	0.002 ppm	0.001 ppm	0.003 ppm
CO	1-Hour	40,000	35	--	--	--
	8-Hour	10,000	9	--	--	--
Pb	3-Month	1.5	--	--	--	--
O <sub>3</sub>	1-Hour	240	0.12	0.071 ppm	0.072 ppm	0.076 ppm
	8-Hour	--	0.08	0.061 ppm	0.066 ppm	0.067 ppm

North Dakota was one of nine states in 2006 that met standards for all criteria pollutants. The state also met standards for fine particulates and the eight-hour ozone standards established by the U.S. Environmental Protection Agency (EPA) (NDDH 2007). The three counties addressed in Table 2 are also in full attainment and usually far below established limits (American Lung Association 2006). The Clean Air Act mandates prevention of significant deterioration in designated attainment areas. Class I areas are of national significance and include national parks greater than 6,000 acres in size, national monuments, national seashores, and federal wilderness areas larger than 5,000 acres and designated prior to 1977. There is a Class I air shed at nearby Theodore Roosevelt National Park (TRNP), which covers approximately 110 square miles in three units within the Little Missouri National Grassland between Medora and Watford City, located 30-40 miles west of the proposed project. The reservation can be considered a Class II attainment air shed, which affords it a lower level of protection from significant deterioration.

The proposed project is similar to other nearby approved previously installed projects. Construction traffic will generate temporary, intermittent, and nearly undetectable gaseous emissions of particulates, SO<sub>2</sub>, NO<sub>2</sub>, CO<sub>2</sub>, and volatile organic compounds. Road dust will be controlled as necessary and other best management practices implemented as necessary to limit emissions to the immediate project areas (BLM 2005).

No detectable or long-term impacts to air quality or visibility are expected within the air sheds of the Reservation, state, or TRNP. Despite temporary minor construction impacts, the proposed project is expected to have an overwhelming positive and long-term impact on air quality. In addition to eliminating flaring of gas from tied-in wells, the gathering system will drastically reduce the heavy truck traffic and increased dust in the air. No laws, regulations or other requirements have been waived; no monitoring or compensatory measures are required.

### 3.3 Public Health and Safety

Health and safety concerns include hazards posed by temporary heavy truck traffic and equipment during construction activities, hazardous materials used or generated during installation or production, and burning or explosive hazards during operation of the pipelines. Negative impacts from construction will be largely temporary. Noise fugitive dust, and traffic hazards will be present during construction and them diminish sharply during operations.

The U.S. EPA specifies chemical reporting requirements under Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986, as amended. No materials used or generated by this project for production, use, storage, transport, or disposal are on either the SARA list or on EPA's list of extremely hazardous substances in 40 CFR 355. The most common and potentially hazardous substances used during the construction of the pipeline will include diesel fuel, gasoline, lubricating oils, paints, and solvents. The Spill Prevention Control and Countermeasure (SPCC) plan includes procedures for hazardous material storage, handling, disposal, cleanup, and reporting. Potentially hazardous materials will be stored only in designated and permitted staging areas at least 100 feet from watercourses and wetlands. Vehicle refueling will comply with the same minimum setback. Materials Safety Data Sheets for each potentially hazardous substance will be maintained onsite at the point of use at all times.

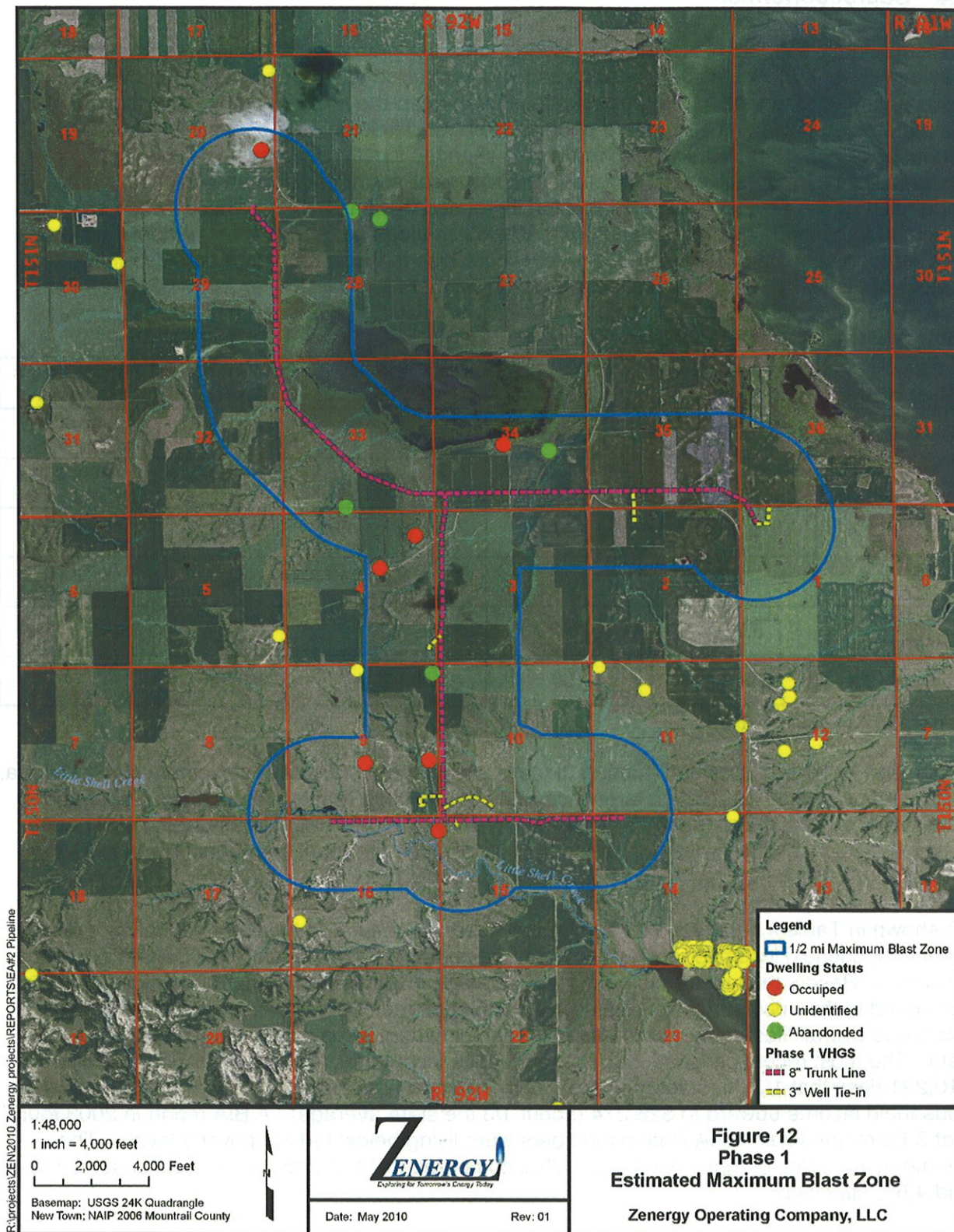
According to the Pipeline and Hazardous Materials Safety Administration (PHMSA 2009), pipelines are a reliable and cost-effective means to transport natural gas and hazardous liquids. PHMSA statistics show one gallon of oil is spilled for every barrel of oil that is transported one million miles: "In household terms, this is less than one teaspoon of oil spilled per thousand barrel-miles". In the event of a spill, Zenergy will notify local emergency management authorities and state or federal response centers. After the pipeline is operational, Zenergy will also install and utilize the following programs for public safety: operator training, cathodic protection, detailed ROW marking, regular inspections, and integrity management programs (automated PIG launcher). Pipeline pressure will also be monitored at both ends of the system; significant leaks causing pressure drops will be located by launching a special PIG or other detention equipment down a line.

Combustion and explosive hazards are considered extremely unlikely for the proposed project, but modeling results show that most damage will be expected within 0.5 mile of either side of the pipeline ROW. Aerial imagery was used to identify homes within one-half mile (estimated maximum blast zone) of the proposed pipeline ROW (Figure 12). There are seven existing occupied homes, two abandoned homes, and one church within this estimated maximum blast zone. Five of the occupied homes are located on trust land. Two homes are within 500 feet and direct line-of-sight of the ROW. These include a permanent dwelling in the NE ¼, NE ¼ of Section and a mobile home in the NE ¼, SW ¼ of Section 9.

Project design and operational precautions mitigate against impacts from traffic or hazardous materials. The size of the area potentially impacted by leaks, fire or explosion is a function of relatively small diameter of the proposed pipeline and the burial depth of six feet. Operations will conform to instructions from BIA fire management staff.

Impacts from the proposed project are considered minimal, insignificant or unlikely. No laws, regulations or other requirements have been waived; no compensatory mitigation measures are required.

Figure 12. Overview of Estimated Maximum Blast Zone



### 3.4 Socioeconomics

Socioeconomic conditions include population, demographics, income, employment, and housing. These conditions can be analyzed and compared at various scales. This analysis focuses on the reservation, the four counties that overlap the majority of the Reservation and the state of North Dakota. The state population showed little change between the last two censuses (1990-2000), but there were notable changes locally, as shown in Table 3. Populations in Dunn, McKenzie, McLean, and Mountrail counties declined 5 to 11%, while population on the Fort Berthold Reservation increased by almost 10%. These trends are expected to continue (Rathge et al. 2002). While American Indians are the predominant group on the reservation, they are a minority everywhere else in the state. More than two-thirds (3,986) of the Reservation population are tribal members.

**Table 3. Population and Demographics.**

County or Reservation	Population in 2000	% of State Population	% Change 1990-2000	Predominant Group	Predominant Minority
Dunn County	3,600	0.56	- 10.1	White	American Indian (12%)
McKenzie County	5,737	0.89	- 10.1	White	American Indian (21%)
McLean County	9,311	1.45	- 11.0	White	American Indian (6%)
Mountrail County	6,631	1.03	- 5.6	White	American Indian (30%)
Fort Berthold Reservation	5,915,	0.92	+ 9.8	American Indian	White (27%)
Statewide	642,200	100	+0.005	White	American Indian (5%)

Source: U.S. Census Bureau 2007.

In addition to the ranching and farming that are employment mainstays in western North Dakota, employment on the Reservation largely consists of ranching, farming, tribal government, tribal enterprises, schools, and federal agencies. The MHA Nation's Four Bears Casino and Lodge, near New Town, employs over 320 people, 90% of which are tribal members (Three Affiliated Tribes 2008).

As shown in Table 4 counties overlapping the Reservation tend to have per capita incomes, median household incomes, and employment rates that are lower than North Dakota statewide averages. Reservation residents have lower average incomes and higher unemployment rates compared to the encompassing counties. MHA Nation members are in turn disadvantaged relative to overall Reservation incomes and unemployment rates that average in non-Indian data. The most recent census found that per capita income for residents of the Reservation is \$10,291 (less than 1/3 the state average). Overcrowded housing skews the median reservation household income upward to \$26,274 (about 1/3 the state average). A BIA report in 2003 found that 33% of employed MHA Nation members were living below federal poverty levels. The unemployment rate of tribal members is 22% compared to 11.1% for the reservation as a whole and 4.6% statewide.

**Table 4. Income and Unemployment.**

Unit of Analysis	Per Capita Income	Median Household Income	Unemployment Rate (2007)	Employed but Below Poverty Level	Percent of All People in Poverty
MHA Nation	--	--	22%	33%	Unknown
Fort Berthold Reservation	\$10,291	\$26,274	11.1%	--	Unknown
Mountrail County	\$29,071	\$34,541	5.8%	--	15.4%
Dunn County	\$27,528	\$35,107	3.4%	--	13%
McKenzie County	\$27,477,	\$35,348	3.1%	--	15.8%
McLean County	\$32,387	\$37,652	4.7%	--	12.8%
North Dakota	\$31,871	\$40,818	3.2%		11.2%

Source: U.S. Department of Agriculture Economic Research Data 2008 and BIA 2003.

Availability and affordability of housing can affect oil and gas development and operations. Housing information from the year 2000 is summarized in Table 5. The tribal Housing Authority manages a majority of the housing units within the reservation. Housing typically consists of homes built through various government programs, low-rent housing units, and scattered-site homes. Private purchase and rental housing are available in New Town. New housing construction has recently increased within much of the analysis area, but availability remains low.

**Table 5. Housing**

Housing Development	Fort Berthold Reservation	Dunn County	McKenzie County	McLean County	Mountrail County
<b>Existing Housing</b>					
Owner-Occupied Units	1,122	1,570	2,009	4,332	2,495
Renter Occupied Units	786	395	710	932	941
Total	1,908	1,965	2,719	5,264	3,436
New Private Housing Building Permits 2000-2005	--	18	4	135	113
<b>Housing Development Statistics</b>					
State rank in housing starts	--	51 of 53	15 of 53	21 of 53	17 of 53
National rank in housing starts	--	3112 / 3141	2498 / 3141	2691 / 3141	2559 / 3141

Source: U.S. Census Bureau 2007 and 2008

The proposed projects are not expected to have measurable impacts on population trends, local unemployment rates or housing starts. Relatively high-paying construction jobs will result from exploration and development of oil and gas reserves on the reservation, but most of these opportunities are expected to be short-term. The proposed action will require temporary employees during the well construction cycle and one to two full-time employees from the long-term production cycle. Short-term construction employment will provide some economic benefit.

Long-term commercial operations will provide significant royalty income and indirect economic benefits.

### 3.5 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, was signed by President Clinton in 1994. The Order requires agencies to advance environmental justice (EJ) by pursuing fair treatment and meaningful involvement of minority and low-income populations. Fair treatment means such groups should not bear a disproportionately high share of negative environment consequences from federal programs, policies, decisions, or operations. Meaningful involvement means federal officials actively promote opportunities for public participation and participating groups and individuals can materially affect federal decisions.

The U.S. Environmental Protection Agency (EPA) headed the interagency workgroup established by the 1994 Order and is responsible for related legal action. Working criteria for designation of targeted populations are provided in *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses* (EPA 1998). This guidance uses a statistical approach to consider various geographic areas and scales of analysis to define a particular population's status under the Order.

Environmental Justice is an evolving concept with potential for disagreement over the scope of analysis and the implications for federal responsiveness. It is nevertheless clear that tribal members on the Great Plains qualify for EJ consideration as both a minority and low-income population. The population of the Dakotas is predominantly Caucasian. While some 70% of Reservation residents are tribal members, Indians comprise only 5% of North Dakota residents. Even in a state with relatively low per capita and household income, Indian individuals and households are distinctly disadvantaged.

There are, however, some unusual EJ considerations when proposed federal actions are meant to benefit tribal members. Determination of fair treatment necessarily considers the distribution of both benefits and negative impacts, due to variation in the interests of various tribal groups and individuals. There is also potential for major differences in impacts to resident tribal members and those enrolled or living elsewhere. A general benefit to the MHA Nation government and infrastructure has already resulted from tribal leasing, fees, and taxes. Oil and gas leasing has also already brought much-needed income to MHA Nation members who hold mineral interests, some of whom may eventually benefit further from royalties on commercial production. Profitable production rates at proposed locations may lead to exploration and development on additional tracts owned by currently non-benefitting allottees. The absence of lease and royalty income does not preclude other benefits. Exploration and development will provide many relatively high-paying jobs, with oversight from the Tribal Employment Rights Office.

The owners of allotted surface within the project areas may not hold mineral rights. In such case, surface owners do not receive oil and gas lease or royalty income and their only income will be compensatory for productive acreage lost due to road and well pad construction. Tribal members without either surface or mineral rights will not receive any direct benefits whatsoever. Indirect benefits of employment and general tribal gains will be the only potential offsets to negative impacts.

Potential impacts to tribes and tribal members include disturbance of cultural resources. There is potential for disproportionate impacts, especially if the impacted tribes and members do not

reside within the Reservation and therefore do not share in direct or indirect benefits. This potential is significantly reduced following the surveys of proposed well locations and access road routes and determination by the BIA that there will be no affect to historic properties. Research and survey has found nothing to be present on the site that qualifies as a traditional cultural property (TCP) or that requires protection under the *American Indian Religious Freedom Act*. Potential for disproportionate impacts is further mitigated by requirements for immediate work stoppage following an unexpected discovery of cultural resources of any type. Mandatory consultations will take place during any such work stoppage, affording an opportunity for all affected parties to assert their interests and contribute to an appropriate resolution, regardless of their home location or tribal affiliation.

The proposed project has not been found to pose significant impacts to any other critical element – air, public health and safety, water, wetlands, wildlife, vegetation, or soils – within the human environment. The proposed action offers many positive consequences for tribal members, while recognizing Environmental Justice concerns. Procedures summarized in this document and in the APD are binding and sufficient. No laws, regulations, or other requirements have been waived; no compensatory mitigations measures are required.

