



United States Department of the Interior

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

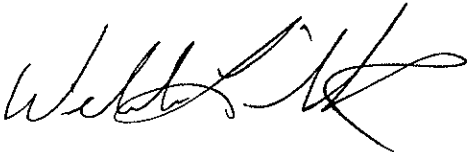


IN REPLY REFER TO:
DESCRM
MC-208

DEC 16 2010

MEMORANDUM

TO: Superintendent, Fort Berthold Agency

FROM: Regional Director, Great Plains Region 

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 Van Hook Trunkline to FBIR #13-24H 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: Tex Hall, Chairman, Three Affiliated Tribes (with attachment)
Elgin Crows Breast, THPO (with attachment)
Derek Enderud, BLM, Dickenson, ND (with attachment)
John Shelman, US Army Corps of Engineers
Jeffrey Hunt, Virtual One Stop Shop

Finding of No Significant Impact
Zenergy Operating Company, LLC

Van Hook Trunkline to FBIR #13-24H
Van Hook Gathering System


Fort Berthold Indian Reservation
McLean and Mountrail County, North Dakota

The U.S. Bureau of Indian Affairs (BIA) has received a proposal to construct and operate an oil, natural gas and water gathering system on the Fort Berthold Indian Reservation, herein referred to as the Van Hook Trunkline to FBIR #13-24H, located in Sections 10, 11, 12, 13, and 14 of Township 150 North, Range 92 West, McLean and 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. Guidance from the U.S. Fish and Wildlife Service has been fully considered regarding wildlife impacts, particularly in regard to threatened or endangered species. This guidance includes 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).
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

12-16-10
Date

ENVIRONMENTAL ASSESSMENT

United States Bureau of Indian Affairs

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



Zenergy Operating Company, LLC

**Van Hook Trunkline to FBIR #13-24H
Van Hook Gathering System**

Fort Berthold Indian Reservation

December 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
605-226-7656

Environmental Assessment

Van Hook Trunkline to FBIR #13-24H

Van Hook Gathering System

Zenergy Operating Company, LLC

TABLE OF CONTENTS

1.0	Purpose and Need for the Proposed Action	3
2.0	Proposed Action and Alternatives.....	6
2.1	System Design.....	6
2.1.1	Section 10, T150N, R92W.....	7
2.1.2	Section 11, T150N, R92W.....	9
2.1.3	Sections 12 and 13, T150N, R92W.....	10
2.2	Construction Procedures.....	10
2.2.1	Clearing and Grading.....	11
2.2.2	Trenching.....	11
2.2.3	Stringing.....	14
2.2.4	Pipe Bending.....	14
2.2.5	Welding.....	14
2.2.6	X-ray/Inspection.....	14
2.2.7	Lowering In.....	14
2.2.8	Backfilling.....	14
2.2.9	Hydrostatic Testing.....	14
2.2.10	Restoration.....	15
2.2.11	Rural Water System Crossings.....	15
2.3	Directional Drilling.....	15
2.4	Reclamation.....	16
2.5	Operations and Maintenance.....	17
3.0	The Affected Environment and Potential Impacts.....	18
3.1	The No Action Alternative.....	19
3.2	Air Quality.....	19
3.3	Public Health and Safety.....	21
3.4	Socioeconomics.....	23
3.5	Environmental Justice.....	25
3.6	Water Resources.....	26
3.6.1	Surface Water.....	26
3.6.2	Wetlands.....	26
3.6.3	Groundwater.....	28
3.6.4	Water Wells.....	28
3.7	Habitat and Wildlife.....	28
3.7.1	Critical Habitats.....	29
3.7.2	Threatened and Endangered Species.....	29
3.7.3	Species Assessments.....	29
3.7.4	Migratory Birds, Raptors and Resident Wildlife.....	31
3.8	Soils.....	32
3.9	Cultural Resources.....	35
3.10	Vegetation and Noxious Weeds.....	36
3.10.1	Vegetation.....	36
3.10.2	Noxious Weeds.....	36

3.11	Irreversible and Irretrievable Commitment of Resources	37
3.12	Short-Term Use versus Long-Term Productivity	37
3.13	Cumulative Impacts	37
4.0	Consultation and Coordination	40
5.0	List of Preparers	41
6.0	References and Acronyms	42

LIST OF FIGURES

Figure 1.	Van Hook Gathering System	4
Figure 2.	Van Hook Trunkline to FBIR #13-24H	5
Figure 3.	Proposed route in SE ¼ of Section 10.	8
Figure 4.	Proposed route in SE ¼ of Section 10.	9
Figure 5.	Proposed route in SE ¼ Section 11	10
Figure 6.	Access Roads	12
Figure 7.	Typical Pipeline ROW	13
Figure 8.	Overview of Estimated Maximum Blast Zone	22
Figure 9.	Wetland and Waterbody Crossings	27
Figure 10.	Topsoil Stripping Depths	34

LIST OF TABLES

Table 1.	Directional Drill Locations	16
Table 2.	Summary of Federal Air Quality Standards	20
Table 2.	Population and Demographics.	23
Table 3.	Income and Unemployment.	24
Table 5.	Housing	24
Table 5.	Water wells within 5 miles.	28
Table 6.	County status of Endangered, Threatened, and Candidate species and Designated Critical Habitat	29
Table 7.	Wildlife (General)	32
Table 8.	Noxious weeds in Mountrail County	37

APPENDICES

- Appendix A** Van Hook Gathering System Scoping Letter
- 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 Trunkline to FBIR #13-24H (Project) The proposed Project is an expansion of the Van Hook Gathering System (VHGS) – Phase 1 currently being constructed, and part of a larger planned gathering system (Figure 1). A Finding of No Significant Impact (FONSI) was issued for Phase 1 of the VHGS on July 30, 2010.

Initially the Project (Figure 2) will gather just natural gas from existing and proposed oil wells located on the Sanish Peninsula of the Reservation. The Project is located in Sections 10, 11, 12, 13, and 14 of Township 150 North, Range 92W. The project is comprised of approximately 2.5 miles of 8" trunk pipeline and 0.3 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. Underground electrical utility lines may also be constructed in the same right-of-way (ROW).

This document addresses construction and operation of the Van Hook Trunkline to FBIR #13-24H of the proposed system that crosses tribal owned and individual allotted land only in T150N R92W (Figure 2). These tribal and individual allotted lands 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.

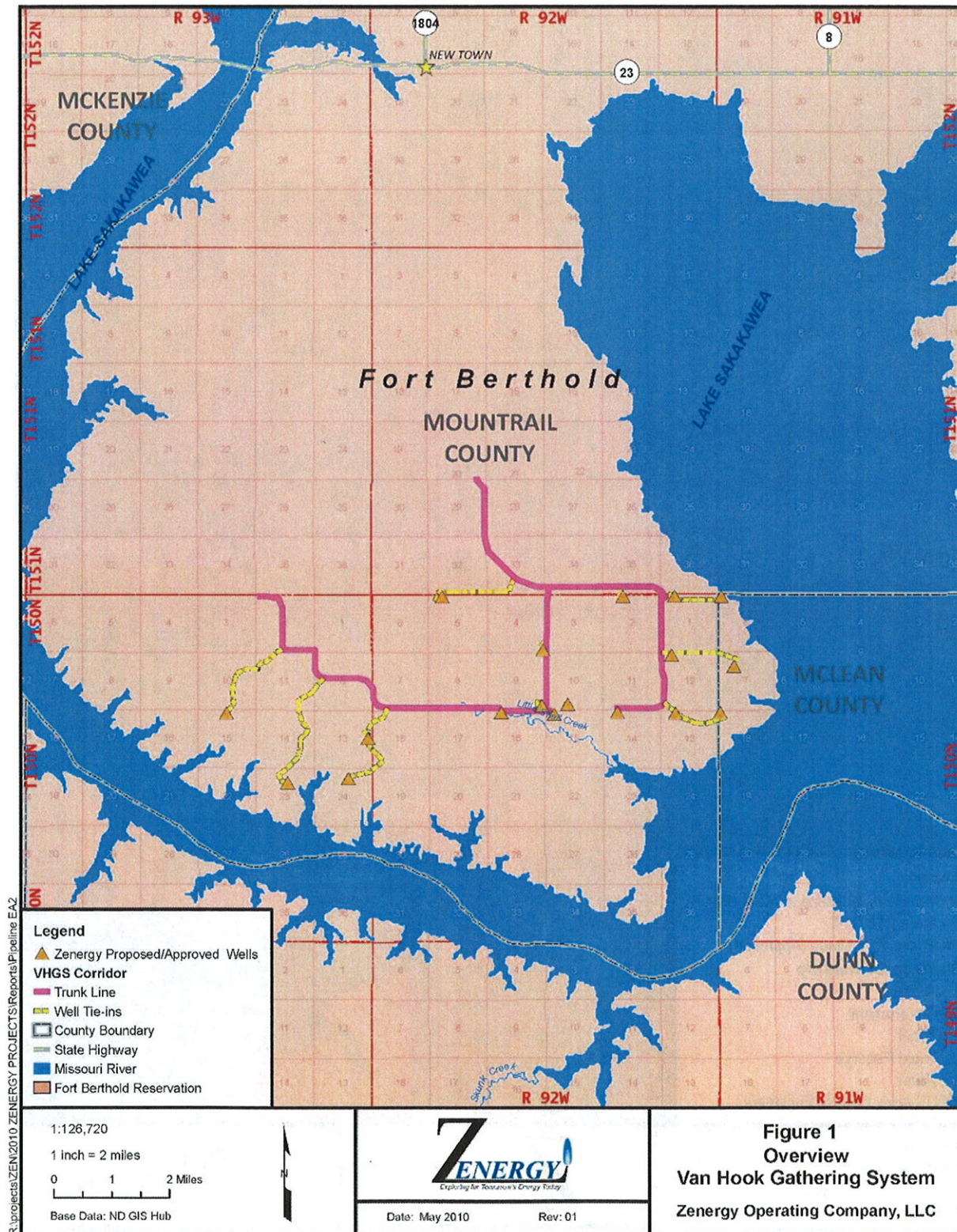
The economic development of available resources and associated BIA actions are consistent with BIA's general mission. Leasing and development of mineral resources offers substantial economic benefits to both the Three Affiliated Tribes of the Mandan, Hidatsa, and Arikara Nations and to individual tribal 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).

