United States Department of the Interior

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

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IN REPLY REFER TO:
DESCRM
MC-208

SEP 2 2 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, an Environmental Assessment has been completed and a Finding of No Significant Impact (FONSI) has been issued. The environmental assessment authorizes land use for seven bakken exploratory oil wells atop two pads on the Fort Berthold Indian Reservation.

All the necessary requirements of the National Environmental Policy Act have been completed. Attached for your files are copies of the EA Addendum, 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. Part 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, Tribal Historic Preservation Officer (with attachment)
Derek Enderud, BLM, Bureau of Land Management (with attachment)
Ryan Krapp, Carlsonmccain (with attachment)
Jonathon Shelman, Corps of Engineer
Jeff Hunt, Fort Berthold Agency

Finding of No Significant Impact
Dakota-3 E&P Company, LLC

Environmental Assessment to Authorize Land Use for Seven Bakken Exploratory Oil Wells from Two Multi-Well Pads:

D-3 Owl Comes Out #7-1H, #7-2H & #7-3H
D-3 Stink Gun #7-1H, #7-2H, #7-3H & #7-4H

Fort Berthold Indian Reservation
Dunn County, North Dakota

The U.S. Bureau of Indian Affairs (BIA) has received a proposal to drill the D-3 Owl Comes Out #7-1H, #7-2H & #7-3H, and D-3 Stink Gun #7-1H, #7-2H, #7-3H & #7-4H bakken exploratory oil wells on two multi-well pads on the Fort Berthold Indian Reservation. Associated federal actions by BIA include determinations of effect regarding cultural resources, approvals of leases, rights-of-way and easements, and a positive recommendation to the Bureau of Land Management regarding the Applications for Permit to Drill.

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

This determination is based on the following factors:

1. Agency and public involvement was solicited and environmental issues related to the proposal were identified.

2. Protective and prudent measures were designed to minimize impacts to air, water, soil, vegetation, wetlands, wildlife, public safety, water resources, and cultural resources. The remaining potential for impacts was disclosed for both the proposed action and the No Action alternative.

3. Guidance from the U.S. Fish and Wildlife Service has been fully considered regarding wildlife impacts, particularly in regard to threatened or endangered species. This guidance includes the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.) (MBTA), the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.) (NEPA), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250) (BGEPA), Executive Order 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds", and the Endangered Species Act (16 U.S.C. 1531 et seq.) (ESA).

4. The proposed actions are designed to avoid adverse effects to historic, archaeological, cultural and traditional properties, sites and practices. Compliance with the procedures of the National Historic Preservation Act is complete.

5. Environmental justice was fully considered.

6. Cumulative effects to the environment are either mitigated or minimal.

7. No regulatory requirements have been waived or require compensatory mitigation measures.

8. The proposed projects will improve the socio-economic condition of the affected Indian community.

Regional Director

9-22-11
Date

ENVIRONMENTAL ASSESSMENT

United States Bureau of Indian Affairs

Great Plains Regional Office
Aberdeen, South Dakota

Dakota-3 E&P Company, LLC
D-3 Owl Comes Out #7-1H, #7-2H & #7-3H
D-3 Stink Gun #7-1H, #7-2H, #7-3H & #7-4H

Fort Berthold Indian Reservation

September 2011

For information contact:
Bureau of Indian Affairs, Great Plains Regional Office
Division of Environment, Safety and Cultural Resources
115 4th Avenue SE
Aberdeen, South Dakota 57401
605-226-7656

Environmental Assessment

D-3 Owl Comes Out #7-1H, #7-2H & #7-3H
D-3 Stink Gun#7-1H, #7-2H, #7-3H & #7-4H
Dakota-3 E&P Company, LLC

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1.0 Purpose and Need for the Proposed Action

Dakota-3 E&P Company, LLC (D-3) is proposing to construct two sites to drill seven horizontal oil/gas wells on the Fort Berthold Indian Reservation, in order to evaluate and potentially develop the commercial potential of 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 may also hold title to subsurface mineral rights. Developments are proposed on lands held in trust by the United States in McLean County, North Dakota (Figure 1). The proposed well sites are:

- D-3 Owl Comes Out #7-1H, #7-2H & #7-3H
- D-3 Stink Gun #7-1H, #7-2H, #7-3H & #7-4H

Multiple well bores will be drilled from each pad site. The drilling plan for these sites is depicted in Figure 2.