### **3.6 Water Resources**

#### **3.6.1 Surface Water**

The proposed Van Hook Gathering System is located across the glaciated upland in the Missouri River Regional Water Basin and within the Garrison Dam Sub-Basin, as it traverses the Independence Point and Van Hook State Wildlife Management Area Watersheds within the Little Shell Creek Church, the Lower Van Hook Arm, and the Muskrat Lake Sub-Watersheds.

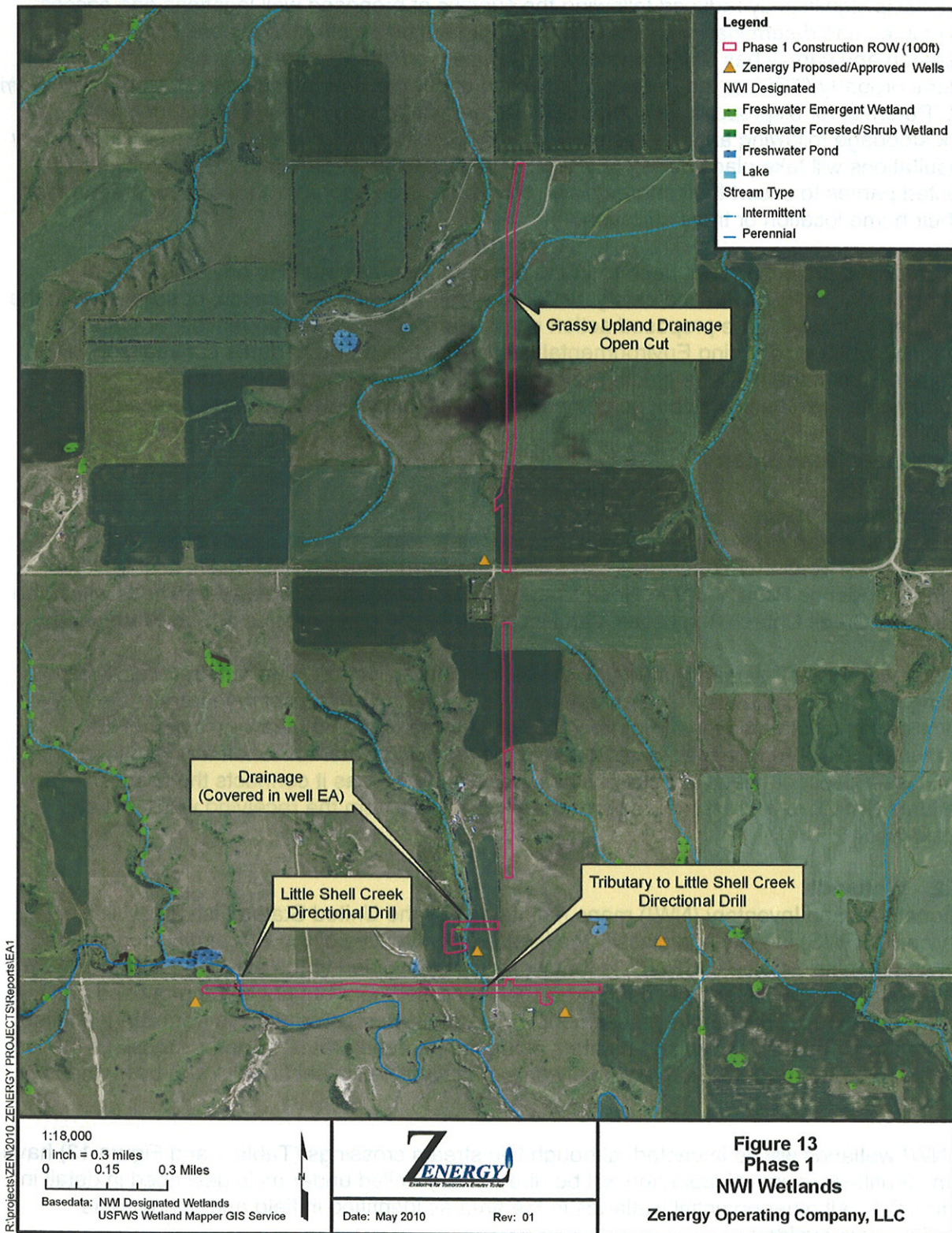
Surface water runoff generally starts as sheet-flow until collected by ephemeral drainages leading to Lake Sakakawea. The ephemeral drainages, in turn, combine to form intermittent and/or perennial streams that flow into Lake Sakakawea. Lake Sakakawea is part of the Missouri River sub-regional watershed and is the receiving water for runoff from the land area. The closest direct drainage to Lake Sakakawea is 4,300 feet as it connects the Olson #1-12H. The Little Shell Creek crossing is approximately 2.7 miles from the receiving water of Lake Sakakawea.

#### **3.6.2 Wetlands**

National Wetland Inventory (NWI) maps maintained by the United States Fish and Wildlife Service (USFWS) identify and classify wetlands. The directive of the BIA and United States Fish and Wildlife Service (USFWS) is that wetlands be avoided to the extent possible. Wetlands in the NWI layer have been previously recorded near but not in the proposed project ROW (Figure 13). The on-site assessment conducted with representatives from BIA identified and confirmed riparian or wetland habitats along the proposed route. Stream crossings that are not able to be avoided will be directionally drilled as identified in section 2.1 and by methods described in Section 2.3.

No NWI wetlands will be impacted, although two stream crossings (Table 1 and Figure 13) have been identified as unavoidable and will be directionally drilled under as is described in detail in section 2.1. All other potential wetlands in the area as identified in field and during route planning were avoided.

Figure 13. NWI Map





### 3.6.3 Groundwater

The principal uses of ground water in Mountrail County are for domestic and livestock supplies, public supplies, industrial supplies, and irrigation. Practically all of the water used for industrial purposes in Mountrail County either is used in connection with the production of petroleum or is obtained from public supplies and no records are kept. The largest use of ground water in the county is for pressure maintenance during well drilling.

Ground water in Mountrail County is obtained from aquifers in the glacial drift of Quaternary age, the Sentinel Butte and Tongue River Formations in the Fort Union Group of Tertiary age, and the Fox Hills Formation, Hell Creek Formation, and the Dakota Group of Cretaceous age. The Dakota Group, Fox Hills Formation, Hell Creek Formation, Fort Union Group, and the glacial drift contain the only aquifers that are presently of economic importance.

### 3.6.4 Water Wells

There are two domestic or stock water supply wells within five miles of the proposed pipeline (Table 6). There are records of 12 other water wells drilled within five miles of the proposed location. These include six test holes and six observation wells drilled by the USGS or ND State Water Commission.

**Table 6. Water wells within 5 miles.**

LOCATION	Distance and Direction	Permit Type	Aquifer	Well Depth (feet)	Date
NW NW 35 T151N R93W	3.0 mi, W	Domestic or Stock Well	Tongue River	308	1/3/1988
NE NE 10 T150N R93W	4.9 mi, NW	Domestic or Stock Well	Tongue River	421	7/27/1981

<sup>1</sup> ND State Water Commission 2009

The pipeline will be placed at a depth of six feet, except at directional drill locations and/or road crossings. Seepage and infiltration of hazardous materials from the pipelines are considered unlikely. Impacts to shallow aquifers from surface activities and spills will be avoided or managed by implementation of a Spill Prevention, Control, and Countermeasure (SPCC) Plan.

No significant impacts to surface water or groundwater are expected because of the proposed action. No applicable laws or regulations will be waived; no compensatory mitigation measures are required to protect surface water or groundwater.

## 3.7 Habitat and Wildlife

### 3.7.1 Critical Habitats

The North Dakota Parks and Recreation Department (NDPR) houses the North Dakota Natural Heritage biological conservation database. A review by the NDPR was done to determine if any current or historic plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based upon the review and the onsite visit the proposed project is not located across or near any recorded significant ecological community and is not likely to adversely affect critical wildlife habitats.

The on-site surveys did not reveal any additional species observations or habitat areas of concern. Native species will be reseeded according to recommendations provided by the BIA. Wetlands encountered along the route are few and the route completely avoids or directionally drills under to preserve the integrity of the basins. Major drainages and perennial stream crossings have either been avoided or directionally drilled under. Native prairie has been avoided to the extent possible. Best management practices (BMP's) including contouring, silt fences, waddles, soil compaction and native reseeded will be implemented along entire route interim during construction and at final reclamation.

**3.7.2 Threatened and Endangered Species**

Assessments for Federally listed threatened and endangered species were conducted by evaluating historic and present occurrences, and by determining if potential habitat exists within the project area. The US Fish and Wildlife Service was consulted on the proposed project during the scoping period. Comments were received (Appendix B) and commitments were incorporated in the construction practice and plans throughout this document. Determinations were made concerning direct and cumulative effects of the proposed activities on each species and their habitat. Currently, seven species and one Designated Critical Habitat are listed in Mountrail County, North Dakota (Table 7).

**Table 7. County status of Endangered, Threatened, and Candidate species and Designated Critical Habitat**

Species	Status	County
		Mountrail
Interior Least Tern	Endangered	X
Whooping Crane	Endangered	X
Black-footed Ferret	Endangered	
Pallid Sturgeon	Endangered	X
Gray Wolf	Endangered	X
Piping Plover	Threatened	X
W Prairie Fringed Orchid	Threatened	
Dakota Skipper	Candidate	X
Designated Critical Habitat - Piping Plover		X

<sup>1</sup> USFWS (updated May 15, 2010)

**3.7.3 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
- Is not likely to jeopardize a proposed species or adversely modify critical habitat

**3.7.3.1 Gray Wolf**

Gray wolves, an Endangered Species in North Dakota, 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 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.

### 3.7.3.2 Interior Least Tern

The interior least tern nests on midstream sandbars along the Yellowstone and Missouri River systems. Interior least terns construct bowl-shaped depression nests on sparsely vegetated sandbars and sandy beaches. Their nesting period occurs between mid-May through mid-August. The proposed projects will not disrupt the Missouri River habitat. The proposed project is set back (more than ½ mile) from the Missouri River system and **may affect, but is not likely to adversely affect** this species.

### 3.7.3.3 Pallid Sturgeon

Pallid sturgeons are found within the Mississippi, Missouri, and Yellowstone River systems. Pallid sturgeon populations in North Dakota have decreased since the 1960's (Grondahl and Martin no date). The proposed projects will not disrupt the Missouri River habitat. The proposed project **may affect, but is not likely to adversely affect** this species.

### 3.7.3.4 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. Approximately 75% of the whooping state sightings in North Dakota occur within a 90-mile corridor that includes the proposed gathering system route and electrical line (Appendix B, USFWS). Because collisions with power lines are the primary cause for fledgling mortality, it is planned that utility lines be constructed underground. If underground lines are not an option, new above ground power lines and an equal amount of existing lines will be marked following specifications made by the BIA and other federal agencies, including the USFWS (USFWS, 2010). Land use in the area is primarily native prairie pasture with no large shallow marshes in the area.

Construction activities may cause migratory cranes to divert from the area but is not likely to result in any fatalities. Construction will be stopped if whooping cranes are sighted within one mile of the construction activities and not resume until the birds have left the area. Any sightings will be immediately reported to the US Fish and Wildlife Service (USFWS), North Dakota Game and Fish Department (NDGFD), and/or the BIA. Following these guidelines, it is reasonable to expect that the proposed activities are **may affect, but is not likely to adversely affect** whooping cranes.

### 3.7.3.5 Piping Plover

Piping plovers are found along the Missouri and Yellowstone River systems and on large alkaline wetlands. Nesting sites have been documented on the shorelines of Lake Sakakawea. In addition, critical habitat has been designated along Lake Sakakawea. The NDPRD have supplied maps depicting any know nesting sites (Appendix B). The document provided that the proposed route is over 1 mile from any historic nest site and not within line-of-sight of Missouri River habitat. None were observed during the on-site visit.

The project will not disrupt the Missouri River habitat or any designated Critical Habitat. The proposed project **may affect, but is not likely to adversely affect** this species at this time and **may affect, but is not likely to adversely affect** critical habitat.

**3.7.3.6 Dakota Skipper**

Dakota skippers are currently listed as a candidate species in North Dakota and have been documented in Mountrail County. 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. Although no individuals were seen during the on-site review, preferred plant species were present along the route in native prairie areas

Activities from pipeline installation may temporarily disturb some forage species of the Dakota skipper but **may affect, but is not likely to adversely affect** this species at this time due to the availability of large native grassland pastures in the immediate area. Native species will be replanted during reclamation activities.

**3.7.4 Migratory Birds, Raptors and Resident Wildlife**

Proposed oil and gas development in the area 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 cliff, tree, and ground raptor nests was conducted within ½ mile of the proposed project ROW during the on-site review. No raptors or nests were observed during the on-site review. The ROW was also traversed to identify the presence of migratory bird species as well as nests located within the ROW. No nests were found within the ROW. If portions of the pipeline are to be constructed during the spring nesting season (February 1 - July 15) ground and/or aerial surveys for migratory birds (including raptors) and nests will again be conducted within 5 days of construction surface disturbance.

If a migratory bird nest is located, the location will be recorded, monitored and documentation will be maintained. The USFWS will be consulted to determine mitigation measures to avoid disturbance of the nest. Measures may include applying an appropriate avoidance buffer to the nest or delaying construction in that area until the nest is fledged.

The proposed pipeline construction may have a net reduced effect on migratory bird and raptor incidental take due to reduced truck traffic in the project area over the life of the oil field.

Table 8 identifies other wildlife that may be generally expected along the proposed route. Some of these were confirmed by direct observation or by various signs. Direct wildlife observations can be affected by time of day, time of year, etc. The on-site visit was conducted on April 15, 2010.

**Table 8. Wildlife (General)**

Observed	Suitable Habitat
Sharp-tailed grouse, ring-necked pheasant, Hungarian partridge, numerous migratory grassland and song birds	Sharp-tailed grouse, ring-necked pheasant, Hungarian partridge, mule deer, pronghorn antelope, small mammals, and a variety of migratory grassland and song birds

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 unavoidably impact habitat for unlisted species, including small migratory birds, ground dwelling mammals, and other wildlife species.

Fragmentation of native prairie habitat is a specific concern for grouse species, but the limited disturbance from pipeline installation is small in the landscape context. Trenches will be backfilled immediately after pipeline and utility installation and testing, waiting only if soils are overly wet or frozen. Final and complete reclamation will proceed immediately after construction is completed, and no later than by the next appropriate planting season (fall or spring).

### **3.8 Soils**

The Natural Resource Conservation Services (NRCS) soils data was reviewed prior to the on-site assessment and verified during the field visit. The majority of the soils along the proposed ROW are classified as Williams-Zahl and Zahl-Williams loams, with slopes ranging from 3-25%.

Generally, the pipeline ROW is located on fine-grained soils with low to moderate erosion potential. The sites are suitable for construction and surface soils will allow for successful reclamation. The pipeline route was moved to reduce erosion potential and increase successful reclamation efforts from areas where the preliminary route was soft staked on steep inclines or side-slopes. The ROW will be monitored for erosion and best management practices implemented to control erosion as necessary.

Soils in Section 3 are cultivated and are used for small grain production. Topsoil is on average approximately six inches in depth and is a silty-clay with a mix of sand and gravel. At depths greater than six inches, the soil composition is a lean-clay with some sand. The topsoil depth near a drainage in NW ¼ NW ¼ is deeper (approximately 12 inches). Scattered cobbles are present.

Surface use in Section 10 is a mix of cultivated land and native grassland. The cultivated soil is a silty-clay, dark brown in color with some sand present to a depth of six inches. Deeper than six inches the soil is a light brown clay with some sand.

Topsoil on the native grassland hilltops is a brown sandy clay with gravel up to six inches deep. At greater depths, the soil turns to a lighter brown silty-clay. At the toe of slopes and drainage areas, the topsoil is a black organic silty-loam approximately 12 inches deep. At greater depths, the soil turns a lean, light brown clay.

Land use in Sections 15 and 16 is native pasture. Native topsoil is a sandy-clay with some gravel to a depth 6-8 inches. Scattered cobbles are present. At greater depths the soils turns to lean clay.

Topsoil will be stripped from across the ROW prior to trenching. Generally, topsoil will be stripped to a depth of six inches on cultivated land and native grassland. Topsoil will be stripped to a depth of 12 inches across intermittent drainage ways and other non-agricultural areas where directional drilling is not required. Recommended topsoil stripping depths along the proposed ROW are depicted in Figure 14.

Water body, tributary, wetland, and other directional drill locations are identified in Table 1. Topsoil shall be stripped at the recommended depth at entry- and exit-hole locations. Should drilling fail, and open cutting of these crossings is necessary, topsoil shall be stripped at the recommended depth.

Rocks will be unearthed during construction. Rock may be included as backfill in the excavated trench except immediately surrounding the pipe or within the top 12 inches of backfill. The contractor will remove excess rock from the top 12 inches of soil to the extent practical. The size, density, and distribution of rock on the construction work area shall be similar to adjacent areas not disturbed by construction. Segregated rock will be collected and disposed of off the ROW or at a location designated by the landowner or BIA.

