United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Great Plains Regional Office MC-208
115 Fourth Avenue S.E., Suite 400
Aberdeen, South Dakota 57401

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IN REPLY REFER TO:
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APR 15 2011

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 five proposed horizontal oil and gas wells by Zenergy 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 are copies 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 (40 C.F.R. Section 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, Dickinson, ND (with attachment)
John Shelman, US Army Corps of Engineers
Jeffrey Hunt, Fort Berthold Agency

Finding of No Significant Impact

Zenergy Operating Company, LLC

Environmental Assessment for Five Bakken Exploratory Oil Wells:

D-3 Dancing Bull #16-21H
D-3 Dora Smith #5-8H
D-3 Mandan South #24-25H
D-3 Mabel Evans #10-3H &
D-3 Normal Eagle #15-22H

Fort Berthold Indian Reservation
Mountrail County, North Dakota

The U.S. Bureau of Indian Affairs (BIA) has received a proposal to drill up to five exploratory oil/gas wells, access roads and related infrastructure on the Fort Berthold Indian Reservation in 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.

Potential of the proposed actions to impact the human environment is analyzed in the attached addendum to an existing Environmental Assessment (EA), as required by the National Environmental Policy Act. Based on the recently completed addendum to the EA, I have determined that the proposed project 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, archeological, cultural and traditional properties, sites and practices. The Tribal Historic Preservation Officer has concurred with BIA's determination that no historic properties will be affected.
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

4-15-11
Date

ENVIRONMENTAL ASSESSMENT

United States Bureau of Indian Affairs

Great Plains Regional Office
Aberdeen, South Dakota

Zenergy Operating Company, LLC

D-3 Dancing Bull #16-21H
D-3 Dora Smith #5-8H
D-3 Mandan South #24-25H
D-3 Mabel Evans #10-3H &
D-3 Normal Eagle #15-22H

Fort Berthold Indian Reservation

April 2011

For information contact:
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Division of Environment, Safety and Cultural Resources
115 4th Avenue SE
Aberdeen, South Dakota 57401
605-226-7656

Environmental Assessment

D-3 Dancing Bull #16-21H
D-3 Dora Smith #5-8H
D-3 Mandan South #24-25H
D-3 Mabel Evans #10-3H &
D-3 Normal Eagle #15-22H

Zenergy Operating Company, LLC

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1.0 Purpose and Need for the Proposed Action

Zenergy Operating Company, LLC (Zenergy) is proposing to drill five horizontal oil/gas wells on the Fort Berthold Indian Reservation to develop the commercial potential of these natural resources. The U.S. Bureau of Indian Affairs (BIA) is the surface management agency for potentially affected tribal lands and individual allotments. The BIA also holds title to subsurface mineral rights. Developments are proposed on lands held in trust by the United States in Mountrail County, North Dakota (Figure 1). The proposed well sites are:

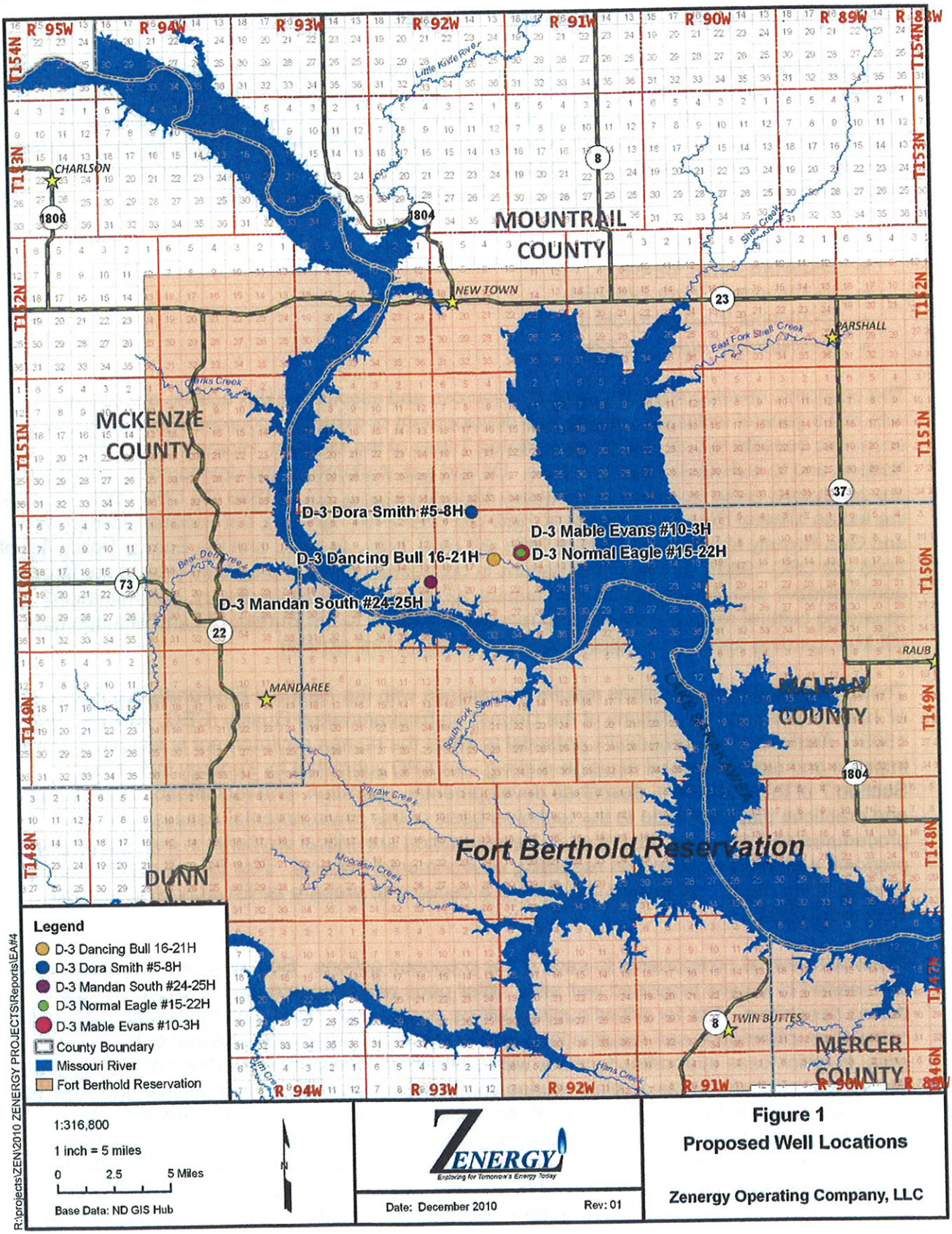
- D-3 Dancing Bull #16-21H
- D-3 Dora Smith #5-8H
- D-3 Mandan South #24-25H
- D-3 Mabel Evans #10-3H &
- D-3 Normal Eagle #15-22H

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. 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 leases, easements and rights-of-way, determinations regarding cultural resource effects and recommendations to the Bureau of Land Management (BLM) regarding approval of Applications for Permit to Drill (APDs).

These proposed federal actions require 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. An APD submitted by Zenergy included in Section 7 of this document, describes developmental, operation, and reclamation procedures and practices that contribute to the technical basis of this Environmental Assessment (EA). 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).

There are several components to each of the proposed actions. Both new and improved roads are needed to access proposed well sites. Well pads will be constructed to accommodate drilling operations. Pits for drilled cuttings will be constructed, used, and reclaimed. Drilling and completion information can result in long-term commercial production at some or both of the sites, in which case supporting facilities will be installed. The working portions of well pads and the access road will remain in place during commercial production. All project components will eventually be abandoned and reclaimed, as specified in this document and the APD and according to any other federal conditions, unless formally transferred with federal approval to either the BIA or the landowner. The proposed wells are exploratory, in that results can also support developmental decisions on other leases in the surrounding area, but this EA addresses only the installation and possible long-term operation of the listed wells and directly associated

Figure 1. Proposed Well Locations



infrastructure and facilities. Additional NEPA analysis, decisions, and federal actions will be required prior to any other developments.

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

2.0 Proposed Action and Alternatives

The **No Action Alternative** must be considered within an EA. If this alternative is selected, BIA will not approve leases, rights-of-way, or other administrative proposals for one or more of the proposed projects. This document analyzes the potential impacts of specific proposed projects, three exploratory oil/gas wells on mixed surface ownership and mineral estate within the boundaries of the Fort Berthold Indian Reservation in Mountrail County, North Dakota. The proposed wells will test the commercial potential of the Middle Bakken Dolomite Member of the Bakken Formation. Site-specific actions will or might include several components, including access roads, construction of well pads, drilling operations, installation of production facilities, tanker traffic, and reclamation.

Construction activities will follow lease stipulations, practices, and procedures outlined in this document, the APD, 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 either BIA or BLM. All lease operations will be conducted in full compliance with applicable laws and regulations, including 43 CFR 3100, *Onshore Oil and Gas Orders 1, 2, 6, and 7,* approved plans of operations and any applicable Notices to Lessees.

The specific well pad locations were determined at 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. Those in attendance included: Environmental Specialist – Jeff Desjarlais (BIA); Dean Graves (Uintah Surveyors); Archaeologists from SWCA Environmental Consulting; Tribal Historic Preservation Office (THPO) monitors; and Todd Hartleben and Ryan Krapp (McCain).

Resource surveys were conducted at the time of pre-on-site inspections to determine potential 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 Field Camps

Self-contained trailers may house a few key personnel during drilling operations, but any such arrangements will be short-term. No long-term residential camps are proposed. Construction and drilling personnel will commute to the proposed project sites, most likely from within or around the Reservation. Human waste will be collected in standard portable chemical toilets or service trailers located on-site, then transported off-site to a state-approved wastewater treatment facility. Other solid waste will be collected in enclosed containers and disposed of at a state-approved facility.

2.2 Access Roads

Approximately 4,906 feet (~0.93 miles) of access roads will be constructed, the majority of which are existing two-tracks that will be upgraded. Signed agreements will be in place allowing road construction across affected surface allotments and private land surfaces, and any

applicable approach permits and/or easements will be obtained prior to any construction activity. A maximum disturbed right-of-way (ROW) width of 66 feet for each access road, with the exception of the Dancing Bull #16-21H (ROW 100 feet), will result in approximately 11.8 acres of new road disturbance.

Construction will follow road design standards outlined in the Gold Book. A minimum of six inches of topsoil will be stripped from the access road corridors, with the stockpiled topsoil redistributed on the outslope areas of the borrow ditches following road construction. These borrow ditch areas will be reseeded as soon as practical with a seed mixture determined by the BIA. Care will be taken during road construction to avoid disturbing or disrupting any buried utilities that may exist along existing roads. If commercial production is established from a proposed location, the access road will be graveled with a minimum of four inches of gravel and the roadway will remain in place for the life of the well(s). Details of road construction are addressed in the Multi-Point Surface Use and Operations Plan in the APD. Typical cross-sections are shown in Figure 2.

2.3 Well Pads

The proposed well pad(s) will consist mainly of an area leveled for the drilling rig and related equipment, and a pit excavated for drilling fluids, drilled cuttings, and fluids produced during drilling activities. Well pad areas will be cleared of vegetation, stripped of topsoil, and graded to the specifications in the approved APD. Topsoil will be stockpiled and stabilized until disturbed areas are reclaimed and revegetated. Excavated subsoils will be used in well pad construction, with the finished well pads graded to ensure positive water drainage away from the drill site. Erosion control will be maintained through prompt re-vegetation and by constructing all necessary surface water drainage control, including berms, diversion ditches, and waterbars.

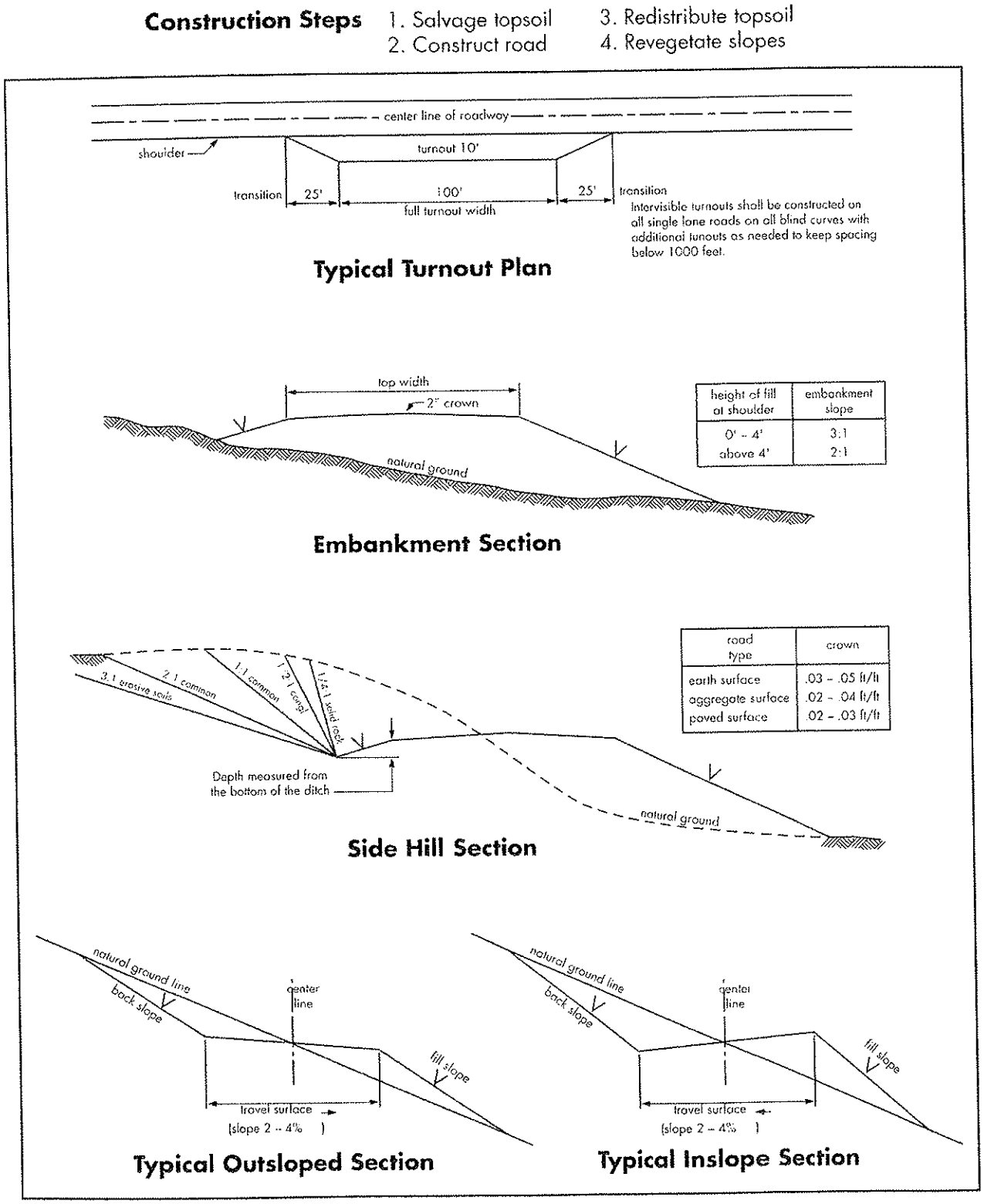
The level area of the single well pads used for drilling and completion operations (including a reserve pit for drilled cuttings) are built 430 feet long by 330 feet wide (3.3 acres per well pad). Cut and fill slopes and stockpiled topsoil and reserve pit backfill on the edge of pads average a disturbance of additional 1.6 acres for an average of 4.9 acres of surface disturbance for each single well pad. A dual pad will be constructed to drill the D-3 Mabel Evans #10-3H and D-3 Normal Eagle #15-22 wells. This dual pad surface will measure 600 feet by 330 feet wide (4.5 acres) with stockpiled topsoil and reserve pit backfill on the edge of the pad disturbing up to 8.0 acres for 12.6 acres of surface disturbance for the dual well pad. Total, the three single pads and one dual pad will result in approximately 27 acres of well site disturbance. Details of pad construction and reclamation are diagrammed in the APD for each site.

2.4 Drilling

After securing mineral leases, Zenergy submitted APDs to the BLM for the proposed wells. The BLM North Dakota Field Office forwarded the APDs to the BIA's Fort Berthold Agency in New Town, North Dakota, for review and concurrence. BLM will not approve an APD until BIA completes its NEPA process and recommends APD approval. No construction or drilling will begin until an approved permit has been obtained from the BLM.

Rig transport and on-site assembly will take about seven days. A rotary drill rig will require approximately 35 days to reach target depths. A typical drilling rig is shown in Figure 3. For approximately the upper 2,500 feet of the drilled hole, a fresh-water based mud system with non-hazardous additives such as bentonite will be used to minimize contaminant concerns. Water will be obtained from a commercial source for this drilling state, using nearly 8.4 gallons of water per foot of hole drilled.

Figure 2. Typical roadway cross section (Gold Book)



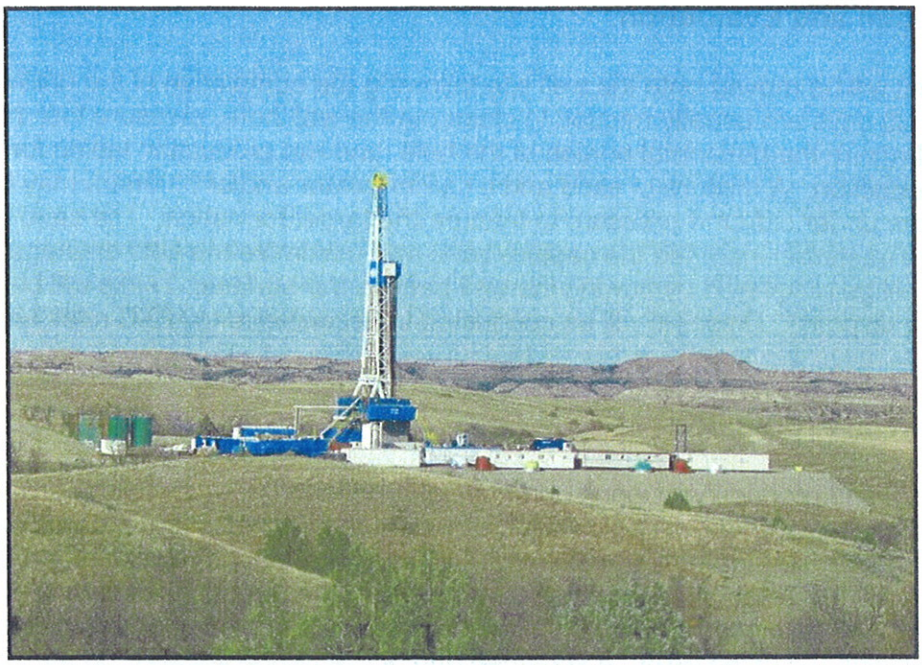


Figure 3. Typical drill rig (McCain and Associates, Inc.)

Following the setting and cementing of the near-surface casing, an oil-based mud system will be used to drill to the production casing point for the proposed wells. The oil-based mud system consists of a diesel fuel (80-85%) and water (15-20%) mixture. The oil-based drilling fluids reduce the potential for hole sloughing while drilling through shale formations. Approximately 4,725 gallons of water and 18,900 gallons of diesel fuel per well will be used during the vertical drilling for each well. The lateral reach each well hole will be drilled using on average approximately 33,600 gallons of fresh water.