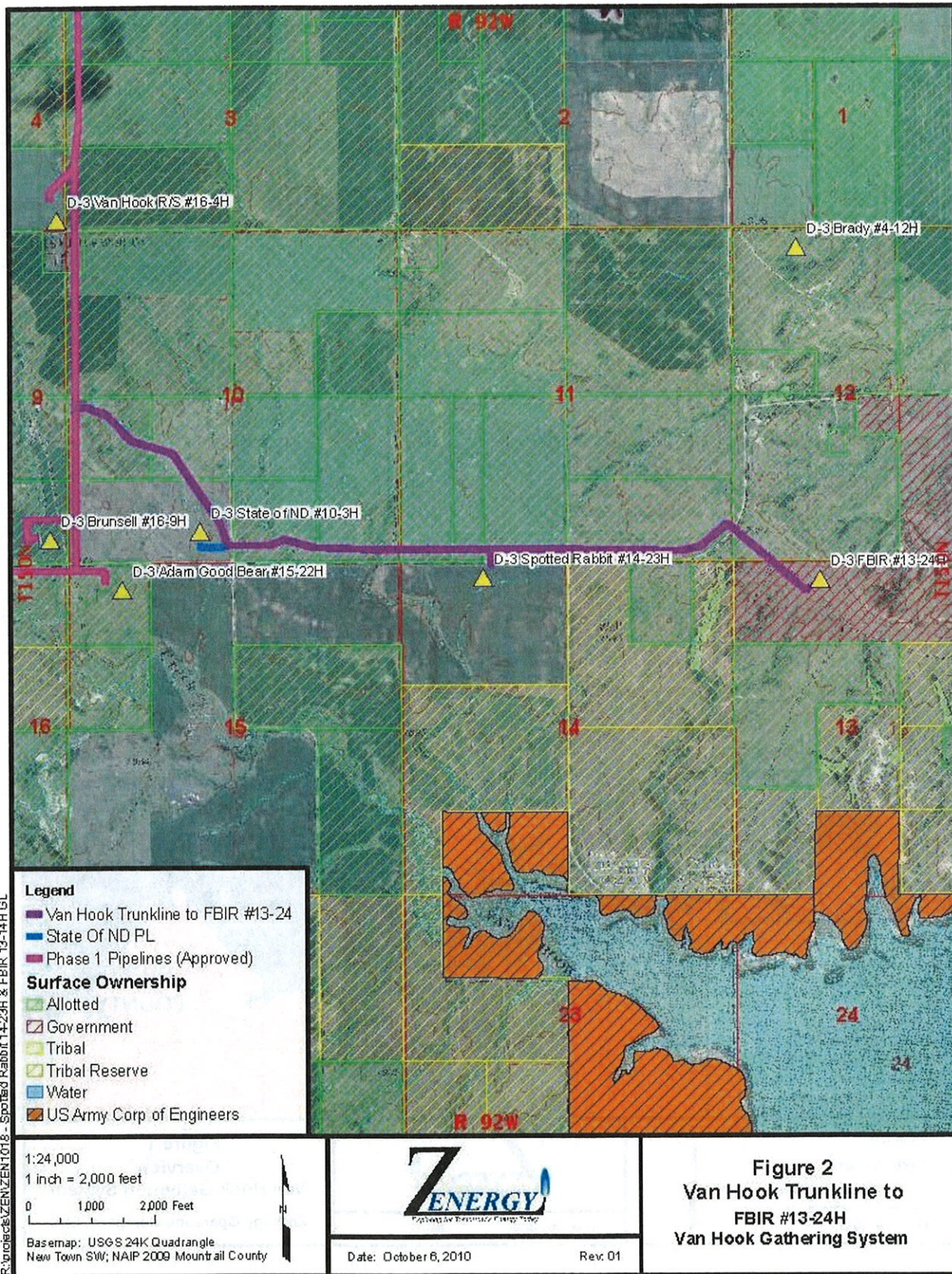
Any authorized project will comply with all applicable federal, state, and tribal laws, rules, policies, regulations, and agreements. No construction or other ground-disturbing operations will begin until all necessary leases, easements, surveys, clearances, consultations, permissions, determinations, 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. Van Hook Gathering System



R:\projects\ZEN\2010 ZENERGY PROJECTS\Reports\Pipeline EA2

Figure 2. Van Hook Trunkline to FBIR #13-24H



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 July 19, 2010. Those in attendance included: Environmental Specialist - Daryl Turrcotte (BIA); Adam Kearl (Utah Surveyors); Wade Burns (Beaver Creek Archeology); Tribal Historic Preservation Office (THPO) monitors; and Todd Hartleben and Kathie Kjar (McCain).

Resource surveys were conducted at the time of pre-on-site inspections to determine potential affects 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 Project will collect and gather natural gas from three existing and proposed Zenergy oil wells. The gathering system will connect to a larger gathering and distribution network currently being constructed (Phase 1). The construction of the Van Hook Trunkline to FBIR #13-24H will also be part of a critical looping path for the larger anticipated Van Hook Gathering System.

The Van Hook Trunkline to FBIR #13-24H will traverse trust land in Sections 10, 11, 12, and 13 of T150N R92. This first phase of construction will gather natural gas from three oil/gas wells - two of which are located on fee land and one on trust land. The main east-west portion of the project 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. A PIG launcher site will be installed at the D-3 FBIR #13-24 well pad. Valves and PIG launchers may be constructed on fee land.

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 Section 10, T150N, R92W

The Project will start in the NW ¼ of the SW ¼, and tie into the Phase 1 pipeline currently being constructed. The pipeline route will proceed to the southeast to the D-3 State of ND #10-3H well site and then parallel 28th Street to the east. This route was chosen in order to avoid environmentally sensitive resources located between the D-3 Brunsell #16-9H well site and the D-3 State of ND #10-3H well site. A tie-in pipeline will be constructed to connect the D-3 State of ND #10-3H well site (located on Fee property) to the gathering system.

The route crosses a native prairie pasture in the north ½ of the SW ¼ and grassland areas in the SW ¼ of the SE ¼, and the SE ¼ of the SE ¼. Needle-and-thread (*Stipa comata*) is the dominant native grass, but Kentucky bluegrass (*Poa pratensis*) is also a dominant species. The pasture is heavily grazed; however, residual cover is high in the grassland areas of the SE ¼.

Grasslands include scattered patches of buckbrush (*Symphoricarpos occidentalis*) and smooth brome (*Bromus inermis*). The area includes several forb species such as dotted gayfeather (*Liatris punctata*), silver leaf scurfpea (*Psoralea argophylla*), purple coneflower (*Echinachea angustifolium*), false boneset (*Kuhnia eupatorioides*), fringed sage (*Artemisia frigida*), and others. Crested wheatgrass (*Agropyron cristatum*) is in the area, but not common.

The drainage in the SW ¼ SE ¼ includes a dense patch of buckbrush. Upon closer examination several wetland species (FACW, FACW+ and OBL) were noted, included woolly sedge (*Carex lanuginosa*), wire-stem muhly (*Muhlenbergia frondosa*), smartweed (*Polygonum* sp.), and white aster (*Aster simplex*), and soils had hydric indicators. Following review, it was recommended that the proposed line be diverted around the wetland area.

West of the drainage, smooth brome dominated the grassland area. Native forbs were relatively common in the area, most likely volunteering in the older seeding.

The majority of the SE¼ of Section 10 is cultivated. East of the grain field, a small native area is found with a shrubby lower slope. The shrub patch is dominated by American plum (*Prunus americana*) and chokecherry (*Prunus virginiana*), but includes patches of Canada thistle (*Cirsium arvense*).

Downslope and east of the shrubby area, a drainage is dominated by wetland species including curly dock (*Rumex crispus*), quackgrass (*Agropyron repens*), woolly sedge, and meadow anemone (*Anemone canadensis*). Following review, it was decided to avoid disturbance of this drainage by directionally drilling under the wetland area. A small grassland parcel borders the east edge of Section 10. Smooth brome is dominant on the grassland area.



Figure 3. Proposed route in SE ¼ of Section 10.

Photo taken facing east, paralleling 28th Street. The wetland is located in the low spot in center of picture. The Project will be routed around the wetland (to the left) of the photo.



Figure 4. Proposed route in SE ¼ of Section 10.

Photo taken facing west, near section line with Section 11. The drainage and wetland in the photo will be directionally drilled.

2.1.2 Section 11, T150N, R92W

The SW¼ of Section 11 is cultivated. A short tie in pipeline will be constructed to connect the D3 Spotted Rabbit #14-23H well site (located on fee property in Section 14).

The SE¼ of Section 11 is grassland. A narrow band of smooth brome is dominant adjacent to the fence line and road right-of-way and has encroached onto the native grasslands to the north. The majority of the pipeline route in this quarter section is severely invaded by smooth brome. Crested wheatgrass is also common along the pipeline route. Some forbs are present (purple coneflower, prairie coneflower) but are scattered and not prevalent. Scattered patches of chokecherry are present.



Figure 5. Proposed route in SE ¼ Section 11

Photo taken facing west along the proposed route.