### **3.9 Cultural Resources**

Historic properties, or cultural resources, on federal or tribal lands are protected by many laws, regulations and agreements. The *National Historic Preservation Act of 1966* (16 USC 470 *et seq.*) at Section 106 requires, for any federal, federally assisted or federally licensed undertaking, that the federal agency take into account the effect of that undertaking on any district, site, building, structure or object that is included in the National Register of Historic Places (National Register) before the expenditure of any federal funds or the issuance of any federal license. Cultural resources is a broad term encompassing sites, objects, or practices of archaeological, historical, cultural and religious significance. Eligibility criteria (36 CFR 60.6) include association with important events or people in our history, distinctive construction or artistic characteristics, and either a record of yielding or a potential to yield information important in prehistory or history. In practice, properties are generally not eligible for listing on the National Register if they lack diagnostic artifacts, subsurface remains or structural features, but those considered eligible are treated as though they were listed on the National Register, even when no formal nomination has been filed. This process of taking into account an undertaking's effect on historic properties is known as "Section 106 review," or more commonly as a cultural resource inventory.

The area of potential effect (APE) of any federal undertaking must also be evaluated for significance to Native Americans from a cultural and religious standpoint. Sites and practices may be eligible for protection under the *American Indian Religious Freedom Act of 1978* (42 USC 1996). Sacred sites may be identified by a tribe or an authoritative individual (Executive Order 13007). Special protections are afforded to human remains, funerary objects, and objects of cultural patrimony under the *Native American Graves Protection and Repatriation Act* (NAGPRA, 25 USC 3001 *et seq.*).

Whatever the nature of the cultural resource addressed by a particular statute or tradition, implementing procedures invariably include consultation requirements at various stages of a federal undertaking. The MHA Nation has designated a Tribal Historic Preservation Officer (THPO) by Tribal Council resolution, whose office and functions are certified by the National Park Service. The THPO operates with the same authority exercised in most of the rest of North Dakota by the State Historic Preservation Officer (SHPO). Thus, BIA consults and corresponds with the THPO regarding cultural resources on all projects proposed within the exterior boundaries of the Fort Berthold Reservation.

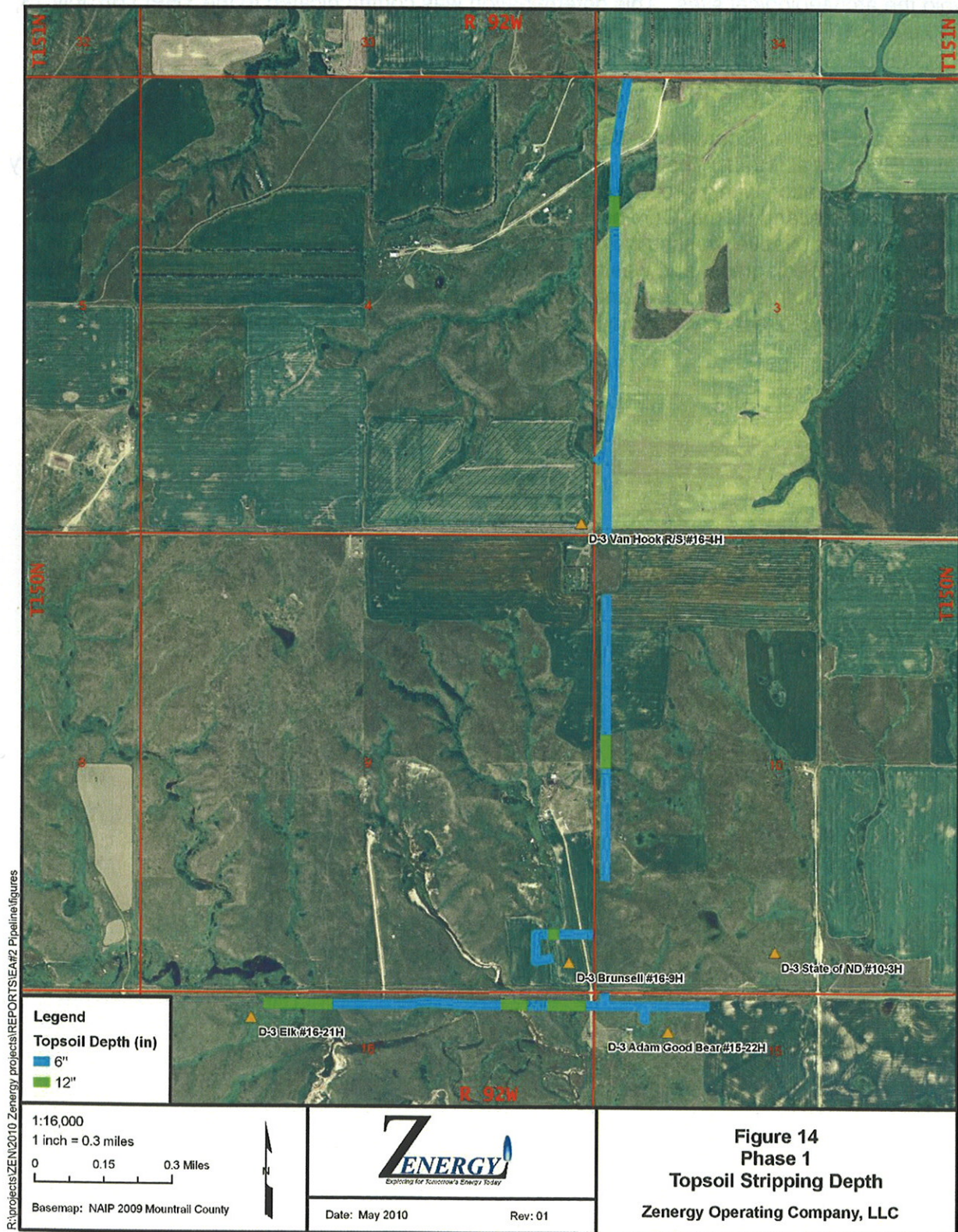
A cultural resource inventory of this pipeline project was conducted by personnel of Beaver Creek Archaeology, Inc., using an intensive pedestrian methodology. Approximately 110 acres were inventoried between March 1 and 15, 2010 (Burns 2010). Two archaeological sites were relocated that may possess the quality of integrity and meet at least one of the criteria (36 CFR

60.6) for inclusion on the National Register. As the lead federal agency, and as provided for in 36 CFR 800.5, on the basis of the information provided, BIA reached a determination of **no historic properties affected** for this undertaking, as the pipeline has been rerouted so as to avoid the archaeological sites. This determination was communicated to the THPO on July 13, 2010 and the THPO concurred on July 22, 2010.

### **3.10 Vegetation and Noxious Weeds**

The Missouri Plateau Ecoregion (Missouri Slope) is a western mixed-grass and short-grass prairie (Bryce et al. 1998). The U.S. Department of Agriculture soil surveys for Mountrail County describes vegetation within proposed project areas as mostly cultivated farmlands, native grasses, and wetland plants. Common grain and seed crops include wheat, oats, flax, canola, barley and peas. Native grasses include big bluestem, little bluestem, blue grama, side-oats grama, green needlegrass, and western wheatgrass. Typical wetland plants are smartweed, sedge species, bulrush, bluejoint, and cattail. Woody draws, coulees, and drainages may host communities of chokecherry, buffalo berry, western snowberry and gooseberry.

**Figure 14. Topsoil Stripping Depths**





### 3.10.1 Vegetation

The proposed ROW is characterized as rolling hills with intermixed native grassland habitats and cultivated agricultural land. Many upland and intermittent drainages dissect the area. Native areas are used for livestock grazing and at the time of on-site investigation, residual cover was moderate to low in pasture areas.

Western wheatgrass (*Agropyron smithii*), needle-and-thread (*Stipa comata*), Prairie junegrass (*Koeleria pyramidata*), blue gramma (*Bouteloua gracilis*), threadleaf sedge (*Carex filifolia*) and little bluestem (*Andropogon scoparius*) are the dominant grass species found on the native hillside, drainages, and pastures. Crested wheatgrass (*Agropyron cristatum*) and smooth brome are present in some pastures, likely due to winter livestock feeding operations. The drainage crossing in the cultivated field in Section 3 is dominated by buckbrush (*Symphoricarpos occidentalis*) with a Kentucky bluegrass (*Poa pratensis*) understory and goldenrod (*Solidago spp.*) found in margins.

Scattered forb species across the native areas included fringed sagebrush (*Artemisia frigida*), purple prairie clover (*Dalea purpureum*), purple coneflower (*Echinacea angustifolia*), ground plum (*Astragalus crassicaarpus*), silver leaf scurfpea (*Psoralea argophylla*), green milkweed (*Asclepias viridiflora*) skeleton weed (*Lygodesmia juncea*), and an occasional bull thistle (*Cirsium vulgare*). The upland drainages are occasionally spotted with the woody species of buffalo berry (*Shepherdia argentea*), chokecherry (*Prunus virginiana*), Skunkbrush sumac (*Rhus aromatica* var. *trilobata*) and usually include surrounding buckbrush stands.

Smooth brome (*Bromus inermis*) and buck brush are typically found in the roadside ditches. Wetland species were not identified nor delineated as these are directional drill locations and will not be impacted by construction.

### 3.10.2 Noxious Weeds

The North Dakota Agriculture Commission (ND Department of Agriculture 2002) identifies twelve noxious weed plant species in the state (Table 9). All twelve of the noxious weed species have been reported in Mountrail County (ND Department of Agriculture 2007). Absinth wormwood (*Artemisia absinthium*) is found in the pasture in the SW ¼ of Section 10. Canada thistle (*Cirsium arvense*) is present in the road ditch near the Elk #16-21H.

**Table 9. Noxious weeds in Mountrail County**

Common Name	Scientific Name	5 year (2003-2007) Average Reported Acres of Noxious Weeds <sup>1</sup>
		Mountrail County
<b>Absinth wormwood</b>	<b><i>Artemisia absinthium</i></b>	<b>1,085</b>
Canada thistle	<i>Cirsium arvense</i>	21,232
Dalmatian toadflax	<i>Linaria genistifolia</i>	NR
Diffuse knapweed	<i>Centaurea diffusa</i>	NR
Field bindweed	<i>Convolvulus arvensis</i>	1,429
Leafy spurge	<i>Euphorbia esula</i>	21,928
Musk thistle	<i>Carduus nutans</i>	2
Purple loosestrife	<i>Lythrum salicaria</i>	NR
Russian knapweed	<i>Acroptilon repens</i>	NR
Saltcedar	<i>Tamarix spp.</i>	721
Spotted knapweed	<i>Centaurea maculosa</i>	164
Yellow starthistle	<i>Centaurea solstitialis</i>	NR

<sup>1</sup> North Dakota Department of Agriculture 2003-2007

<sup>2</sup> Not Reported

Removal of existing soils and vegetation present opportunities for invasive species and threatens to reduce the quality or quantity of forage or crop production. Vehicles that have been driven in areas with invasive species must be cleaned with high-pressure sprayers before entering the project area.

Surface disturbance and vehicular traffic must not take place outside approved ROW. Areas stripped of topsoil must be re-seeded and reclaimed at the earliest opportunity. Certified weed-free straw and seed must be used for all construction, seeding, and reclamation efforts. Prompt and appropriate construction, operation, and reclamation are expected to reduce vegetative impacts to minimal levels, effectively negating the potential to establish or spread invasive species.

### 3.11 Irreversible and Irretrievable Commitment of Resources

Removal and consumption of oil and/or gas from the Bakken Formation will be an irreversible and irretrievable commitment of resources. Other potential resource commitments include acreage devoted to disposal of cuttings, soil lost through wind and water erosion, cultural resources inadvertently destroyed, wildlife inadvertently killed during earthmoving or in collisions with vehicles, and energy expended during construction and operation.

### 3.12 Short-Term Use versus Long-Term Productivity

Short-term activities will not detract significantly from long-term productivity of the project areas. The areas dedicated to the ROW will be unavailable for livestock grazing, wildlife habitat, and other uses. Allottees with surface rights will be compensated for loss of productive acreage and project footprints. Successful and ongoing reclamation of the landscape will quickly support wildlife and livestock grazing, stabilize the soil, and reduce the potential for erosion and sedimentation. The major long-term resource loss corresponds with the project purpose: extraction of hydrocarbons from the Bakken Formation.

### 3.13 Cumulative Impacts

The landscape and vegetation of the Great Plains have undergone continual transformations due to the influences of nature and human actions. Cumulative effects have occurred as a loss and alteration of habitats caused by cultivation, range management practices, fire suppression, exotic species introductions, resource development, and other practices. Environmental impacts may accumulate either over time or in combination with similar activities in the area. Unrelated activities may also have negative impacts on critical elements, thereby contributing to cumulative degradation of the environment. Past and current disturbances near the proposed project include farming, grazing, roads, and other oil/gas development. Virtually all-available acreage is already organized into agricultural leases or range units to utilize surface resources for economic benefit; oil and gas development is not expected to have more than a minor effect on surface use patterns.

There will be ground-disturbing activities to land that has not been previously cultivated or otherwise physically manipulated. The Phase 1 installation will temporarily disturb native prairie rangeland. There are no wetlands, floodplains, or major drainage facilities that will be significantly negatively affected by the proposed gathering system. Current land uses are expected to continue with little change other than the acreage within the temporary ROW cleared during installation. Increased truck traffic on adjacent roadways can temporarily be expected and has a documented negative, but manageable, impact on road conditions.

The major activity with potential to impact critical elements of the human environment is oil field development. Over the past several years, exploration has accelerated over the Bakken Formation. Most of this exploration has taken place outside the reservation boundary on fee land, but for purposes of cumulative impact analyses, land ownership and the reservation boundary are immaterial.

The proposed actions have been planned to avoid impacts to wetlands, floodplains, surface water, cultural resources, and threatened and endangered species. Unavoidable impacts to these or other resources will be minimized and/or mitigated as described in this document. The operator of any facility will be required to complete reclamation following construction and completion. Implementation of other precautionary and protective measures detailed in this EA and applicable regulations are expected to minimize impacts to all critical elements of the human environment. Impacts from the proposed projects are expected to generally be minor, temporary, manageable, and/or insignificant. No cumulative impacts are reasonably foreseen from existing and proposed activities, relative to the existing scale of development, other than increasingly positive impacts to the reservation economy.

## 4.0 Consultation and Coordination

The project scoping letters were sent to direct mail recipients at the respective agencies on May 3, 2010, and are listed in Table 10. A sample scoping letter and all comments received for the proposed Van Hook Gathering System is included in Appendix A and Appendix B.

**Table 10. Scoping letter recipients**

<u>Agency</u>	<u>Comments</u>
US Fish and Wildlife Service	Letter found in Appendix B Concerns and commitments incorporated throughout
Game and Fish Department	Letter found in Appendix B Concerns and commitments incorporated throughout
Bureau of Land Management	No Response
US Army Corps of Engineers	Letter found in Appendix B Concerns and commitments incorporated throughout
ND Parks and Recreation Department	Letter found in Appendix B Concerns and commitments incorporated throughout



# United States Department of the Interior

BUREAU OF INDIAN AFFAIRS  
Great Plains Regional Office  
115 Fourth Avenue S.E.  
Aberdeen, South Dakota 57401

JUL 13 2010



IN REPLY REFER TO:  
DESCRM  
MC-208

Perry 'No Tears' Brady, THPO  
Mandan, Hidatsa and Arikara Nation  
404 Frontage Road  
New Town, North Dakota 58763

Dear Mr. Brady:

We have considered the potential effects on cultural resources of the proposed Van Hook Gathering Line in Mountrail County, North Dakota. Approximately 110 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the areas depicted in the enclosed report. No historic properties were located that appear to possess the quality of integrity and meet at least one of the criteria (36 CFR 60.4) for inclusion on the National Register of Historic Places. No properties were located that appear to qualify for protection under the American Indian Religious Freedom Act (42 USC 1996).

As the surface management agency, and as provided for in 36 CFR 800.5, we have therefore reached a determination of **no historic properties affected** for this undertaking. Catalogued as **BIA Case Number AAO-1770/FB/10**, the proposed undertaking, locations, and project dimensions are described in the following report:

Burns, Christina  
(2010) Van Hook Gathering Line: A Class III Cultural Resource Inventory in Mountrail County, North Dakota. Beaver Creek Archaeology, Inc. for Zenergy Operating, LLC, Tulsa, OK.

If your office concurs with this determination, consultation will be completed under the National Historic Preservation Act and its implementing regulations. The Standard Conditions of Compliance will be adhered to.

If you have any questions, please contact Dr. Carson N. Murdy, Regional Archaeologist, at (605) 226-7656.