Dry cuttings generated from use of a semi-closed loop drilling system will be deposited in the cuttings pit on each individual well pad. Cutting pits will be lined with an impervious (plastic/vinyl) liner to prevent drilling fluid seepage and contamination of the underlying soil. Liners will be installed over sufficient bedding (either straw or dirt) to cover any rocks, will overlap the pit walls, extend under the mud tanks, and will be covered with dirt and/or rocks to hold it in place. All fluids and cuttings are collected in above ground storage containers and disposed of at approved hazardous waste disposal site. The use of a closed loop drilling system for D-3 Mandan South #24-25H does not require a reserve pit.

Prior to use, the entire location will be fenced completely with a cattle guard at the access road location, in order to protect both wildlife and livestock. Fencing will be installed in accordance with Gold Book guidelines and maintained until the reserve pits are backfilled.

2.5 Casing and Cementing

Surface casing will be set to approximately 2,500 feet and cemented back to the surface during drilling, isolating all near-surface aquifers in the project area. The Fox Hills Formation will be encountered at approximately 1,700 feet and the Pierre Formation at about 1,800 feet. A production casing cemented from approximately 11,256 feet up to about 4,000 feet will isolate potential hydrocarbon zones in the Dakota Formation that occur below 4,500 feet. The

production horizontal section will be uncased. Casing and cementing operations will be conducted in full compliance with *Onshore Oil and Gas Orders 2* (Title 43 CFR 3160).

2.6 Completion and Evaluation

A work-over unit will be moved onto the well site following the completion of the drilling rig. Approximately 30 days are usually needed to clean out the well bore, pressure test the casing, perforate and fracture the horizontal portion of the hole, and run production tubing for commercial production. A mixture of sand and a carrier (water and/or nitrogen) may be pumped into the well bore under extreme pressure to fracture the target formation. The sand particles will stabilize the fractures, increase the capture zone and maximize the field drainage. The fracture fluids will be recovered by flowing the well back to the surface. Tanks will be used to collect fluids for disposal. Disposal will be conducted in accordance to NDIC rules and regulations.

2.7 Commercial Production

If drilling, testing, and production support commercial production from any of the proposed locations, additional equipment will be installed including a pumping unit at the well head, a vertical heater/treater, storage tanks (usually four 400-barrel steel tanks), and a flare/production pit. An impervious dike (that can contain 100% capacity of the largest holding tank and a single day's production) will be placed around the production tanks and heater/treater. Load out lines will be located inside the diked area. A screened drip barrel will be installed under the outlet. A metal access staircase will provide access to the inside of the dike area, protect the dike, and may provide support to tanker truck hoses. The BIA will choose an inconspicuous paint color for all permanent aboveground production facilities from colors recommended either by the BLM or by the Rocky Mountain Five-State Interagency committee. A typical producing unit is shown in Figure 4 and more detail is included in the APD.

Oil will be either collected in tanks installed in on location and trucked to an existing oil terminal or connected to a proposed oil and gas gathering system. Produced water will be collected and contained in tanks and will be removed for periodic disposal at an approved disposal site. Production volumes of oil and water will dictate trucking frequency.

The duration of production operations cannot be reliably predicted, but some oil wells have pumped for more than 100 years. Initial estimation of daily production will be approximately 500 barrels of oil and 100 barrels of water. The production is anticipated to decrease after three months to approximately 200 barrels of oil and 50 barrels of water per day. The produced water is primarily comprised of fracture fluids and should decrease over time.

Ancillary developments, such as right-of-way for oil and water pipelines and a powerline may be applied for in the future by the well site operator. This EA does not address any impacts that will be caused by these ancillary developments.

Large volumes of natural gas are not expected from these locations. Small volumes will be flared in accordance with Notice to Lessees (NTL) 4A and adopted NDIC regulations, which prohibit unrestricted flaring for more than the initial year of operation (NDCC 28-08-06.4). A proposed gas gathering system is proposed in the area and connection will allow for gas capture and transport to sale.

Results could also encourage additional exploration. Should future oil/gas exploration activities be proposed wholly or partly on trust land, those proposals and associated federal actions

would require additional site-specific NEPA analysis and BIA consideration prior to implementation.

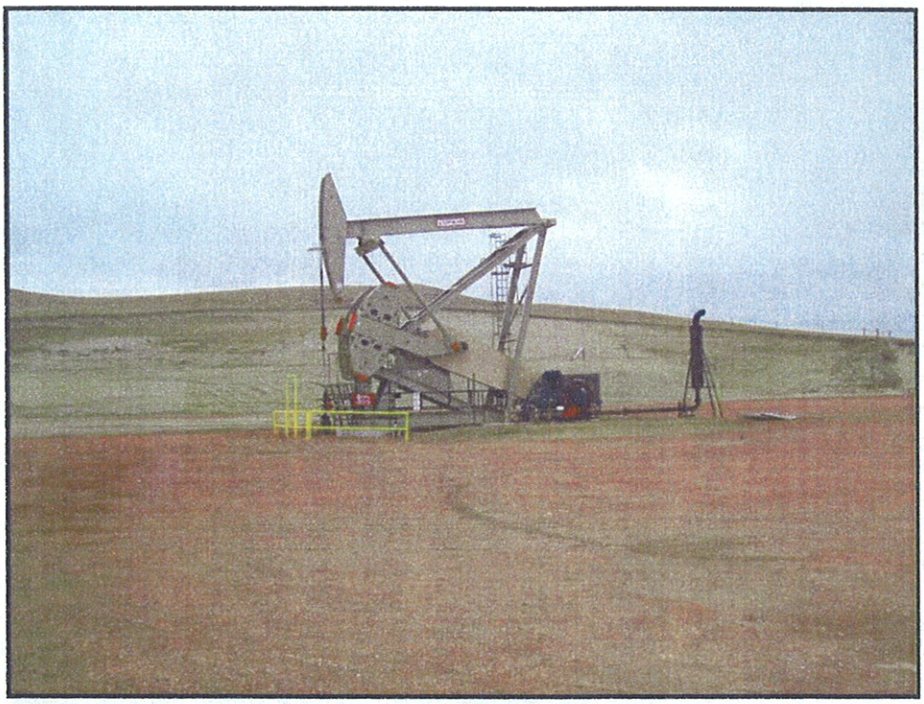


Figure 4. Typical producing unit (McCain and Associates, Inc.)

2.8 Construction Details at Individual Sites

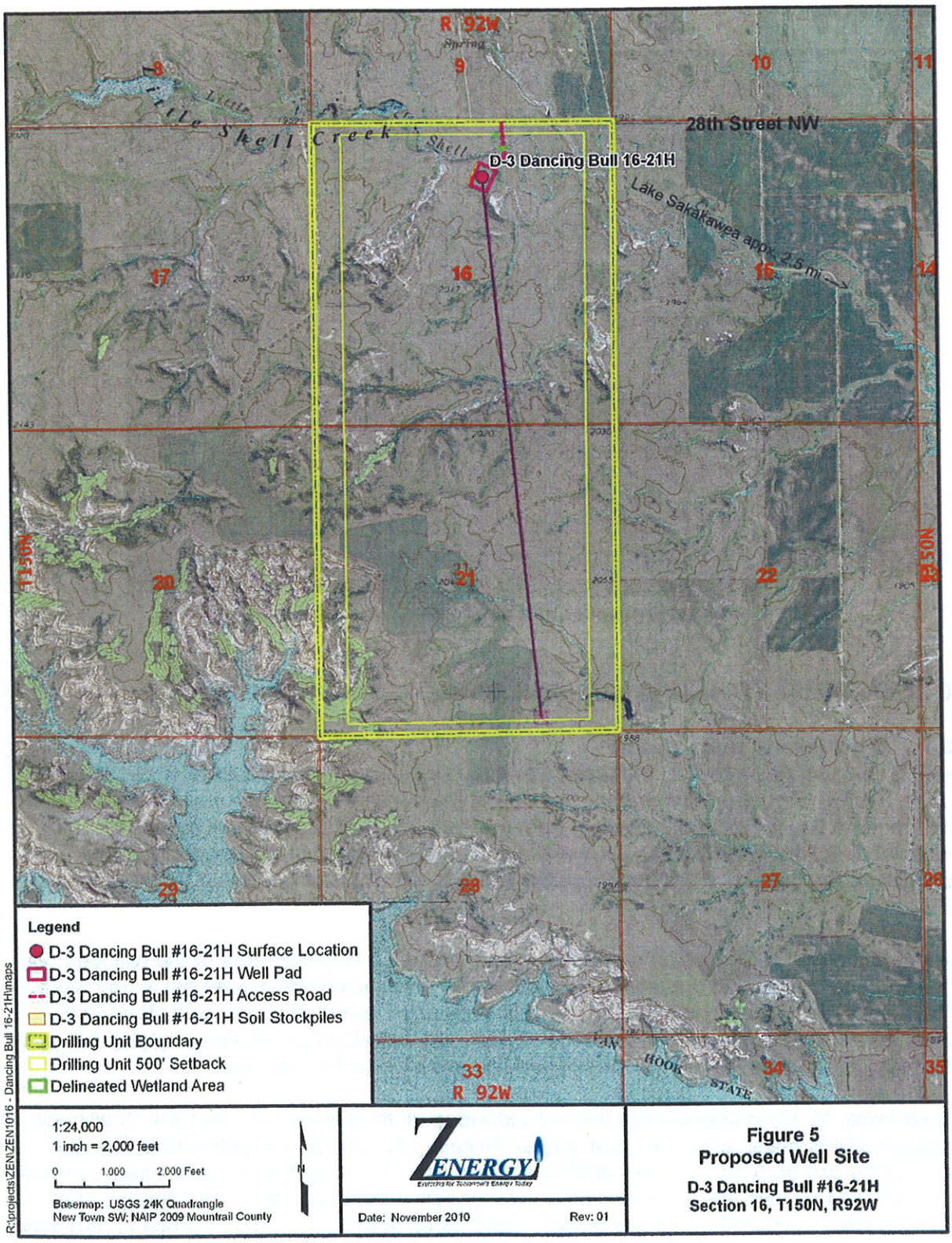
2.8.1 D-3 Dancing Bull #16-21H

The D-3 Dancing Bull #16-21H proposed well site is located in the NW¼NE¼ of Section 16, T150N, R92W (Figure 6). The surface location of the borehole will be approximately 950 feet from the north line (FNL) and 2,254 feet from the east line (FEL). The borehole will be horizontal directionally drilled in a southerly direction to the bottom hole target within the SE¼SE¼ of Section 21, at 250 feet from the south line (FSL) and 1,320 feet from the east line (FEL).

The proposed well is located on a parcel of native pasture. The level area of the well pad used for drilling and completion operations (including a reserve pit for drilled cuttings) is 430 feet long by 330 feet wide. The surface area of the pad, including cut and fill slopes and stockpiled topsoil and reserve pit backfill on the edge of pads will disturb an approximate total of 4.6 acres of surface disturbance for the well pad construction (including fenced area).

The pad was initially staked so that the pad extended off the flat area above Little Shell Creek. Mitigation efforts made at the site visit included rotating the pad and rounding or pulling the edges of the pad back from breaks leading to the creek. A five-foot high containment berm will be constructed on pad site to contain any runoff or spill on the pad site. Best Management Practices (BMP's) including the use of water bars, seed matting, diversion ditches around south and west sides of pad and sediment fences to stop sedimentation into creek will be implemented.

Figure 5. D-3 Dancing Bull #16-21H Location



The proposed access road departs 28th Street NW and travels south crossing Little Shell Creek before gaining elevation to the pad site. The proposed access is approximately 826 feet long and a maximum right of way width of 100 feet for a total surface disturbance of 1.9 acres. The complete project will have total surface disturbance and surface use loss of approximately 6.5 acres.

The initial onsite visit revealed a small seep near the start of the access road. The seep was delineated and the access road was moved east to ensure avoidance. The width of the creek at the road crossing was delineated with a sub-meter accurate GPS unit and revealed the maximum width to be 37 feet. The maximum disturbed right-of-way width will be 100 feet with a running surface of 12 feet wide and therefore the calculated area impacted at the stream crossing is approximately 0.08 acres. A Section 10 permit from the U.S. Army Corps of Engineers is not necessary as long as the impact is < 0.1 acres. Culverts will be placed through the road to maintain water flow. BMP's including matting will be used at crossing to reduce erosion and sedimentation. Zenergy and the BIA will monitor the creek crossing for the life of the well for any negative effects to flow regime and sedimentation. The use of a closed-loop drilling system will be utilized at this site and construction of a five-foot berm around the pad edge for spill containment, along with other BMP's to control erosion.

The BIA requires all electrical utilities to be underground. No utilities corridors are proposed at this time. If utilities at this site are required, they will be underground and the stream crossing will be bored. A rural water pipeline that parallels the highway ROW will be avoided according to standard crossing and clearance specifications of the rural water company.

Figure 6. D-3 Dancing Bull #16-21H Pad Site General Appearance
The proposed well site is located on a northwest sloping native prairie pasture near Little Shell Creek. Photograph taken from center stake southwest across pad site.

Figure 7. D-3 Dancing Bull #16-21H Access Road
The proposed access road starts from 28th Street NW across native pasture and crossing Little Shell Creek (center of photo). Photo taken from south bank of Little Shell Creek facing north.

2.8.2 D-3 Dora Smith #5-8H

The D-3 Dora Smith #5-8H proposed well site is located in the NW¼NE¼ of Section 5, T150N, R92W (Figure 8). The surface location of the borehole will be approximately 474 feet from the north line (FNL) and 1,873 feet from the east line (FEL). The borehole will be horizontal directionally drilled in a southerly direction to the bottom hole target within SE¼SE¼ of Section 8, at 250 feet from the south line (FSL) and 1,320 feet from the east line (FEL).

The proposed site is located in a native prairie pasture. The site can be characterized as a bowl shaped basin with a >9% sloping hill to the south and grassy drainage to the north (Figure 9). The well was initially staked so that the north edge of the pad was located in the drainage to the north. Mitigation efforts made at the site visit included rotating the pad to reduce cut and fill volumes and moving the edges of the pad from the drainage (≥75ft) (Figure 10). The level area of the well pad used for drilling and completion operations (including a reserve pit for drilled dry cuttings) is 430 feet long by 330 feet wide. The surface area of the pad, including cut and fill slopes and stockpiled topsoil and reserve pit backfill on the edge of pads will disturb an approximate total of 3.9 acres of surface disturbance for the well pad construction with 4.9 acres fenced.

The proposed access road will start at the approved D-3 Mary R. Smith #5-8H well pad and follow an established two-track trail the majority of its length to the east (Figure 11). The road will follow the side-hill topography across the pasture to a livestock corral, where the proposed site is located. The proposed access road is approximately 2,592 feet long and a have maximum right of way width of 66 feet for a road surface disturbance of approximately 4.0 acres. The complete project will have total surface disturbance and surface use loss of approximately 8.9 acres of prairie pasture.

Figure 8. D-3 Dora Smith #5-8H Location

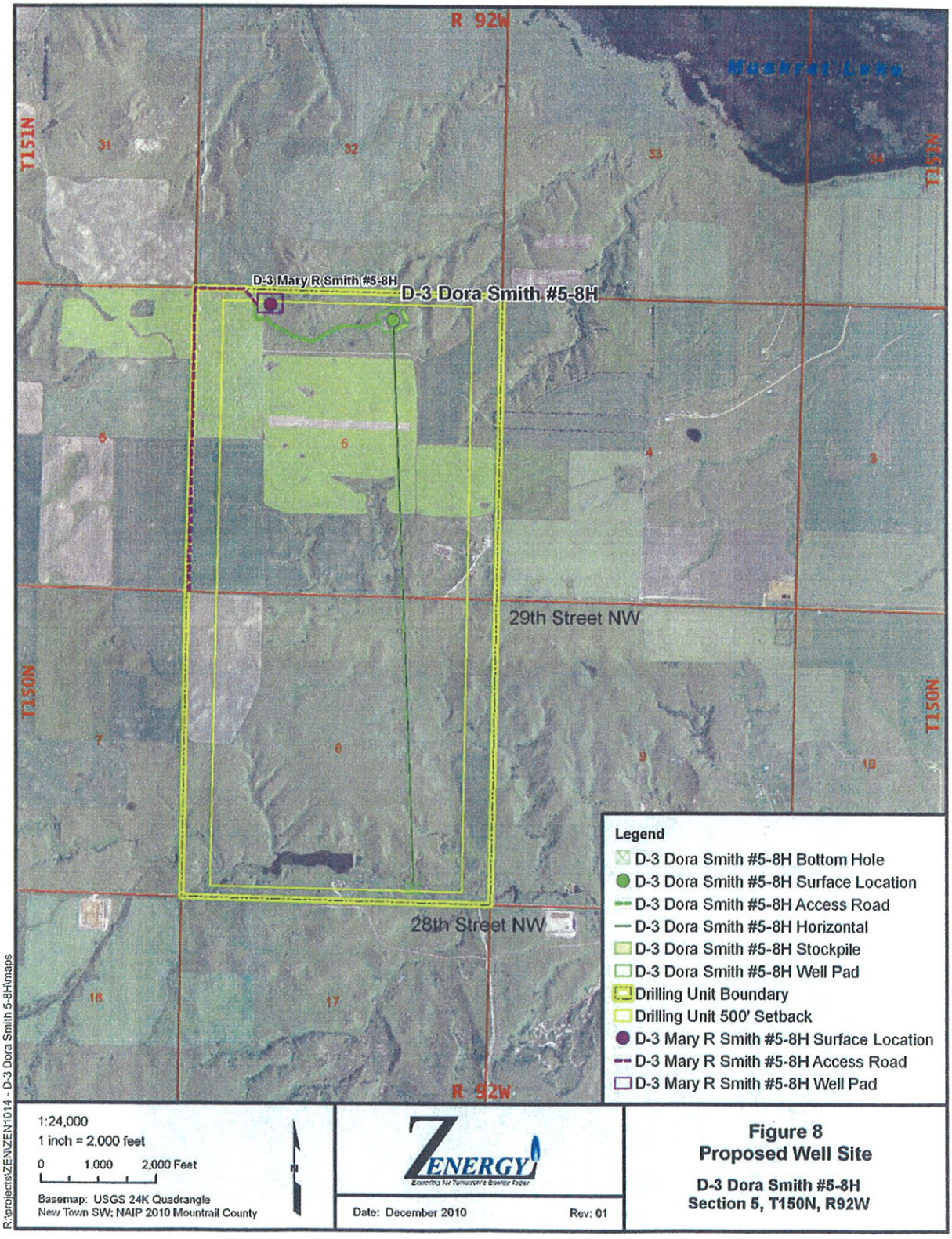


Figure 9. D-3 Dora Smith #5-8H Pad Site General Appearance
The proposed well site is located on a north sloping native prairie pasture above a grassy drainage. Photograph taken from northeast pad corner facing southwest.

Figure 10. D-3 Dora Smith #5-8H Pad Site Drainage
The proposed well site is located above a grassy drainage leading to Muskrat Lake (approximately 1.2 miles). Photograph taken from northeast pad corner facing northeast.