2.1.3 Sections 12 and 13, T150N, R92W

The proposed route crosses into Section 12 at the 85th Avenue crossing. The route will proceed southeast to the D-3 FBIR #13-24H. The proposed route in Sections 12 and 13 follows a developed access road to the D-3 FBIR #13-24H (former D-3 FBIR #3-13H) well site. The access road route and adjacent area was evaluated in 2009 (*Field Report, D-3 Brady #4-12H, D-3 Brunsell #16-9, D-3 FBIR #3-13H, D-3 Mason #3-2,; D-3 North Segment #4-6H, D-3 Olson #4-1H, D-3 Wolf #4-18H, McCain, 2009; Environmental Summary, D-3 Brady #4-12H, D-3 Brunsell #16-9, D-3 FBIR #3-13H, D-3 Mason #3-2,; D-3 North Segment #4-6H, D-3 Olson #4-1H, D-3 Wolf #4-18H; McCain, 2009, and FONSI, dated 10/20/2009*) and again during the site visit on July 2010. The proposed pipeline route falls within the corridor evaluated for the access road. No changes, other than the development of an access road and the well site have occurred since the writing of the EA in 2009. Introduced perennial grasses dominate the route.

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 6). 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.

County, state, private and BIA roads used during Project 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 7).

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.

Figure 6. Access Roads

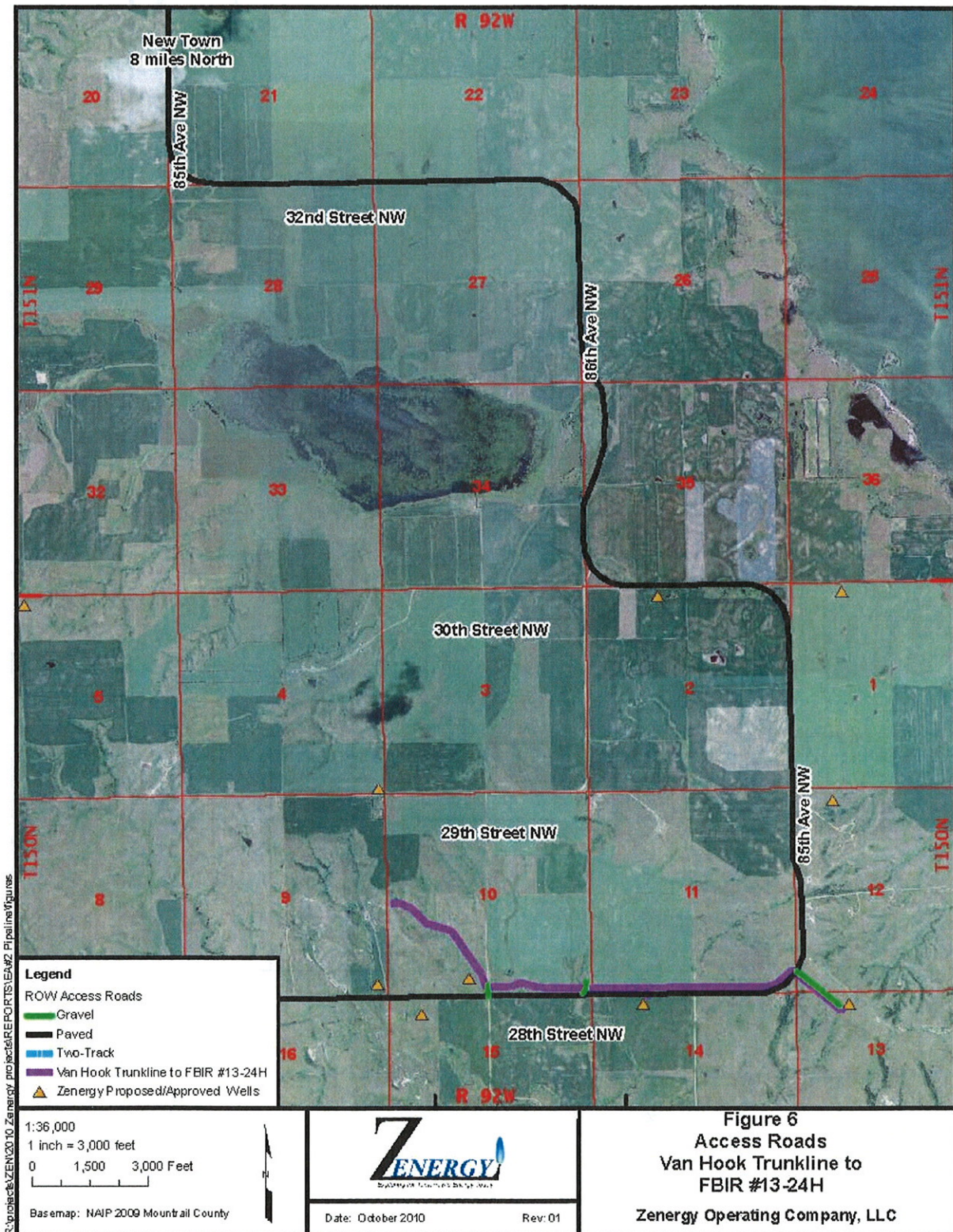
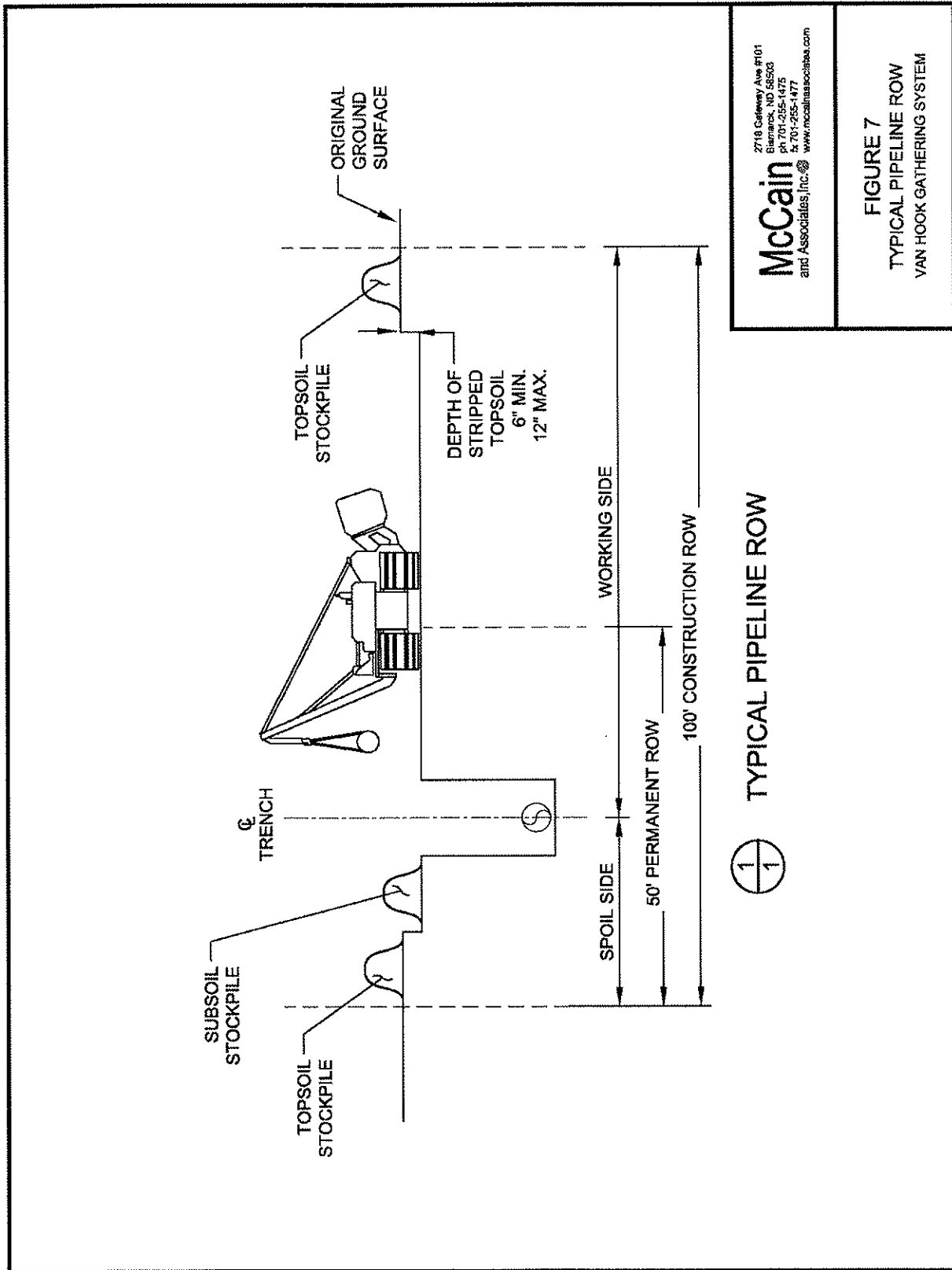


Figure 7. Typical Pipeline ROW



McCain
 and Associates, Inc.
 2718 Carleway Ave #101
 Bismarck, ND 58503
 ph 701-255-1475
 fx 701-255-1477
 www.mccainassociates.com

FIGURE 7
 TYPICAL PIPELINE ROW
 VAN HOOK GATHERING SYSTEM

2.2.3 Stringing

Pipe will either be stored at the facility located in Section 20 T51N R92W or at existing oil/gas well sites along the route and 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.

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 filled 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.

2.2.11 Rural Water System Crossings

The proposed Project will cross the existing Forth Berthold Rural Water utility. This rural water system is managed by the Bureau of Reclamation. Certain regulations apply to these crossings including:

- Clearance/spacing.
- Erosion control measures.
- Procedures, excavation plans, and schedules for crossings.
- Submittal of as-built documentation after construction.

The Bureau of Reclamation will be notified of the proposed crossing(s) and appropriate documentation will be submitted.

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 the Van Hook Trunkline to FBIR #13-24H are identified in Table 2. These locations include four road crossings and one wetland/waterbody crossing.