Sincerely,

Regional Director

Enclosure

cc: Chairman, Three Affiliated Tribes  
Superintendent, Fort Berthold Agency

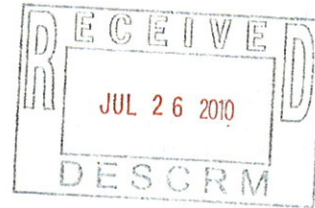


**TRIBAL HISTORIC PRESERVATION**

*Mandan Hidatsa Arikara*  
Perry 'No Tears' Brady, Director  
404 Frontage Road,  
New Town, North Dakota 58763  
Ph/701-862-2474 fax/701-862-2490  
[pbrady@mhanation.com](mailto:pbrady@mhanation.com)

July 22, 2010

Dr. Carson N. Murdy  
Great Plains Regional Office  
115 Fourth Avenue S.E.  
Aberdeen, South Dakota



**RE: Recommendation and Concurrence:**

As Director of the Tribal Historic Preservation Office and the Tribal Historical Preservation Officer representing the Mandan Hidatsa Arikara Nation I Concur with the Sites the standard of compliance should be adhered to. **BIA Case Number AAO-1770/FB/10**

**Burns, Christina**

Van Hook Gathering Line: A Class III Cultural Resource Inventory in Mountrail County, North Dakota. Beaver Creek Archaeology, Inc. for Zenergy Operating, LLC, Tulsa, OK.

If you have any questions or need additional information, you can contact me at (701) 862-2474 or 862-2475 or Cell number (701) 421-0547

Sincerely:

Perry "No Tear" Brady  
Director  
Mandan, Hidatsa, & Arikara Nation

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Cc.File

## 5.0 List of Preparers

An interdisciplinary team contributed to this document, following guidance in Part 1502.6 of CEQ regulations. Portions of the documents were drafted by McCain and Associates, Inc, under contract to Zenergy and under the direction of BIA. Federal officials, oil and gas representatives, and consultants included the following:

### **Bureau of Indian Affairs**

Marilyn Bercier  
Mark Herman

### **Zenergy Operating Company, LLC**

Scott Martin, Marketing Manager  
Kelley Bryan, Landman and Project Manager

### **McCain and Associates, Inc.**

Todd Hartleben, Principal Engineer  
Ryan Krapp, Wildlife Biologist/GIS Specialist

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- United States Fish and Wildlife Service. 2009. National Wetlands Inventory. <http://wetlandsfws.er.usgs.gov/NWI/>
- United States Geologic Service. 2009. New Town SW, Sanish SE and Sitting Buttes, 24K Topographic Quadrangles. 7.5 Minute Series. US Geological Survey, Denver, CO and North Dakota State Water Commission, Bismarck, North Dakota. <http://gis1.state.nd.us/24k/>
- United States Geologic Service. 2009. Parshall 100K Topographic Quadrangle. 7.5 Minute Series. US Geological Survey, Denver, CO and North Dakota State Water Commission, Bismarck, North Dakota. <http://gis1.state.nd.us/100k/>
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Williams, B. B., and M. E. Bluemle. 1978. Status of Mineral Resource Information for the Fort Berthold Indian Reservation, North Dakota. Administrative report B1A-40. 35 pp.

Burns, Christina

(2010) Van Hook Gathering Line: A Class III Cultural Resource Inventory in Mountrail County, North Dakota. Beaver Creek Archaeology, Inc. for Zenergy Operating, LLC, Tulsa, OK.

## **Acronyms**

AAQM	Ambient Air Quality Monitoring (site)
AIRFA	American Indian Religious Freedom Act
APD	Application for Permit to Drill
APE	Area of Potential Affect
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FONSI	Finding of No Significant Impact
GPRO	Great Plains Regional Office
MHA Nation	Three Affiliated Tribes of the Mandan, Hidatsa, and Arikara Nation
NAGPRA	Native American Graves Protection and Repatriation Act
NDCC	North Dakota Century Code
NDDH	North Dakota Department of Health
NDIC	North Dakota Industrial Commission
NDGFD	North Dakota Game and Fish Department
NDNH	North Dakota Natural Heritage
NDSWC	North Dakota State Water Commission
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPAL	Northern Plains Agro-ecosystems Laboratory
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTL	Notice to Lessees
SHPO	State Historic Preservation Officer
TCP	Traditional Cultural Property
TERO	Tribal Employment Rights Office
THPO	Tribal Historic Preservation Officer
TVD	Total Vertical Depth
USACE	United States Army Corps of Engineers
USC	United States Code
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

## ***Appendix A***

### ***Van Hook Gathering System Scoping Letter***

## ***Appendix B***

### ***Van Hook Gathering System Scoping Comments***

## ***Appendix B***

### ***Van Hook Gathering System Scoping Comments***



# North Dakota Department of Transportation

Francis G. Ziegler, P.E.  
*Director*

John Hoeven  
*Governor*

April 19, 2010

Chris Miller  
Project Director  
PBSJ  
3810 Valley Commons Dr. – Suite 4  
Bozeman, MT 59718

EA PROPOSED ACTION INCLUDES APPROVAL BY BIA AND BLM OF DRILLING AND COMPLETION OF UP TO TWELVE EXPLORATORY WELLS, BEAKS/HUNTSMEDICINE, FORT BERTHOLD RESERVATION, NORTH DAKOTA

We have reviewed your March 26, 2010, letter.

The project referenced above will have no adverse effect on the North Dakota Department of Transportation highways.

However, if any work needs to be done on highway right-of-way, appropriate permits and risk management documents will need to be obtained from the Department of Transportation District Engineer, Walter Peterson at 701-774-2700.

A handwritten signature in black ink, appearing to read "Ronald J. Henke".

RONALD J. HENKE, P.E., DIRECTOR - OFFICE OF PROJECT DEVELOPMENT

57:rjh:js

c: Walter A. Peterson, Williston District

608 East Boulevard Avenue • Bismarck, North Dakota 58505-0700  
Information: (701) 328-2500 • FAX: (701) 328-0310 • TTY: (701) 328-4156 • [www.dot.nd.gov](http://www.dot.nd.gov)

United States Department of Agriculture



Natural Resources Conservation Service  
P.O. Box 1458  
Bismarck, ND 58502-1458

---

April 8, 2010

Chris Miller  
PBS&J  
115 N. 28<sup>th</sup> Street, Suite 202  
Billings, Montana 59101-2045

RE: Drilling and completion of up to twelve exploratory oil and gas wells using one well pad and one access road on the Fort Berthold Indian Reservation by XTO Energy, Inc.

- Beaks/Huntsmedicine 24X8 Sites:  
SE 1/4, SW 1/4, Section 8, Township 149N, Range 91W  
NW 1/4, Section 17, Township 149N, Range 91W  
Dunn County, ND.

Dear Mr. Miller:

The Natural Resources Conservation Service (NRCS) has reviewed your letter dated March 26, 2010, concerning drilling and completion of up to twelve exploratory oil and gas wells by constructing one well pad and one access road on the Fort Berthold Indian Reservation by XTO Energy, Inc., located in Dunn County, North Dakota.

NRCS has a major responsibility with the Farmland Protection Policy Act (FPPA) in documenting conversion of farmland (i.e., prime, statewide, and local importance) to non-agricultural use. It appears your proposed project is not supported by federal funding or actions; therefore, FPPA does not apply and no further action is needed.

If you have additional questions pertaining to FPPA, please contact Steve Sieler, State Soil Liaison, at (701) 530-2019.

Sincerely,

A handwritten signature in black ink that reads "Paul J. Sweeney".

PAUL J. SWEENEY  
State Conservationist

cc:  
Susan Tuhy, DC, NRCS, Killdeer, ND  
Terrance Gisvold, ASTC (FO), NRCS, Dickinson, ND

*Helping People Help the Land*  
An Equal Opportunity Provider and Employer



An employee-owned company

March 26, 2010

Dear Interested Party:

The Bureau of Indian Affairs (BIA) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA), in cooperation with the Bureau of Land Management (BLM). The proposed action includes approval by the BIA and BLM of the drilling and completion of up to twelve exploratory oil and gas wells using one well pad and one access road on the Fort Berthold Indian Reservation by XTO Energy, Inc. The well pad and access road are proposed in the following locations and shown on the enclosed project location map:

- **Beaks/Huntsmedicine 24X-8 Site:** SE ¼, SW ¼, Section 8, Township 149N, Range 91W  
NW ¼, Section 17, Township 149N, Range 91W

Development of the project would consist of the mechanical excavation and preparation of one well pad and construction of one access road. The proposed well pad is roughly 5.05 acres in size. The proposed access road is roughly 5,388 feet long; of which 2,727 feet is proposed as new road and 2,662 feet would involve improvements to an existing two-track road. The twelve wells would be located within a 1,280-acre spacing unit and positioned to use the same access road. The drilling of these well sites is proposed to begin as early as spring/summer 2010.

To ensure that social, economic, and environmental effects are analyzed accurately, we solicit your views and comments on the Proposed Action, pursuant to Section 102(2) (D) (IV) of NEPA, as amended. We are interested in developments proposed or underway that should be considered in connection with the proposed project. We also ask your assistance in identifying any property or resources that you own, manage, oversee or otherwise value that might be adversely impacted. Please send your replies and requests for additional project information to:

Chris Miller, Project Manager  
PBS&J  
115 N. 28<sup>th</sup> Street, Suite 202  
Billings, Montana 59101-2045  
406-259-7979  
[lcmliller@pbsj.com](mailto:lcmliller@pbsj.com)

If we do not hear from you by **April 29, 2010** we will assume that you have no comment on this project. Questions can be directed to Chris Miller using the information provided, or Rich McEldowney at (406) 587-7275 (ext. 223).

Sincerely,

Chris Miller  
Project Director



Federal Aviation  
Administration

Date 4/13/10

No objection provided the Federal Aviation Administration is notified of construction or alterations as required by Federal Aviation Regulations, Part 77, Objects Affecting Navigable Airspace, Paragraph 77.13. Notice may be filed on-line at <https://ocaaa.faa.gov>.

Patricia L. Dressler, Environmental Protection Specialist  
Federal Aviation Administration, Bismarck Airports District Office  
2301 University Drive, Building 23B, Bismarck, ND 58504

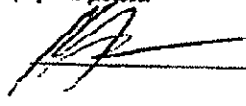




An employee-owned company

It is the determination of the Turtle Mountain Tribal Historic Preservation Office that this project will have no effect on historic properties of importance to the Turtle Mountain Band of Chippewa Indians. A determination of No Historic Properties Affected is granted for the project to proceed.

March 26, 2010

 4-7-10

Dear Interested Party:

The Bureau of Indian Affairs (BIA) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA), in cooperation with the Bureau of Land Management (BLM). The proposed action includes approval by the BIA and BLM of the drilling and completion of up to twelve exploratory oil and gas wells using one well pad and one access road on the Fort Berthold Indian Reservation by XTO Energy, Inc. The well pad and access road are proposed in the following locations and shown on the enclosed project location map:

- **Beaks/Huntsmedicine 24X-8 Site:** SE ¼, SW ¼, Section 8, Township 149N, Range 91W  
NW ¼, Section 17, Township 149N, Range 91W

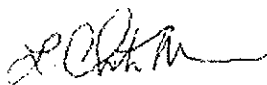
Development of the project would consist of the mechanical excavation and preparation of one well pad and construction of one access road. The proposed well pad is roughly 5.05 acres in size. The proposed access road is roughly 5,388 feet long; of which 2,727 feet is proposed as new road and 2,662 feet would involve improvements to an existing two-track road. The twelve wells would be located within a 1,280-acre spacing unit and positioned to use the same access road. The drilling of these well sites is proposed to begin as early as spring/summer 2010.

To ensure that social, economic, and environmental effects are analyzed accurately, we solicit your views and comments on the Proposed Action, pursuant to Section 102(2) (D) (IV) of NEPA, as amended. We are interested in developments proposed or underway that should be considered in connection with the proposed project. We also ask your assistance in identifying any property or resources that you own, manage, oversee or otherwise value that might be adversely impacted. Please send your replies and requests for additional project information to:

Chris Miller, Project Manager  
PBS&J  
115 N. 28<sup>th</sup> Street, Suite 202  
Billings, Montana 59101-2045  
406-259-7979  
[cmiller@pbsj.com](mailto:cmiller@pbsj.com)

If we do not hear from you by **April 29, 2010** we will assume that you have no comment on this project. Questions can be directed to Chris Miller using the information provided, or Rich McEldowney at (406) 587-7275 (ext. 223).

Sincerely,



Chris Miller  
Project Director

U.S. Department of Homeland Security  
Region VIII  
Denver Federal Center, Building 710  
P.O. Box 25267  
Denver, CO 80225-0267



**FEMA**

R8-Mitigation

April 12, 2010

PBS&J

Attn: Chris Miller, Project Director  
115 N. 28<sup>th</sup> St., Suite 202  
Billings, MT 59101-2045

Dear Mr. Miller:

Thank you for your inquiry regarding the proposed project, Beaks/Huntsmedicine 24X-8 Site. FEMA's major concern is if the property is located within a mapped Special Flood Hazard Area, as development in these areas requires further consideration.

We recommend that you contact Cliff Whitman at (701) 627-4805 to receive further guidelines regarding the impact that this project might have relative to the regulations and policies of the National Flood Insurance Program. Considering that floods are the most devastating of all natural disasters in this country, any efforts to reduce the impacts of that hazard is worthwhile.

Let me know if I can be of assistance and please feel free to contact me at 303-235-4721. Thank you for giving us the opportunity to assist you in the impending pipelines on the Fort Berthold Reservation.

Sincerely,

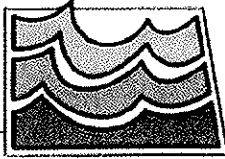
A handwritten signature in black ink, appearing to read "Dave Lyner".

Dave Lyner

Program Specialist

Mitigation Division, FM & I Branch

[www.fema.gov](http://www.fema.gov)



## North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850  
701-328-2750 • TDD 701-328-2750 • FAX 701-328-3696 • INTERNET: <http://swc.nd.gov>

May 12, 2010

Chris Miller  
PBS&J  
115 N 28<sup>th</sup> Street STE 202  
Billings, MT 59101-2045

Dear Mr. Miller:

This is in response to your request for review of environmental impacts associated with the drilling and completion of up to twelve exploratory oil and gas wells using one well pad and one access road on the Fort Berthold Indian Reservation by XTO Energy, Inc – Beaks/Huntsmedicine.

The proposed project has been reviewed by State Water Commission staff and the following comments are provided:

- The property is not located in an identified floodplain and it is believed the project will not affect an identified floodplain.
- All waste material associated with the project must be disposed of properly and not placed in identified floodway areas.
- No sole-source aquifers have been designated in ND.

There are no other concerns associated with this project that affect State Water Commission or State Engineer regulatory responsibilities.

Thank you for the opportunity to provide review comments. If you have any questions, please call me at 328-4969.

Sincerely,

Larry Knudtson  
Research Analyst

LJK:dp/1570

JOHN HOEVEN, GOVERNOR  
CHAIRMAN

DALE L. FRINK  
SECRETARY AND STATE ENGINEER

March 16, 2010

US Fish and Wildlife Service  
Mr. Jeffrey Towner  
Field Supervisor  
3425 Miriam Avenue  
Bismarck, ND 58501

Re: Zenergy Inc.  
Proposed Oil/Gas Gathering System

Dear Mr. Towner:

McCain and Associates, Inc. (McCain) is requesting your input on a proposed oil and gas gathering system. Zenergy Inc. is proposing to construct oil and gas gathering pipelines originating from wells located on the Fort Berthold Reservation. These pipelines will connect to existing pipelines established in the area. The proposed corridor is located primarily within T151N R92W; T150N R92W; and T150N R93W.

The proposed pipeline corridors will include approximately 7.3 miles of 12" trunk pipelines, 9.2 miles of 10" gathering pipelines, and 12.0 miles of 8" well gathering pipelines. Steel oil lines and either steel or poly gas pipelines will be either placed in two trenches, each 2.5 feet wide spaced 5.0 feet apart or one trench with a width of 5.0 feet.