Figure 11. D-3 Dora Smith #5-8H Access Road
The proposed access road follows an established two-track trail the majority of its length from the D-3 Mary R Smith #5-8H well to the east.

A semi-closed loop drilling system, which includes a dry cuttings pit, will be utilized. A two-foot high minimum containment berm be constructed on the pad site around the north and east sides to reduce erosion into the drainage and to contain any runoff or spill to the pad site. Best Management Practices (BMP's) including the use of sediment fencing, soil compaction and reseeding of native species will be utilized during construction and after final reclamation. The BIA requires all electrical utilities to be underground.

2.8.3 D-3 Mandan South #24-25H

The D-3 Mandan #24-25H proposed well site is located in the NE¼NE¼ of Section 24, T150N, R93W (Figure 12). The surface location of the borehole will be approximately 795 feet from the north line (FNL) and 2,175 feet from the east line (FEL). The borehole will be horizontal directionally drilled in a southerly direction to the bottom hole target within SE¼SE¼ of Section 25, at 250 feet from the south line (FSL) and 1,320 feet from the west line (FEL).

The proposed well site is located on a high plateau, in native prairie pasture near the edge of steep treed drainages of Lake Sakakawea (Figure 13Figure 14). At the on-site assessment, recommendations included keeping the pad on the high plateau back from the bluffs and rounding of corners to avoid treed drainages. The soft-staked center and pad corners were moved to mitigate for these recommendations. The proposed well site will be approximately 330 feet by 430 feet in size and disturb approximately 5.3 acres (including all fenced area). Soil stockpiles will be placed on the east side of the pad site.

Figure 12. D-3 Mandan South #24-25H Location

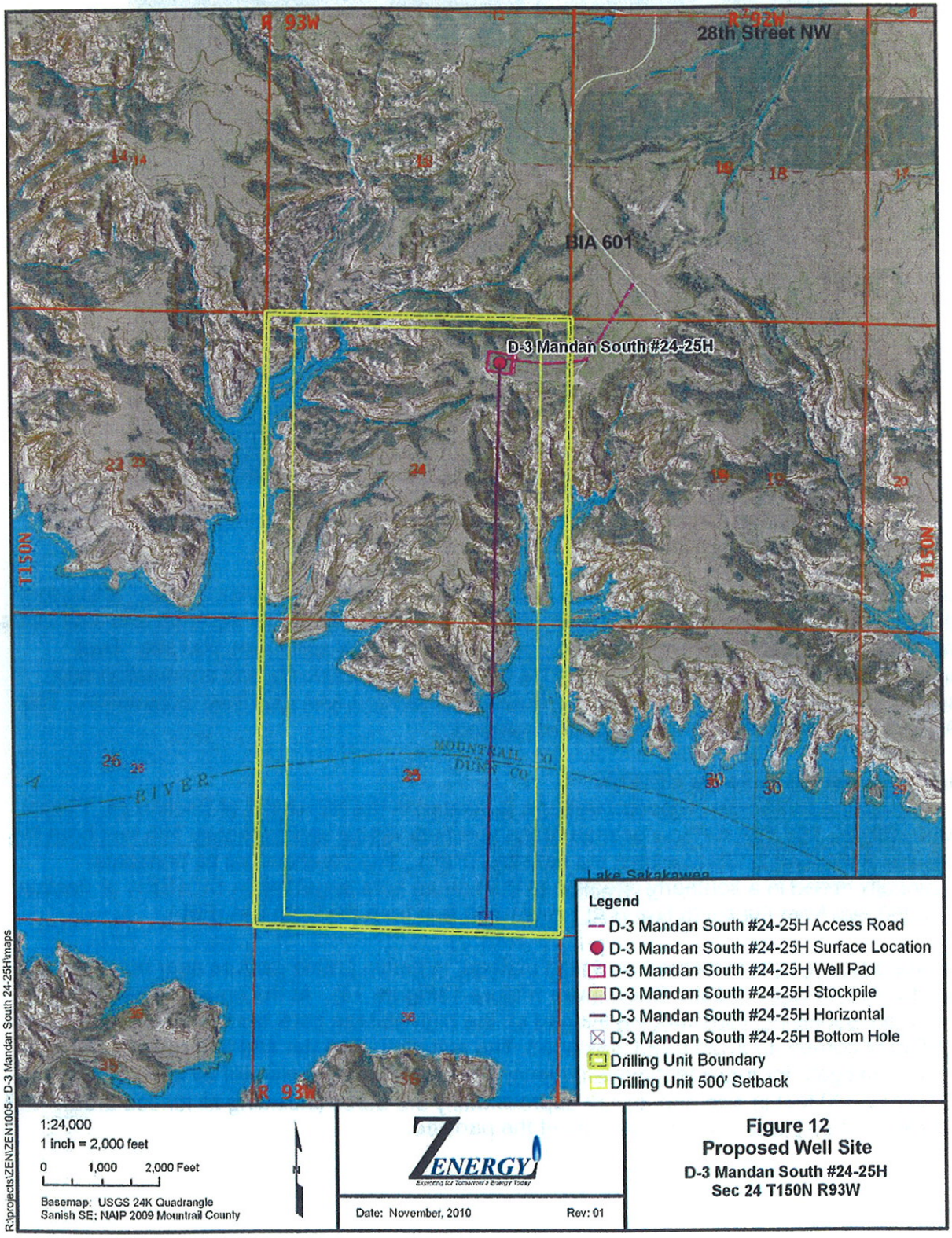


Figure 13. D-3 Mandan #24-25H Pad Site General Appearance
The proposed well site is located on a north sloping native prairie pasture near steep treed drainages. Photograph taken from access road facing west across pad site.

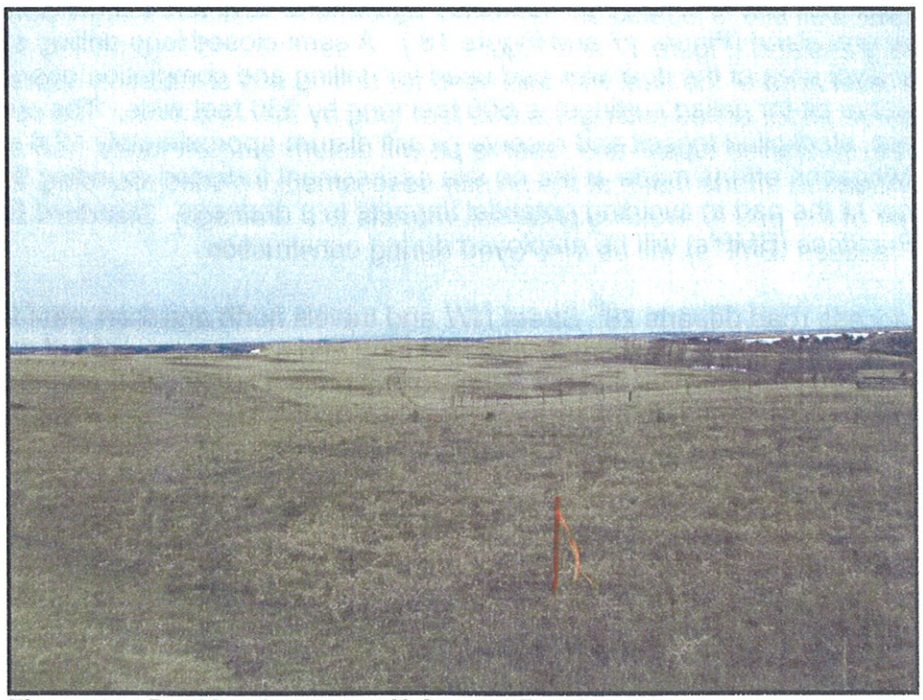


Figure 14. D-3 Mandan #24-25H Access Road
The proposed access road diverts from a private driveway before following a two-track across native pasture to the site. Photograph taken from private driveway facing west along access road.

The pad site and access route will result in approximately 7.7 total acres of new disturbance and surface use loss.

The BIA also stated on-site that use of a closed-Loop drilling system would be required and Best Management Practices (BMP's) to control soil erosion would be required. Additionally due to the proximity of Lake Sakakawea, a four-foot high berm around the perimeter of the pad shall be constructed to contain surface water run-off or potential contamination from entering the drainages. These avoidance measures and other protective measures were incorporated into the final project design to minimize impacts to evaluated resources, as appropriate (see Section 3.0).

2.8.4 D-3 Mable Evans #10-3H & D-3 Normal Eagle #15-22H

The D-3 Mable Evans #10-3H and D-3 Normal Eagle #15-22H is a dual well site proposed in the SE1/2 of Section 10, T150N, R92W (Figure 15 and Figure 16). The surface location of the D-3 Mable Evans #10-3H borehole will be approximately 471 feet from the south line (FSL) and 1,260 feet from the east line (FEL). The borehole will be horizontal directionally drilled in a northwesterly direction to the bottom hole target within NE¼NW¼ of Section 3, at 250 feet from the north line (FNL) and 1,980 feet from the east line (FEL).

The surface location of the D-3 Normal Eagle #15-22H borehole will be approximately 472 feet from the south line (FSL) and 1,460 feet from the east line (FEL). The borehole will be horizontal directionally drilled in a southeasterly direction to the bottom hole target within SE¼SE¼ of Section 22, at 250 feet from the south line (FSL) and 1,320 feet from the east line (FEL).

The proposed dual well site is located on cultivated agricultural land and a small portion of degraded native grassland (Figure 17 and Figure 18). A semi-closed loop drilling system will be utilized. The level area of the dual well pad used for drilling and completion operations (including a reserve pit for drilled cuttings) is 600 feet long by 330 feet wide. The operating pad, cut and fill slopes, stockpiled topsoil and reserve pit will disturb approximately 12.6 acres during construction. Mitigation efforts made at the on site assessment included rounding the southwest corner of the pad to avoiding potential impacts to a drainage. Standard Best Management Practices (BMP's) will be employed during construction.

The proposed access road departs 28th Street NW and travels north and then west to the pad site. The proposed access is approximately 439 feet long and a maximum right of way width of 66 feet for a total surface disturbance of 0.7 acres. Total project surface disturbance will be approximately 13.4 acres. The fenced area will also include the area between the pad site and the road ditch, encompassing a total of 14.9 acres of surface use loss.

Figure 15. D-3 Mable Evans #10-3H and D-3 Normal Eagle #15-22H Location

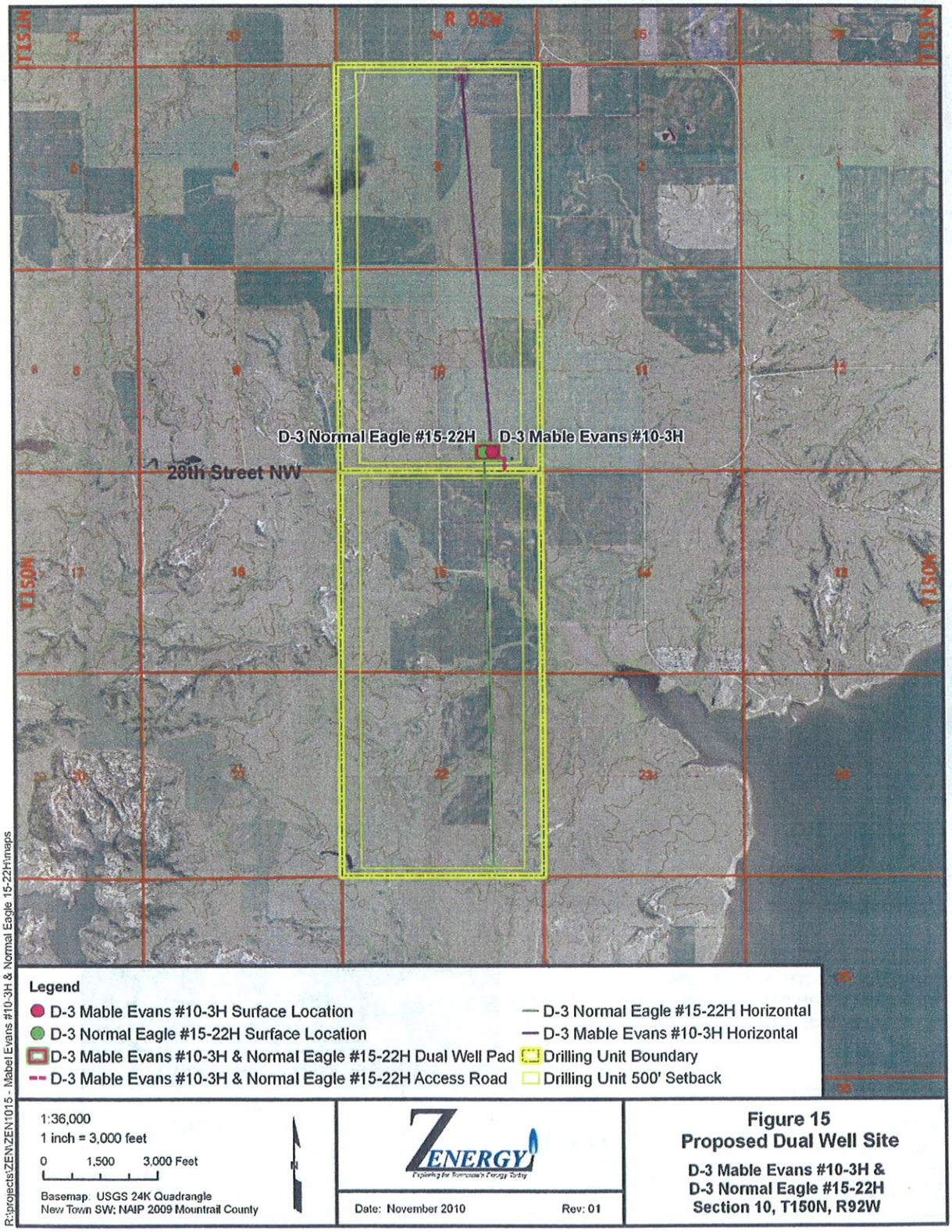


Figure 16. D-3 Mable Evans #10-3H and D-3 Normal Eagle #15-22H Dual Pad

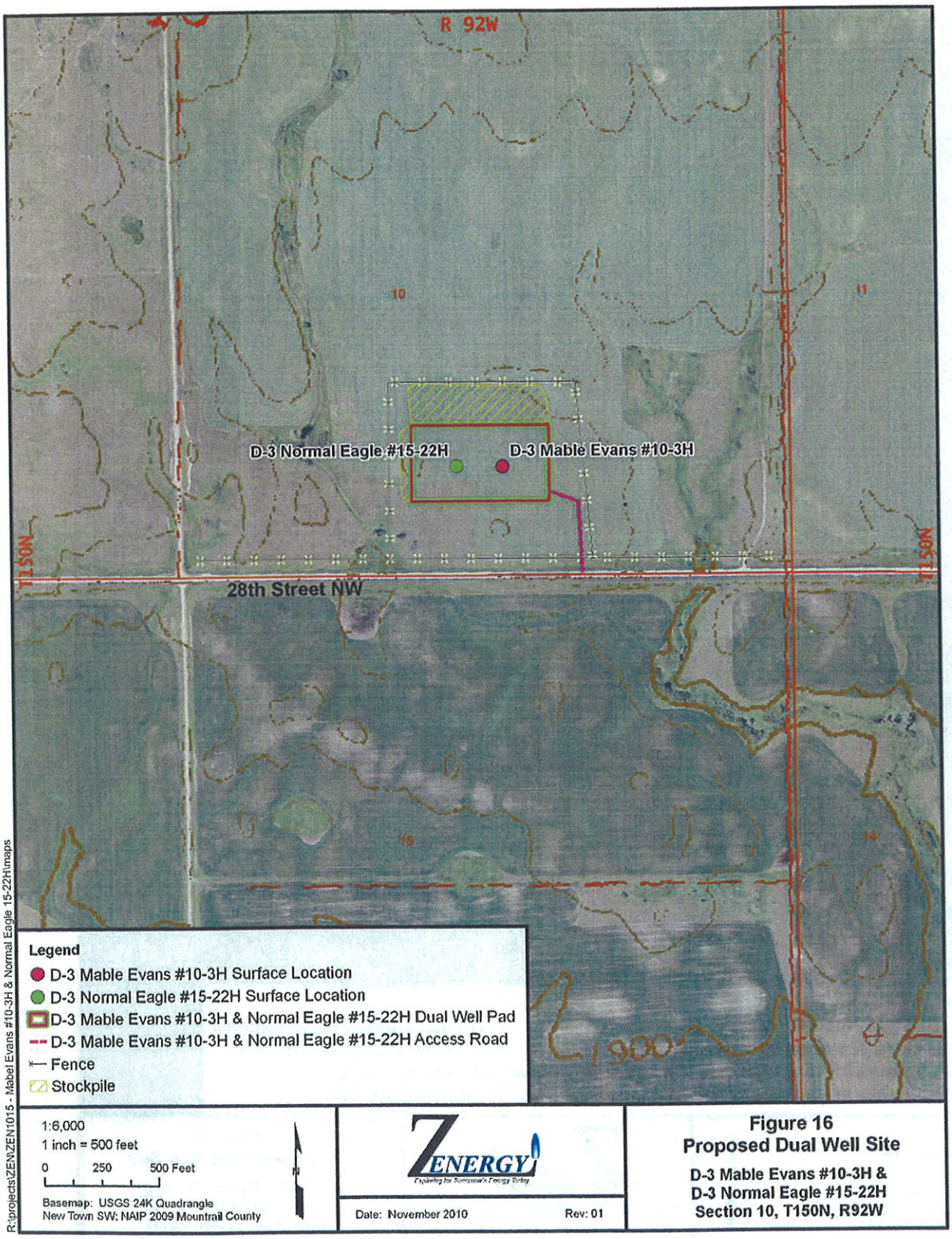


Figure 17. D-3 Mable Evans #10-3H and D-3 Normal Eagle #15-22H Appearance
Photo taken facing east across proposed pad site.

Figure 18. D-3 Normal Eagle #15-22H Well Center
Photo taken looking west across proposed pad.

2.9 Reclamation

The reserve pit and drill cuttings will be treated, solidified, backfilled, and buried as soon as possible after well completion. Controlled mixing of cuttings with non-toxic reagents causes an irreversible reaction that quickly results in an inert, solid material. Any oily residue is dispersed and captured, preventing coalescence and release to the environment at significant rates in the

future. The alkaline nature of the stabilized material also chemically stabilizes various metals that may be present, primarily by transforming them into less soluble compounds. Treated material will then be buried in the reserve pit, overlain by at least four feet of overburden as required by adopted NDIC regulations.

If commercial production equipment is installed, the well pad will be reduced in size to, <1 acre, reclaiming the rest of the original pad. The working area of each well pad and the running surface of access roads will be surfaced with scoria or crushed rock obtained from a previously approved location. The outslope portions of roads will be covered with stockpiled topsoil and re-seeded with a seed mixture determined by the BIA, reducing the residual access-related disturbance to about 28' wide. Other interim reclamation measures to be accomplished within the first year include reduction of the cut and fill slopes, redistribution of stockpiled topsoil, installation of erosion control measures, and reseeding as recommended by the BIA.