Table 1. Directional Drill Locations

Location	Pipeline Segment	Feature
West side of SE ¼, Section 10	Van Hook Trunkline to FBIR #13-24H	Gravel Road
SE ¼, SE ¼ Section 10	Van Hook Trunkline to FBIR #13-24H	Wetland/Unnamed Tributary to Lake Sakakawea
Section line Sections 10 and 11	Van Hook Trunkline to FBIR #13-24H	Gravel Road
SW ¼ Section 11	Gathering line to D-3 Spotted Rabbit #14-23H well	Paved Road
SE ¼ Section 11/SW ¼ Section 12	Van Hook Trunkline to FBIR #13-24H	Paved Road

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 is 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 Trunkline to FBIR #13-24H 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 (SO₂), particulate matter (PM₁₀), nitrogen dioxide (NO₂), and ozone (O₃). 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-country 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 ₂	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 ₁₀	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 _{2.5}	24-Hour	35	--	--	--	--
	Weighted Annual Mean	15	--	--	--	--
NO ₂	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 ₃	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, SO₂, NO₂, CO₂, 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.

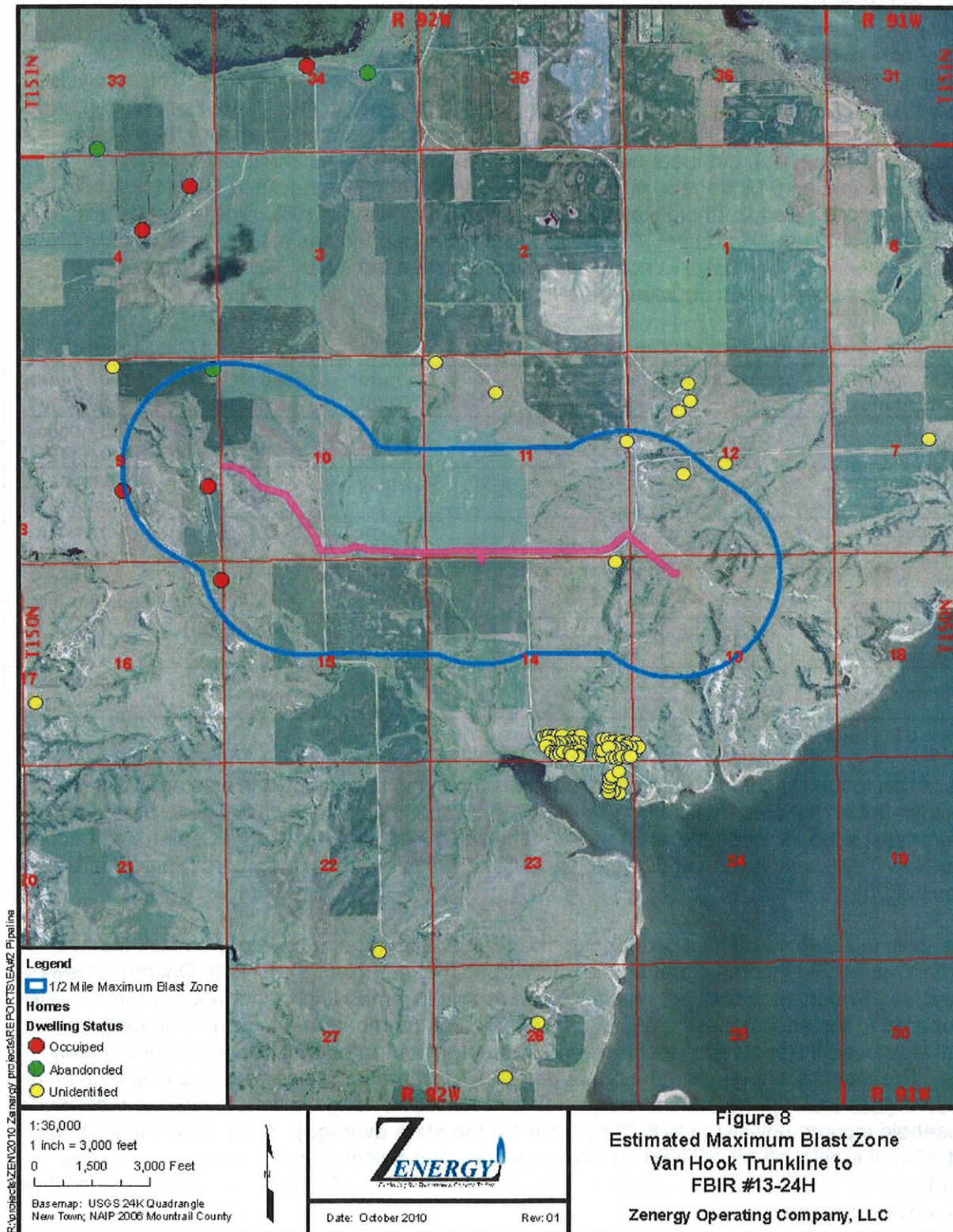
According to the Pipeline and Hazardous Materials Safety Administration (PHMSA 2009), pipelines are a reliable and cost-effective means to transport natural gas and hazardous liquids. PHMSA statistics show one gallon of oil is spilled for every barrel of oil that is transported one million miles: "In 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 8). There are five existing occupied homes, one unoccupied building, and one church within this estimated maximum blast zone.

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 8. 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
Existing Housing					
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
Housing Development Statistics					
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.

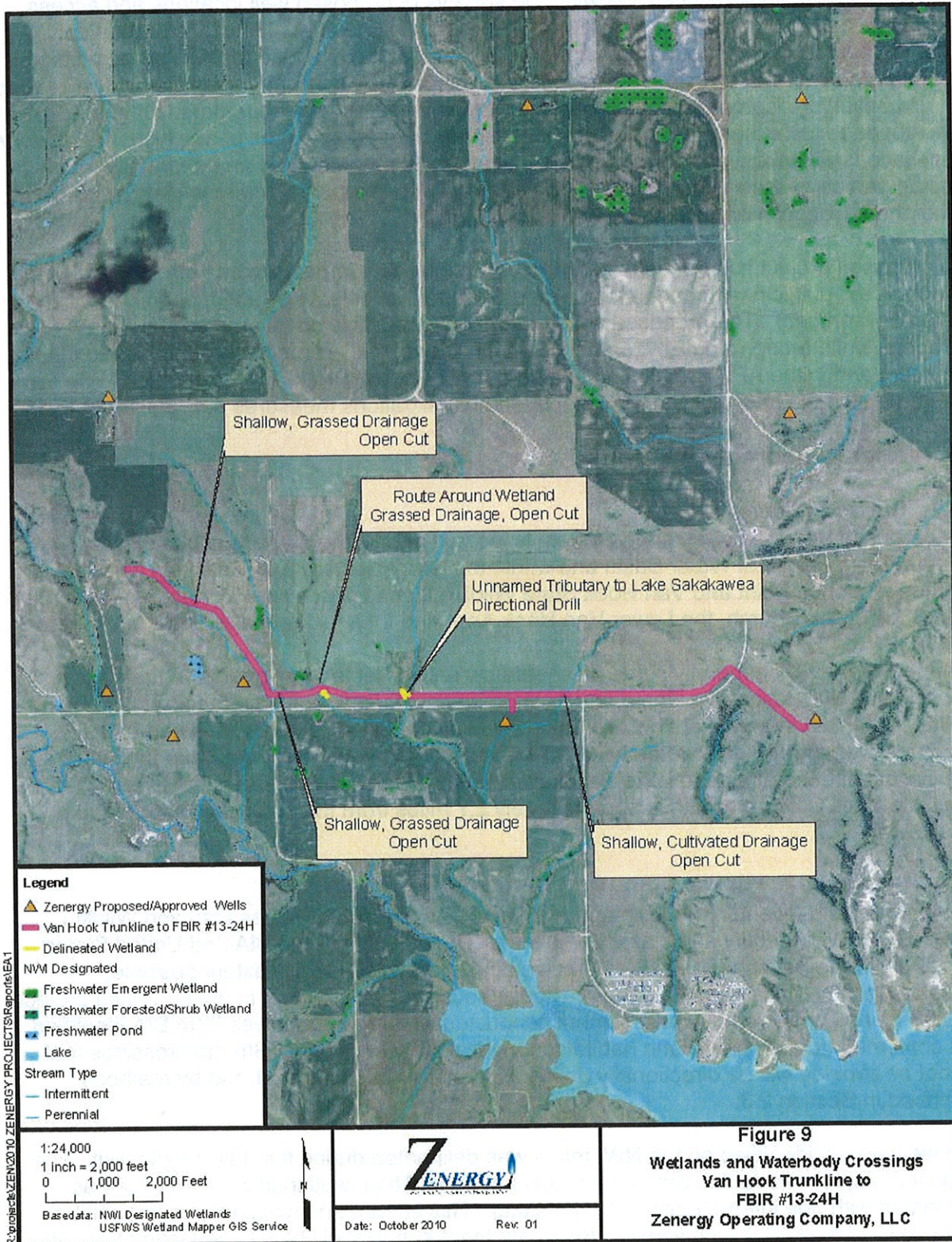
Surface water runoff generally starts as sheet-flow until collected by ephemeral drainages leading to Lake Sakakawea. The ephemeral drainages, in turn, combine to form intermittent and/or perennial streams that flow into Lake Sakakawea. Lake Sakakawea is part of the Missouri River sub-regional watershed 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 9). The on-site assessment conducted with representatives from BIA identified and confirmed riparian or wetland habitats along the proposed route. Stream crossings that cannot be avoided will be directionally drilled as identified in section 2.1 and by methods described in Section 2.3.

One wetland not identified on the NWI maps was delineated during the July 19 site visit. The proposed project was routed around the wetland. In addition, wetlands were identified as associated with one intermittent stream crossing. This stream and wetland crossing will be directionally drilled. The remainder of the intermittent streams will be crossed using the open cut method. All other potential wetlands in the area as identified in field and during route planning are avoided.

Figure 9. Wetland and Waterbody Crossings



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 is one domestic or stock water supply well within five miles of the proposed pipeline (Table 6). There are records of four other water wells drilled within five miles of the proposed location. These include two test holes and two observation wells drilled by the USGS or ND State Water Commission. The current status of these wells is unknown.