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. APDs submitted by D-3 describe developmental, operations, 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. Current and new roads are needed to access proposed well sites. Mutlti-well pads will be constructed to accommodate drilling operations. 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 infrastructure and facilities.

Figure 1. Proposed Well Locations

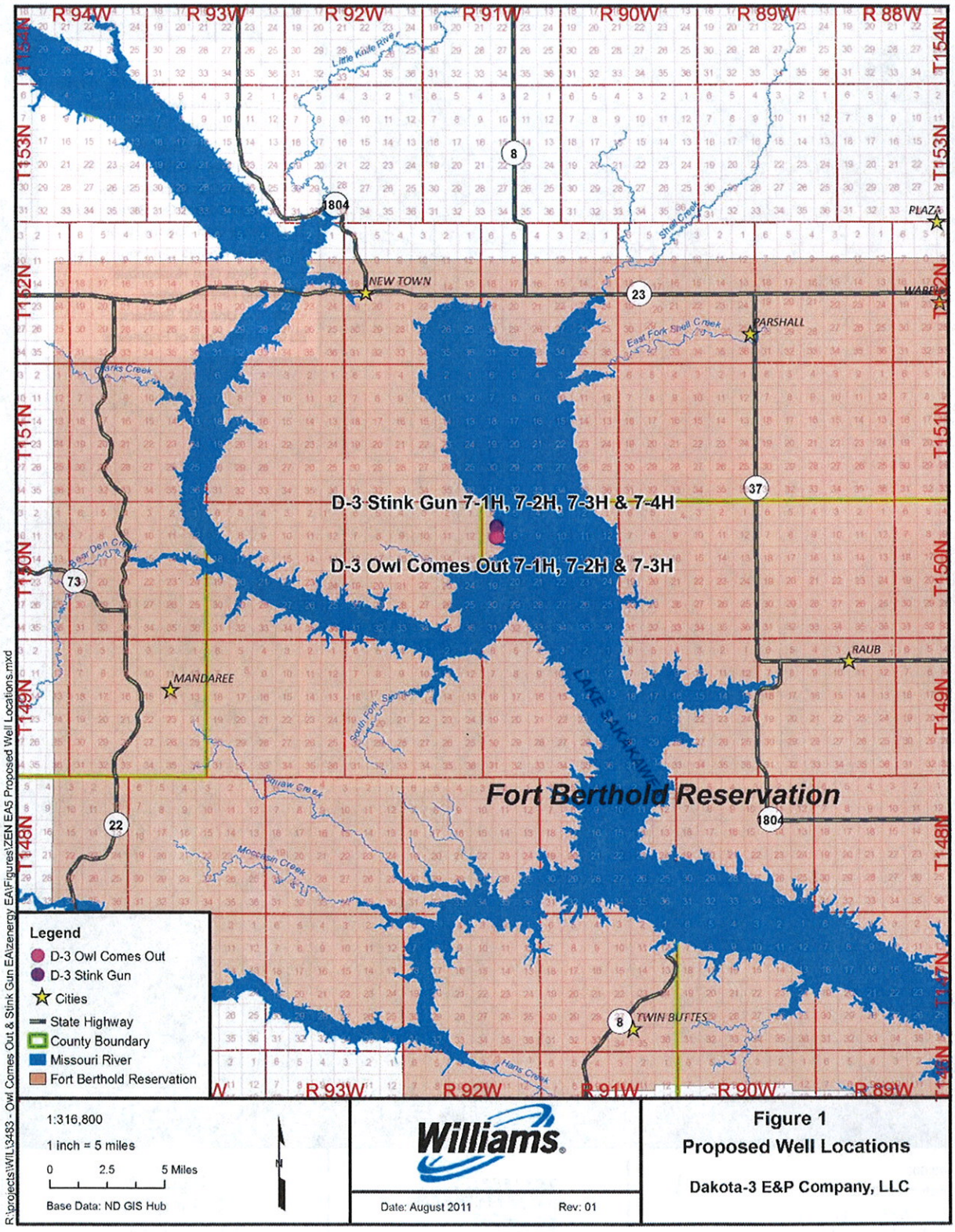
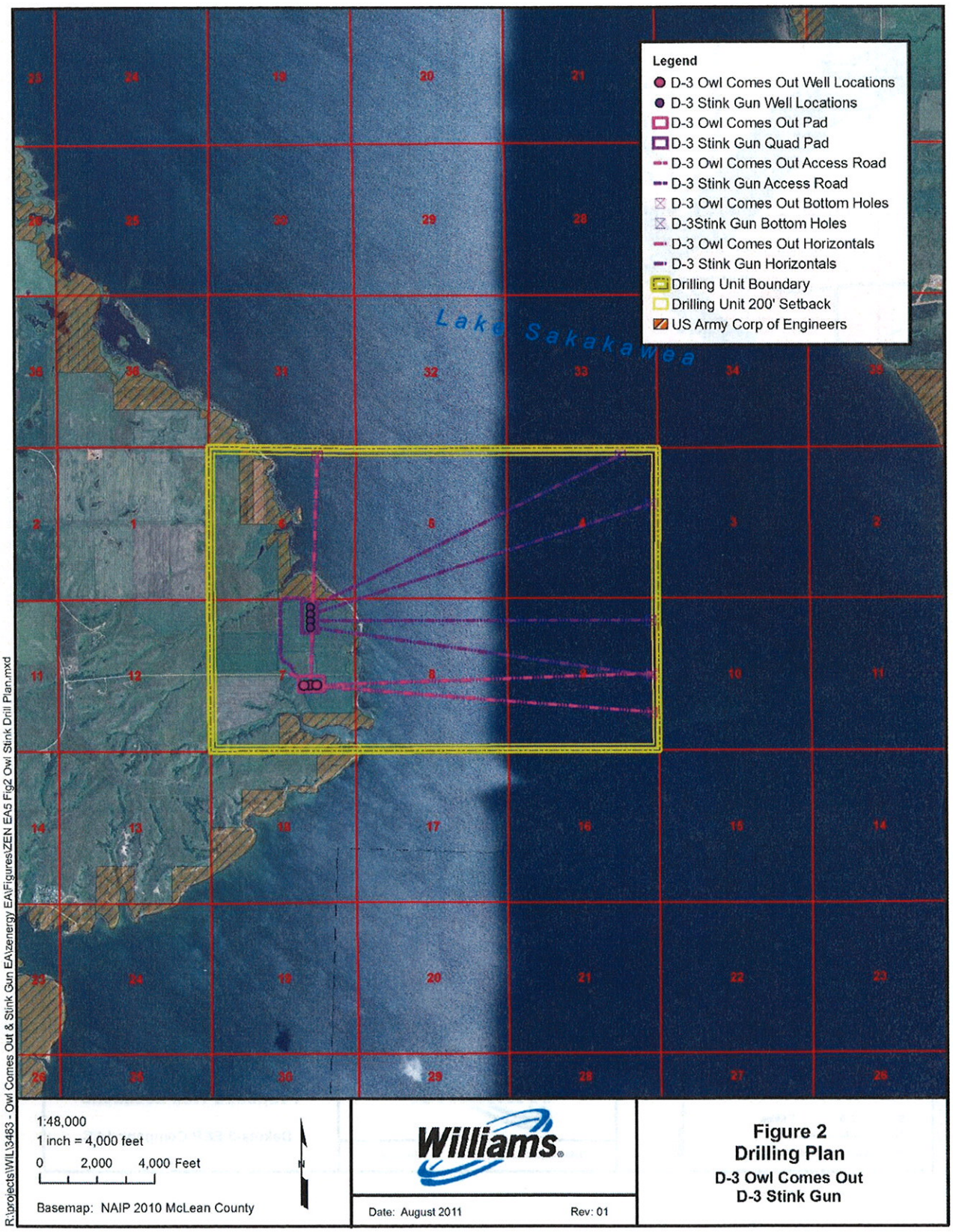