Final reclamation will occur either in the very short term if the proposed well is commercially unproductive, or later upon final abandonment of commercial operations. All disturbed areas will be reclaimed, reflecting the BIA view of oil and gas exploration and production as temporary intrusions on the landscape. All facilities will be removed, well bores will be plugged with cement and dry hole markers will be set. Access roads and work areas will be leveled or backfilled as necessity, scarified, re-contoured and re-seeded. Exceptions to these reclamation measures might occur if the BIA approves assignment of an access road either to the BIA roads inventory or to concurring surface allottees. Please refer to the Surface Use Plan within the attached APD in Section 7 for further detail regarding both interim and final reclamation measures. Figure 19 and Figure 20 show a typical reclamation from the Gold Book.

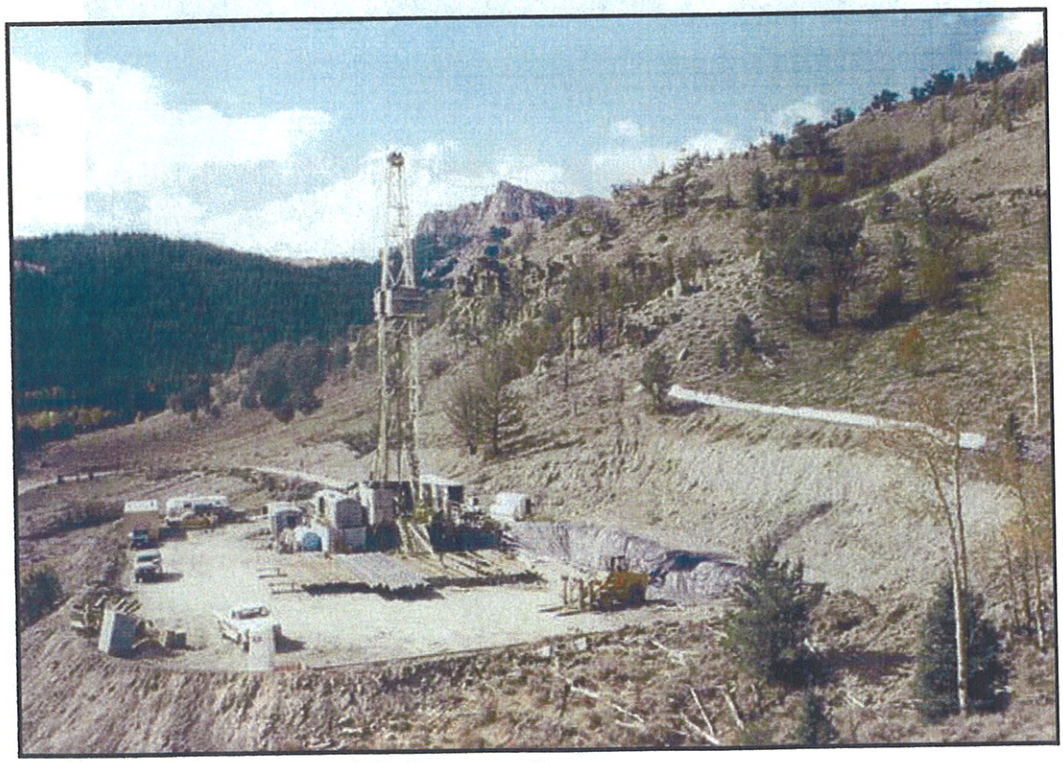


Figure 19. Typical well pad during operation
The well pad and access road are constructed to the minimum size necessary to safely conduct drilling and completion operations.

Figure 20. Well pad after reclamation
The well pad and access road have been recontoured back to the original contour, the topsoil respread, and the site revegetated.

2.10 Preferred Alternative

The preferred alternative is to complete all administrative actions and approvals necessary to authorize and/or facilitate oil and gas developments at the proposed well locations.

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 proposed well(s) and access road(s) are 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 Reservation is 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 proposed well site(s) and spacing units are 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, gravel, and 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 projects will not be constructed, drilled, installed, or operated. Existing conditions will not be impacted for the following critical 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.

There will be no project-related ground disturbance, use of hazardous materials, or trucking of product to collection areas. Surface disturbance, deposition of potentially harmful biological material, trucking, and other traffic will not change from present levels. 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 discovery of resources at these well locations.

3.2 Air Quality

The North Dakota Department of Health (NDDH) network of Ambient Air Quality Monitoring (AAQM) stations includes Watford City in McKenzie County, Dunn Center in Dunn County, and Beulah in Mercer County. These stations are located west, south, and southeast of proposed well sites. Criteria pollutants tracked under National Ambient Air Quality Standards (NAAQS) of the *Clean Air Act* include sulfur dioxide (SO_2), particulate matter (PM_{10}), nitrogen dioxide (NO_2), and ozone (O_3). Two other criteria pollutants – lead (Pb) and carbon monoxide (CO) – are not monitored by any of three stations. Table 1 summarizes federal air quality standards and available air quality data from the three-country study area.

Table 1. Summary of Federal Air Quality Standards and Available Air Quality Data

Pollutant	Averaging Period	NAAQS ($\mu g/m^3$)	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 ($\mu g/m^3$)	35 ($\mu g/m^3$)	35 ($\mu g/m^3$)
	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 projects. 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, drilling, and tanker traffic will generate temporary, intermittent, and nearly undetectable gaseous emissions of particulates, SO_2, NO_2, CO_2, 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. 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 naturally occurring toxic gases, hazardous materials used or generated during installation or production, and hazards posed by heavy truck traffic associated with drilling, completion, and production activities.

Hydrogen sulfide gas (H_2S) is extremely toxic in concentrations above 500 parts per million (ppm), but it has not been found in measurable quantities in the Bakken Formation. Before reaching the Bakken, however, drilling will penetrate the Mission Canyon Formation, which is known to contain varying concentrations of H_2S. Release of H_2S at dangerous concentrations is

very unlikely. Contingency plans submitted to BLM comply fully with relevant portions of *Onshore Oil and Gas Order 6* to minimize potential for gas leaks during drilling. Emergency response plans protect both the drilling crew and the public within one mile of a well; precautions include automated sampling and alarm systems operating continuously at multiple locations on the well pad.

Aerial imagery was used to identify nearby homes within one and five miles of the proposed well site(s) (Table 2).

Table 2. Distance and Location of Residences

Well Name	Nearest residence	# Residences within 1 mile	# Residences within 5 miles*
D-3 Dancing Bull #16-21H	2,250' N	4	25
D-3 Dora Smith #5-8H	4,100' SE	1	37
D-3 Mandan South #24-25H	1,200' E	2	20
D-3 Mabel Evans #10-3H	4,150' W	4	25
D-3 Normal Eagle #15-22H	3,950' W	4	25
* does not include 77 seasonal residences near Pouch Point Recreation area.			

In addition to the permanent currently occupied residences, a recreation area (Pouch Point) which has approximately 77 seasonal residences is located in Sections 14 and 23 of T150N, R92W. These are not included in the totals above.

Negative impacts from construction will be largely temporary. Noise, fugitive dust, and traffic hazards will be prevalent during the construction, drilling, and well completion (approximately 60 days) and then diminish quickly during commercial operation. Approximately 50 trips during several days will be needed to transport the drilling rig and associated equipment to each site. The same amount of traffic will be required to dismantle and transport the drilling rig following the completion of the drilling operations.

One pick-up will travel to each well pad daily if the wells prove productive. Natural gas will initially be flared during production and the produced oil and water will be trucked away from the well site. Tanker truck activity depends directly on production of the well. Initially a successful Bakken well usually produces high rates of both oil and water. Upwards of 500 barrels of oil and 100 barrels of water per day might be expected during the initial months of production. Daily production typically decreases by 50% or more after the initial months. An oil tanker usually hauls 140 barrels and a water tanker holds 110 barrels per load. Four oil tankers and one water tanker may visit each well site per day during the initial months of production. This number will decline dramatically as production declines. Established load restrictions for state and BIA roadways will be followed and appropriate haul permits will be acquired. All traffic must be confined to approved routes and conform to load and speed limits.

The EPA specifies chemical reporting 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. Project design and operational precautions mitigate against impacts from toxic gases, hazardous materials, and traffic. All operations, including flaring, will conform to instructions from BIA fire management staff. Impacts from the proposed projects are considered minimal, unlikely or insignificant. No laws regulations, or requirements have been waived; no compensatory mitigation measures are required.

3.4 Water Resources

3.4.1 Surface Water

The proposed sites are located on a glaciated upland in the Missouri River Regional Water Basin (Figure 21). 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 surrounding the well sites.

3.4.2 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.
On-site assessments conducted at all sites with representatives from BIA directed the use of BMP's to control soil erosion to be employed, such as the construction of a berms on pads for spill containment, wattle or choir logs on slopes and at bottom of drainages, and use of seed matting and installation of silt fences. These methods will mitigate the effects of development near the upland and intermittent drainages leading to receiving waters.

3.4.2.1 D-3 Dancing Bull #16-21H

The D-3 Dancing Bull #16-21H well site is located within the Garrison Dam Sub-Basin, the Independence Point Watershed and Little Shell Creek Sub-Watershed. Surface water runoff from the D-3 Dancing Bull #16-21H well site will flow overland approximately 350 feet on a gradual slope to the northeast before reaching Little Shell Creek. Little Shell Creek continues 2.5 miles to the shores of Lake Sakakawea.

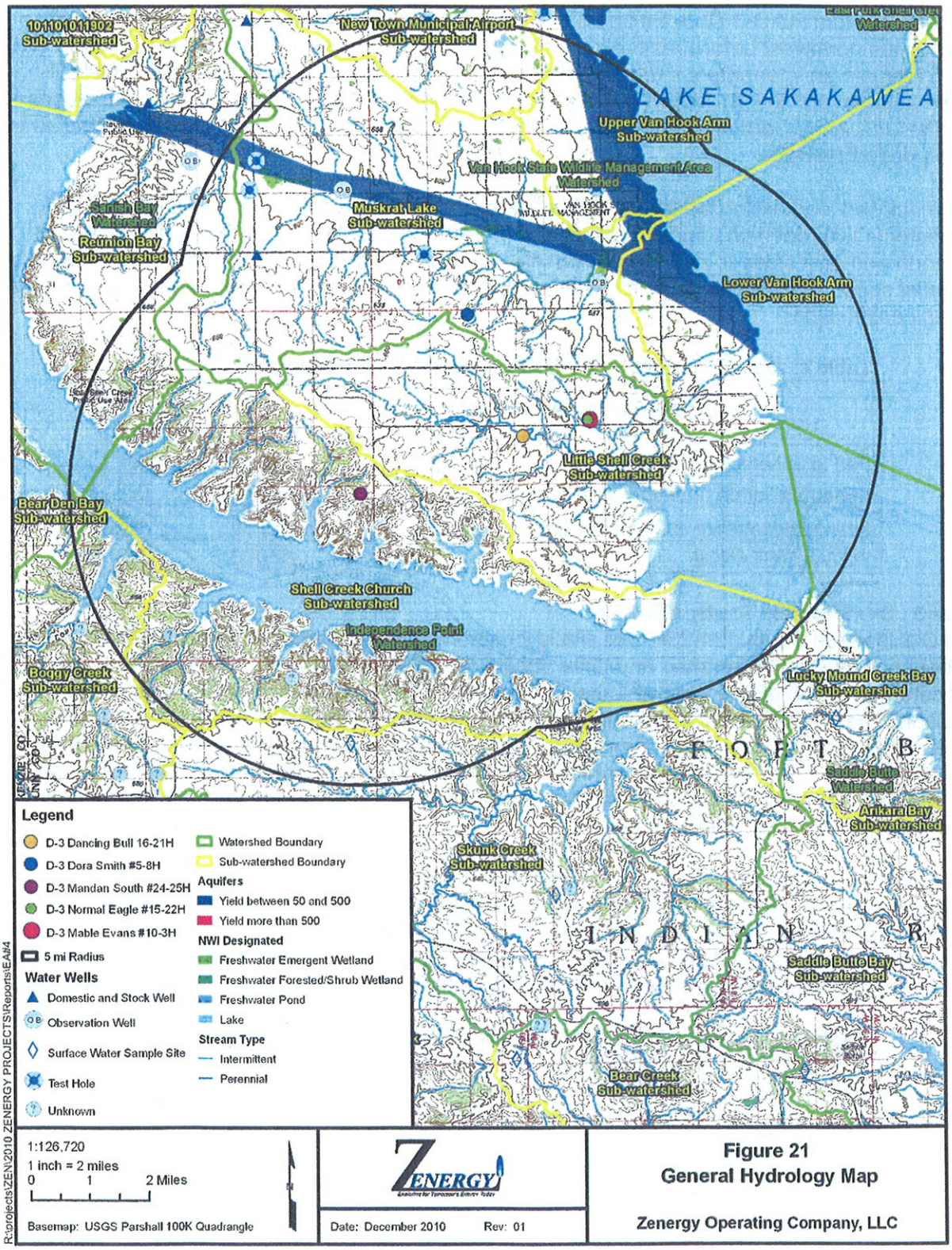
Little Shell Creek was delineated where the proposed access road will cross. The creek at this location is approximately 37 feet wide. The maximum disturbed right-of-way width will be 100 feet with a running surface of 12 feet wide; therefore, the calculated area impacted at the stream crossing is approximately 0.08 acres.

The BIA requested the use of a closed-loop drilling system and construction of a four-foot high containment berm to be built on top of pad to contain contaminated fluids from transferring off pad. Also, Best Management Practices (BMP's) including the use of water bars, seed matting, diversion ditches around south and west sides of pad and sediment fences to stop sedimentation into creek will be implemented. Zenergy and BIA resource officers will conduct monitoring of this berm and all other potential erosion areas periodically to ensure proper functioning condition. Maintenance will occur as needed to maintain environmental protections.

Table 3. Distance from D-3 Dancing Bull #16-21H to Receiving Water

Source - Point	Distance	
	feet	miles
Pad to Little Shell Creek (perennial stream)	~350	<0.1
Little Shell Creek to Lake Sakakawea	~13,000	2.5
TOTAL DISTANCE	~13,350	2.5

Figure 21. General Hydrology Map



3.4.2.2 D-3 Dora Smith #5-8H

The D-3 Dora Smith #5-8H well site is located within the Garrison Dam Sub-Basin, the Van Hook State Wildlife Management Area Watershed and Muskrat Lake Sub-Watershed. Surface water runoff from the D-3 Dora Smith #5-8H well site will flow overland 75 feet on a gradual slope to the northwest before reaching a defined ephemeral drainage. This drainage leads 1,675 feet into an intermittent stream approximately 5,250 feet from Muskrat Lake. Muskrat Lake has been previously determined a non-jurisdictional wetland from previous consultations with the U.S. Army Corps of Engineers. Wetlands are not located on and will not be affected by the proposed well site.

A semi-closed loop drilling system, which includes a dry cuttings pit, will be utilized. The BIA requested a two-foot high minimum containment berm be constructed on the pad site around the north and east sides to reduce erosion into the drainage and to contain storm water runoff or potential spills. BMP's including silt fence and/or other erosion control devices will also be used during construction.

Table 4. Distance from D-3 Dora Smith #5-8H to Receiving Water

Source - Point	Distance	
	feet	miles
Pad to ephemeral drainage	~75	<0.1
Ephemeral drain to intermittent stream	~1,675	0.3
Intermittent stream to Muskrat Lake	~5,250	1.0
TOTAL DISTANCE	~7,000	1.3

3.4.2.3 D-3 Mandan South #24-25H

The D-3 Mandan South #24-25H well site is located within the Garrison Dam Sub-Basin, the Independence Point Watershed and Little Shell Creek Sub-Watershed. The proposed pad site is located on a high plateau above Lake Sakakawea. The pad site is near the edge of the Missouri River breaks and the drainages flanking the Site will receive some runoff. Surface water runoff around the well site flows directly to a wooded ephemeral drain north of the pad. The drain leads 1,400 feet to an intermittent stream and then approximately 2,600 feet to Lake Sakakawea. The on-site assessment determined that wetlands are not located on and will not be affected by the proposed well site.

A closed-loop drilling system will be required at this site. Additionally, due to the proximity of Lake Sakakawea a four-foot high berm around the perimeter of the pad shall be constructed to contain surface water runoff or any petroleum spill from entering the drainages. Best management practices (BMP's) including contouring, silt fences, choir waddles, soil compaction, and native reseeding will be implemented during construction and interim and final reclamation.

Table 5. Distance from D-3 Mandan South #24-25H to Receiving Water

Source - Point	Distance	
	feet	miles
Pad to intermittent stream	~1,400	0.25
Intermittent stream to Lake Sakakawea	~2,600	0.5
TOTAL DISTANCE	~4,000	0.75

3.4.2.4 D-3 Mable Evans #10-3H & D-3 Normal Eagle #15-22H

The D-3 Mable Evans #10-3H & D-3 Normal Eagle #15-22H dual well site is located within the Garrison Dam Sub-Basin, the Independence Point Watershed and Little Shell Creek Sub-

Watershed. The proposed pad site is located in an agricultural field. Surface water runoff around the well site will flow overland before reaching an intermittent stream east of the pad site. The intermittent stream flows under 28th Street NW and continues approximately 7,400 feet to Lake Sakakawea.

The on-site assessment determined that a wetland is located southwest of the proposed well pad. Mitigation recommendations made at the on site visit included rounding the southwest corner of the pad, avoiding any potential to impacts to the wetland.

The use of a semi closed-loop drilling system will be used at this location. Standard BMP's including contouring, silt fences, choir waddles, soil compaction, and native reseeding will be implemented during construction and interim and final reclamation.

Table 6. Distance from D-3 Mable Evans #10-3H and D-3 Normal Eagle #15-22H to Receiving Water

Source - Point	Distance	
	feet	miles
Pad to intermittent stream	~500	0.1
Intermittent stream to 28th Street NW culvert	~300	<0.1
28th Street NW culvert to Lake Sakakawea	~7,400	1.5
TOTAL DISTANCE	~8,200	1.6

3.4.3 Groundwater

3.4.3.1 Mountrail County

The principal uses of ground water in Mountrail County are for domestic and livestock supplies, public supplies, industrial supplies, and irrigation. Most farm units in the area have at least one well for their domestic and livestock uses, but no records are available to accurately determine the quantity of water used. 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.

The upper part of the Fox Hills Formation and the lower part of the Hell Creek Formation contain about 100 feet of sandstone in an interbedded sandstone, siltstone, and shale zone. The sandstone beds in the zone apparently are hydrologically connected and herein are referred to as the Fox Hills-Hell Creek aquifer.

The top of the Fox Hills-Hell Creek aquifer generally ranges from 1,550 to 2,100 feet below land surface (altitude about 300 feet above msl) in the south-central and southwestern parts of Mountrail County. The top of the aquifer is about 1,450 to 2,100 feet below land surface (altitude about 550 feet above msl) in the southeastern part of the county.

The Fort Union Group generally underlies the glacial drift at depths of less than 100 feet throughout much of the Coteau Slope and the Drift Prairie, except in the larger ancient buried

valleys. Depths to the Fort Union are commonly more than 100 feet in the Coteau du Missouri area, but many exceptions do exist. The group is subdivided into four formations in some Tongue River and Sentinel Butte Formations

The Tongue River and Sentinel Butte Formations either crop out or immediately underlie the glacial drift in the report area. These units are distinguishable only on the surface in Mountrail County. Individual sand beds in the Tongue River-Sentinel Butte Formations vary greatly in thickness. Most sand beds are less than 10 feet thick, but thicknesses exceeding 100 feet, do occur.