Table 6. Water wells within 5 miles.

LOCATION	Distance and Direction	Permit Type	Aquifer	Well Depth (feet)	Date
NW NW 35 T151N R93W	4.0 mi, W	Domestic or Stock Well	Tongue River	308	1/3/1988

¹ 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

The cumulative effects of the proposed project are difficult to accurately quantify as the ultimate effects are dependant upon the species potentially present in the area, the timing of the human activity, the nature of the activity, the duration of the activity, and what is happening in adjacent habitats at the time of proposed disturbance. Further, some species of wildlife are more suited to adapt to rapid environmental change, while other species may be seasonally or permanently displaced from otherwise favorable habitat.

The degree and magnitude of wildlife impacts that could be additive as a result of developing the proposed action is generally considered a minor cumulative effect. The cumulative loss of habitat from the proposed project is not a significant loss of habitat because of the abundance of similar habitat in the region.

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. 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
Pallid Sturgeon	Endangered	X
Gray Wolf	Endangered	X
Piping Plover	Threatened	X
Sprague's Pipit	Candidate	X
Dakota Skipper	Candidate	X
Designated Critical Habitat - Piping Plover		X

¹ 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 located more than one mile from the Missouri River system and construction is temporary in duration. The proposed project **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 and Critical Habitat

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 known nesting sites (Appendix B). The document provided that the proposed route is over one 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 Sprague's Pipit

The Sprague's pipit is a ground nester that breeds and winters on open grasslands. It feeds mostly on insects, spiders, and some seeds. The Sprague's pipit is closely tied with native prairie habitat and breeds in the north-central United States in Minnesota, Montana, North Dakota and South Dakota as well as south-central Canada. During the breeding season, Sprague's pipits prefer large patches of native grassland with a minimum size requirement thought to be approximately 145 ha (358.3 ac). The species prefers to breed in well-drained, open grasslands and avoids grasslands with excessive shrubs. Preferred grass height is estimated to be between 10 and 30 cm. They may avoid roads, trails, and habitat edges.

The proposed pipeline is located adjacent to existing roads for much of its route and crosses cultivated fields. The vegetative height at time of survey was greater than 30 cm in most areas and numerous chokecherry, buffalo berry, and buck brush patches are located across the area.

The area of proposed disturbance will be mowed in the fall to reduce cover and spring nesting potential of migratory birds. If the site will be constructed during the nesting season (February 15 - July 15) ground surveys for Sprague's pipits and their nests will be conducted five days prior to construction. If birds or nests are discovered the USFWS will be contacted for additional information on how to proceed. Mitigation measures recommended will be taken to avoid any disturbance of raptor or migratory bird nesting sites. Based upon these factors the proposed project is **may affect, is not likely to adversely affect** this species.

3.7.3.7 Dakota Skipper

Dakota skippers are 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; and 2) upland (dry) prairie on ridges and hillsides dominated by bluestem grasses, needlegrass, pale purple coneflower and upright coneflowers and blanket flower. Dakota skipper populations have declined historically due to widespread conversion of native prairie.

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
Northern harrier, Sharp-tailed grouse, ring-necked pheasant, Hungarian partridge, grasshopper sparrows 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 portions of Section 10 and the west half of Section 11 are cultivated and are used for small grain production. Topsoil is on average approximately six to 12 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 the drainages is deeper (approximately 12 inches). Scattered cobbles are present.

The Project crosses 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 light brown clay with some sand.

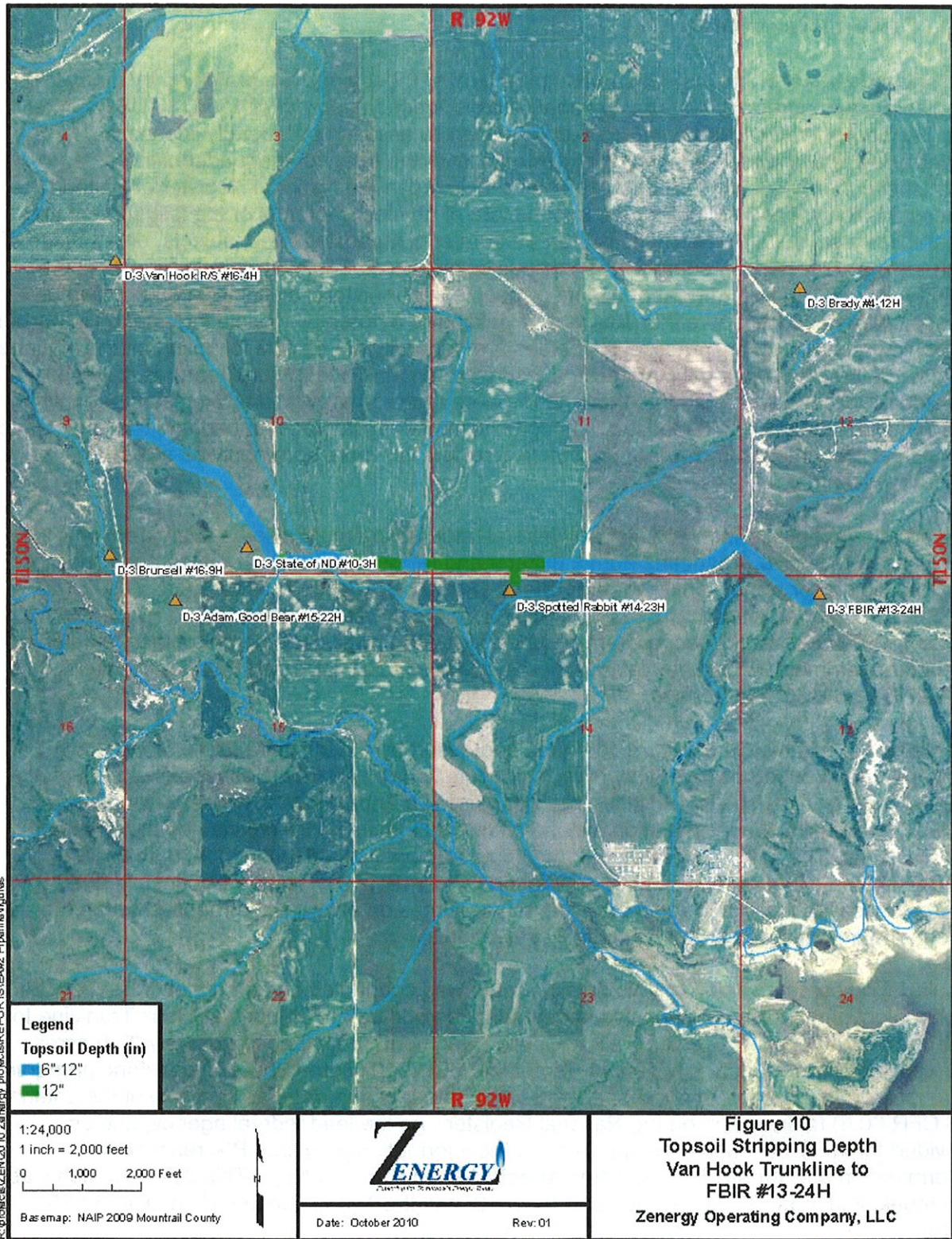
Topsoil on the native grassland hilltops is brown sandy clay with gravel up to six inches deep. At greater depths, the soil turns to a lighter brown silty-clay. At the toe of slopes and drainage areas, the topsoil is a black organic silty-loam approximately 12 inches deep. At greater depths, the soil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

Topsoil will be stripped from across the ROW prior to trenching. Generally, topsoil will be stripped to a depth of 12 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. Topsoil will be stripped to a minimum depth of six inches across grassland parcels. Recommended topsoil stripping depths along the proposed ROW are depicted in Figure 10.

Water body, tributary, wetland, and other directional drill locations are identified in Section 3.6.2. 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.

Figure 10. Topsoil Stripping Depths



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 route was conducted by personnel of Beaver Creek Archaeology, Inc., using an intensive pedestrian methodology. For this Van Hook Trunkline to FBIR #13-24H (formerly Spotted Rabbit Pipeline Segment) project approximately 27.5 acres were inventoried between July 19 and September 30, 2010 (Burns 2010). No historic properties were located that appear to 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. This determination was communicated to the THPO on October 20, 2010, and the THPO concurred on October 25, 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.

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.

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). Canada thistle is found along the wetland and drainage crossings in Section 10.

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.

Table 9. Noxious weeds in Mountrail County

Common Name	Scientific Name	5 year (2003-2007) Average Reported Acres of Noxious Weeds ¹
		Mountrail County
Absinth wormwood	<i>Artemisia absinthium</i>	1,085
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

¹ North Dakota Department of Agriculture 2003-2007

² Not Reported

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

Cumulative impacts result when the effects of an action are added to or interact with other effects in a particular place and within a particular time. It is the combination of these effects, and any resulting environmental degradation, that is the focus of the cumulative impact analysis. While impacts can be differentiated as direct, indirect, and cumulative, the concept of cumulative impacts takes into account all disturbances since cumulative impacts result in the

compounding of the effects of all actions over time. Thus the cumulative impacts of an action can be viewed as the total effects on a resource, ecosystem, or human community of that action and all other activities affecting that resource no matter what entity (federal, non-federal, or private) is taking the actions.

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.

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 project would be one of various proposed developments in the area. As such, it would contribute only a portion of the cumulative impacts. In some instances, the cumulative impact on the environment of the proposed project and oil/gas development activities would be the sum of the individual impacts from each project in the region. There are other impacts, however, that cumulatively may be greater than the sum of the individual projects.

There will be ground-disturbing activities to land that has not been previously cultivated or otherwise physically manipulated. The Van Hook Trunkline to FBIR #13-24H 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 proposed actions have been planned to avoid impacts to wetlands, floodplains, surface water, cultural resources, and threatened and endangered species. Unavoidable affects 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.