Figure 2. Proposed Drilling Plan



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, seven exploratory oil/gas wells on mixed surface ownership and mineral estate within the boundaries of the Fort Berthold Indian Reservation in McLean 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 compliance with applicable laws and regulations, including 43 CFR 3100, *Onshore Oil and Gas Orders 1, 2, 3, 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 BIA Environmental Specialist, the civil surveyor, archeologists, the Tribal Historic Preservation Office (THPO) monitor and the environmental consultant. Those in attendance included: BIA Environmental Specialist, Jeff Desjarlais; Dean Graves (Uintah Surveyors); SWCA Archeologists; Tribal Historic Preservation Office (THPO) monitors; and Todd Hartleben and Heather Shaw (Carlson McCain).

Resource surveys were conducted on October 18, 2010, 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 4,255 feet (~0.8 miles) of new access roads total for both multi-well pads will be constructed, some 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 100 feet for each access road will result in up to 8.4 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 any buried utilities that may exist along existing roads. If commercial production is established from a proposed location, the access road will be improved 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 3.

2.3 Well Pads

The proposed multi-well pads will consist mainly of an area leveled for the drilling rig and related equipment. Closed-loop drilling systems will be used and therefore no reserve pits will be excavated. 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 re-vegetated. 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.

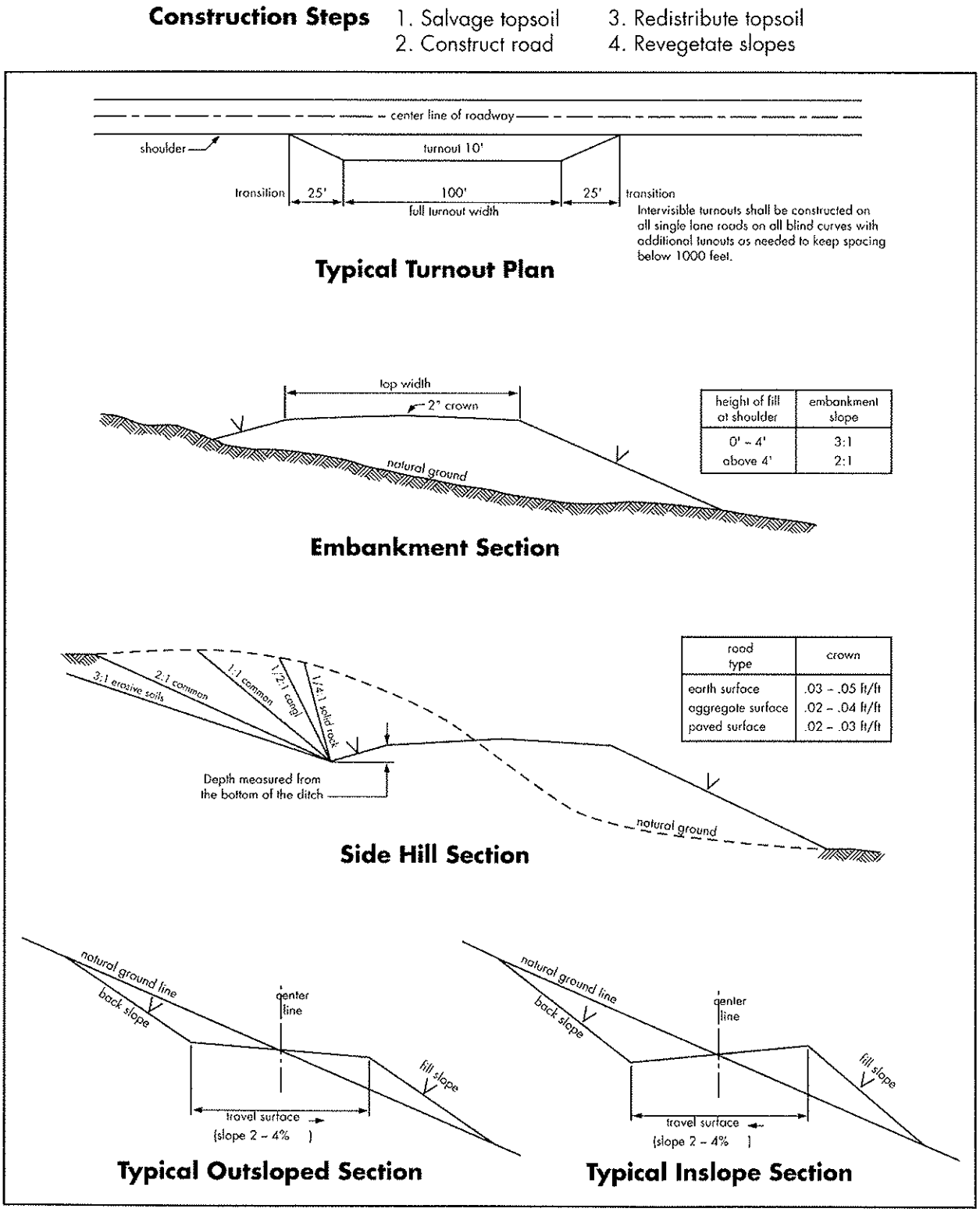
Erosion control will be maintained throughout well pad construction, drilling, and interim reclamation. Surface water control structures include berms, diversion ditches, retention area, and secondary containment berms. A 4-foot high containment berm will be constructed on top of the pad to ensure surface runoff containment during drilling operations. Due to the close proximity of the wells to Lake Sakakawea, a secondary containment system will also be built off the pad which will include a diversion trench, retention area, and containment berms. The secondary containment system will be maintained until the well is reclaimed.