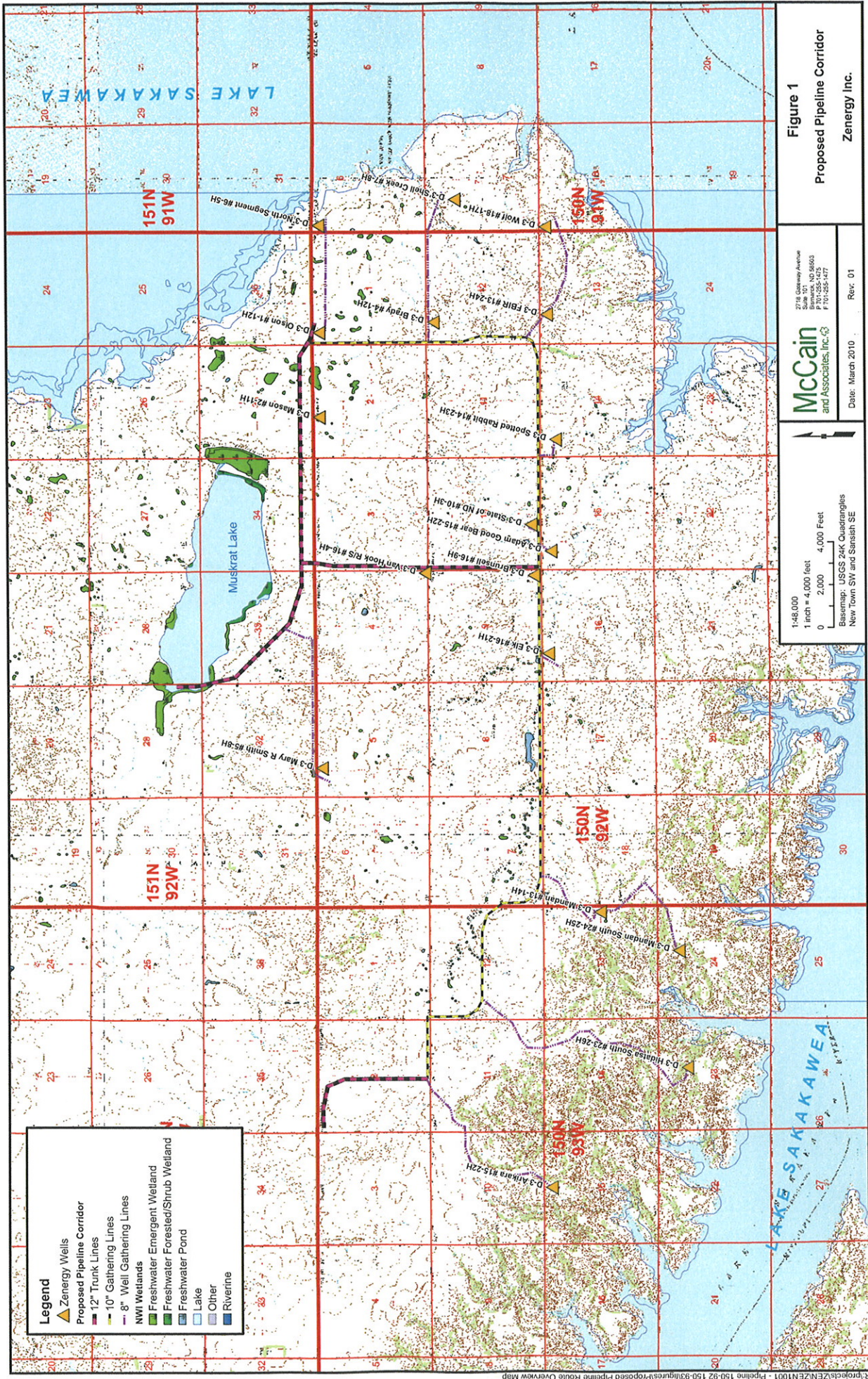
I would appreciate receiving your comments on this pipeline corridor routing in relation to species of concern, habitats and any other biological resources. A map depicting the location of the oil well sites and proposed pipeline corridor is enclosed. Please let me know if you need additional maps or information.

Sincerely,

Ryan J. Krapp  
Ecologist/GIS Specialist

Enclosures

R:\projects\ZEN\ZEN1001 - Pipeline 150-92 150-93\letters (3-16-10)\USFWS Request.doc



- Legend**
- Zenergy Wells
  - Proposed Pipeline Corridor
  - 12" Trunk Lines
  - 10" Gathering Lines
  - 8" Well Gathering Lines
  - NWI Wetlands
  - Freshwater Emergent Wetland
  - Freshwater Forested/Shrub Wetland
  - Freshwater Pond
  - Lake
  - Other
  - Riverine

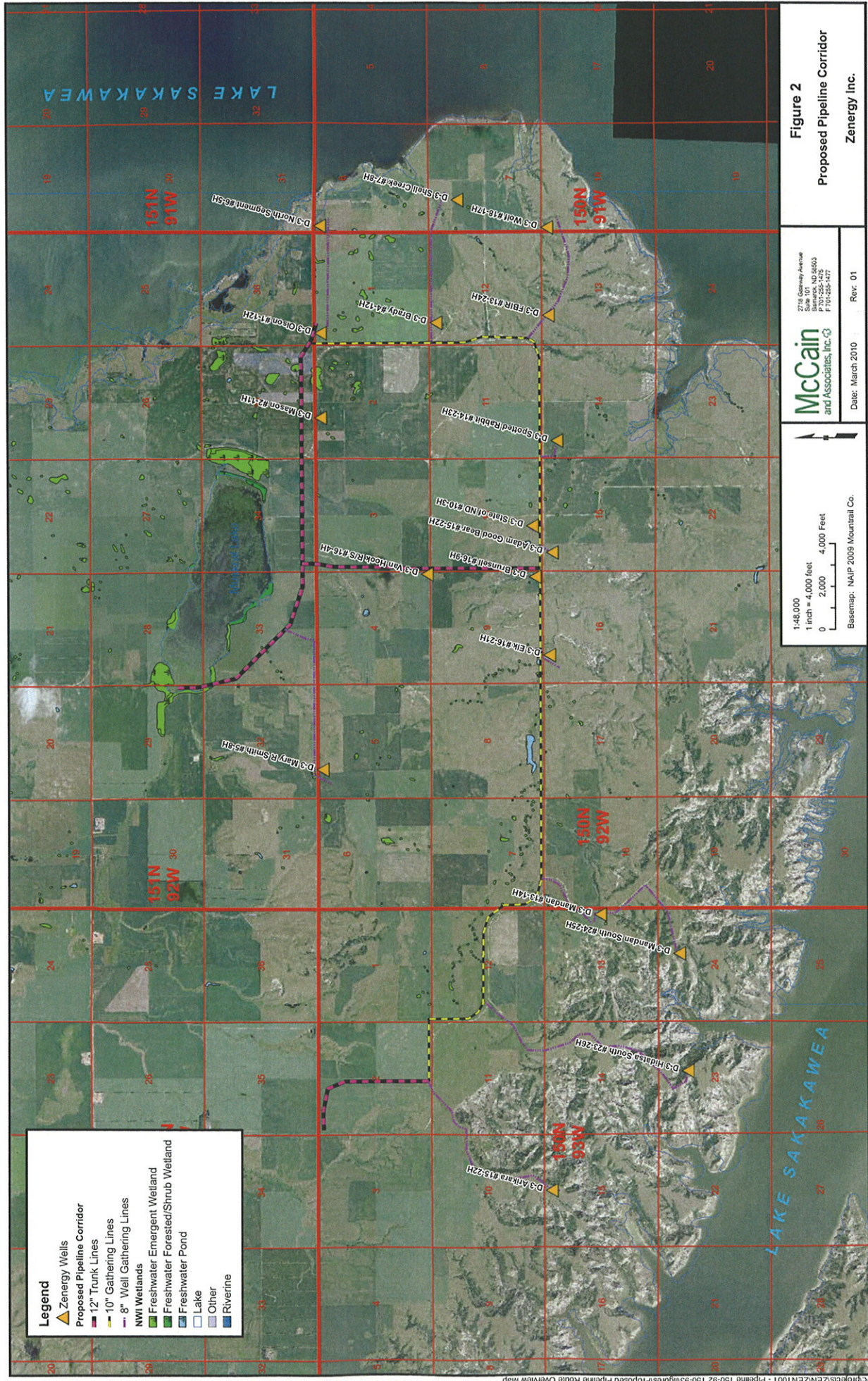
1:48,000  
 1 inch = 4,000 feet  
 0 2,000 4,000 Feet

Basemap: USCS 74K Quadrangles  
 New Town SW and Salsish SE

**McCain**  
 and Associates, Inc. ©

Date: March 2010 Rev. 01

**Figure 1**  
 Proposed Pipeline Corridor  
 Zenergy Inc.



**Legend**

- Zenergy Wells
- Proposed Pipeline Corridor
- 12" Trunk Lines
- 10" Gathering Lines
- 8" Well Gathering Lines
- NWI Wetlands
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

**Figure 2**  
Proposed Pipeline Corridor  
Zenergy Inc.

McCain  
and Associates, Inc. ©

Date: March 2010      Rev: 01

1:48,000  
1 inch = 4,000 feet  
0      2,000      4,000 Feet

Basemap: NAIP 2009 Mountainal Co.

2718 Glenway Avenue  
Suite 301  
Bismarck, ND 58503  
F 701-255-1477



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
CORPS OF ENGINEERS, OMAHA DISTRICT  
NORTH DAKOTA REGULATORY OFFICE  
1513 SOUTH 12<sup>TH</sup> STREET  
BISMARCK ND 58504-6640  
May 13, 2010

North Dakota Regulatory Office

[NWO-2010-00788-BIS]

McCain and Associates, Inc.  
Attn: Ryan J. Krapp  
2718 Gateway Ave, Suite 101  
Bismarck, North Dakota 58503

Dear Mr. Krapp:

This is in response to your request for a Department of the Army (DA), Corps of Engineers (Corps) approved jurisdictional determination (JD), in accordance with Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act, on wetlands abutting Muskrat Lake. The project is also identified as the **Zenergy Operating Company, LLC, Van Hook Gathering System**. The proposed pipeline crossing is within Section 29, Township 151 North, Range 92 West, Mountrail County, North Dakota.

The JD is enclosed for your information. It may also be viewed at our website at <http://www.nwo.usace.army.mil/html/od-rnd/ndhome.htm>. (Reference NWO-2010-00788-BIS). The JD will be available on the website within 30 days. You may also request copies of the supporting materials the Corps used in determining this jurisdiction. If you are not in agreement with the JD, you may request an administrative appeal under U.S. Army Corps of Engineers regulations found at 33 CFR 331. The Notification of Administrative Appeal Options and Process and Request for Appeal (NAO-RFA) are enclosed. The Request for appeal must be received within 60 days from the date of this correspondence. If you would like more information on the jurisdictional appeal process, contact this office. It is not necessary to submit a Request for Appeal if you do not object to the JD. The JD will be valid for a period of 5 years.

Based on the information provided and after a review conducted by the Corps and the United States Environmental Protection Agency (EPA), we have determined that Muskrat Lake including abutting and adjacent wetlands and unnamed tributaries to Muskrat Lake are isolated and not waters of the United States. Therefore, are not subject to DA regulatory authorities and no permit pursuant to Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act is required from the DA.

Although a DA permit will not be required for the project, this does not eliminate the requirement that you obtain any other applicable Federal, state, tribal or local permits as required.

Customer Survey. The Omaha District, North Dakota Regulatory Office is committed to providing quality and timely service to your customers. In an effort to improve customer service, please take a moment to complete our Customer Service Survey found on our website at <http://per2.nwp.usace.army.mil/survey.html>. If you do not have Internet access, you can call and request a paper copy of the survey that you can complete and return to us by mail or fax.

If you have any questions concerning this determination, please do not hesitate to contact this office by letter or telephone (701) 255-0015 and reference project number **NWO-2010-00788-BIS**.

Sincerely,

A handwritten signature in black ink that reads "Daniel E. Cimarosti". The signature is written in a cursive style with a large, stylized 'D' and 'C'.

Daniel E. Cimarosti  
Regulatory Program Manager  
North Dakota

Enclosures  
Approved JD (blue sheets)  
NAO-RFA



**NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND  
REQUEST FOR APPEAL**

Applicant: McCain and Associates, Inc./Zenergy Operating Co., Attn: Ryan J. Krapp, 2718 Gateway Ave, Suite 101, Bismarck, North Dakota 58503		File Number: NWO-2010- 00788-BIS	Date: May 13, 2010
Attached is:			See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
	PROFFERED PERMIT (Standard Permit or Letter of permission)		B
	PERMIT DENIAL		C
XX	APPROVED JURISDICTIONAL DETERMINATION		D
	PRELIMINARY JURISDICTIONAL DETERMINATION		E

**SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://usace.army.mil/inet/functions/cw/cecwo/reg> or Corps regulations at 33 CFR Part 331.**

**A: INITIAL PROFFERED PERMIT:** You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

**B: PROFFERED PERMIT:** You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**C: PERMIT DENIAL:** You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**D: APPROVED JURISDICTIONAL DETERMINATION:** You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**E: PRELIMINARY JURISDICTIONAL DETERMINATION:** You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

**SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT**

**REASONS FOR APPEAL OR OBJECTIONS:** (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

**ADDITIONAL INFORMATION:** The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

**POINT OF CONTACT FOR QUESTIONS OR INFORMATION:**

If you have questions regarding this decision and/or the appeal process you may contact: US Army Corps of Engineers  
Attn: Daniel Cimarosti  
1513 South 12<sup>th</sup> Street  
Bismarck, North Dakota 58504  
Telephone (701) 255-0015

If you only have questions regarding the appeal process you may also contact:  
US Army Corps of Engineers, Northwestern Division  
Attn: David Gesl  
PO Box 2870  
Portland, OR 97208-2870 Telephone (503) 808-3825

**RIGHT OF ENTRY:** Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

\_\_\_\_\_  
Signature of appellant or agent.

Date:

Telephone number:

**APPROVED JURISDICTIONAL DETERMINATION FORM**  
**U.S. Army Corps of Engineers**

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

**SECTION I: BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):** 12 May 2010

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Omaha District, Zenergy Operating Company, LLC/ McCain and Associates, Inc., (NWO-2010-00788-BIS)

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: North Dakota County/parish/borough: Mountrail County City:  
Center coordinates of site (lat/long in degree decimal format): Lat. 47.86016; Long. -102.45092 BW  
Universal Transverse Mercator:

Name of nearest waterbody: Missouri River (Lake Sakakawea)

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: The aquatic resource is isolated.

Name of watershed or Hydrologic Unit Code (HUC): 10110101

- Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.  
 Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

**D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

- Office (Desk) Determination. Date: April 21, 2010  
 Field Determination. Date(s):

**SECTION II: SUMMARY OF FINDINGS**

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION.**

There **Are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

- Waters subject to the ebb and flow of the tide.  
 Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.  
Explain:

**B. CWA SECTION 404 DETERMINATION OF JURISDICTION.**

There **Are no** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>**

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs  
 Non-RPWs that flow directly or indirectly into TNWs  
 Wetlands directly abutting RPWs that flow directly or indirectly into TNWs  
 Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs  
 Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs  
 Impoundments of jurisdictional waters  
 Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: linear feet: width (ft) and/or acres.  
Wetlands: acres.

**c. Limits (boundaries) of jurisdiction based on: Pick List**

Elevation of established OHWM (if known):

**2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain: An approved JD was completed for the Muskrat Lake basin during June/July 2009 and determined to be isolated, reference NWO-2009-01588-BIS dated July 21, 2009. No additional information has been generated that would change this determination.

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

<sup>3</sup> Supporting documentation is presented in Section III.F.

### SECTION III: CWA ANALYSIS

#### A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

##### 1. TNW

Identify TNW: \_\_\_\_\_

Summarize rationale supporting determination: \_\_\_\_\_

##### 2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": \_\_\_\_\_

#### B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

##### 1. Characteristics of non-TNWs that flow directly or indirectly into TNW

###### (i) General Area Conditions:

Watershed size: **Pick List**

Drainage area: **Pick List**

Average annual rainfall: \_\_\_\_\_ inches

Average annual snowfall: \_\_\_\_\_ inches

###### (ii) Physical Characteristics:

###### (a) Relationship with TNW:

Tributary flows directly into TNW.

Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.