3.14 Commitments/Mitigation

Resource surveys were conducted at the time of pre-on-site inspections to determine potential affects 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. During the inspections, the BIA gathered information needed to develop site-specific mitigation measures that will be incorporated in the Permit to Construct. The proposed gathering line will be constructed such that additional pipelines may be included in the ROW.

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.

If construction occurs during the migratory bird nesting season (February 1 – July 15) a bird/nest survey will be conducted five days prior to construction. Findings will be reported to the USFWS. 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. If construction is delayed until the following spring, the area of disturbance will be mowed in the fall to reduce residual cover and spring nesting potential of migratory birds.

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.

4.0 Consultation and Coordination

The proposed Project is located adjacent and near oil and gas development(s) currently being developed. These developments have been reviewed in previous Environmental Assessments (incorporated by reference, Section 6) and FONSI's issued prior to development.

The area of influence for this project is within the scope of review of these current developments, and as such, is part of the overall development plan. The North Dakota Parks and Recreation Department and North Dakota Game and Fish Department have not identified any significant ecological resources in the area (McCain, 2009).

The U.S. Fish and Wildlife Service (USFWS) was consulted for concurrence on potential impacts to federally listed species in accordance with the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C.1531 et seq.). A scoping letter for this project was sent to the USFWS on October 13, 2010 (Appendix A). Concurrence with Section 7 of the ESA was received on December 10, 2010, and is included in Appendix B.

A cultural resource inventory of this pipeline route was conducted by personnel of Beaver Creek Archaeology, Inc., using an intensive pedestrian methodology. For this Van Hook Trunkline to FBIR #13-24H (formerly Spotted Rabbit Pipeline Segment) project approximately 27.5 acres were inventoried between July 19 and September 30, 2010 (Burns 2010). No historic properties were located that appear to 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. This determination was communicated to the THPO on October 20, 2010, and the THPO concurred on October 25, 2010. These letters are also included in Appendix B.

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
Kathie Kjar, Senior Ecologist
Ryan Krapp, Wildlife Biologist/GIS Specialist

6.0 References and Acronyms

- Armstrong, C.A. 1971. Ground Water Resources of Burke and Mountrail Counties. Geological Survey, United States Department of the Interior.
- Bryce, S., J.M. Omemik, D.E. Pater, M. Ulmer, J. Schaar, J. Freeouf, R. Johnson, P. Kuck, and S.H. Azevedo. 1998. Ecoregions of North Dakota and South Dakota. Jamestown, North Dakota: Northern Prairie Wildlife Research Center Online.
<http://www.npwrc.usgs.gov/resource/habitat/indsdeco/index.htm>. Accessed June 2008.
- Burns, Christina. 2010. Spotted Rabbit Pipeline Segment: A Class III Cultural Resource Inventory in Mountrail County, North Dakota. Beaver Creek Archaeology, Inc. for Zenergy Operating, LLC, Tulsa, OK.
- Canadian Wildlife Service Environment Canada. 2004. Assessment and Status Report on the Dakota Skipper (*Hesperia dacotae*) in Canada. Committee on the Status of Endangered Wildlife in Canada. Environment Canada, Ottawa, ON.
- Grondahl, C. and K. Martin. No Date. North Dakota's endangered and threatened species. North Dakota State Game and Fish Department's Non-game Program, Bismarck, ND. Jamestown, ND: Northern Prairie Wildlife Research Center Online.
<http://www.npwrc.usgs.gov/resource/wildlife/endanger/index.htm> (Version 16JUL97)
- McCain and Associates, Inc., 2009. Environmental Summary, D-3 Brady #4-12H, D-3 Brunsell #16-9, D-3 FBIR #3-13H, D-3 Mason #3-2,; D-3 North Segment #4-6H, D-3 Olson #4-1H, D-3 Wolf #4-18H. Bismarck, ND.
- McCain and Associates, Inc. 2009. Field Report, D-3 Brady #4-12H, D-3 Brunsell #16-9, D-3 FBIR #3-13H, D-3 Mason #3-2,; D-3 North Segment #4-6H, D-3 Olson #4-1H, D-3 Wolf #4-18H. Bismarck, ND.
- North Dakota State Industrial Commission. 2009. Oil and Gas Well Data. North Dakota State Industrial Commission. Bismarck, ND. <https://www.dmr.nd.gov/oilgas/>
- North Dakota State Water Commission. 2009. Surface and Ground Water Data. North Dakota State Water Commission. Bismarck, ND. <http://mapservice.swc.state.nd.us/>
- North Dakota Department of Agriculture. 2008. County and City Listed Noxious Weeds. North Dakota Department of Agriculture, Bismarck.
<http://www.agdepartment.com/PDFFiles/CountyCityListedNoxWeeds.pdf>
- North Dakota Department of Agriculture. 2002. NDAC 7-06-01-02. Noxious weeds listed. North Dakota Administrative Code 7-06-01-02. North Dakota Department of Agriculture, Bismarck.
- Pipeline and Hazardous Materials Safety Administration (PHMSA) 2010. PHMSA Stakeholder Communications: North Dakota.
<http://primis.phmsa.dot.gov/comm/StatePages/northdakota.htm>. Accessed April 2010.
- Rathge, R., M. Clemson, and R. Danielson. 2002. North Dakota Population Projections 2005-2020. North Dakota State Data Center at North Dakota State University. Fargo, North Dakota. September.

- Texas Parks and Wildlife Department. 2008. Whooping Crane (*Grus americana*). Texas Parks and Wildlife Department, Austin, TX.
<http://www.tpwd.state.tx.us/huntwild/wild/species/whooper>
- Three Affiliated Tribes. 2008. Mandan, Hidatsa, Arikara Website. Available online at
http://www.mhanation.com/main/history/histOIY_economic_social.html. Accessed April 2008.
- U.S. Bureau of Indian Affairs (BIA). 2010. Environmental Assessment, Zenergy Operating Company, LLC, Phase 1, Van Hook Gathering System. Great Plains Regional Office, Aberdeen, SD.
- U.S. Bureau of Indian Affairs (BIA). 2009. Environmental Assessment, D-3 Adam Good Bear #15-22H; D-3 Mandan #13-14H; D-3 Skunk Creek #1-12H. Great Plains Regional Office, Aberdeen, SD.
- U.S. Bureau of Indian Affairs (BIA). 2003. American Indian Population and Labor Force Report. U.S. Department of the Interior, Bureau of Indian Affairs, Office of Tribal Affairs. Washington, D.C. 34pp.
- United States Census Bureau. 2008. Selected Demographic Data for both North Dakota and the Fort Berthold Indian Reservation from Census 2000. U.S. Census Bureau, Census 2000. Information downloaded 5/12/08 and available online at <http://factfinder.census.gov>.
- United States Department of Agriculture. 2009. North Dakota Noxious Weeds. North Dakota Department of Agriculture. <http://www.agdepartment.com/noxiousweeds>
- United States Department of Agriculture, Natural Resources Conservation Service. 2009. Mountrail County, North Dakota Digitized Soil Survey. North Dakota Department of Agriculture. http://soils.usda.gov/survey/online_surveys/north_dakota
- United States Department of Agriculture, Natural Resource Conservation Service. 2009. Watershed Boundary Dataset (WBD).
<http://www.ncgc.nrcs.usda.gov/products/datasets/watershed/>
- United States Department of the Interior and United States Department of Agriculture. 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+3071/REV 07. Bureau of Land Management. Denver, Colorado. 84 pp.
- United States Energy Information Administration (EIA). 2009. Form EIA-857. Monthly Report or Natural Gas Purchases and Deliveries to Consumers.
www.eia.doe.gov/natural_gas/data_publications/natural_gas_monthly/ngm.html
Accessed May 2008.
- United States Environmental Protection Agency (EPA). 1998. Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses. Office of Federal Activities, U.S. Environmental Protection Agency. Washington, D.C. 70 pp + appendices.
- United States Farm Service Agency. 2009. National Agriculture Imagery Program, Mountrail and Dunn County aerial photographs.

United States Fish and Wildlife Service. 2010. County occurrence of endangered, threatened and candidate species and designated critical habitat in North Dakota. Department of the Interior, US Fish and Wildlife Service Washington, D.C. 20240

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/>

United States Geologic Service. 2010. Water Resources of the United States. States Geological Service, Bismarck, ND. <http://water.usgs.gov/GIS/huc.html>

United States Geological Survey. 2006. Federally Listed Endangered, Threatened, and Candidate Species – 1995 (updated August 3, 2006). U.S. Department of the Interior. <http://www.npwrc.usgs.gov/resource/wildlife/nddanger/species/grusamer.htm>

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.

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

October 22, 2010

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

**Re: Van Hook Gathering System, Spotted Rabbit Pipeline Segment
Zenergy Operating Company**

Dear Mr. Towner:

On behalf of Zenergy Operating Company (Zenergy), McCain and Associates, Inc. is submitting information concerning expansion of the Zenergy Van Hook Gathering System (VHGS). This portion of the VHGS is referred to as the Spotted Rabbit Pipeline Segment herein and is located in Section 10, 11, 12, and 13 of T150N, R92W (Figure 1). Construction of Phase 1 of the VHGS is currently begin undertaken

An on-site biological assessment of the Site was conducted on July 19, 2010, with Bureau of Indian Affairs (BIA) and Tribal representatives present. The proposed pipeline was "soft" staked and the location was reviewed in consideration of topography, natural drainage and erosion control, vegetation, T&E species, migratory birds, wildlife and habitats, 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.

Project Description

The proposed route crosses a mixture of native prairie pastures and agricultural fields. The pasture in Section 10 is heavily grazed. Needle-and-thread (*Stipa comata*) is the dominant native grass, but Kentucky bluegrass (*Poa pratensis*) is also a dominant species. Scattered patches of buckbrush (*Symphoricarpos occidentalis*) and smooth brome (*Bromus inermis*) are present in drainage areas. The area includes several forb species such as dotted gayfeather (*Liatris punctata*), silver leaf scurfpea (*Psoralea argophylla*), purple coneflower (*Echinacea angustifolium*), false boneset (*Kuhnia eupatorioides*), fringed sage (*Artemisia frigida*), and others. Crested wheatgrass (*Agropyron cristatum*) is in the area, but not common.