3.4.4 Water Wells and Water Use Permits

There is one domestic or stock water supply well within five miles of the proposed well sites (Figure 21). It is located 3.7 mile from the D-3 Dora Smith #5-8H in section 5 of T151N, R93W and is drilled into the Tongue River Aquifer. There have also been seven water test wells drilled within five miles of the proposed locations. These include four test holes and three installed observation wells (Table 7).

One active water permit is located within five miles of the project area. It is located in the SW¼ Section 34, T151N, R92W. The permit was issued on October 27, 1970, to J. & S. Pennington. This is a perfected permit for flood irrigation from the surface water of Muskrat Lake. Muskrat Lake surface waters are located approximately 1.3 miles downstream from the proposed D-3 Dora Smith #5-8H.

Table 7. Water Wells Within 5 miles

LOCATION	Distance To Nearest Proposed Well (miles)	Permit Type	Aquifer	Well Depth (feet)	Date
NW NW 35 T151N R93W	3.7	Domestic Well	Tongue River	298	1/3/1988
NE SE 34 T151N R92W	2.3	Observation Well	White Shield	138	8/6/1966
SE NE 30 T151N R92W	1.8	Observation Well	Undefined	210	6/4/1992
SW SE 24 T151N R93W	3.0	Observation Well	Unknown	145	6/3/1992

[1] ND State Water Commission 2009

Water quality will be protected by drilling with fresh water to a point below the base of the Fox Hills Formation, implementing proper hazardous materials management, and using appropriate casing and cementing. Drilling will proceed in compliance with *Onshore Oil and Gas Order* 2, *Drilling Operations* (43 CFR 3160). If cement circulation is lost, a cement bound log will be required by BLM to ascertain is remedial cementing is required to provide an adequate seal between casing and strata. Surface casing will be cemented in place to a depth of about 2,500 feet, isolating aquifers in the Fox Hills Formation and extending a minimum of 50 feet into the underlying Pierre shale. Intermediate casing will extend from the surface and be cemented as needed to isolate potentially productive water and hydrocarbon-bearing zones.

Seepage and infiltration of hazardous materials from the reserve pits are considered unlikely due to mandatory construction and linear specifications, including a minimum of two feet of freeboard at all times. There will be no other pits or lagoons. 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.

Produced water will be captured in tanks on-site and periodically trucked to an approved disposal site. BIA and BLM will monitor all operations and review site records at their discretion. Evidence of groundwater contamination related to the project will result in a stop work order until all appropriate measures were identified and implemented. These and other construction and reclamation techniques included in the APD will minimize potential for impacts to both surface water and groundwater. 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.

3.5 Habitat and Wildlife

3.5.1 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 areas. The North Dakota Game and Fish Department concerns include habitat fragmentation and direct loss of wildlife habitat. They recommend that construction be avoided to the extent possible within native prairie, wooded draws, riparian corridors, and wetland areas.

Based upon the review the proposed projects are not located 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 critical habitat areas of concern.

Native species will be reseeded according to recommendations by tribe and BIA.
Wetlands encountered along the route are few and all mitigation efforts will be implemented to preserve the integrity of all basins. Major drainages and perennial stream crossings have either been avoided or potential negative impacts are mitigated. Native prairie has been avoided to the extent possible. Best management practices (BMP's) including contouring, silt fences, waddles, soil compaction and native reseeding will be implemented during construction and at interim and final reclamation.

3.5.2 Species of Concern

Assessments for Federally listed threatened and endangered species and candidate species were conducted by evaluating historic and present occurrences by determining if potential habitat exists within the project area. Determinations were made concerning direct and cumulative effects of the proposed activities on each T&E species and their habitat (Section 3.5.3). The US Fish and Wildlife Service (USFWS) has provided concurrence of these findings in correspondence presented in Appendix B.

Scoping letters and consultation with the USFWS, ND Game and Fish Department, and the North Dakota Natural Heritage Inventory were conducted. Comments received are presented in Appendix B.

Currently, six species and one Designated Critical Habitat are listed as potentially present in Mountrail County, North Dakota (Table 8).

Table 8. Mountrail County 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 October 2010)

3.5.3 Species Assessments

Assessments for Federally listed threatened, endangered and candidate species were conducted by evaluating historic and present occurrences and by determining if potential habitat exists within the project areas. 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

3.5.3.1 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.

3.5.3.2 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 and are not within direct line-of-sight of potential habitat. The use of closed or semi-closed loop drilling systems and containment berms will mitigate any potential effects from drilling. No individuals were observed in the project areas during the onsite visits in 2010. The proposed project ***may affect, is not likely to adversely affect*** this species.

3.5.3.3 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 sites will not disrupt the Missouri River habitat. The use of

closed or semi-closed loop drilling systems and containment berms will mitigate any potential effects from drilling. The proposed project ***may affect, is not likely to adversely affect*** this species.

3.5.3.4 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(s) are 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 well sites (Appendix B, USFWS). Because collisions with power lines are the primary cause for fledgling mortality, it is planned that any utility lines will be constructed underground as per request of BIA.

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 ***may affect, but is not likely to adversely affect*** whooping cranes.

3.5.3.5 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. No piping plovers were observed in or around the project areas during the on-site review and the proposed sites will not disrupt the Missouri River habitat or be within line-of-sight of the Missouri River. The use of closed or semi-closed loop drilling systems and containment berms will mitigate any potential effects from drilling.

Based upon the mitigation efforts employed the proposed projects 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.

3.5.3.6 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.

Portions of the proposed well locations are located on and across native prairie pasture; however, the majority of the proposed developments occur along established trails, on or near

edge habitats, and near habitat transition zones. The landscape was surveyed for the presence of this species and none were present at time of survey.

If the sites 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.

3.5.3.7 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.

The proposed project sites contain some potential habitat and moderate to good residual vegetative cover; however, relatively small amounts of habitat critical to the life stages of the Dakota skipper sill be altered by the proposed developments.

3.5.4 Wildlife

3.5.4.1 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 projects. No raptors or nests were observed during the on-site reviews. The Sites were surveyed for migratory bird species as well as nests. At the time of the surveys, northern harriers and turkey vultures were observed in project areas but no nests of either species were observed.

Zenergy will construct the sites outside the nesting season (February 15 - July 15) or conduct surveys for migratory birds (including raptors) and nests five days prior to construction and report any findings to the USFWS. 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.

3.5.4.2 Resident Wildlife

Potential impacts to wildlife include construction of well pads, upgrading of existing two-track trails, construction of new roads, and potential future commercial operations. Minimal to no impacts on listed species are expected due to the sparseness of even anecdotal evidence that they may occur within the project area. Ground clearing might impact habitat for unlisted species, including small birds, ground dwelling mammals, and other wildlife species.

Table 9 identifies other wildlife that may be generally expected around the proposed sites. Some of these were confirmed by direct observation or by various signs. Direct wildlife observations are affected by time of day, time of year, habitat condition and secretive nature of wildlife.

Table 9. Wildlife

Location	Observed	Suitable Habitat
D-3 Dancing Bull #16-21H	None	Pronghorn antelope, small mammals, sharp-tailed grouse, and a variety of grassland and song nesting birds
D-3 Dora Smith #5-8H	Northern harrier, sharp-tailed grouse, grasshopper sparrow	Mule deer, pronghorn antelope, small mammals, sharp-tailed grouse, and a variety of grassland and song nesting birds
D-3 Mandan South #24-25H	Eastern bluebird, field mouse	Mule deer, pronghorn antelope, small mammals, sharp-tailed grouse, and a variety of grassland and song nesting birds
D-3 Mabel Evans #10-3H & D-3 Normal Eagle #15-22H	Turkey vultures	Pronghorn antelope, small mammals, sharp-tailed grouse, and a variety of grassland and song nesting birds

Fragmentation of native prairie habitat is a specific concern for resident sharp-tailed grouse, but the limited disturbance from exploration remains small in the landscape context.

Precautions benefitting all wildlife include:

- Locations overlying existing disturbances;
- Netting of the reserve pit in the interval between drilling and reclamation of the pit;
- Prompt removal of oil from open pits or ponds;
- Installation of covers on drip buckets under valves or spigots; and
- Prompt initial reclamation.

Final and complete reclamation will proceed immediately if the well is unproductive, or promptly after a commercial well is decommissioned. Wildlife inhabiting project areas are generally expected to adapt to changing conditions and continue to thrive.

3.6 Soils

The following paragraphs discuss soils found at the individual well sites. The Natural Resource Conservation Services (NRCS) soils data was reviewed prior to the on-site assessment and verified during the field visit. Generally, the wells addressed in this report are located on fine-grained soils with low to moderate erosion potential. The sites are suitable for construction. Sites should be monitored for erosion and best management practices implemented to control erosion as necessary. The area of disturbance measured is within the completed area fenced, thus includes the cut/fill areas and topsoil/spoil piles.

3.6.1 D-3 Dancing Bull #16-21H

The D-3 Dancing Bull #16-21H well site is located on northeast sloping native bench above Little Shell Creek. The well site area is comprised mostly of Williams-Zahl and Zahl-Williams loams according to the NRCS Mapping Units (MUs) assigned to the area. Rhodes-Cabba loams are found at the well site edges near the Little Shell Creek. The on site assessment found dark, silty loam topsoil at depths greater than 18" across the pad site. Soils at depths greater than 18" are generally sandy lean clay.

Table 10. D-3 Dancing Bull #16-21H Soils

Soil Name (MU)	Pad Acres	Road Acres	Total Acres
(23B) Williams-Zahl loams, 3 to 6 percent slopes	3.1	1.3	4.4
(24E) Zahl-Williams loams, 9 to 25 percent slopes	0.7	na	0.7
(62E) Rhoades-Cabba loams, 3 to 25 percent slopes	0.5	0.6	1.1

3.6.2 D-3 Dora Smith #5-8H

The D-3 Dora Smith #5-8H well pad is located in a grassy upland with approximate 6-15% slopes surrounding the site. The slopes near the well are center are approximately a 3-6% grade. Soils are comprised of Noonan-Williams loams according to the NRCS Mapping Units (MUs). The soils along the access road coming are comprised almost entirely of Williams-Zahl and Zahl-Williams loams. The soils along the two-track as it follows the side slope of a large butte are mapped as the Vebar-Flasher-Zahl complex. Topsoil across the proposed site and access road is generally 12" deep. Soils turn to lean clay with some sand and a trace of gravel present at depths greater than 12"

Table 11. D-3 Dora Smith #5-8H Soils

Soil Name	Pad Acres	Road Acres	Total Acres
(24C) Williams-Zahl loams, 6 to 9 percent slopes	na	2.4	2.4
(24E) Zahl-Williams loams, 9 to 25 percent slopes	na	0.4	0.4
(24F) Zahl-Max loams, 25 to 60 percent slopes	na	0.1	0.1
(58B) Noonan-Williams loams, 0 to 6 percent slopes	4.9	0.5	5.4
(80E) Vebar-Flasher-Zahl complex, 6 to 25 percent slopes	na	0.6	0.6

3.6.3 D-3 Mandan South #24-25H

The D-3 Mandan South #24-25H well site is located on a generally north sloping plateau with a 6-9% grade comprised of Williams-Zahl and Noonan-Williams loams according to the NRCS Mapping Units (MUs). The pad is situated near the edge of the steep Missouri River breaks where Badland-Cabba complex soils are encountered. The access road crosses 3-6% sloping Noonan-Williams loams from the private drive to the proposed pad site. The topsoil, as determined onsite, is a dark brown sandy loam, approximately 8" deep across the area. Soil at depths greater than 8" turns to a sandy clay with some gravel inclusions. At 24"+ the soil turns to a gray clay with gravel and cobbles.

Table 12. D-3 Mandan South #24-25H

Soil Name	Pad Acres	Road Acres	Total Acres
(24C) Williams-Zahl loams, 6 to 9 percent slopes	3.6	na	3.6
(57F) Badland-Cabba complex, 9 to 70 percent slopes	0.6	na	0.6
(58B) Noonan-Williams loams, 0 to 6 percent slopes	0.9	1.8	2.7

3.6.4 D-3 Mabel Evans #10-3 and D-3 Normal Eagle #15-22H

The D-3 Mabel Evans #10-3H and D-3 Normal Eagle #15-22H well site and access road is located on a cultivated convex hill with an approximate 3-6% grade east slope. The soils here are comprised of Williams-Zahl loams according to the NRCS Mapping Units (MUs). Topsoil is

10" deep across the site and is black, silty clay in nature. Soil at depths greater than 10" is sandy lean clay.

Table 13. D-3 Mabel Evans #10-3H and D-3 Normal Eagle #15- 22H Soils

Soil Name	Pad Acres	Road Acres	Total Acres
(24C) Williams-Zahl loams, 6 to 9 percent slopes	6.5	na	6.5
(9B) Savage silty clay loam, 0 to 6 percent slopes	1.7	1.7	3.4

3.7 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 McLean and Mountrail Counties describe vegetation within proposed project areas as mostly cultivated farmlands, native grasses, and wetland plants. Common grain and seed crops include wheat, oats, flax, canola, and barley. 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, buffaloberry, western snowberry and gooseberry.

3.7.1 D-3 Dancing Bull #16-21H Vegetation

An on-site biological assessment of the Site was conducted on August 26, 2010, and again on September 27. Vegetation condition at time of the surveys was moderate to tall. Species found in the native pasture is predominately green needlegrass (*Stipa viridula*), western wheatgrass (*Agropyron smithii*), needle-and-thread (*Stipa comata*), and prairie junegrass *(Koeleria pyramidata).* Buck brush (*Symphoricarpos occidentalis*) patches with an understory of Kentucky bluegrass (*Poa pratensis*) patches are also common. Dominant forbs present include Canada goldenrod (*Solidago canadensis),* fringed sagebrush (*Artemisia frigid),* green milkweed (*Asclepias viridiflora),* curly cup gumweed (*Grindelia squarrosa) and* owl clover (*Orthocarpus luteus*). Shrub species on side slopes flanking the pad site include chokecherry (*Prunus virginiana*) and buffalo berry (*Shepherdia argentea).* The Little Shell Creek bottom contained 2-10 inches of standing water and harbored spikerush *(Eleocharis obtuse),* prairie cordgrass *(Spartina pectinatus)* and narrow-leaved cattail (*Typha angustifolia*).

3.7.2 D-3 Dora Smith #5-8H Vegetation

An on-site biological assessment of the Site was conducted on August 26, 2010, and again on September 27. The proposed site is located in a native pasture. Vegetation condition at time of surveys was moderate to tall. Species found in the native pasture are predominately needle-and-thread (*Stipa comata*), blue grama (*Bouteloua gracilis*), green needlegrass (*Stipa viridula*) with Kentucky bluegrass (*Poa pratensis*) densely invading most of pasture. Buck brush (*Symphoricarpos occidentalis*) patches with an understory of Kentucky bluegrass are common along two-track. Little bluestem (*Andropogon scoparius*) is prominent on side slopes flanking the site and along the access route. The drainage and side slopes include patches of chokecherry (*Prunus virginiana*) and buffalo berry (*Shepherdia argentea).* Forbs in the pasture are prominent and include Canada goldenrod (*Solidago canadensis),* fringed sagebrush (*Artemisia frigid),* green milkweed (*Asclepias viridiflora,* silver leaf scurfpea (*Psoralea argophylla*) and purple coneflower *(Echinacea angustifolia).*

3.7.3 D-3 Mandan South #24-25H Vegetation

An on-site biological assessment of the Site was conducted on August 1, 2010 and again on September 27. The proposed well is located on parcel of native pasture. Grazing is heavy and

species diversity is low. The proposed access road follows an existing private driveway and two-track trail. Species found in the native pasture are predominately Western wheatgrass (Agropyron smithii), needle-and-thread (Stipa comata), and Blue gramma (Bouteloua gracilis) with crested wheatgrass (Agropyron cristatum). Buck brush (Symphoricarpos occidentalis) patches with an understory of Kentucky bluegrass (Poa pratensis) patches are also present. Vegetation in drainages flanking the pad site includes green ash (Fraxinus pennsylvanica) and chokecherry (Prunus virginiana). Weed species including Russian thistle (Salsola kali) and kochia (Kochia scoparia) are found adjacent to a nearby residence.

3.7.4 D-3 Mable Evans #10-3H & D-3 Normal Eagle #15-22H Vegetation

An on-site biological assessment of the Site was conducted on August 26, 2010, and again on September 27. The proposed well site is located on cultivated agricultural land and a small portion of degraded native grassland. Native grassland vegetation condition at the time of the surveys was moderate to tall. Species found in the grassland is predominately needle-and-thread (*Stipa comata*) invaded by crested wheatgrass (*Agropyron cristatum*) and smooth brome (*Bromus inermis*). Buck brush (*Symphoricarpos occidentalis*) patches with an understory of Kentucky bluegrass (*Poa pratensis*) patches are also common. Forbs present include purple coneflower (*Echinacea angustifolia),* woods rose (*Rosa woodsii),* spotted gay feather (*Liatris punctata),* wavy leaf thistle (*Cirsium undulatum),* and silver leaf scurfpea (*Psoralea argophylla).* Canada thistle (*Cirsium arvense)* is found on the cultivated field edge.

3.7.5 Noxious Weeds

The North Dakota Agriculture Commission (ND Department of Agriculture 2002) identifies twelve noxious weed plant species in the state (Table 14). Seven of the noxious weed species have been reported in Mountrail County. Absinth wormwood, Canada thistle, field bindweed, leafy spurge, musk thistle, saltcedar, and spotted knapweed are known to occur in the County (ND Department of Agriculture 2007).

Canada thistle is found on the cultivated field edge of the D-3 Mable Evans #10-3H & D-3 Normal Eagle #15-22H pad site. No other noxious weeds were observed along the other proposed access roads or sites during the assessment.

Potential disturbance of 31.9 acres and removal of existing soils and vegetation present opportunities for invasive species and threatens to reduce the quality or quantity of forage or crop production. The APD and this EA require the operator to control noxious weeds throughout project areas. Vehicles that have been driven in areas with invasive species must be cleaned with high-pressure sprayers before entering the project area.

Surface disturbance and vehicular traffic must not take place outside approved rights-of-way or fenced well pad areas. 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.

Table 14. Noxious weeds

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

[1] North Dakota Department of Agriculture 2003-2007
[2] Not Reported

3.8 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.

Cultural resource inventories of these Dakota-3 well pads and access roads were conducted by personnel of Beaver Creek Archaeology, Inc. and SWCA Environmental Consultants, using an intensive pedestrian methodology. For the Mandan South 24-25H (formerly Mandan 24-25H) project approximately 15 acres were inventoried on April 4, 2010 (Herson and 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 May 6, 2010; however, the THPO did not respond within the allotted 30 day comment period. For the Dancing Bull 16-21H project approximately 13.5 acres were inventoried (Hutchinson and Kohler 2011a) and for the Dora Smith 5-8H project approximately 22.8 acres were inventoried (Hutchinson and Lechert 2011) on August 26, 2010. One archaeological site was located that may possess the quality of integrity and meet at least one of the criteria (36 CFR 60.6) for inclusion on the National Register. As the lead federal agency, and as provided for in 36 CFR 800.5, on the basis of the information provided, BIA reached a determination of **no historic properties affected** for these undertakings, as the archaeological site will be avoided. This determination was communicated to the THPO on March 4, 2011; however, the THPO did not respond within the allotted 30 day comment period. For the Mabel Evans 10-3H & Normal Eagle 15-22H dual well pad project approximately 12.13 acres were inventoried on August 26, 2010 (Hutchinson and Kohler 2011b). No historic properties were located, and BIA reached a determination of **no historic properties affected** for this undertaking. This determination was communicated to the THPO on March 15, 2011; however, the THPO did not respond within the allotted 30 day comment period.