Project waters are **Pick List** river miles from RPW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Project waters are **Pick List** aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: \_\_\_\_\_

Identify flow route to TNW<sup>5</sup>: \_\_\_\_\_

Tributary stream order, if known: \_\_\_\_\_

<sup>4</sup> Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

<sup>5</sup> Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

- Tributary is:  Natural  
 Artificial (man-made). Explain:  
 Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):

- Average width:       feet  
Average depth:       feet  
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

- |  |  |                                   |
|--|--|-----------------------------------|
| <input type="checkbox"/> Silts           | <input type="checkbox"/> Sands                     | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles         | <input type="checkbox"/> Gravel                    | <input type="checkbox"/> Muck     |
| <input type="checkbox"/> Bedrock         | <input type="checkbox"/> Vegetation. Type/% cover: |                                   |
| <input type="checkbox"/> Other. Explain: |  |                                   |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope):       %

(c) Flow:

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime:

Other information on duration and volume:

Surface flow is: **Pick List.** Characteristics:

Subsurface flow: **Pick List.** Explain findings:

- Dye (or other) test performed:

Tributary has (check all that apply):

- |   |   |
|---|---|
| <input type="checkbox"/> Bed and banks  |   |
| <input type="checkbox"/> OHWM <sup>6</sup> (check all indicators that apply): |   |
| <input type="checkbox"/> clear, natural line impressed on the bank            | <input type="checkbox"/> the presence of litter and debris          |
| <input type="checkbox"/> changes in the character of soil                     | <input type="checkbox"/> destruction of terrestrial vegetation      |
| <input type="checkbox"/> shelving   | <input type="checkbox"/> the presence of wrack line                 |
| <input type="checkbox"/> vegetation matted down, bent, or absent              | <input type="checkbox"/> sediment sorting                           |
| <input type="checkbox"/> leaf litter disturbed or washed away                 | <input type="checkbox"/> scour                                      |
| <input type="checkbox"/> sediment deposition                                  | <input type="checkbox"/> multiple observed or predicted flow events |
| <input type="checkbox"/> water staining                                       | <input type="checkbox"/> abrupt change in plant community           |
| <input type="checkbox"/> other (list):  |   |
| <input type="checkbox"/> Discontinuous OHWM. <sup>7</sup> Explain:            |   |

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

- |  |  |
|--|--|
| <input type="checkbox"/> High Tide Line indicated by:              | <input type="checkbox"/> Mean High Water Mark indicated by:            |
| <input type="checkbox"/> oil or scum line along shore objects      | <input type="checkbox"/> survey to available datum;                    |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings;                            |
| <input type="checkbox"/> physical markings/characteristics         | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges                              |  |
| <input type="checkbox"/> other (list):                             |  |

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain:

Identify specific pollutants, if known:

<sup>6</sup>A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

<sup>7</sup>Ibid.

(iv) **Biological Characteristics. Channel supports (check all that apply):**

- Riparian corridor. Characteristics (type, average width):
- Wetland fringe. Characteristics:
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size:        acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain:

Surface flow is: **Pick List**

Characteristics:

Subsurface flow: **Pick List**. Explain findings:

Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain:

Ecological connection. Explain:

Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List**.

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain:
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately (        ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>	<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>
------------------------------	------------------------	------------------------------	------------------------

Summarize overall biological, chemical and physical functions being performed:

### C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

### D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. TNWs and Adjacent Wetlands. Check all that apply and provide size estimates in review area:  
 TNWs: linear feet width (ft), Or, acres.  
 Wetlands adjacent to TNWs: acres.
2. RPWs that flow directly or indirectly into TNWs.  
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:  
 Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).  
 Other non-wetland waters: acres.  
Identify type(s) of waters: .

3. **Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: linear feet width (ft).  
 Other non-wetland waters: acres.  
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.  
 Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .  
 Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.<sup>9</sup>**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from "waters of the U.S.," or  
 Demonstrate that water meets the criteria for one of the categories presented above (1-6), or  
 Demonstrate that water is isolated with a nexus to commerce (see E below).

E. **ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):<sup>10</sup>**

- which are or could be used by interstate or foreign travelers for recreational or other purposes.  
 from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.  
 which are or could be used for industrial purposes by industries in interstate commerce.  
 Interstate isolated waters. Explain: .  
 Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

<sup>8</sup>See Footnote # 3.

<sup>9</sup>To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

<sup>10</sup> Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapunus.



Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
- Other non-wetland waters: acres.  
Identify type(s) of waters: .
- Wetlands: acres.

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR). **Muskrat Lake is not listed as public waters and does not have a public boat ramp. Muskrat Lake is a closed basin isolated lake that does not connect to the Missouri River / Lake Sakakawea or other waters of the United States.**

There is no information available to show that these wetlands 1) are or could be used by interstate or foreign travelers for recreational or other purposes, 2) produces fish or shellfish which are or could be taken and sold in interstate or foreign commerce, or 3) is or could be used for industrial purposes by industries in interstate commerce.

- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: 650 acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: The applicant provided a location map.
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: .
- Corps navigable waters' study: .
- U.S. Geological Survey Hydrologic Atlas:
  - USGS NIID data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: 1:24,000 . New Town SW.
- USDA Natural Resources Conservation Service Soil Survey. Citation: .
- National wetlands inventory map(s). Cite name: New Town SW.
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): .  
or  Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): .

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**

The approximate center point of Muskrat Lake is Lat. 47.86016; Long. -102.45092

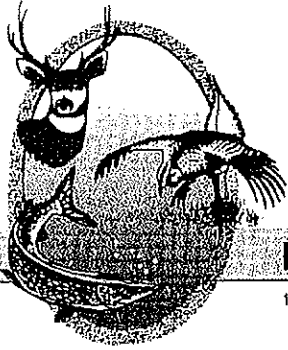
The project involves the construction of a 12" natural gas pipeline that will cross wetland abutting Muskrat Lake. Muskrat Lake is not listed as public waters and does not have a public boat ramp. Muskrat Lake is a closed basin isolated lake that does not connect to the Missouri River / Lake Sakakawea or other waters of the United States.

An approved JD was completed for the Muskrat Lake basin during June/July 2009 and determined to be isolated, reference NWO-2009-01588-BIS dated July 21, 2009. No additional information has been generated that would change this determination. An agricultural economic report was completed, April 1985, by the Department of Agricultural Economics, North Dakota Agricultural Experiment Station that indicated water cannot outlet from Muskrat Lake until the lake reaches an approximate level of 1895' msl which is not presumed a possibility. <http://ageconsearch.umn.edu/bitstream/23443/1/acr196.pdf>.

There is no information available to show that these wetlands 1) are or could be used by interstate or foreign travelers for recreational or other purposes, 2) produces fish or shellfish which are or could be taken and sold in interstate or foreign commerce, or 3) is or could be used for industrial purposes by industries in interstate commerce.

B O A I E

Muskral Lake  
NWO-2010-00785-BIS



"VARIETY IN HUNTING AND FISHING"

**NORTH DAKOTA GAME AND FISH DEPARTMENT**

100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

April 13, 2010

Ryan J. Krapp  
Ecologist/GIS Specialist  
McCain and Associates, Inc.  
2718 Gateway Ave, Suite 101  
Bismarck, ND 58503

Dear Mr. Krapp:

RE: Zenergy Inc.  
Proposed Oil/Gas Gathering System

Zenergy, Inc. is proposing to construct oil and gas pipelines originating from wells on the Fort Berthold Reservation primarily within T151N R92W, T150N R92W, and T150N R93W, of Mountrail County, North Dakota.

Our primary concern with this project is the possible disturbance of native prairie and wooded draws associated with construction of the pipeline and access roads. We ask that work within these areas be avoided to the extent possible, every effort be made to prevent destruction of woody vegetation, and disturbed areas be reclaimed to pre-project conditions.

The National Wetland Inventory indicates various wetlands within the proposed project area. We recommend that steps be taken to protect any wetlands that cannot be avoided, and existing drainage patterns be maintained.

We do not believe this project will have any significant adverse effects on wildlife or wildlife habitat provided best management practices are implemented.

Sincerely,

A handwritten signature in cursive script that reads "Steve Dyba".

(for) Michael G. McKenna  
Chief  
Conservation & Communication Division

js



John Hoeven, Governor  
Douglass A. Prchal, Director

1600 East Century Avenue, Suite 3  
Bismarck, ND 58503-0649  
Phone 701-328-5357  
Fax 701-328-5363  
E-mail [parkrec@nd.gov](mailto:parkrec@nd.gov)  
[www.parkrec.nd.gov](http://www.parkrec.nd.gov)

March 29, 2010

Ryan J. Krapp  
McCain and Associates, Inc.  
2718 Gateway Ave., Suite 101  
Bismarck, ND 58503

Re: Zenergy Inc. Oil and Gas Gathering System Proposal

Dear Mr. Krapp:

The North Dakota Parks and Recreation Department (the Department) has reviewed the above referenced project proposal from Zenergy Inc. to construct oil and gas gathering pipelines located in multiple sections in T151N, R92W; T150N, R92W; T150N, R93W, Mountrail County; and T150N, R91W, McLean County.

Our agency scope of authority and expertise covers recreation and biological resources (in particular rare plants and ecological communities). The project as defined does not affect state park lands that we manage or Land and Water Conservation Fund recreation projects that we coordinate.

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any current of historic plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, several occurrences have been identified within or adjacent to the project area including: *Charadrius melodus* (piping plover), *Pascopyrum smithii* – *Nasella (Stipa) viridula* prairie (needlegrass-wheatgrass prairie), *Stipa comata* – *Bouteloua gracilis/Carex filifolia* prairie (needle-and-thread mixed grass prairie), *Andropogon gerardii* – *Sporobolus heterolepis* – *Schizachyrium western hillslope prairie* (Western big bluestem prairie), and *Hesperostipa curtiseta* – *Elymus lanceolatus herbaceous vegetation* (Western porcupine grass prairie). Please see the attached spreadsheet and map for more specific information on these species. We defer further comments regarding animal species to the North Dakota Game and Fish Department and the United States Fish and Wildlife Service.

Because this information is not based on a comprehensive inventory, there may be species of concern or otherwise significant ecological communities in the area that are not represented in the database. The lack of data for any project area cannot be construed to mean that no significant features are present. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

The Department recommends that the project be accomplished with minimal impacts and that all efforts be made to ensure that critical habitats not be disturbed in the project area to help secure rare species conservation in North Dakota. Regarding any reclamation efforts, we recommend that any impacted areas be revegetated with species native to the project area.

Thank you for the opportunity to comment on this project. Please contact Kathy Duttonhefner (701-328-5370 or [kgduttonhefner@nd.gov](mailto:kgduttonhefner@nd.gov)) of our staff if additional information is needed.

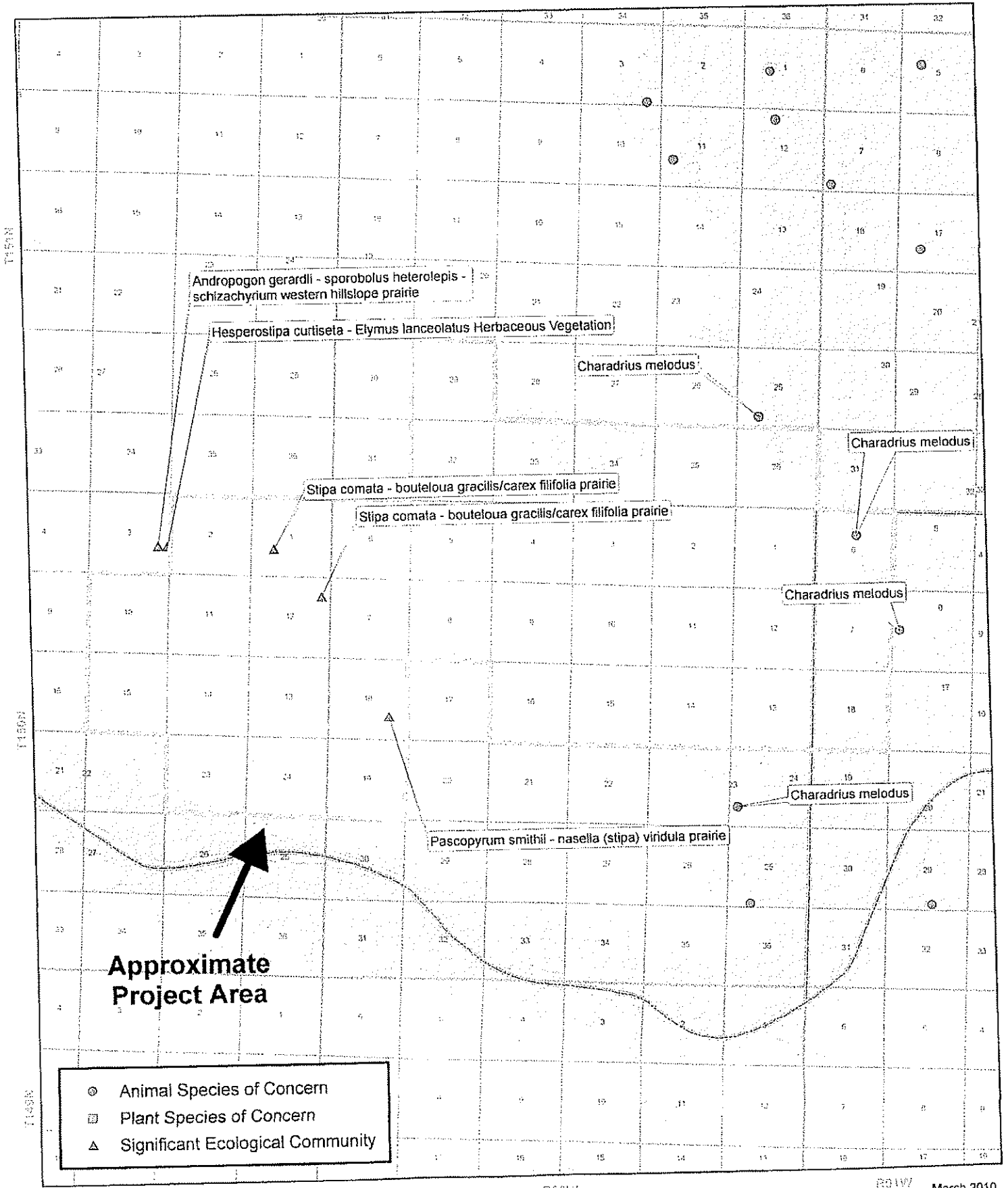
Sincerely,

  
Jesse Hanson, Manager  
Planning and Natural Resources Division

R.USNDNHI\*2010-082

.....  
*Play in our backyard!*

# North Dakota Parks and Recreation Department North Dakota Natural Heritage Inventory



- ⊙ Animal Species of Concern
- ⊠ Plant Species of Concern
- △ Significant Ecological Community

North Dakota Natural Heritage Inventory  
Rare Animal and Plant Species and Significant Ecological Communities

State Scientific Name	State Common Name	State Rank	Global Rank	Federal Status	Township Range Section	County	Last Observation	Estimated Representation Accuracy	Precision
<i>Charadrius melodus</i>	Piping Plover	S1S2	G3	LE, LT	150N091W - 06	McLean	1988	Medium	S
<i>Charadrius melodus</i>	Piping Plover	S1S2	G3	LE, LT	150N091W - 08	McLean	1988		S
<i>Paspopyrum smithii</i> - <i>nasella</i> (stipa) viridula prairie	Needlegrass-wheatgrass Prairie	S2	GNR		150N092W - 18; 150N092W - 07; 150N092W - 16; 150N093W - 13; 150N093W - 12; 150N093W - 24; 150N092W - 20; 150N092W - 19; 150N092W - 17; 150N092W - 08	Mountrail	1967		M
<i>Charadrius melodus</i>	Piping Plover	S1S2	G3	LE, LT	150N092W - 24	Mountrail	1988		S
<i>Stipa comata</i> - <i>bouteloua gracilis</i> /carex filifolia prairie	Needle-and-thread Mixed Grass Prairie	S2	GNR		150N093W - 01; 150N092W - 06; 150N092W - 07; 151N093W - 35; 151N093W - 36; 150N093W - 12; 150N093W - 02; 151N092W - 31; 150N093W - 11	Mountrail	1967		M
<i>Andropogon gerardii</i> - <i>sporobolus heterolepis</i> - <i>schizachyrium</i> western hillslope prairie	Western Big Bluestem Prairie	S1	GNR		150N093W - 03	Mountrail	1967		S
<i>Hesperostipa curtiseta</i> - <i>Elymus lanceolatus</i> Herbaceous Vegetation	Western Porcupine Grass Prairie	S2	GNR		150N093W - 03; 150N093W - 02; 150N093W - 12; 150N092W - 06; 150N092W - 31; 150N093W - 11; 150N092W - 05; 150N093W - 13; 150N092W - 08; 151N093W - 36; 150N093W - 01; 150N092W - 07; 150N093W - 02; 150N092W - 18	Mountrail	1967		S
<i>Stipa comata</i> - <i>bouteloua gracilis</i> /carex filifolia prairie	Needle-and-thread Mixed Grass Prairie	S2	GNR		150N092W - 07; 150N093W - 02; 150N092W - 18	Mountrail	1967		M
<i>Charadrius melodus</i>	Piping Plover	S1S2	G3	LE, LT	151N092W - 25	Mountrail	2000-05-23	Medium	S

## North Dakota Natural Heritage Inventory Biological and Conservation Data Disclaimer

The quantity and quality of data collected by the North Dakota Natural Heritage Inventory are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in North Dakota have never been thoroughly surveyed, and new species are still being discovered. For these reasons, the Natural Heritage Inventory cannot provide a definite statement on the presence, absence, or condition of biological elements in any part of North Dakota. Natural Heritage data summarize the existing information known at the time of the request. Our data are continually upgraded and information is continually being added to the database. This data should never be regarded as final statements on the elements or areas that are being considered, nor should they be substituted for on-site surveys.

### Estimated Representation Accuracy

Value that indicates the approximate percentage of the Element Occurrence Representation (EO Rep) that was observed to be occupied by the species or community (versus buffer area added for locational uncertainty). Use of estimated representation accuracy provides a common index for the consistent comparison of EO reps, thus helping to ensure that aggregated data are correctly analyzed and interpreted.