The drainage in the SW ¼ SE ¼ includes a dense patch of buckbrush. Upon closer examination several wetland species (FACW, FACW+ and OBL) were noted, included woolly sedge (*Carex lanuginosa*), wire-stem muhly (*Muhlenbergia frondosa*), smartweed (*Polygonum* sp.), and white aster (*Aster simplex*), and soils had hydric indicators. Following review, it was recommended that the proposed line be diverted around the wetland area.

West of the drainage, smooth brome dominated the grassland area. Native forbs were relatively common in the area, most likely volunteering in the older seeding.

The majority of the SE¼ of Section 10 was tilled and in cereal grains. East of the grain field, a small native area is found with a shrubby lower slope. The shrub patch is dominated by American plum (*Prunus americana*) and chokecherry (*Prunus virginiana*), but includes patches of Canada thistle (*Cirsium arvense*).

Downslope and east of the shrubby area, a drainage is dominated by wetland species including curly dock (*Rumex crispus*), quackgrass (*Agropyron repens*), woolly sedge, and meadow anemone (*Anemone canadensis*). Following review it was recommended to avoid disturbance of this area by directional drilling the drainage crossing.

A small grassland parcel borders the east edge of Section 10. Smooth brome is dominant on the grassland area.

The SW¼ of Section 11 is cultivated.

The SE¼ of Section 11 is native grassland. A narrow band of smooth brome is dominant adjacent to the fence line and has encroached onto the native grasslands to the north. The proposed pipeline crosses a shrubby patch adjacent to a small knob dominated by native grasses. The majority of the pipeline route in this quarter section is severely invaded by smooth brome. Crested wheatgrass is also common along the pipeline route.

The pipeline Route in Sections 12 and 13 follows an existing access road to the D-3 FBIR #13-24H well site. Environmental review of the access road route was incorporated into previous Environmental Assessment (EA) documents.

Migratory Birds and Raptors

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 line-of sight of the proposed project. The only suitable nesting habitat within ½ mile of the route is located in the NE ¼ of Section 14. No nests were observed during the on-site review.

The project area was also surveyed for migratory and upland bird species. Bird species observed during the on-site assessment include a northern harrier (*Circus cyaneus*) sharp-tailed grouse (*Tympanuchus phasianellus*), and numerous grasshopper sparrows (*Ammodramus savannarum*).

If the pipeline will be constructed during the nesting season (February 1 - July 15) aerial or ground surveys for migratory birds (including raptors) and nests will again be conducted 5 days prior to construction. If migratory birds or nests are discovered the USFWS will be contacted for additional information on how to proceed. Mitigation measures recommended will be taken to avoid any disturbance of raptor or migratory bird nesting sites.

High Value Habitat Avoidance

The ND Parks and Recreation Department (NDPRD) houses the North Dakota Natural Heritage biological conservation database. A review by the NDPRD has been done in conjunction with EA preparation for the well sites along the route. The original pipeline route from the D-3 Adam Good Bear #15-22H to the D-3 Spotted Rabbit #14-23H was located on the south side of 28th Street. This route was reviewed and approved under separate EA documentation. Based upon the field visit and review of the NDPRD database, no significant ecological communities will be impacted by the proposed route.

Cumulative Impacts

Potential impacts to wildlife include displacement due to construction activities and loss of ground and nesting cover in native areas. Pipeline construction may temporarily impact habits

of unlisted species, including migratory birds, small and large mammals, and other wildlife species. The disturbance from the establishment of this site is small in the landscape context, expected to be temporary, and is situated near other permitted oil development and agricultural practices.

Fragmentation of native prairie habitat is a specific concern for grouse species and the Sprague's pipit. A sharp-tailed grouse was observed at the July 9 site visit. Due to the time of the site visit, lek grounds were not observed. If construction is delayed until spring a pre-construction survey will be performed to ensure a lek is not located in the area.

Biological Species Assessment

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. A determination was made concerning direct and cumulative effects of the proposed activities on each species. Threatened and endangered species with documented occurrences in Mountrail County are listed in Table 1.

Table 1. Mountrail County Threatened, Endangered and Candidate Species List

Species	Status
Interior Least Tern	Endangered
Whooping Crane	Endangered
Pallid Sturgeon	Endangered
Gray Wolf	Endangered
Piping Plover	Threatened
Sprague's Pipit	Candidate
Dakota Skipper	Candidate

¹ USFWS (updated October, 2010)

Determinations made for federally listed species are:

- No effect
- May affect, is not likely to adversely affect
- May affect, is likely to adversely affect

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). No individuals were observed in the area during the onsite visits. Due to the transient nature and no recent recorded sightings in the area the proposed project **may affect, is not likely to adversely affect** this species.

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.

No individuals were observed in the area during the onsite visits August 26 and September 27, 2010. The proposed well site is located more than ½ mile from the Missouri River system and will not impact the Missouri River habitat. No individuals were observed in the project area during the onsite visit. The proposed project **may affect, is not likely to adversely affect** this species.

Pallid Sturgeon

Pallid sturgeons are found in 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 pipeline is located more than ½ mile from the Missouri River system and will not impact the Missouri River habitat. The proposed project will have **no effect** on this species.

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).

Approximately 75% of the whooping crane sightings in North Dakota occur within a 90-mile corridor that includes the proposed well location. Because collisions with power lines are the primary cause for fledgling mortality, it is BIA directive that any utility lines be constructed underground. Land use in the area is native prairie pasture and agricultural fields. A large shallow marsh, Muskrat Lake, is located approximately three miles north of the proposed development. No individual whooping cranes were observed in the area during the on-site visits.

Construction activities may cause migratory cranes to divert from the area but is not likely to result in any fatalities. If a bird is sighted within one mile of the project area construction activities will cease and will be immediately reported to the US Fish and Wildlife Service (USFWS), North Dakota Game and Fish Department (NDGFD), and the BIA. In coordination with the USFWS and the BIA, construction will resume once the bird(s) have left the area. Following these guidelines, it is reasonable to expect that the proposed activity **may affect, is not likely to adversely affect** whooping cranes.

Piping Plover and Critical Habitat

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 proposed pipeline is located more than one mile from the Missouri River system (and its closest location) and construction will not impact the Missouri River. No piping plovers were observed in or around the project area during the on-site review and the proposed site will not be within line-of-sight of Missouri River. The proposed project **may affect, is not likely to adversely affect** this species.

Sprague's Pipit

The Sprague's pipit is a ground nester that breeds and winters on open grasslands. It feeds mostly on insects and spiders and some seeds. The Sprague's pipit is closely tied with native prairie habitat and breeds in the north-central United States in Minnesota, Montana, North Dakota and South Dakota as well as south-central Canada. During the breeding season, Sprague's pipits prefer large patches of native grassland with a minimum size requirement

thought to be approximately 145 ha (358.3 ac). The species prefers to breed in well-drained, open grasslands and avoids grasslands with excessive shrubs. Preferred grass height is estimated to be between 10 and 30 cm. They may avoid roads, trails, and habitat edges.

The proposed pipeline is located adjacent to existing roads for much of its route and crosses cultivated fields. The vegetative height at time of survey was greater than 30 cm in most areas and numerous chokecherry, buffalo berry, and buck brush patches are located across the area.

The area of proposed disturbance will be mowed in the fall to reduce cover and spring nesting potential of migratory birds. If the site will be constructed during the nesting season (February 1 - July 15) ground surveys for Sprague's pipits and their nests will be conducted five days prior to construction. If birds or nests are discovered the USFWS will be contacted for additional information on how to proceed. Mitigation measures recommended will be taken to avoid any disturbance of raptor or migratory bird nesting sites. Based upon these factors the proposed project is **may affect, is not likely to adversely affect** this species.

Dakota Skipper

Dakota skippers are 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; and 2) upland (dry) prairie on ridges and hillsides dominated by bluestem grasses, needlegrass, pale purple coneflower and upright coneflowers and blanket flower. Dakota skipper populations have declined historically due to widespread conversion of native prairie.

Relatively small amounts of the species related to life stages of the Dakota skipper may be temporarily impacted by the proposed construction. Therefore the proposed project **may affect, is not likely to adversely affect** this species.

Conclusion

The BIA has required the following site-specific construction procedures be implemented to help reduce impacts to wildlife and habitat:

- A spring survey for migratory nesting birds 5 days prior to construction.
- Mowing grassy areas to reduce spring nesting potential.
- Routing of the pipeline around wetland areas.
- Directional drill crossing of an intermittent drainage.
- Interim and final reclamation including:
 - Use of BMPs (soil compaction, berms, silt fences, wattles, fabric etc.) to reduce erosion
 - Monitoring and maintenance of potential erosion areas.
 - Seeding of native species.
 - Indefinite monitoring of seeding success and weed species control.