No cultural resources are known to be present within the APE. If cultural resources are discovered during construction or operation, the operator shall immediately stop work, secure the affected site and notify BIA and THPO. Unexpected or inadvertent discoveries of cultural resources or human remains trigger mandatory federal procedures that include work stoppage and BIA consultation with all appropriate parties. Following any such discovery, operations will not resume without written authorization from the BIA. **Project personnel are prohibited from collecting any artifacts or disturbing cultural resources in the area under any circumstances. Individuals outside the right-of-way are trespassing.** No laws, regulations, or other requirements have been waived; no compensatory mitigation measures are required.

3.9 Socio-economics

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 15. 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.

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).

Table 15. 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.

As shown in Table 16 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 that 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.

Availability and affordability of housing can affect oil and gas development and operations. Housing information from the year 2000 is summarized in Table 17. 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 16. 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.

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.

Table 17. 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

3.10 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 federal decisions can be materially affected by participating groups and individuals.

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 might eventually benefit further from royalties on commercial production. Profitable production rates at proposed locations might lead to exploration and development on additional tracts owned by currently non-benefitting allottees. The absence of lease and royalty income does not, moreover, 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 effect 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.

3.11 Mitigation and Monitoring

Many protective measures and procedures are described in this document and in the APD. No laws, regulations, or other requirements have been waived; no compensatory mitigation measures are required.

3.12 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 killed during earthmoving or in collisions with vehicles, and energy expended during construction and operation.

3.13 Short-Term Use versus Long-Term Productivity

Short-term activities will not detract significantly from long-term productivity of the project areas. The small areas dedicated to the access roads and well pads 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 will shrink considerably once wells are drilled and non-working areas are reclaimed and reseeded. 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.

3.14 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 wells. Current land uses are expected to continue with little change, since undivided interests in the land surface are often held by different tribal members than those holding mineral rights. Virtually all-available acreage is already organized into agricultural leases or range units to utilize surface resources for economic benefit; oil and gas development is not expected to have more than a minor effect on surface use patterns.

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, but for purposes of cumulative impact analyses, land ownership and the reservation boundary are immaterial. Perimeters of 1, 5, 10, and 20 miles around the proposed well sites were evaluated to determine the level of oil and gas activity in the surrounding area, as shown in Table 18 and on Figure 22. There are 20 active well within five miles of the sites considered in this document with at least 32 NDIC reported confidential sites in the area. The immediate area is currently under development, mainly by Zenergy. Within ten miles, there are currently 87 active wells with 109 proposed. Within 20 miles, there are approximately 779 total oil and gas wells in various stages of development or in production.

Table 18. Oil and Gas Well Status in Area

Distance from Well Sites	Active Wells	Confidential or Proposed Wells	Permitted to Drill	Currently Drilling*	**Totals**
0-1 miles	1	5	0	1	**6**
1-5 miles	20	32	0	5	**52**
5-10 miles	66	72	6	9	**144**
10-20 miles	387	161	29	20	**577**
Cumulative Total (20-mile radius)	**474**	**270**	**35**	**29**	**779**
Fort Berthold Reservation	**207**	**202**	**15**	**18**	**424**

NDIC OG well status – November 22, 2010.
* Drill rigs not tabulated in totals. Confidential well numbers account for those with drill rigs.

There are ever increasing numbers of newly constructed and proposed well pads within the Fort Berthold reservation boundaries and near the proposed sites. Within the boundaries, there are 424 active, proposed, or permitted wells with 18 of these currently being drilled. Zenergy has numerous wells in various stages of development, in the planning process or in the application process. Such developments will rely wherever possible on shared roads, centralized and downsized facilities, and other opportunities to reduce surface disturbance and impacts to the human environment. Zenergy also has proposed to develop a natural gas gathering system connecting all wells developed in the area.

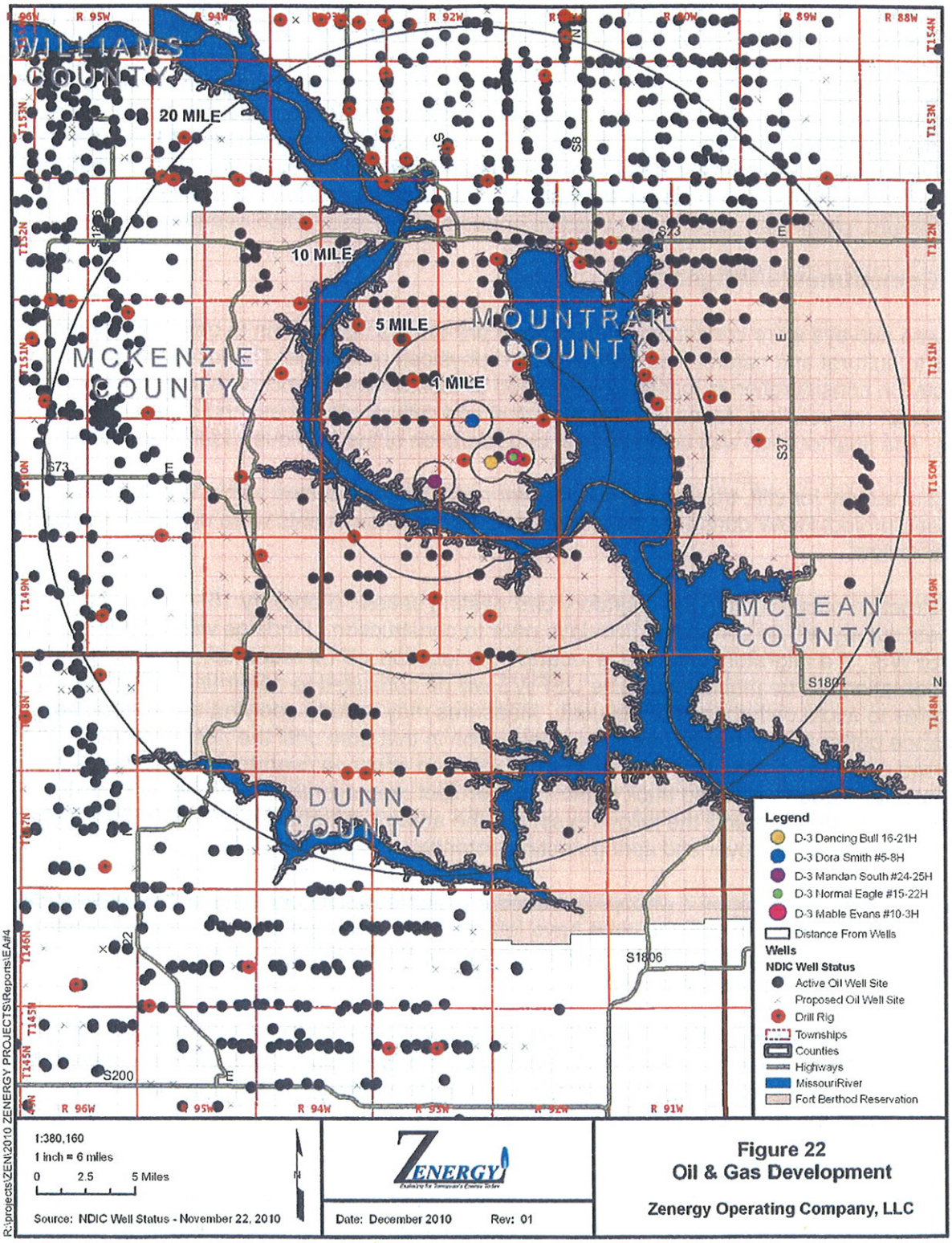
Approved oil/gas leases may lead to additional exploration and development, but additional analysis and BIA approval are required before the surface is disturbed at any other location. Potential impacts from possible future development cannot be meaningfully analyzed at this time. Not only is the level of development highly sensitive to volatile commodities prices, but additional development may increase interest in pipelines, thereby *reducing* impacts to certain critical elements of the human environment, such as public safety and air quality.

These proposed projects would be in addition to the other numerous developments in the area. Efforts are made to reduce surface use by drilling multiple wells from common pads when possible. As such, these proposed projects would contribute only a small 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 lands that have not been previously cultivated or otherwise physically manipulated. There are no wetlands, floodplains, or major drainage facilities that will be significantly negatively affected by the proposed well sites. Current land

uses are expected to continue with little change other than the acreage required for development. The surface disturbance from all proposed projects is approximately 38.8 total acres. The road acreage and fenced pad area combined encompasses an estimated total of 44.3 acres of total surface use loss. Increased truck traffic on adjacent roadways can be expected and has a documented negative, but manageable, impact on road conditions.

Figure 22. Gas and Oil Development


WILLIAMS COUNTY
MCKENZIE COUNTY
MOUNTRAIL COUNTY
MCLEAN COUNTY
DUNN COUNTY
20 MILE
10 MILE
5 MILE
1 MILE
Legend
D-3 Dancing Bull 16-21H
D-3 Dora Smith #5-8H
D-3 Mandan South #24-25H
D-3 Normal Eagle #15-22H
D-3 Mable Evans #10-3H
Distance From Wells
Wells
NDIC Well Status
Active Oil Well Site
Proposed Oil Well Site
Drill Rig
Townships
Counties
Highways
MissouriRiver
Fort Berthod Reservation
1:380,160
1 inch = 6 miles
0 2.5 5 Miles
Source: NDIC Well Status - November 22, 2010
Date: December 2010 Rev: 01
Figure 22
Oil & Gas Development
Zenergy Operating Company, LLC
R:\projects\ZEN\2010 ZENERGY PROJECTS\Reports\EA#4

The proposed actions have been planned to avoid impacts to wetlands, floodplains, surface water, cultural resources, and threatened and endangered species. Unavoidable impacts to these or other resources will be minimized and/or mitigated as described in this document. The operator of any facility will be required to complete interim reclamation of the road and well pad immediately following construction and completion. Implementation of other precautionary and protective measures detailed in this EA, the APD, and applicable regulations are expected to minimize impacts to all critical elements of the human environment. 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.

3.15 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 locations were 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.

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 15 – 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.

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.

3.15.1 D-3 Dancing Bull #16-21H

The D-3 Dancing Bull #16-21H will be drilled using a semi-closed loop drilling system. Cutting pits will be lined with a 20-mil HDPE liner. Mitigation criteria incorporated into the well pad design include rotating the pad and rounding or pulling the edges of the pad back to maintain an offset from drainages. A five-foot high containment berm will be constructed to contain any runoff or spill on the pad site. Best Management Practices (BMP's) including the use of water bars, seed matting, diversion ditches around south and west sides of pad and sediment fences to stop sedimentation into creek will be implemented. The BIA requires all electrical utilities to be underground.

3.15.2 D-3 Dora Smith #16-21H

D-3 Dora Smith #5-8H will be drilled using a semi-closed loop drilling system. Cutting pits will be lined with a 20-mil HDPE liner. Mitigation criteria incorporated into the well pad design include rotating the pad and rounding or pulling the edges of the pad back to maintain an offset from drainages and to reduce cut and fill volumes. A two-foot high minimum containment berm be constructed on the pad site around the north and east sides to reduce erosion into the drainage and to contain any runoff or spill to the pad site. Best Management Practices (BMP's) including the use of sediment fencing, soil compaction and reseeding of native species will be utilized during construction and after final reclamation. The BIA requires all electrical utilities to be underground.

3.15.3 D-3 Mandan South #24-25H

D-3 Mandan South #24-25H will be drilled using a closed-loop drilling system. No cuttings or reserve pits will be located at the Site. Best Management Practices (BMP's) to control soil erosion would be required. Additionally due to the proximity of Lake Sakakawea, a four-foot high berm around the perimeter of the pad shall be constructed to contain surface water run-off or potential contamination from entering the drainages. At the on-site assessment, mitigation recommendations included keeping the pad on the high plateau back from the bluffs and rounding of corners to avoid treed drainages.

3.15.4 D-3 Mable Evans #10-3H and D-3 Normal Eagle #15-22H

D-3 Mable Evans #10-3H and D-3 Normal Eagle #15-22H is a dual well site. The wells will be drilled using semi-closed loop drilling system. Cutting pits will be lined with a 20-mil HDPE liner. Mitigation criteria incorporated into the well pad design to avoiding potential impacts to a drainage nearby drainage. Standard Best Management Practices (BMP's) will be employed during construction.

4.0 Consultation and Coordination

Project scoping letters and maps were mailed to recipients listed and a record of comments received is found in Table 19. An example scoping and concurrence request letter can be found in Appendix A. Response letters are found in Appendix B.

Table 19. Scoping Record

Agency Scoping	Comments
US Fish and Wildlife Service	Concurrence received and all comments incorporated
North Dakota Game and Fish Department	Comments received and incorporated
Bureau of Land Management	No Response
US Army Corps of Engineers	Comments received and incorporated
ND Natural Heritage Inventory (ND Parks and Rec)	Comments received and incorporated

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:

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Zenergy Operating Company, LLC
Kelley Bryan, Landman and Project Manager

McCain and Associates, Inc.
Todd Hartleben, Principal Engineer
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. Omernik, 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/habitatlndsdeco/index.htm. Accessed June 2008.

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.

Cooper, Judith, Caryn Berg, and Alan Hutchinson. 2011. A Class I and Class III Cultural Resources Inventory of the Zenergy Dakota-3 Dora Smith 5-8H Well and Access Road, Fort Berthold Indian Reservation, Mountrail County, North Dakota. Submitted by SWCA Environmental Consultants to the BIA Great Plains Regional Office.

Herson, Chandler S. and Wade Burns. 2010. Dakota-3 Mandan #24-25H Well Pad: A Class III Cultural Resource Inventory, Mountrail County, North Dakota. Beaver Creek Archeology.

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).

Hutchinson, Alan and Todd Kohler. 2011. A Class III Cultural Resource Inventory of Zenergy's Dancing Bull #16-21H Well Pad and Access Road on the Fort Berthold Indian Reservation, Mountrail County, North Dakota. Submitted by SWCA Environmental Consultants to the BIA Great Plains Regional Office.

Hutchinson, Alan and Todd Kohler. 2011. A Class III Cultural Resource Inventory of Zenergy's Mabel Evans #10-3H and Norma Eagle 15-22H Well Pad and Access Road on the Fort Berthold Indian Reservation, Mountrail County, North Dakota. Submitted by SWCA Environmental Consultants to the BIA Great Plains Regional Office.

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.

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). 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 *512008* 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 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. 2005 and 2009. National Agriculture Imagery Program, Mountrail County aerial photograph.

United States Fish and Wildlife Service. 20010. 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, 24K 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/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. 2009. 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.

Herson, Chandler S., and Wade Burns
(2010) Dakota-3 Mandan #24-25H Well Pad: A Class III Cultural Resource Inventory, Mountrail County, North Dakota. Beaver Creek Archaeology for Zenergy Operating Company, LLC, Tulsa, OK.

Hutchinson, Alan, and Todd Kohler
(2011a) A Class I and Class III Cultural Resource Inventory of the Zenergy Dakota-3 Dancing Bull #16-21H Well Pad and Access Road on the Fort Berthold Indian Reservation, Mountrail County, North Dakota. SWCA Environmental Consultants for Zenergy Operating Company, LLC, Tulsa, OK.

(2011b) A Class I and Class III Cultural Resource Inventory of the Zenergy Dakota-3 Mabel Evans #10-3H and Dakota-3 Normal Eagle #15-22H Dual Well Pad and Access Road on the Fort Berthold Indian Reservation, Mountrail County, North Dakota. SWCA Environmental Consultants for Zenergy Operating Company, LLC, Tulsa, OK.

Hutchinson, Alan, and Stephanie Lechert
(2011) A Class I and Class III Cultural Resource Inventory of the Zenergy Dakota-3 Dora Smith #5-8H Well Pad and Access Road, Fort Berthold Indian Reservation, Mountrail County, North Dakota. SWCA Environmental Consultants for Zenergy Operating Company, LLC, Tulsa, OK.

Acronyms

AAQM	Ambient Air Quality Monitoring (site)
AIRFA	American Indian Religious Freedom Act
APD	Application for Permit to Drill
APE	Area of Potential Affect
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FONSI	Finding of No Significant Impact
GPRO	Great Plains Regional Office
MHA Nation	Three Affiliated Tribes of the Mandan, Hidatsa, and Arikara Nation

NAGPRA	Native American Graves Protection and Repatriation Act
NDCC	North Dakota Century Code
NDDH	North Dakota Department of Health
NDGFD	North Dakota Game and Fish Department
NDIC	North Dakota Industrial Commission
NDNHI	North Dakota Natural Heritage Inventory
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

Applications for Permit to Drill

Appendix A

Scoping and Concurrence Request

McCain
and Associates, Inc.

ENGINEERS & SCIENTISTS
Knowledge. Commitment. Service.

October 1, 2010

Mr. Mike McKenna
North Dakota Game and Fish Department
Conservation & Communication Division Chief
100 North Bismarck Expressway
Bismarck, ND 58501

Re: Proposed D-3 Dancing Bull #16-21H Well Site
Zenergy Operating Company

Dear Mr. McKenna:

McCain and Associates, Inc. (McCain) is requesting your input concerning development of the proposed D-3 Dancing Bull #16-21H well site (Site). The Site is located on the Fort Berthold Reservation in Section 16, T150N, R92W of Mountrail County.

An on-site biological assessment of the Site was conducted on August 26, 2010 and revisited on September 27, with Bureau of Indian Affairs (BIA) and Tribal representatives present. At the initial on-site visit the proposed well site and access road were "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. The final project design was staked and re-evaluated at the second on-site visit.

Project Description
The proposed well is located on a parcel of native horse pasture. The level area of the well pad used for drilling and completion operations (including a reserve pit for drilled cuttings) is 430 feet long by 330 feet wide. The surface area of the pad, including cut and fill slopes and stockpiled topsoil and reserve pit backfill on the edge of pads will disturb an approximate total of 4.6 acres of surface disturbance for the well pad construction. The pad was initial staked spilling over the edges of the flat above Little Shell Creek. Mitigation efforts made at the site visit included rotating the pad and rounding or pulling the edges of the pad back from the edge. The BIA requested and Zenergy readily agreed that a 5-foot high containment berm would be constructed on pad site to contain any runoff or spill on the pad site. Best Management Practices (BMP's) including the use of water bars, seed matting, diversion ditches around south and west sides of pad and sediment fences to stop sedimentation into creek.