The level area of the D-3 Owl Comes Out used for drilling and completion operations will be 890 feet long by 530 feet wide or 10.8 acres. Cut and fill slopes, ditches, containment berms, and retention areas on the edge of the pad will disturb approximately 4.4 additional acres. The fenced area or total loss of surface acreage will be approximately 15.2 acres.

The level area of the D-3 Stink Gun pad used for drilling and completion operations will be 1,120 feet long by 530 feet wide or 13.6 acres. Cut and fill slopes, ditches, containment berms, retention areas on the edge of the pad will disturb approximately 5.1 additional acres. The fenced area or total loss of surface acreage will be approximately 18.7 acres. Details of pad construction and reclamation are specified in the APD for each site.

Construction of these multi-well pads and access roads will result in an approximate total of 42.3 acres of disturbance or fenced area surface use loss. Interim site reclamation plans after well drilling completions will reduce the pad surface size to less than half of the size needed for development. Reclaimed areas will be reseeded according to BIA recommendations.

Figure 3. Typical roadway cross section (Gold Book)



2.4 Drilling

D-3 will submit APDs to the BLM for the proposed wells. The BLM North Dakota Field Office will forward 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 approximately seven days. A rotary drill rig will require approximately 35 days to reach target depths. A typical drilling rig is shown in Figure 4. 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 drilling, using nearly 8.4 gallons of water per foot of hole drilled.