Very high (>95%)

High (>80%, <= 95%)

Medium (>20%, <= 80%)

Low (>0%, <= 20%)

Unknown

{null} - Not assessed

### Precision

A single-letter code for the precision used to map the Element Occurrence (EO) on a U.S. Geological Survey (USGS) 7.5' (or 15') topographic quadrangle map, based on the previous Heritage methodology in which EOs were located on paper maps using dots.

S - Seconds: accuracy of locality mappable within a three-second radius; 100 meters from the centerpoint

M - Minute: accuracy of locality mappable within a one-minute radius; 2 km from the centerpoint

G - General: accuracy of locality mappable to map or place name precision only; 8 km from centerpoint

U - Unmappable





# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services  
3425 Miriam Avenue  
Bismarck, North Dakota 58501



MAY 12 2010

Mr. Ryan J. Krapp  
Ecologist/GIS Specialist  
McCain & Associates  
2718 Gateway Ave, Suite 101  
Bismarck, North Dakota 58503

Re: Oil and gas gathering system, Fort  
Berthold Reservation, Mountrail  
County, North Dakota

Dear Mr. Krapp:

This is in response to your March 16, 2010, letter and two follow-up e-mails on April 16, 2010, regarding a proposed oil and gas gathering system on the Fort Berthold Reservation in Mountrail County, North Dakota. The proposed corridor is located primarily within T. 151 N., R. 92 W.; T. 150 N., R. 92 W.; and T. 150 N., R. 93 W. The proposed pipelines would gather oil from wells on the Fort Berthold reservation and connect to existing lines.

We offer the following comments under the authority of and in accordance with the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.) (MBTA), the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.) (NEPA), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250) (BGEPA), Executive Order 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds", the Endangered Species Act (16 U.S.C. 1531 et seq.) (ESA), and the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57).

### **Threatened and Endangered Species**

If a Federal agency authorizes, funds, or carries out a proposed action, the responsible Federal agency, or its designated agent, is required to evaluate whether the action "may affect" listed species. If the Federal agency determines the action "may affect, is likely to adversely affect" listed species, then the responsible Federal agency shall request formal section 7 consultation with this office, or work with this office to remove the likely adverse effects before proceeding. If the evaluation shows a "no effect" determination on listed species, further consultation is not necessary. If a non-Federal entity receives Federal funding for an activity, or if a Federal permit or license is required, the Federal

funding, licensing, or permitting agency may designate the fund recipient or permittee as its agent for purposes of informal section 7 consultation. The funding, permitting, or licensing Federal agency is responsible to ensure that its actions comply with the ESA, including obtaining concurrence from the U.S. Fish and Wildlife Service (Service) for any action that may affect a threatened or endangered species or designated critical habitat prior to carrying out the activity.

In an e-mail dated October 13, 2009, the Bureau of Indian Affairs (BIA) designated McCain and Associates to represent the BIA for informal Section 7 consultation under the ESA. Therefore, the Service is responding to you as the designated non-Federal representative.

A list of federally endangered and threatened species that may be present within the proposed project's area of influence is enclosed. This list fulfills requirements of the Service under Section 7 of the ESA. This list remains valid for 90 days. The BIA or designated non-Federal agent should make a determination of the proposed projects' effects on listed species, including whether there is anticipated destruction or adverse modification of designated critical habitat. This determination may be included in the EA. It should state whether or not the BIA plans to incorporate the Service's recommendations to avoid and minimize any adverse effects. If the BIA does not plan to take the recommended measures, the document should explain why not.

Parts of the proposed project come within one-half mile of designated critical habitat for the piping plover. Critical habitat can be viewed on the Service website: [http://www.fws.gov/northdakotafieldoffice/endspecies/species/piping\\_plover.htm](http://www.fws.gov/northdakotafieldoffice/endspecies/species/piping_plover.htm). GIS layers of critical habitat can be obtained by contacting our office at the letterhead address. The Service suggests that Zenergy inform us of how the proposed project will be designed so that neither pipeline construction nor ongoing operations of the pipeline, including any potential spills, will impact critical habitat or nesting plovers. There are records of plovers nesting on Lake Sakakawea along the eastern portion of the proposed project.

The Aransas Wood Buffalo Population (AWBP) of endangered whooping cranes is the only self-sustaining migratory population of whooping cranes remaining in the wild. These birds breed in the wetlands of Wood Buffalo National Park in Alberta and the Northwest Territories of northern Canada, and overwinter on the Texas coast. Whooping cranes in the AWBP annually migrate through North Dakota during their spring and fall migrations. They make numerous stops along their migration route to feed and roost before moving on. The proposed project lies within a 90 mile corridor that includes approximately 75 percent of all reported whooping crane sightings in the State (enclosure).

Whooping cranes are unlikely to spend more than a few days in any one spot during migration. The Service suggests that the Environmental Assessment (EA) include a requirement that if a whooping crane is sighted within one mile of the pipeline while it is under construction, that all work cease within one mile of that part of the project and the

Service be contacted immediately. In coordination with the Service, work may resume after the bird(s) leave the area.

Currently, collisions with lines are the greatest known source of mortality for fledged whooping cranes, and have accounted for the death or serious injury of at least 46 whooping cranes since 1956. Whooping cranes roost in wetlands overnight, and may take up to a mile to gain altitude when taking off. We recommend that all lines associated with the proposed project be buried. If it is not possible to bury the line, we recommend that the line be marked using state-of-the-art line marking devices to reduce the likelihood of a whooping crane striking the line. However, marking devices only reduce the risk of a whooping crane strike by between 50 and 80 percent (Morkill and Anderson 1990). To further reduce the increased risk of a strike from proposed new overhead lines, additional existing lines will need to be marked. The Service suggests that in addition to marking the new line, an equal amount of existing line be marked within the 95 percent migration corridor within one-mile of suitable habitat (enclosure). Some of the available marking devices include: aerial marker spheres, swinging plates, spiral vibration dampers, and bird flight diverters.

Potential habitat for the Dakota skipper exists on the Fort Berthold Reservation. In 1995, the Dakota skipper was determined to be a candidate species under the ESA. No legal requirement exists to protect candidate species; however, it is within the spirit of the ESA to consider these species as having significant value and worth protecting.

The Dakota skipper is a small to medium-sized hesperiine butterfly associated with high quality prairie ranging from wet-mesic tallgrass prairie to dry-mesic mixed grass prairie. The first type of habitat is relatively flat and moist native bluestem prairie. Three species of wildflowers are usually present: wood lily (*Lilium philadelphicum*), harebell (*Campanula rotundifolia*), and smooth camas (*Zygadenus elegans*). The second habitat type is upland (dry) prairie that is often on ridges and hillsides. Bluestem grasses and needlegrasses dominate these habitats. On this habitat type, three wildflowers are typically present in high quality sites that are suitable for Dakota skipper: pale purple (*Echinacea pallida*) and upright (*E. angustifolia*) coneflowers and blanketflower (*Gaillardia sp.*). Because of the difficulty of surveying for Dakota skippers and a short survey window, we recommend that the project avoid any impacts to potential Dakota skipper habitat. If Dakota skipper habitat is present near the proposed project, and you intend to take precautions to avoid impacts to skipper habitat, please notify the Service for further direction.

### **Migratory Birds**

The Migratory Bird Treaty Act prohibits the taking, killing, possession, and transportation, (among other actions) of migratory birds, their eggs, parts, and nests, except when specifically permitted by regulations. While the MBTA has no provision for allowing unauthorized take, the U.S. Fish and Wildlife Service (USFWS) realizes that some birds may be killed during project construction even if all known reasonable and effective measures to protect birds are used. The USFWS Office of Law Enforcement

carries out its mission to protect migratory birds through investigations and enforcement, as well as by fostering relationships with individuals, companies, and industries that have taken effective steps to avoid take of migratory birds, and by encouraging others to implement measures to avoid take of migratory birds. It is not possible to absolve individuals, companies, or agencies from liability even if they implement bird mortality avoidance or other similar protective measures. However, the Office of Law Enforcement focuses its resources on investigating and prosecuting individuals and companies that take migratory birds without identifying and implementing all reasonable, prudent and effective measures to avoid that take. Companies are encouraged to work closely with Service biologists to identify available protective measures when developing project plans and/or avian protection plans, and to implement those measures prior to/during construction or similar activities.

The BGEPA, prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald eagles, including their parts, nests, or eggs. The Act provides criminal and civil penalties for persons who take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof. The Act defines take as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. "Disturb" means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagles return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment.

To avoid take and minimize disturbance to fish and wildlife resources in the project area the Service provides the following recommendations:

- To the extent practicable, schedule construction for late summer or fall/early winter so as not to disrupt waterfowl or other wildlife during the breeding season (February 1 to July 15). If work is proposed to take place during the breeding season or at any other time which may result in the take of bald or golden eagles or other migratory birds, their eggs, or active nests, the Service recommends that the project proponent implement all practicable measures to avoid all take, such as suspending construction where necessary and/or maintaining adequate buffers to protect the birds until the young have fledged. The Service further recommends that if you choose to conduct field surveys for nesting birds, including eagles, with the intent of avoiding take, that you maintain any documentation of the presence of eagles or other migratory birds, eggs, and active nests, along with information regarding the qualifications of the biologist(s)

performing the survey(s), and any avoidance measures implemented at the project site. Should surveys or other available information indicate a potential for take of eagles or other migratory birds, their eggs, or active nests, the Service requests that you contact this office for further coordination on the extent of the impact and the long-term implications of the intended use of the project on eagles or other migratory bird populations.

Bald and/or golden eagles may use the proposed project area. Golden eagles inhabit a wide variety of habitat types, including open grassland areas. They are known to nest on cliffs, in trees, manmade structures, and on the ground (Kochert et al. 2002). There are numerous records of golden eagle nests on the Fort Berthold reservation (Pers. Comm. Anne Marguerite Coyle, Dickinson State University). While the bald eagle tends to be more closely associated with forested areas near water (Buehler 2000), they have been found nesting in single trees several miles from the nearest water body. Therefore, there may also be potential habitat for the bald eagle throughout the proposed project area. Especially early in the nesting season, eagles can be very sensitive to disturbance near the nest site and may abandon their nest as a result of low disturbance levels, even from foot traffic. A buffer of at least 1/2 mile should be maintained for golden and bald eagle nests. A permit is required for any take of bald or golden eagles or their nests. Permits to take golden eagles or their nests are available only for legitimate emergencies and as part of a program to protect golden eagles.

The Service recommends that aerial raptor surveys be conducted prior to any on-the-ground activities. The Service recommends that an aerial nest survey (preferably by helicopter) be conducted within one mile of any proposed ground disturbances to identify active and inactive nest sites near the proposed pipeline and associated facilities, including proposed new roads. Aerial surveys should be conducted between March 1 and May 15, before leaf-out so that nests are visible.

Aerial surveys should include the following:

1. Due to the ability to hover and facilitate observations of the ground, helicopters are preferred over fixed wing aircraft, although small aircraft may also be used for the raptor surveys. Whenever possible, two observers should be used to conduct the surveys. Even experienced observers only find approximately 50 percent of nests on a flight (Pers. Comm. Anne Marguerite Coyle, Dickinson State University), so we recommend that two flights be performed prior to any on-the-ground work, including other biological surveys or other work.
2. Observations of raptors and nest sites should be recorded using GPS. The date, location, nest condition, activity status, raptor species, and habitat should be recorded for each sighting.
3. We request that you share the qualifications of the biologist(s) conducting the survey, method of survey, and results of the survey with the Service.

## **High Value Habitat Avoidance**

The correspondence on April 16, 2010, stated that wetlands that cannot be avoided will be crossed using “the open trench method.” Trenching through wetlands risks permanently impacting their hydrology if the clay base is disturbed. Additionally, the vegetation disturbance causes temporary wetland impacts, which may become permanent if invasive species take over. We strongly recommend that you route the line to avoid all wetlands. If this is not possible, then the pipeline should avoid potential impacts by boring under wetlands. In particular, the GIS information provided shows the pipeline traversing the west side of Muskrat Lake. We recommend that Zenergy either avoid Muskrat Lake altogether, or bore under it.

To minimize disturbance to fish and wildlife habitat in the project area, the Service provides the following recommendations:

- Make no stream channel alterations or changes in drainage patterns.
- Install and maintain appropriate erosion control measures to reduce sediment transport to adjacent wetlands and stream channels.
- Avoid construction in native prairie, if possible, and reseed disturbed native prairie with a comparable native grass/forb seed mixture immediately after construction to reduce erosion. Seed stock should preferably be collected from the adjacent native prairie. If this is not possible, the seed stock should be obtained from sources no farther than 250 miles away to ensure the particular cultivars are well adapted to the local climate.

## **Cumulative Effects Analysis**

A large number of wells, well pipelines, and appurtenant facilities are being constructed in the western portion of North Dakota. The Service is concerned that these projects are being put in piecemeal without an overarching plan to ensure that the facilities are being constructed to access all new pads most efficiently, while disturbing the least amount of habitat. While we understand that there is still some level of uncertainty regarding the extent of the oil formations, there has been enough drilling in this area that the Service believes that the uncertainty is relatively small and decreasing. It would be appropriate for the EA to include some cumulative effects analysis of this pipeline in relationship to existing and proposed pads, roads, electrical transmission lines, and other features associated with oil production.

## **Habitat Fragmentation**

Prairie habitat is increasingly being lost or fragmented because of the large amount of energy development in areas of the State that were formerly relatively undisturbed. Only about 30 percent of native prairie in North Dakota remains from pre-settlement times (Strong et al. 2005), with nearly all native tallgrass prairie converted nationwide (Ricketts

et al. 1999). Oil pads, associated roadways, and vehicle traffic can cause fragmentation of the landscape, disrupting wildlife patterns and making it more likely that non-native plant species may invade an area. The Service recommends placing the proposed pipeline in previously disturbed areas to the greatest extent practicable, for example, by locating it along existing roads. Many prairie species require large, contiguous blocks of grasslands for their biological needs and may either avoid patchy habitat or experience reduced reproductive success.

- The Service recommends that impacts to native prairie be avoided or minimized. If native prairie cannot be avoided, the Service recommends outlining stringent reclamation requirements, including a bond sufficient to cover the cost of reclamation, as described in the “Post-production Phase – Reclamation” section below.
- The Service recommends that the pipeline follow existing roads and trails to the greatest extent possible, minimizing all new ground disturbance.
- If new areas are disturbed necessary, the Service recommends avoiding native prairie to the greatest extent possible.
- The Service recommends that the disturbed areas along the Right of Way (ROW) be reseeded immediately with a native prairie mix to reduce erosion and prevent invasion by non-native species. Disturbed areas should be monitored regularly throughout the life of the project, and treated with herbicide as necessary to ensure that exotic species are not infesting disturbed areas.
- If multiple companies are developing well pads in the same general area, the pipeline should be designed with sufficient capacity so that it can transport all of the oil in an area so that more land does not need to be disturbed.
- Install and maintain appropriate erosion control measures to reduce sedimentation and water quality degradation of wetlands and streams that the proposed project crosses.

The Service recommends that the BIA incorporate the relevant requirements described in the Dakota Prairie Grasslands Land and Resource Management Plan (USDA 2001). This document includes a number of requirements to avoid sensitive resources. In particular, the Service suggests that the BIA incorporate the relevant portions of Appendix D, Oil and Gas Stipulations.

#### **Post-production Phase – Reclamation**

The EA should include a plan to restore the landscape following project completion, including a bond sufficient to reclaim the area in full. As soon as possible after construction, the ROW should be minimized to the extent practicable. Within one year of the proposed pipeline’s closure, the land along the pipeline should be reseeded with a

native prairie mix. Since native prairie species take some time to establish, and intensive management may be required for several years to ensure that weeds do not infest the area, the Service recommends that the BIA follow the timeline requirements set out in the 2003 *North Dakota Public Service Commission, Standards for evaluation of revegetation success and recommended procedures for pre-and postmining vegetation assessments* (available on-line at <http://www.psc.state.nd.us/jurisdiction/reclamation/files/revegdocjuly2003final.pdf>). This document requires that reclaimed areas be managed for a minimum of ten years, starting in the year when first seeded. Starting in the sixth year, for at least two consecutive years, or three out of the last five, including the last year, the reclaimed area must meet the approved standard as described in the document.

For prairie areas, the Service recommends planting a diverse mixture of native cool and warm season grasses and forbs. While the North Dakota Public Service Commission document requires only five native grass species, recent research has suggested that a more diverse mix, including numerous forb species, is not only ecologically beneficial, but is also more weed resistant, allowing for less intensive management and chemical use. In essence, the more species included in a mixture, the higher the probability of providing competition to resist invasion by non-native plants. The seed source should be as local as possible, preferably collected from the nearby native prairie.

Thank you for the opportunity to comment on this project. If you require further information or the project plans change, please contact me or Carol Aron of my staff at (701) 250-4481 or at the letterhead address.