The proposed access road departs 28th Street NW and travels south crossing the perennial Little Shell Creek before gaining elevation to the pad site. The proposed access is approximately 826 feet long and a maximum right of way width of 100 feet for a total surface disturbance of 1.9 acres. The initial onsite visit revealed a small seep near the start of the access road. The seep was delineated and the staked road was moved east to ensure avoidance. The width of the creek at the road crossing was delineated with a sub-meter accurate GPS unit and revealed the maximum width to be 37 feet. The maximum disturbed right-of-way width will be 100 feet with a running surface of 12 feet wide and therefore the calculated area impacted at the stream crossing is approximately 0.078 acres. Zenergy is

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committed to reducing impacts to the creek and stated during construction the banks will not be cut. The road constructed will be fill material leveled bank to bank to help reduce bank destabilization for reclamation and reduce erosion from ditches flowing into creek. Appropriate culverts to allow normal flows and flash flood events will be installed. Aforementioned BMP's including matting will be used at crossing to reduce erosion and sedimentation. Zenergy and the BIA will monitor creek crossing for the life of the well for any negative effects to flow regime and sedimentation.

The BIA requires all electrical utilities to be underground. No utilities corridors are proposed at this time. If utilities at this site are required they will be underground and the stream crossing will be bored under.

Vegetation condition at time of surveys was moderate to tall. Species found in the native pasture is predominately green needlegrass (*Stipa viridula*), western wheatgrass (*Agropyron smithii*), needle-and-thread (*Stipa comata*), and prairie junegrass *(Koeleria pyramidata)*. Buck brush (*Symphoricarpos occidentalis*) patches with an understory of Kentucky bluegrass (*Poa pratensis*) patches are also common. Dominant forbs present include Canada goldenrod (*Solidago canadensis),* fringed sagebrush (*Artemisia frigid),* green milkweed (*Asclepias viridiflora),* curly cup gumweed (*Grindelia squarrosa) and* owl clover (*Orthocarpus luteus*). Shrub species on side slopes flanking the pad site include and chokecherry (*Prunus virginiana*) and buffalo berry (*Shepherdia argentea).* The flat creek bottom contained 2-10 inches of standing water and harbored spikerush *(Eleocharis obtuse),* prairie cordgrass *(Spartina pectinatus)* and narrow-leaved cattail (*Typha angustifolia*).

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. No raptors or nests were observed during the on-site review. The Site was also surveyed for migratory bird species as well as nests. At the time of the surveys turkey vultures *(Cathartes aurea*) and Black terns (*Chlidonias niger*) were observed soaring above the Site and no nests were observed.

If the site will be constructed during the nesting season (Febuary 1 - July 15) aerial or ground surveys for migratory birds (including raptors) and nests will again be conducted 5 days prior to construction. Mitigation measures will be taken to avoid disturbance of raptor or migratory bird nesting sites.

High Value Habitat Avoidance
The proposed pad site is located on a low plateau of native prairie pasture. The pad site is near the edge and access road crosses the Little Shell Creek and will receive some runoff. The shoreline of Lake Sakakawea is approximately 2.5 river miles from pad site. Best management practices (BMP's) including contouring, silt fences, choir waddles, soil compaction, and native reseeding will be implemented during construction and interim and final reclamation.

Placement of the well site in this location was selected as it is accessible due to the topography of the area, will have the highest success for reclamation and still allow the development of the

mineral rights of the area. The creek crossing is unavoidable and will be monitored by Zenergy and BIA to ensure that proper flow regime is maintained and sedimentation does not occur.

The ND Parks and Recreation Department (NDPRD) houses the North Dakota Natural Heritage biological conservation database. A review by the NDPRD will be 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. No significant ecological communities were observed at the onsite. If the NDPRD review identifies avoidance areas that will be addresses with the BIA and mitigation included in the final EA.

Cumulative Impacts
The proposed well pad site and access route will result in a maximum of 6.5 acres of surface disturbance, including approximately 0.78 acres of creek bed. Potential impacts to wildlife include displacement due to construction activities and loss of ground cover in native and wetland areas. Road and pad construction may temporarily impact habits of unlisted species, including migratory birds, small and large mammals, and other wildlife species. These effects are not likely to cause long-term declines in populations in the area.

Fragmentation of native prairie habitat is a specific concern for grouse species. No grouse or lek grounds were observed at the spring on-site visit. The disturbance from the establishment of this site is small in the landscape context and is situated near other human development.

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

- BMP's at creek crossing reduce potential erosion and to aid in reclamation.
- Use of a closed-loop drilling system.
- Construction of a five-foot high berm around the pad site to aid in containing surface water runoff or spills on site.
- 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 are ***not likely to adversely affect*** listed threatened and endangered species and habitats.

I would appreciate receiving your comments on this well site location in relation to species of concern and other biological resources. Maps depicting the location of the proposed oil well site are enclosed. Please let me know if you need additional information.

Sincerely,

Ryan J. Krapp, Ecologist/GIS Specialist
Enclosures
R:\projects\ZEN\ZEN1016 - Dancing Bull 16-21H\correspondence\NDGF Request.doc

McCain
and Associates, Inc.

ENGINEERS & SCIENTISTS
Knowledge. Commitment. Service.

September 30, 2010

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

Re: D-3 Mandan South #24-25H Well Site
Zenergy Operating Company

Dear Mr. Towner:

As requested, McCain and Associates, Inc. is submitting additional information concerning development of the proposed D-3 Mandan South #24-25H well site (Site). The Site is located on the Fort Berthold Reservation in Section 24, T150N, R93W of Mountrail County. A figure depicting the proposed site location is included.

An on-site biological assessment of the Site was conducted on April 1, 2010 and revisited on September 27, with Bureau of Indian Affairs (BIA) and Tribal representatives. The proposed well site and access road were "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 well is located on a heavily grazed parcel of native pasture. The level area of the well pad used for drilling and completion operations (including a reserve pit for drilled cuttings) is 430 feet long by 330 feet wide (3.3 acres). Cut and fill slopes and stockpiled topsoil and reserve pit backfill on the edge of pads will disturb another 0.9 acres for a total of 4.2 acres of surface disturbance for the well pad.

The proposed access road follows an exiting private driveway and two-track trail. The existing driveway is approximately 1,500 feet long. The two-track trail is approximately 1,000 feet long. The existing driveway and trail will be upgraded to accommodate construction and operations vehicles. The maximum disturbed right-of-way width will be 66 feet with a running surface of 12 feet.

Species found in the native pasture is predominately Western wheatgrass (*Agropyron smithii*), needle-and-thread (*Stipa comata*), Blue gramma (*Bouteloua gracilis)* with crested wheatgrass (*Agropyron cristatum*). Buck brush (*Symphoricarpos occidentalis*) patches with an understory of Kentucky bluegrass (*Poa pratensis*) patches are also present. Grazing is heavy and species diversity is low. Vegetation in drainages flanking the pad site include green ash (*Fraxinus pennsylvanica*) and chokecherry (*Prunus virginiana*). Weed species including Russian thistle (*Salsola kali*) and kochia (*Kochia scoparia*) are found in young tree planting adjacent to a nearby residence.

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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. No raptors or nests were observed during the on-site review. The Site was also surveyed for migratory bird species as well as nests. Due to low grass cover and timing of year no bird species were observed on the Site and no nests were observed.

If the site will be constructed during the nesting season (Febuary 1 - July 15) aerial or ground surveys for migratory birds (including raptors) and nests will again be conducted. Mitigation measures will be taken to avoid disturbance of raptor or migratory bird nesting sites.

High Value Habitat Avoidance
The proposed pad site is located on a high plateau of native prairie pasture. The pad site is near the edge of the Missouri River breaks and the drainages flanking the Site will receive some runoff. Best management practices (BMP's) including contouring, silt fences, choir waddles, soil compaction, and native reseeding will be implemented during construction and interim and final reclamation.

Placement of the well site in this location was selected as it is accessible due to the topography of the area, will have the highest success for reclamation and still allow the development of the mineral rights of the area. No wetlands are located along the access road route or pad site.

The ND Parks and Recreation Department (NDPRD) houses the North Dakota Natural Heritage biological conservation database. A review by the NDPRD 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 the database contains is a historic record of a significant ecological community, *Pascopyrum smithii – Nasella (Stipa) viridula prairie* (needlegrass-wheatgrass prairie), within one-mile of the project. This recorded community was documented in 1967 and will not be impacted by the proposed project.

The native species located on the proposed site does include Western wheatgrass (*Agropyron smithii*), needle-and-thread (*Stipa comata*). The Site location is heavily grazed and has been degraded by the invasion of crested wheatgrass and Kentucky bluegrass, likely caused by livestock feeding. Disturbed areas and spoil piles will be reseeded with a native seed mix as specified by the BIA. The BIA will monitor the seeding success and weed species control over life of project.

Cumulative Impacts
The proposed well pad site and access route will result in approximately 6.3 acres of surface disturbance. Potential impacts to wildlife include displacement due to construction activities and loss of ground cover in native and planted grassland areas. Road and pad construction may temporarily impact habits of unlisted species, including migratory birds, small and large mammals, and other wildlife species. These effects are not likely to cause long-term declines in populations in the area.

Fragmentation of native prairie habitat is a specific concern for grouse species. No grouse or lek grounds were observed at the spring on-site visit. The disturbance from the establishment of this site is small in the landscape context and is situated near other human development.

The BIA is requiring the use of a the use of a closed-loop drilling system and construction of a four-foot berm around the pad edge for spill containment, along with other BMP's to control erosion.

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.

Determinations made for federally listed species are:

- No effect
- Is not likely to adversely affect
- 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

Table 1. Threatened and Endangered Species

Species	Status
Interior Least Tern	Endangered
Whooping Crane	Endangered
Pallid Sturgeon	Endangered
Gray Wolf	Endangered
Piping Plover	Threatened

[1] USFWS (updated May, 2010)

Determinations made for federally listed species are:

- No effect
- Is not likely to adversely affect
- 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

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 visit. Due to the transient nature and no recent recorded sightings in the area the proposed project 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 visit April 1, 2010. The proposed well site is located more than ½ mile from the Missouri River system and will not impact the Missouri River habitat although is on the edge of the breaks leading directly to the Lake Sakakawea. No individuals were observed in the project area during the onsite visit. The proposed project 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 well site is located more than ½ mile from the Missouri River system and will not impact the Missouri River habitat although is on the edge of the breaks leading directly to the Lake Sakakawea. The proposed project is ***not likely to adversely affect*** 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).

The proposed well site 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 well location. 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, above ground power lines shall be marked following specifications made by the BIA and other federal agencies (USFWS, 2010). The proposed well site is placed in a location that has no whooping crane stop-over habitat. Land use in the area is primarily native prairie pasture with no large shallow marshes in the area. No individual whooping cranes were observed in the area during the onsite visit.

Construction activities may cause migratory cranes to divert from the area but is not likely to result in any fatalities. Any sightings should 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 ***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 NDPRD records do not indicate any piping plover sightings or critical habitat within 2-miles of the project site. The proposed well site is located more than ½ mile from the Missouri River system 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 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:

- Rounding the well pad corners reduce potential erosion and to aid in reclamation.
- Use of a closed-loop drilling system.
- Construction of a four-foot high berm around the pad site to aid in containing surface water runoff or spills.
- Interim and final reclamation including:
    - Use of BMPs (soil compaction, berms, silt fences, wattles, 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 are ***not likely to adversely affect*** listed threatened and endangered 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

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Appendix B

Scoping Responses and Concurrence

John Hoeven, Governor
Mark A. Zimmerman, Director

1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649
Phone 701-328-5357
Fax 701-328-5363
E-mail parkrec@nd.gov
www.parkrec.nd.gov

October 15, 2010

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

Re: Zenergy Operating Company D-3 Dancing Bull #16-21H Well Site Proposal

Dear Mr. Krapp:

The North Dakota Parks and Recreation Department has reviewed the above referenced project proposal submitted by Zenergy Operating Company to develop a well site located in Section 16, T150N, R92W, Mountrail County.

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

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any current or historical plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, there are no known occurrences within or adjacent to the project area.

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

Regarding any reclamation efforts, we recommend that any impacted areas be revegetated with species native to the project area.

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

Sincerely,

Jesse Hanson

Jesse Hanson, Manager
Planning and Natural Resources Division

R.USNDNHI*2010-239
CD/1011/DL1018

"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

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

November 2, 2010

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

Dear Mr. Krapp:

RE: Zenergy Inc. – Proposed Oil Well Sites
D-3 Dancing Bull #16-21H
D-3 Mable Evans #10-3H & D-3 Normal Eagle #15-22H
D-3 Dora Smith #5-8H

Zenergy, Inc. is proposing four oil and gas wells located on three well pads on the Fort Berthold Reservation in Mountrail County, North Dakota.

Our primary concern with oil and gas development is the fragmentation and loss of wildlife habitat associated with construction of the well pads and access roads. We recommend that construction be avoided to the extent possible within native prairie, wooded draws, riparian corridors, and wetland areas.

We also suggest that botanical surveys be completed during the appropriate season and aerial surveys be conducted for raptor nests before construction begins.

Sincerely,

Paul Schadewald
Chief
Conservation & Communication Division

js

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501

NOV 16 2010

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

Re: Zenergy Operating Company Scoping for Proposed Well D-3 Dancing Bull #16-21H on Fort Berthold Reservation, Mountrail County, North Dakota

Dear Mr. Krapp:

This is in response to your October 1, 2010, scoping document on a proposed exploratory oil and gas well proposed to be drilled and completed by Zenergy Operating Company, LLC (Zenergy) on the Fort Berthold Reservation, Mountrail County, North Dakota.

Specific location for the proposed pad is:

D-3 Dancing Bull #16-21H: T. 150 N., R. 92 W., Section 16, Mountrail County

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 plovers, interior least terns, and pallid sturgeon. This

concurrence is predicated on Zenergy's commitment to construct and maintain a five foot berm around the perimeter of the well pad.

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 Dakota skipper and Sprague's pipit are candidate species for listing under the ESA; therefore, an effects determination is not necessary for these species. However, the Service's Candidate Conservation Program provides a means for conserving these species. Early conservation preserves management options, minimizes the cost of recovery, and reduces the potential for restrictive land use policies in the future. Through Candidate Conservation Agreements and Candidate Conservation Agreements with Assurances, the Service can work with interested public and private parties to identify threats to candidate species or species at risk. Effective candidate conservation may reverse the species' decline, ultimately eliminating the need for ESA protection. If you would like more information on these programs, please notify the Service for further coordination.

Migratory Birds and Bald and Golden Eagle Protection Act

In an email correspondence on October 15, 2010, to Heidi Riddle of my staff, you clarified that Zenergy will implement the following measures to avoid/minimize take of migratory birds:

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

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 Zenergy'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
Director, ND Game & Fish Department, Bismarck

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640

October 7, 2010

North Dakota Regulatory Office

[NWO-2010-2263-BIS]

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

Dear Mr. Krapp:

1. **Project Authorization.** We have reviewed your October 1, 2010 request, on behalf of Zenergy Operating Company, for Department of the Army (DA) authorization for development of the proposed D-3 Dancing Bull #16-21H oil well site. The project will include an access road that will cross Little Shell Creek, impacting 0.078 acres of stream. Based on the information you provided, this office has determined that your work is authorized by Department of the Army Nationwide Permit No. 14, found in the March 12, 2007 Federal Register (72 FR 11092), Reissuance of Nationwide Permits. Enclosed is a fact sheet that fully describes this Nationwide Permit and lists the General Conditions and the Section 401 Water Quality Certification Requirements, if applicable, that must be followed for this authorization to remain valid. **Please note, any deviations from the original plans and specifications of your project could require additional authorization from this office.**

The plans submitted for review include reserve pits. Your project may be subject to the Migratory Bird Treaty Act of 1918 (MBTA). We did not identify any issues pertaining to the MBTA during our permit review process. However, you are reminded that this permit determination neither establishes compliance with the MBTA, nor does it relieve you of the responsibility for compliance with the MBTA. We recommend you contact FWS at 701-355-8508 for further information about your responsibilities under the MBTA

This verification is valid until the NWP is modified, reissued, or revoked. All of the existing NWPs are scheduled to be modified, reissued, or revoked prior to March 18, 2012. It is incumbent upon you to remain informed of changes to the NWPs. We will issue a public notice when the NWPs are reissued. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant NWP is modified or revoked, you will have twelve (12) months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this

2. **Project Location.** The legal description at the project site is Section 16, Township 150 North, Range 92 West, Mountrail County, North Dakota.

3. **Project Compliance Certification.** *In compliance with General Condition 26, you are required to submit the following project compliance certification within thirty (30) days of project completion. [Please check all applicable statements]*

[ ] I certify that I have completed the project as permitted.
[ ] I certify that I have completed a modified version of the project.
[ ] I certify that I have completed all required mitigation.

Permittee's Signature:_____ **Date:**_____

4. **Other Authorizations.** This determination is applicable only to the permit program administered by the US Army Corps of Engineers. It does not eliminate the need to obtain other Federal, state, tribal, and local approvals before beginning work.

5. Responsibility. You are responsible for all work accomplished in accordance with the terms and conditions of this Nationwide Permit. If a contractor or other authorized representative will be accomplishing the work authorized by the Nationwide Permit on your behalf, it is strongly recommended that they be provided a copy of this letter and the attached conditions so that they are aware of the limitations of the Nationwide Permit. Any activity that fails to comply with all the terms and conditions of the Nationwide Permit will be considered unauthorized and subject to appropriate enforcement action.

6. Other Special Conditions.

Endangered Species

That the permittee shall report any threatened or endangered species at the project site. Notification shall be made to the North Dakota Regulatory Office by telephone or fax within 24 hours. Written confirmation shall be provided within 48 hours if deemed necessary by the North Dakota Regulatory Office.

Cultural Resources

That the permittee and/or the permittee's contractor, or any of the employees, subcontractors or other persons working in the performance of a contract or contract(s) to complete the work authorized herein, shall cease work immediately and report the discovery of any previously unknown historic or archeological remains to the North Dakota Regulatory Office. Notification shall be by telephone or fax within 24 hours of the discovery and, in writing, within 48 hours. The North Dakota Regulatory Office will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places. Work shall not resume until notified by the North Dakota Regulatory Office.

Spawning Season

That no regulated activity within waters of the United States listed as Class III or higher on the 1978 Stream Evaluation Map for the State of North Dakota or on the North Dakota Game and Fish Department's website as a North Dakota Public Fishing Water shall occur between 15 April and 1 June.

7. Additional Information.

Suitable Material and 1978 Stream Evaluation Map: Permittees are reminded that General Condition No. 6 prohibits the use of unsuitable material. In addition, organic debris, some building waste, and materials excessive in fines are not suitable material. Specific verbiage on prohibited materials and the 1978 Stream Evaluation Map for the State of North Dakota can be accessed on the North Dakota Regulatory Office's website at: https://www.nwo.usace.army.mil/html/od-rnd/ndhome.htm

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

8. Points-of-Contact. If you have any questions concerning this determination, please contact **Patsy Crooke** of this office by letter or telephone at 701-255-0015 and reference Authorization Number **NWO-2010-2263-BIS**.

Sincerely

Daniel E. Cimarosti
Regulatory Program Manager
North Dakota

Enclosure

John Hoeven, Governor
Mark A. Zimmerman, Director

1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649
Phone 701-328-5357
Fax 701-328-5363
E-mail parkrec@nd.gov
www.parkrec.nd.gov

November 3, 2010

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

Re: D-3 Dora Smith 5-8H Well Site
Zenergy Operating Company

Dear Mr. Krapp:

The North Dakota Parks and Recreation Department has reviewed the above referenced project proposal submitted by Zenergy Operating Company to develop an oil well located in Section 5, T150N, R92W, Mountrail County.