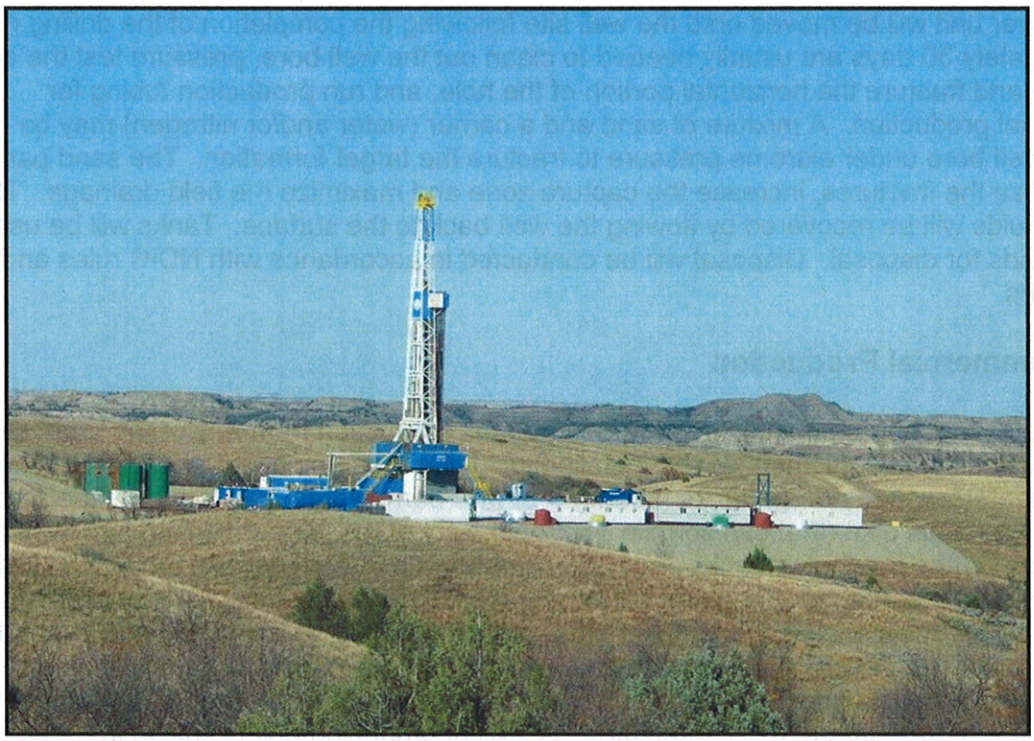


Figure 4. Typical drill rig (Carlson McCain)

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.

Ultilizing the closed-loop drilling system the cuttings and fluids generated from drilling will be circulated and deposited within reserve tanks on each individual well pad. Tanks will be emptied as needed at approved off-site disposal facilities in accordance with North Dakota Industrial Commission (NDIC) rules and regulations.

Prior to use, the entire location will be fenced 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 through the life of the well.

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 Order 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 with 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 each 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 110% capacity of the largest holding tank) will be placed around the production tanks and heater/treater. Load-out lines will be located inside the diked area and a screened drip barrel will be installed under the outlet. A metal access staircase will provide access to the diked 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 5 and more detail is included in the APD.

Oil will be either collected in tanks installed 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.

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 gathering system is proposed in the area and connection will allow for gas, oil, and produced water capture and transport.

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.

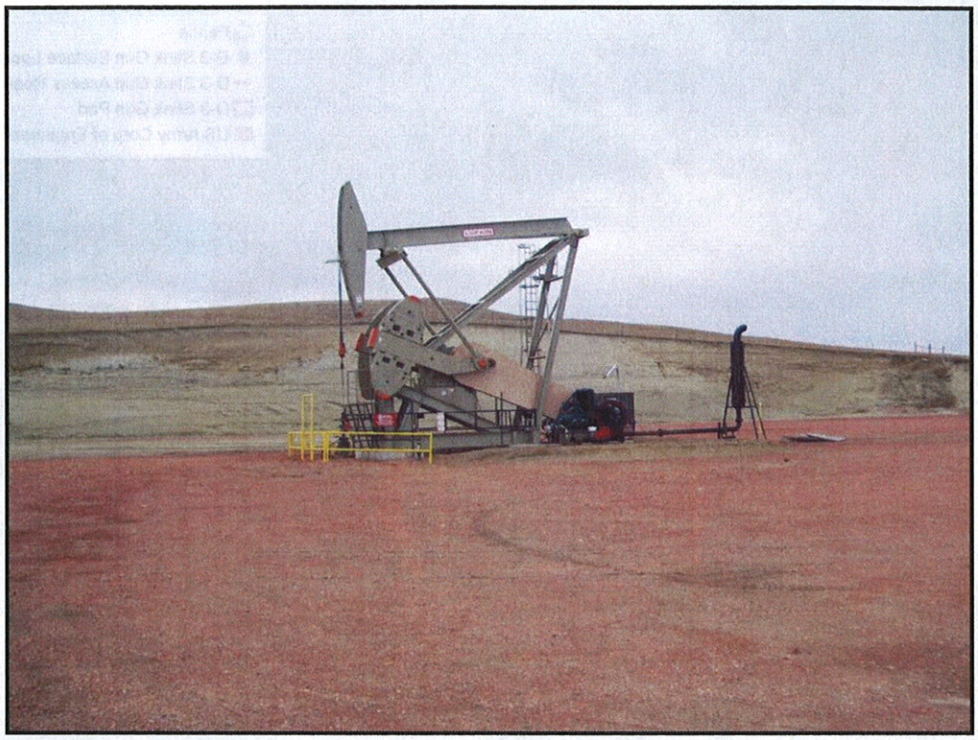


Figure 5. Typical producing unit (Carlson McCain)