Sincerely,



Jeffrey K. Towner  
Field Supervisor  
North Dakota Field Office

Enclosures

cc: Bureau of Indian Affairs, Aberdeen  
(Attn: Marilyn Bercier)  
Bureau of Land Management, Dickinson  
ND Game & Fish Department, Bismarck

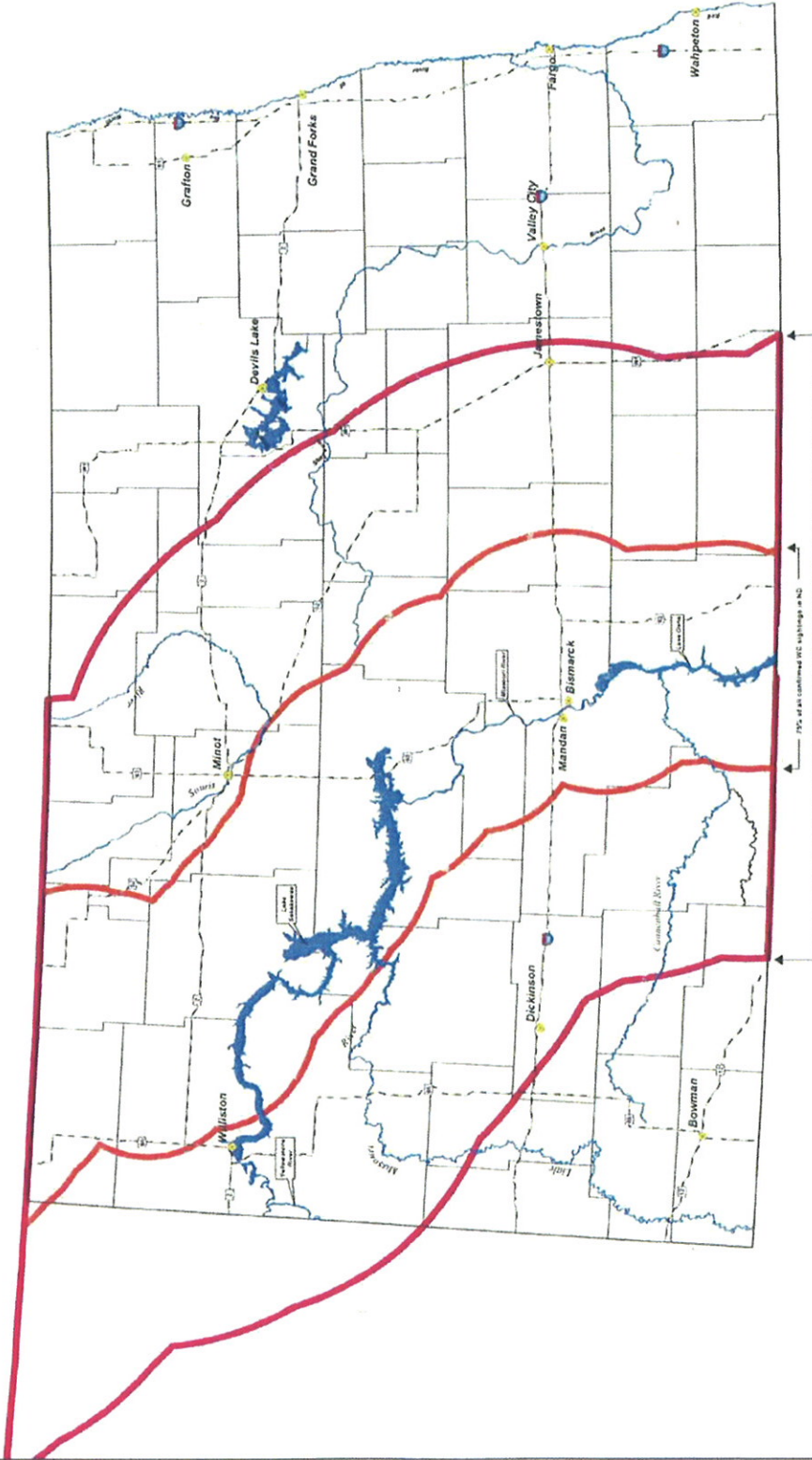


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# North Dakota Whooping Crane Migration Corridor



- 75% Whooping Crane Migration Corridor
- 95% Whooping Crane Migration Corridor

**DISCLAIMER:**  
 The USFWS makes no claim as to the accuracy or completeness of the displayed information. Species occurrence and habitat information is provided for illustrative purposes only. Federal action significance program proposals should consult the Federal Register for more information. The USFWS provides technical assistance in evaluating potential project impacts to fish and wildlife resources.  
 Map produced 04/21/2010 by USFWS Ecological Services, Bismarck, ND.



FEDERAL THREATENED, ENDANGERED, AND CANDIDATE SPECIES  
AND DESIGNATED CRITICAL HABITAT FOUND IN  
MOUNTRAIL COUNTY, NORTH DAKOTA  
May 2010

**ENDANGERED SPECIES**

Birds

Interior least tern (*Sterna antillarum*): Nests along midstream sandbars of the Missouri and Yellowstone Rivers.

Whooping crane (*Grus Americana*): Aransas-Wood Buffalo Population (264 birds) occurs in North Dakota counties during spring and fall migration between breeding and wintering areas. Whooping cranes prefer to roost overnight in shallow open water wetland habitat with good visibility during migration stopovers.

Fish

Pallid sturgeon (*Scaphirhynchus albus*): Known only from the Missouri and Yellowstone Rivers. No reproduction has been documented in 15 years.

Mammals

Gray wolf (*Canis lupus*): Occasional visitor in North Dakota. Most frequently observed in the Turtle Mountains area.

**THREATENED SPECIES**

Birds

Piping plover (*Charadrius melodus*): Nests on midstream sandbars of the Missouri and Yellowstone Rivers and along shorelines of saline wetlands. More nest in North Dakota than any other state.

**CANDIDATE SPECIES**

Invertebrates

Dakota skipper (*Hesperia dacotae*): Found in native prairie containing a high diversity of wildflowers and grasses. Habitat includes two prairie types: 1) low (wet) prairie dominated by bluestem grasses, wood lily, harebell, and smooth camas; 2) upland (dry) prairie on ridges and hillsides dominated by bluestem grasses, needlegrass, pale purple and upright coneflowers and blanketflower.

## **DESIGNATED CRITICAL HABITAT**

### Birds

Piping Plover - Lake Sakakawea - Critical habitat includes sparsely vegetated shoreline beaches, peninsulas, islands composed of sand, gravel, or shale, and their interface with the water bodies.



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services  
3425 Miriam Avenue  
Bismarck, North Dakota 58501



**JUL 23 2010**

Mr. Ryan J. Krapp  
Wildlife/Fisheries Biologist – GIS Specialist  
McCain and Associates, Inc.  
2718 Gateway Avenue, Suite 101  
Bismarck, North Dakota 58503

Re: Van Hook Gathering System

Dear Mr. Krapp:

The U.S. Fish and Wildlife Service (Service) has reviewed the Bureau of Indian Affairs' (BIA) July 20, 2010, Environmental Assessment (EA) and July 23, 2010, e-mail requesting concurrence with BIA's determination of effects to threatened and endangered species from a gathering system on Fort Berthold Indian Reservation. Zenergy Operating Company, LLC (Zenergy) has proposed to construct a gathering line to collect natural gas from existing and proposed oil and gas wells in the Sanish Peninsula, Mountrail County, North Dakota.

The project location is T. 150 N., R. 91, 92, and 93 W. and T. 151 N., R. 91 and 92 W.

We offer the following comments under the authority of and in accordance with the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.) (MBTA), the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.) (NEPA), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250) (BGEPA), Executive Order 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds", and the Endangered Species Act (16 U.S.C. 1531 et seq.) (ESA).

In an e-mail dated October 13, 2009, the Bureau of Indian Affairs (BIA) designated McCain and Associates to represent the BIA for informal Section 7 consultation under the ESA. Therefore, the U.S. Fish and Wildlife Service (Service) is responding to you as the designated non-Federal representative.

### **Threatened and Endangered Species**

The Service concurs with the threatened and endangered species determination of "may affect, but not likely to adversely affect" determination for the interior least tern, piping plover, pallid sturgeon, whooping crane, and gray wolf.

This concurrence is predicated on the following:

- Power lines will either be under ground or if above ground, the new power lines and an equal amount of existing power lines will be marked with bird-flight diverters.
- All construction activities will be stopped if a whooping crane(s) is sighted within one mile from the project area. In coordination with the Service, work may resume once the whooping crane(s) has left the area.

Since the Dakota skipper is a candidate species, a determination is not required. Nevertheless, it is important to protect the species and its habitat. Reseeding native areas promptly with a native mix, as described in the document, should minimize impacts to this species.

### **Bald and Golden Eagles and Migratory Birds**

A ground survey was conducted within ½ mile of the proposed project Right of Way (ROW). No evidence of raptors or nests were observed during the review. To ensure that bald and golden eagles and other migratory birds are not impacted by the proposed project, Zenergy has committed to the following conditions if work takes place during the nesting season (February 1 – July 15):

- Surveys for migratory bird nests will be conducted within five days of ground disturbance. If a nest is found, the Service will be informed and an agreed upon buffer from the nest will be maintained until the nest has fledged.
- Ground and/or aerial surveys for migratory birds will be conducted within five days of construction surface disturbance. If a migratory bird nest is located, the location will be recorded, monitored, and documentation will be maintained. The Service will be alerted and consulted to place mitigation measures to avoid disturbance of nest. Measures may include applying an appropriate avoidance buffer to the nest or construction delayed in that area until the nest has fledged.

### **Native habitat disturbance, Section 2.1.3**

The EA states that the proposed pipeline crosses the head of a drainage containing a variety of native species, including chokecherry (*Prunus virginiana*) and skunkbrush sumac (*Rhus aromatica* var. *trilobata*). The Service recommends that Zenergy replace native trees and shrubs at a 2:1 ratio.

### **Irreversible and Irretrievable Commitment of Resources**

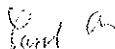
This heading in NEPA refers to commitments of resources already made by the applicant or Federal action agency. For example, if the applicant had already purchased or contracted equipment to be used for the project, this would be included in this section. NEPA is a disclosure law, in order to inform the public about the decision-making process, and this section should inform the public if resources have been committed prior to completion of the process. The Service recommends revising this section of the EA.

## Cumulative Impacts

The cumulative impact analysis does not appear to provide an adequate analysis to determine how the proposed project adds to the cumulative effects of existing and anticipated development in the area. The EA should evaluate the existing wells and pipelines in the project area, consider the proposed pipeline in this context, and include an analysis of the likely oil and gas development, including future pipelines in the foreseeable future.

This concludes the Service's review of the proposed project. Thank you for the opportunity to comment on this project and for Zenergy Operating Company's cooperation in addressing our recommendations. If you require further information or the project plans change, please contact Carol Aron of my staff or contact me directly at (701) 250-4481, or at the letterhead address.

Sincerely,



Jeffrey K. Towner  
Field Supervisor  
North Dakota Field Office

cc: Bureau of Indian Affairs, Aberdeen  
(Attn: Maryln Bercier)  
Bureau of Land Management, Dickinson

# **NOTICE OF AVAILABILITY**

ZENERGY: Phase 1 Van Hook Gathering System

**THE BUREAU OF INDIAN AFFAIRS (BIA) IS PLANNING TO ISSUE ADMINISTRATIVE APPROVALS RELATED TO INSTALLATION OF AN OIL, NATURAL GAS AND WATER GATHERING SYSTEM ON THE FORT BERTHOLD RESERVATION. CONSTRUCTION IS SCHEDULED TO BEGIN IN THE SUMMER OF 2010.**

**AN ENVIRONMENTAL ASSESSMENT (EA) DETERMINED THAT PROPOSED ACTIVITIES WILL NOT CAUSE SIGNIFICANT IMPACTS TO THE HUMAN ENVIRONMENT. AN ENVIRONMENTAL IMPACT STATEMENT IS NOT REQUIRED. CONTACT HOWARD BEMER, SUPERINTENDENT AT 701-627-4707 FOR MORE INFORMATION AND/OR COPIES OF THE EA AND THE FINDING OF NO SIGNIFICANT IMPACT (FONSI).**

**THE FONSI IS ONLY A FINDING ON ENVIRONMENTAL IMPACTS – IT IS NOT A DECISION TO PROCEED WITH AN ACTION AND *CANNOT* BE APPEALED. BIA’S DECISION TO PROCEED WITH ADMINISTRATIVE ACTIONS CAN BE APPEALED UNTIL AUGUST 30, 2010, BY CONTACTING:**

**UNITED STATES DEPARTMENT OF THE INTERIOR  
OFFICE OF HEARINGS AND APPEALS  
INTERIOR BOARD OF INDIAN APPEALS  
801 N. QUINCY STREET, SUITE 300, ARLINGTON, VA 22203.**

**PROCEDURAL DETAILS ARE AVAILABLE FROM THE BIA FORT BERTHOLD AGENCY AT 701-627-4707.**



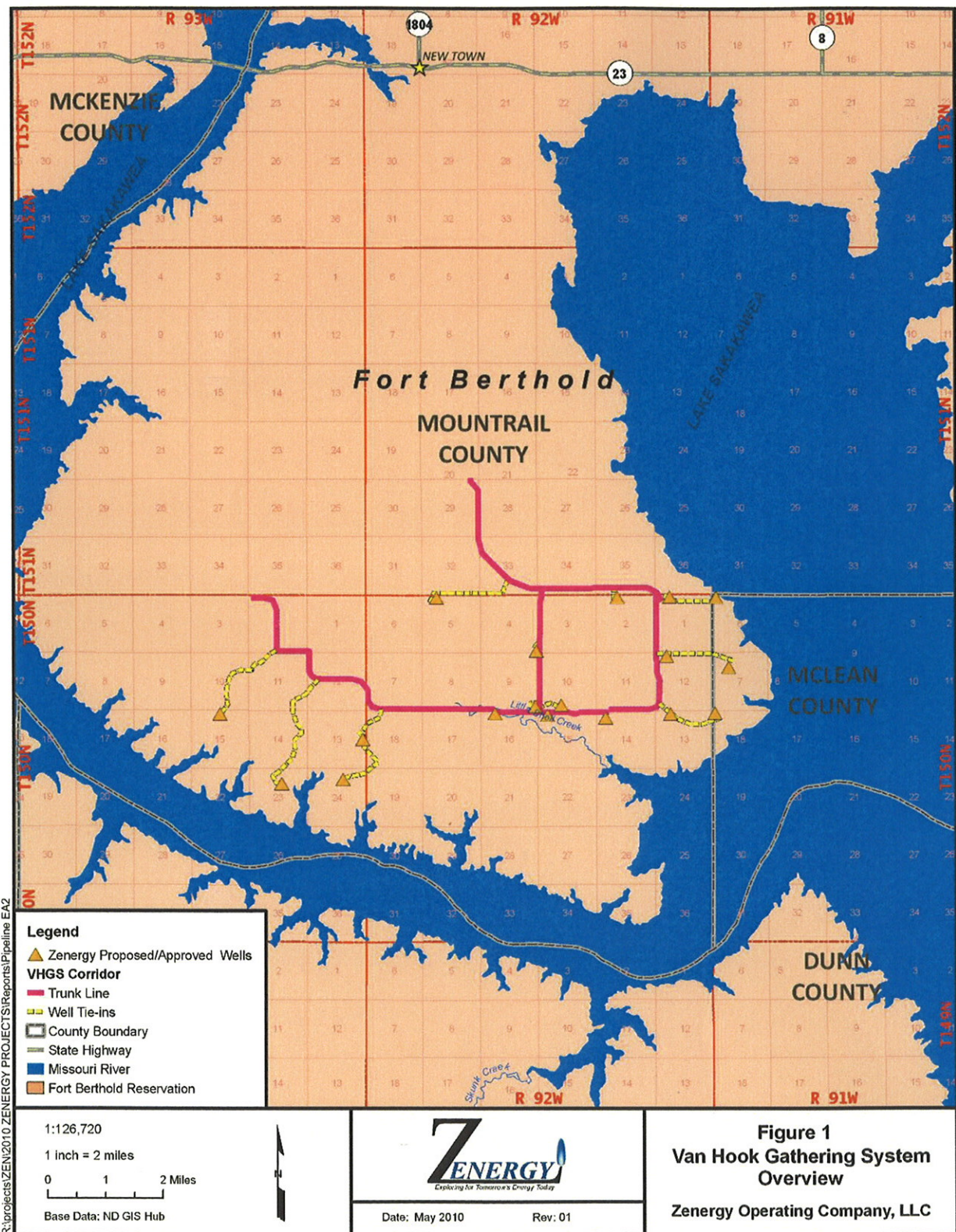


Figure 1. Proposed Van Hook Gathering System