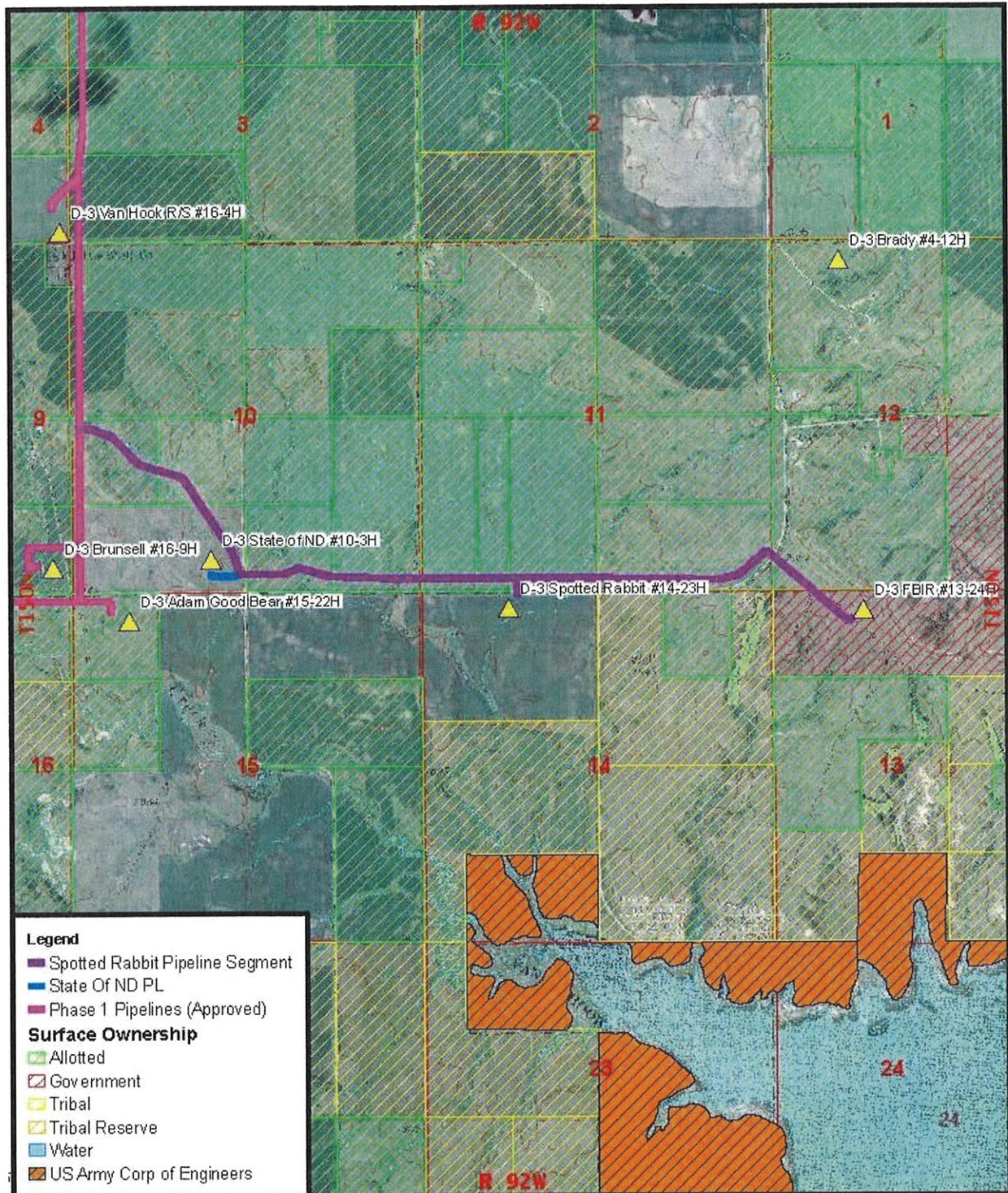
Based on a review of a list of federally listed or proposed endangered or threatened species under U.S. Fish and Wildlife Service jurisdiction, in addition to occasional transient individuals, we have determined that these actions **may affect, is not likely to adversely affect** listed threatened, endangered or candidate species and habitats.

We request your concurrence on potential impacts to federally listed species in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C.1531 et seq.). Please call me at 701-255-1475 if you have any questions or need additional information.

Sincerely,

Ryan J. Krapp
Ecologist/GIS Specialist

R:\projects\ZEN\ZEN1018 - Spotted Rabbit 14-23H & FBIR 13-14H GL\correspondence\usfws letter 101310.doc



Legend

- Spotted Rabbit Pipeline Segment
- State Of ND PL
- Phase 1 Pipelines (Approved)

Surface Ownership

- Allotted
- Government
- Tribal
- Tribal Reserve
- Water
- US Army Corp of Engineers

1:24,000
 1 inch = 2,000 feet
 0 1,000 2,000 Feet

Basemap: USGS 24K Quadrangle
 New Town SW; NAIP 2009 Mountrail County



Date: October 6, 2010

Rev: 01

Figure 1
Proposed Gathering Line
Spotted Rabbit Pipeline Segment
Van Hook Gathering System

Appendix B

Van Hook Gathering System Scoping Comments



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501



DEC 8 2010

Mr. Ryan Krapp, Ecologist
McCain and Associates, Inc.
2718 Gateway Avenue, Suite 101
Bismarck, North Dakota 58503

Re: Zenergy Operating Company Scoping
for Proposed Van Hook Gathering
System, Spotted Rabbit Pipeline
Segment, Fort Berthold Reservation,
Mountrail County, North Dakota

Dear Mr. Krapp:

This is in response to your October 22, 2010, scoping document on a proposed expansion of the Van Hook Gathering System, referred to as the Spotted Rabbit Pipeline Segment to be completed by Zenergy Operating Company, LLC (Zenergy) on the Fort Berthold Reservation, Mountrail County, North Dakota.

Specific location for the proposed pipeline is:

Spotted Rabbit Pipeline Segment: T. 150 N., R. 92 W., Sections 10, 11, 12 and 13,
Mountrail County, North Dakota

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

In an e-mail dated October 13, 2009, the Bureau of Indian Affairs (BIA) designated McCain and Associates, Inc. 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 for the purposes of ESA, and under our other authorities as the entity preparing the NEPA document for adoption by the BIA.

The Service concurs with your “may affect, is not likely to adversely affect” determination for piping plover and interior least tern. The proposed location for the pipeline is approximately one mile from nesting locations on Lake Sakakawea and designated critical habitat for the piping plover.

The Service concurs with your “may affect, is not likely to adversely affect” determination for whooping cranes. This concurrence is predicated on Zenergy’s commitment to stop work on the proposed site if a whooping crane is sighted within one mile of the proposed project area and immediately contacting the Service.

The Service concurs with your “may affect, not likely to adversely affect” determination for gray wolf.

The Service acknowledges your “no effect” determination for pallid sturgeon.

The Dakota skipper and Sprague’s pipit are candidate species for listing under the ESA; therefore, an effects determination is not necessary for these species. For candidate species such as the Dakota skipper and Sprague’s pipit, Federal agencies have the ability to take advantage of the additional management flexibility afforded to candidate species by facilitating development and implementation of Candidate Conservation Agreements (CCAs). CCAs are formal, voluntary agreements between the Service and one or more parties to address the conservation needs of one or more candidate species. Participants voluntarily commit to implement specific actions designed to remove or reduce threats to the covered species. CCAs can involve both Federal and non-Federal lands. In some cases, these agreements have been so successful that listing the species proved to be unnecessary. If you would like more information on these programs, please notify the Service for further coordination.

Migratory Birds

Zenergy has committed to implementing the following measures:

- Construction will be done outside of the migratory bird nesting season (Feb. 1- July 15);
- Or, conduct a bird/nest survey five days prior to construction and report any findings to the Service;
- Or, mow grassy areas to reduce spring nesting potential.

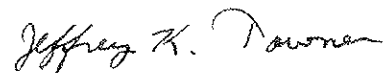
Bald and Golden Eagles

Your letter states that line of sight surveys for eagle nests were conducted within 0.5 mile of the project area and no eagle nests were found.

The Service believes that Zencrgy's commitment to implement the aforementioned measures does demonstrate compliance with the MBTA and the BGEPA.

Thank you for the opportunity to comment on this project proposal. If you require further information or the project plans change, please contact me or Heidi Riddle of my staff 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: Marilyn Bercier)
Bureau of Land Management, Dickinson
ND Game & Fish Department, Bismarck



TRIBAL HISTORIC PRESERVATION

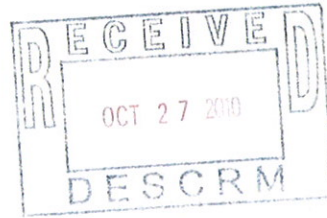
Mandan Hidatsa Arikara

Perry 'No Tears' Brady, Director.
404 Frontage Road,
New Town, North Dakota 58763
Ph/701-862-2474 fax/701-862-2490

pbrady@mhanation.com

October 25, 2010

Carson Murdy
Great Plains Regional Office
115 Fourth Avenue S.E.
Aberdeen, South Dakota 57401



Dear Mr. Murdy:

As Director of the Tribal Historic Preservation Office and the Tribe Historical Preservation Officer representing the Mandan Hidatsa Arikara Nation I Concur with BIA Case Number AAO-1770/FB/10

Burns, Christina

(2010) Spotted Rabbit Pipeline Segment: A Class III Cultural Resource Inventory in Mountrail County, North Dakota. Beaver Creek Archaeology, Inc. for Zenergy Operating Company, LLC, Tulsa. OK

If you have any question please call the office at anytime or contact myself at (701) 421-0547

Sincerely,

A handwritten signature in black ink, appearing to read "Perry Brady". The signature is written in a cursive style with some loops and flourishes.

Perry 'No Tears' Brady
THPO Director
Mandan Hidatsa, & Arikara Nation,

Cc. file
MC.



United States Department of the Interior

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



OCT 20 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 Spotted Rabbit Pipeline in Mountrail County, North Dakota. Approximately 27.5 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the area 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) Spotted Rabbit Pipeline Segment: A Class III Cultural Resource Inventory in Mountrail County, North Dakota. Beaver Creek Archaeology, Inc. for Zenergy Operating Company, 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

Notice of Availability and Appeal Rights

Zenergy: Van Hook Trunkline to FBIR #13-24H

The Bureau of Indian Affairs (BIA) is planning to issue administrative approvals related to installation of the Van Hook Trunkline to FBIR #13-24H Van Hook Gathering System as shown on the attached map. Construction by Peak is expected to begin in the Winter 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 January 16, 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.

Project locations.



R:\projects\ZEN\2010 ZENERGY PROJECTS\Reports\Pipeline EAZ