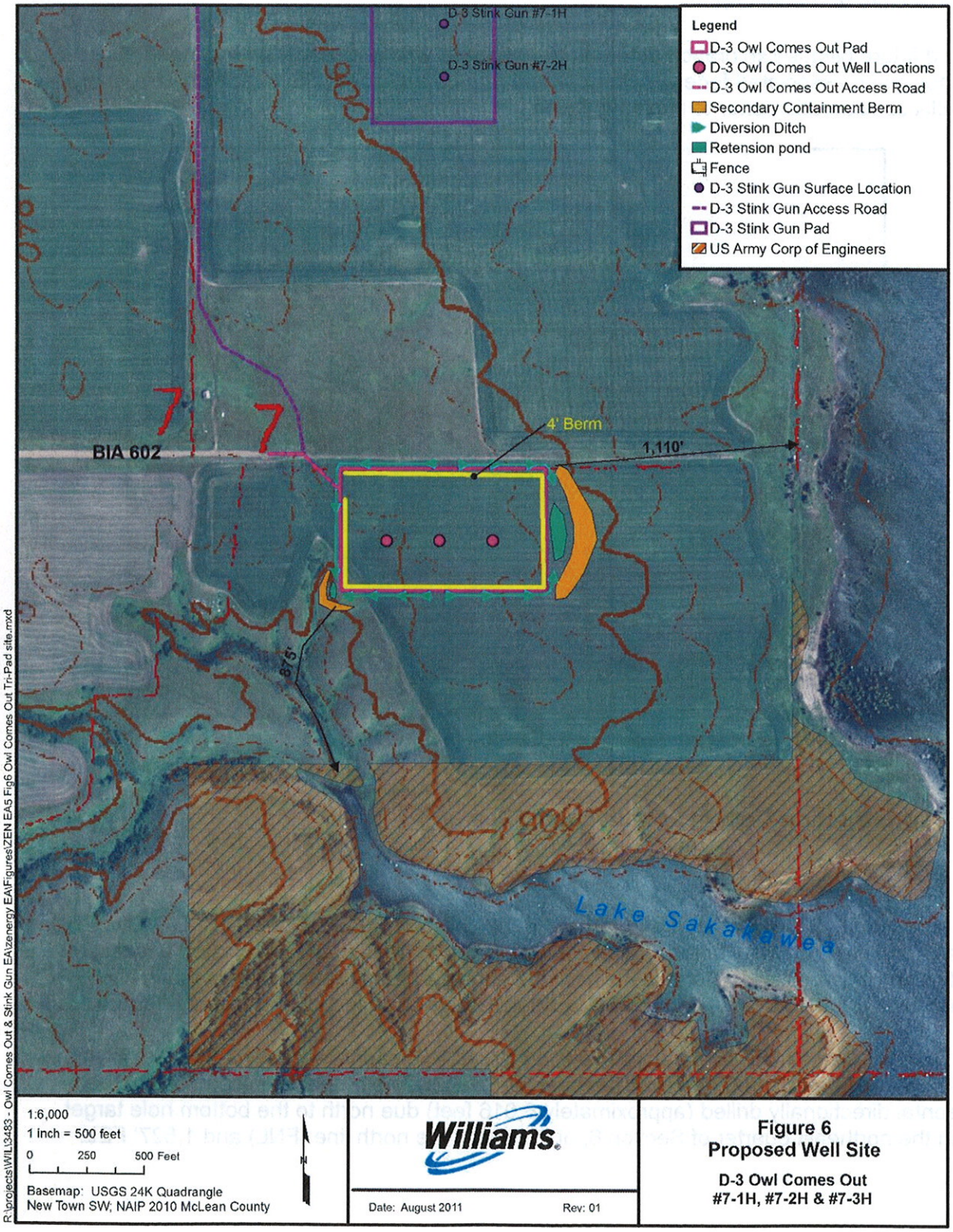
2.8 Construction Details at Individual Sites