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

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any current or historical plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, there are no known occurrences within or adjacent to the project area.

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

Regarding any reclamation efforts, we recommend that any impacted areas be revegetated with species native to the project area.

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

Sincerely,

Jesse Hanson, Manager
Planning and Natural Resources Division

R.USNDNHI*2010-254
CD/1028/DL1105

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501

NOV 15 2010

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

Re: Zenergy Operating Company Scoping for Proposed Well on Fort Berthold Reservation, D-3 Dora Smith 5-8H

Dear Mr. Krapp:

This is in response to your October 13, 2010, scoping document and subsequent October 15, 2010, email correspondence with Heidi Riddle of my staff, on a proposed exploratory oil and gas well proposed to be drilled and completed by Zenergy Operating Company, LLC (Zenergy) on the Fort Berthold Reservation, Mountrail County, North Dakota.

Specific location for the proposed pad is:

D-3 Dora Smith 5-8H: T. 150 N., R. 92 W., Section 5, Mountrail County

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. This concurrence is predicated on

Zenergy's placement of the pad approximately 3.5 miles from Lake Sakakawea. Additionally, Zenergy has agreed to construct and maintain a two foot perimeter berm around the pad.

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. However, the Service's Candidate Conservation Program provides a means for conserving these species. Early conservation preserves management options, minimizes the cost of recovery, and reduces the potential for restrictive land use policies in the future. Through Candidate Conservation Agreements and Candidate Conservation Agreements with Assurances, the Service can work with interested public and private parties to identify threats to candidate species or species at risk. Effective candidate conservation may reverse the species' decline, ultimately eliminating the need for ESA protection. If you would like more information on these programs, please notify the Service for further coordination.

Migratory Birds and Bald and Golden Eagle Protection Act

In an email correspondence on October 15, 2010, to Heidi Riddle of my staff, you clarified that Zenergy will implement the following measures to avoid/minimize take of migratory birds:

- 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.

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 Zenergy'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

Jeffrey K. Towner
Field Supervisor
North Dakota Field Office

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

John Hoeven, Governor
Mark A. Zimmerman, Director

1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649
Phone 701-328-5357
Fax 701-328-5363
E-mail parkrec@nd.gov
www.parkrec.nd.gov

October 15, 2010

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

Re: Zenergy Operating Mable Evans #10-3H & D-3 Normal Eagle #15-22H Dual Well Site Proposal

Dear Mr. Krapp:

The North Dakota Parks and Recreation Department has reviewed the above referenced project proposal submitted by Zenergy Operating Company to develop a dual well site located in Section 10, T150N, R92W, Mountrail County.

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

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any current or historical plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, there are no known occurrences within or adjacent to the project area.

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

Regarding any reclamation efforts, we recommend that any impacted areas be revegetated with species native to the project area.

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

Sincerely,

Jesse Hanson

Jesse Hanson, Manager
Planning and Natural Resources Division

R.USNDNHI*2010-240
CD/1011/DL1018

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501

NOV 16 2010

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

Re: Zenergy Operating Company Scoping for Two Proposed Wells on Fort Berthold Reservation, Dual Pad Mable Evans and Normal Eagle

Dear Mr. Krapp:

This is in response to your October 1, 2010, scoping document on two proposed exploratory oil and gas wells proposed to be drilled and completed by Zenergy Operating Company, LLC (Zenergy) on the Fort Berthold Reservation, Mountrail County, North Dakota.

Specific location for the proposed dual pad is:

D-3 Mable Evans #10-3H and D-3 Normal Eagle #15-22H: T. 150 N., R. 92 W., Section 10, Mountrail County

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 plovers, interior least terns and pallid sturgeon. This concurrence is predicated on Zenergy's placement of the pad 1.5 miles from Lake Sakakawea.

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 Dakota skipper and Sprague's pipit are candidate species for listing under the ESA; therefore, an effects determination is not necessary for these species. However, the Service's Candidate Conservation Program provides a means for conserving these species. Early conservation preserves management options, minimizes the cost of recovery, and reduces the potential for restrictive land use policies in the future. Through Candidate Conservation Agreements and Candidate Conservation Agreements with Assurances, the Service can work with interested public and private parties to identify threats to candidate species or species at risk. Effective candidate conservation may reverse the species' decline, ultimately eliminating the need for ESA protection. If you would like more information on these programs, please notify the Service for further coordination.

Migratory Birds and Bald and Golden Eagle Protection Act

In an email correspondence on October 15, 2010, to Heidi Riddle of my staff, you clarified that Zenergy will implement the following measures to avoid/minimize take of migratory birds:

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

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 Zenergy'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
Director, ND Game & Fish Department, Bismarck

"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

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

May 3, 2010

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

Dear Mr. Krapp:

RE: Zenergy Inc.
Proposed Oil Well Locations – D-3 Mary R Smith #5-8H & D-3 Mandan #24-25H

Zenergy, Inc. is proposing two well sites on the Fort Berthold Reservation in Section 5, T150N, R92W, and Section 24, T150N, R93W of Mountrail County, North Dakota.

Our primary concern with oil and gas development is the fragmentation and loss of wildlife habitat associated with construction of the well pads and access roads. We recommend that construction be avoided to the extent possible within native prairie, wooded draws, riparian corridors, and wetland areas.

We also suggest that botanical surveys be completed during the appropriate season and aerial surveys be conducted for raptor nests before construction begins.

Sincerely,

Stan Ryke

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

js

John Hoeven, Governor
Douglass A. Prchal, Director

1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649
Phone 701-328-5357
Fax 701-328-5363
E-mail parkrec@nd.gov
www.parkrec.nd.gov

April 23, 2010

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

Re: Zenergy Inc. D-3 Mandan #24-25H Oil Well Proposal

Dear Mr. Krapp:

The North Dakota Parks and Recreation Department (NDPRD) has reviewed the above referenced project proposal to develop an oil well located in Section 24, T150N, R93W, Mountrail County.

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

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any current 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 on this review, we do have records for the occurrence of *Pascopyrum smithii – Nasella (Stipa) viridula prairie* (needlegrass-wheatgrass prairie) in a section adjacent to the project area indicating that the habitat in the project area may be suited for this community or other rare, threatened, sensitive or endangered species. Please see the attached spreadsheet and map for more information on this occurrence.

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

Regarding any reclamation efforts, we recommend that any impacted areas be revegetated with species native to the project area.

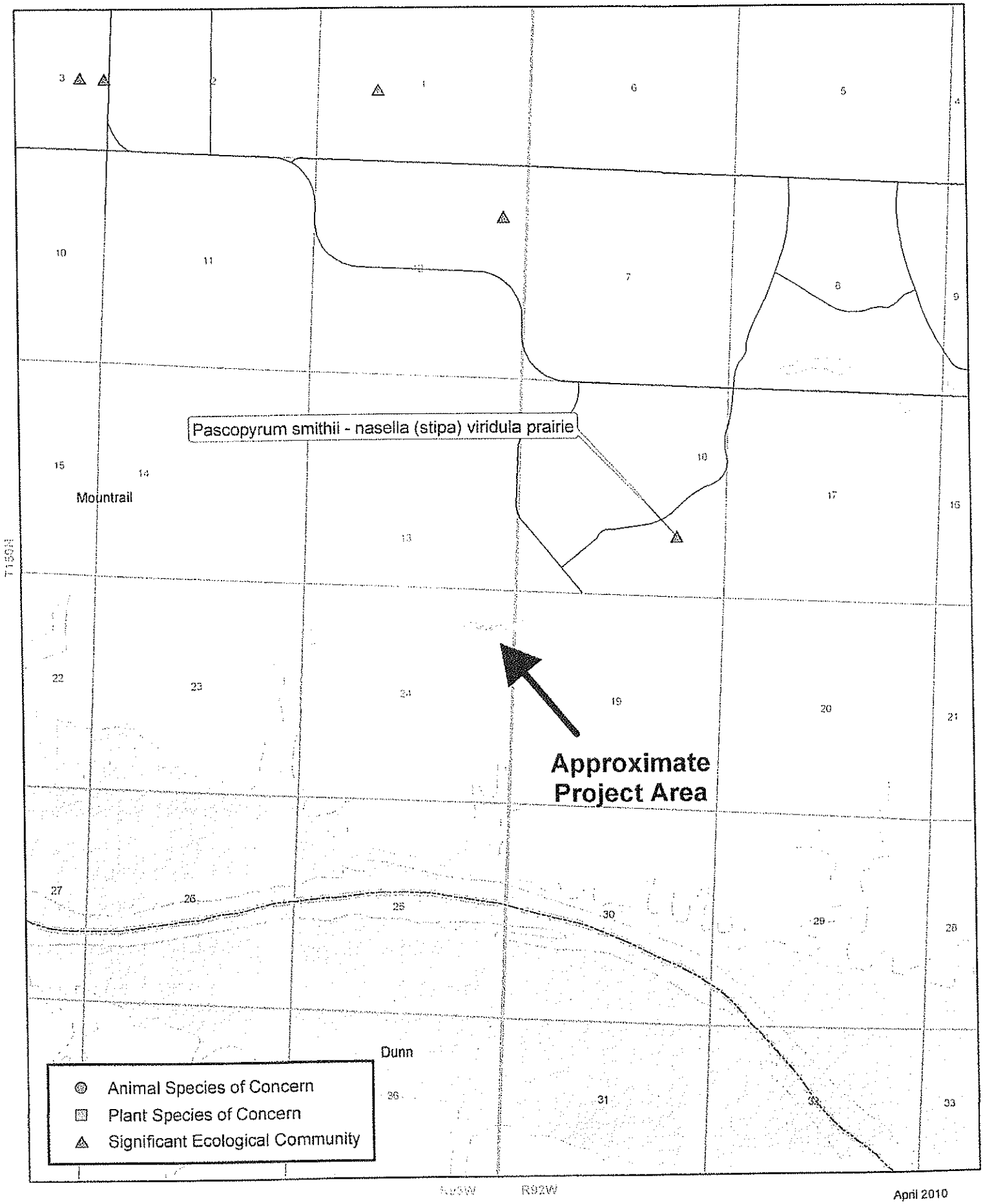
Thank you for the opportunity to comment on this project. Please contact Kathy Duttenhefner (701-328-5370 or kgduttenhefner@nd.gov) of our staff if additional information is needed.

Sincerely,

Jesse Hanson, Manager
Planning and Natural Resources Division

R.USNDNHI*2010-115

North Dakota Parks and Recreation Department
North Dakota Natural Heritage Inventory



North Dakota Natural Heritage Inventory

Rare Animal and Plant Species and Significant Ecological Communities

State Scientific Name	State Common Name	State Rank	Global Rank	Federal Status	Township Range Section	County	Last Observation	Estimated Representation Accuracy	Precision
Pascopyrum smithii - nasella (stipa) viridula prairie	Needlegrass-wheatgrass Prairie	S2	GNR		150N092W - 18; 150N092W - 07; 150N092W - 16; 150N093W - 13; 150N093W - 12; 150N093W - 24; 150N092W - 20; 150N092W - 19; 150N092W - 17; 150N092W - 08	Mountrail	1967		M

North Dakota Natural Heritage Inventory Biological and Conservation Data Disclaimer

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

Estimated Representation Accuracy

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

Very high (>95%)
High (>80%, <= 95%)
Medium (>20%, <= 80%)
Low (>0%, <= 20%)
Unknown
(null) - Not assessed

Precision

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

S - Seconds: accuracy of locality mappable within a three-second radius; 100 meters from the centerpoint
M - Minute: accuracy of locality mappable within a one-minute radius; 2 km from the centerpoint
G - General: accuracy of locality mappalbe to map or place name precision only; 8 km from centerpoint
U - Unmappable

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501

NOV 16 2010

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

Re: Zenergy Operating Company Scoping
for Proposed Well D-3 Mandan South
#24-25H on Fort Berthold Reservation,
Mountrail County, North Dakota

Dear Mr. Krapp:

This is in response to your October 1, 2010, scoping document on a proposed exploratory oil and gas well proposed to be drilled and completed by Zenergy Operating Company, LLC (Zenergy) on the Fort Berthold Reservation, Mountrail County, North Dakota.

Specific location for the proposed pad is:

D-3 Mandan South #24-25H: T. 150 N., R. 93 W., Section 24, Mountrail County

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 plovers, interior least terns and pallid sturgeon. This

concurrence is predicated on Zenergy's commitment to construct and maintain a four foot berm around the perimeter of the well pad.

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 Dakota skipper and Sprague's pipit are candidate species for listing under the ESA; therefore, an effects determination is not necessary for these species. However, the Service's Candidate Conservation Program provides a means for conserving these species. Early conservation preserves management options, minimizes the cost of recovery, and reduces the potential for restrictive land use policies in the future. Through Candidate Conservation Agreements and Candidate Conservation Agreements with Assurances, the Service can work with interested public and private parties to identify threats to candidate species or species at risk. Effective candidate conservation may reverse the species' decline, ultimately eliminating the need for ESA protection. If you would like more information on these programs, please notify the Service for further coordination.

Migratory Birds and Bald and Golden Eagle Protection Act

In an email correspondence on October 15, 2010, to Heidi Riddle of my staff, you clarified that Zenergy will implement the following measures to avoid/minimize take of migratory birds:

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

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 Zenergy'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
Director, ND Game & Fish Department, Bismarck

Friday, April 09, 2010

US Army Corps of Engineers
Garrison Project Office
Mr. Charles Sorenson
PO Box 527
Riverdale, ND 58565

RE: D-3 Mandan #24-25H well

The U.S. Army Corps of Engineers Garrison Dam/Lake Sakakawea Project requests that Zenergy consider and if at all possible implement the following management practices during the exploration phase of the D-3 Mandan #24-25H well.

Due to the close proximity of the well location to lands managed by the U.S. Army Corps of Engineers (USACE) there is a high risk that any storm water runoff from the well location will enter the Missouri River/Lake Sakakawea. As such the USACE would request that Zenergy consider the construction/establishment of a catch trench located on the down sloping side of the well pad. Said trench would help in containing any hazardous wastes from the well pad. Those fluids that accumulate in the trench should be pumped out and disposed of properly

As previously mentioned the location of the proposed well site is extremely close to lands managed by the USACE and as previously stated the possibility for contamination of the Missouri River/Lake Sakakawea is of great concern to this agency. To aid in the prevention of hazardous wastes from entering the aforementioned bodies of water, the USACE would strongly recommend that a Closed Loop Drilling Method be used in the handling of all drilling fluids

Should living quarters be established onsite it is requested that all sewage collection systems be of a closed design and all holding tanks are to be either double walled or contained in a secondary containment system. All sewage waste removed from the well site location should be disposed of properly.

That all additional fill material required for the construction of the well pad is obtained from a private supplier who's material has been certified as being free of all noxious weeds.

That prior to the drilling rig and associated equipment be placed that said equipment be either pressure washed or air blasted off Tribal lands to prevent the possible transportation of noxious or undesirable vegetation onto Tribal lands as well as USACE managed lands.

That no surface occupancy be allowed within ½ mile of any known Threatened or Endangered Species critical habitat.

Zenergy must prove ownership of the minerals below the actual pad location or have a letter from the mineral owner stating that Zenergy has permission to drill through their minerals.

If you have any questions regarding the above recommendations please feel free to contact me.

Mr. Charles Sorenson
PO Box 527
Riverdale, ND 58565

United States Department of the Interior

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

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
DESCRM
MC-208

MAY 06 2010

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 an oil well pad in Mountrail County, North Dakota. Approximately 15 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. The proposed undertaking, location, and project dimensions are described in the following report:

Herson, Chandler S., and Wade Burns
(2010) Dakota-3 Mandan #24-25H Well Pad: A Class III Cultural Resource Inventory, Mountrail County, North Dakota. Beaver Creek Archaeology for Zenergy Operating Company, LLC, Tulsa, OK. Ms. on file (**AAO-1757/FB/10**)

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,

ACTING
Regional Director

Enclosure

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

United States Department of the Interior

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

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
DESCRM
MC-208

MAR 0 4 2011

Elgin Crows Breast, THPO
Mandan, Hidatsa and Arikara Nation
404 Frontage Road
New Town, North Dakota 58763

Dear Mr. Crows Breast:

We have considered the potential effects on cultural resources of two oil well pads and access roads in Mountrail County, North Dakota. Approximately 36.3 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the areas depicted in the enclosed reports. One archaeological site (32MN864) was located that may 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 these undertakings, as the archaeological site will be avoided. Catalogued as BIA Case No. **AAO-1887/FB/11,** the proposed undertakings, locations, and project dimensions are described in the following reports:

Hutchinson, Alan, and Todd Kohler
(2011) A Class I and Class III Cultural Resource Inventory of the Zenergy Dakota-3 Dancing Bull #16-21H Well Pad and Access Road on the Fort Berthold Indian Reservation, Mountrail County, North Dakota. SWCA Environmental Consultants for Zenergy Operating Company, LLC, Tulsa, OK.

Hutchinson, Alan, and Stephanie Lechert
(2010) A Class I and Class III Cultural Resource Inventory of the Zenergy Dakota-3 Dora Smith #5-8H Well Pad and Access Road, Fort Berthold Indian Reservation, Mountrail County, North Dakota. SWCA Environmental Consultants 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

Enclosures

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

United States Department of the Interior

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

MAR 15 2011

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
DESCRM
MC-208

Elgin Crows Breast, THPO
Mandan, Hidatsa and Arikara Nation
404 Frontage Road
New Town, North Dakota 58763

Dear Mr. Crows Breast:

We have considered the potential effects on cultural resources of an oil gathering line and a well pad and access road in Dunn and Mountrail Counties, North Dakota. Approximately 16.6 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the areas depicted in the enclosed reports. 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 these undertakings. The proposed undertakings, locations, and project dimensions are described in the following reports:

Herson, Chandler S.
(2011) A Class I and Class III Cultural Resource Inventory of the Zenergy Dakota-3 Benson #3-9H Gathering Line on the Fort Berthold Indian Reservation, Dunn County, North Dakota. SWCA Environmental Consultants for Zenergy Operating Company, LLC, Tulsa, OK. Ms. on file (**AAO-1602/FB/09**)

Hutchinson, Alan, and Todd Kohler
(2011) A Class I and Class III Cultural Resource Inventory of the Zenergy Dakota-3 Mabel Evans #10-3H and Dakota-3 Normal Eagle #15-22H Dual Well Pad and Access Road on the Fort Berthold Indian Reservation, Mountrail County, North Dakota. SWCA Environmental Consultants for Zenergy Operating Company, LLC, Tulsa, OK. Ms. on file (**AAO-1887/FB/11**)

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,

ACTING Regional Director

Enclosures

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

Notice of Availability and Appeal Rights

Zenergy: D-3 Dancing Bull #16-21H
D-3 Dora Smith #5-8H
D-3 Mandan South #24-25H
D-3 Mabel Evans #10-3H &
D-3 Normal Eagle #15-22H

The Bureau of Indian Affairs (BIA) is planning to issue administrative approvals related to installation of five oil and gas wells as shown on the attached map. Construction by Zenergy is expected to begin in 2011.

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 May 15, 2011, 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.