2.8.1 D-3 Owl Comes Out

The proposed D-3 Owl Comes Out will include the D-3 Owl Comes Out #7-1H, D-3 Owl Comes Out #7-2H, and D-3 Owl Comes Out #7-3H well bores. The Site and associated access route is located on cultivated agricultural lands near the shores of Lake Sakakawea in the in NW¼ SE¼ of Section 7, T150N, R91W, on the Fort Berthold Reservation in McLean County (Figure 6).

The D-3 Owl Comes Out #7-1H borehole is proposed to be approximately 2,300 feet from the south line (FSL) and 1,550 feet from the east line (FEL). The borehole will be vertical then horizontal directionally drilled (approximately 8,016 feet) due north to the bottom hole target within the northeast quarter of Section 6, at 250' from the north line (FNL) and 1,527' FEL.

Figure 6. Owl Comes Out Location



The D-3 Owl Comes Out #7-2H borehole is proposed to be approximately 2,300' FSL and 1,320' FEL. The borehole will be vertical then horizontal directionally drilled (approximately 11,647') east to the bottom hole target within the northeast quarter of Section 9, at 2,640' FNL and 250' FEL.

The D-3 Owl Comes Out #7-3H borehole is proposed to be approximately 529' FSL and 1,780' FEL. The borehole will be vertical then horizontal directionally drilled (approximately 12,139') southeast to the bottom hole target within the southeast quarter of Section 9, at 1,320' FSL and 250' FEL.

The level area of the well pad used for drilling and completion will be approximately 890 feet by 530 feet in size, or approximately 10.8 acres. An additional 4.4 acres will be disturbed during construction of ditch and containment berm off the surfaced pad. Interim site reclamation after well completions will reduce the pad working surface size to less than half of original size and reseeded. The overall surface use loss (fenced area) of the well pad to the agricultural producer will be approximately 15.2 acres. The development of this multi-well pad will ultimately be a net savings of surface area when compared to three individual pads and access roads.

Due to the close proximity of the well to Lake Sakakawea, a 4-foot containment berm will be built on top of the pad to contain surface water from transferring off the pad during drilling operations. An 18" berm will be left in place after interim reclamation and will be maintained for the life of the well. D-3 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.

Secondary containment berms and retension areas will be constructed on the east side and southwest corner of the pad site. A diversion ditch will be constructed around the entire pad to direct any surface runoff into the containment areas. The lowest elevation of the pad is 1918' MSL and is approximately 875' from the shoreline of Lake Sakakawea. A closed-loop drilling system will be utilized due to the close proximity of the surface waters of Lake Sakakawea.

Topsoil from site will be removed and placed at the locations approved in the APD. The corners of the proposed well pad will be rounded as needed. Best Management Practices (BMP's) including the use of a containment berm(s), sediment fencing, soil compaction and reseeding of native species will be utilized during construction and after final reclamation.

The installation of groundwater monitoring wells was discussed at the on-site assessment in order to detect a release of oil from the site. Monitoring wells were determined to not be an effective mitigation strategy because there will be no reserve pits at the site and a surface release will be detected prior to any contamination being evident in subsurface soils.

The access route is proposed to extend BIA 602 approximately 150 feet then will proceed southeast approximately 223 feet to the west side of the pad. A maximum disturbance width (ROW) of 100 feet will result in a maximum 0.9 acres of potential disturbance. The pad site and access route will result in approximately 16.1 total acres of disturbance.

The BIA requires all electrical utilities to be underground. Utilities and gathering lines may be constructed within the access route corridor at a later date.

Figure 7. D-3 Owl Comes Out General Appearance
The proposed well site is located on a gently rolling cultivated area with drainage from the site to the east and west. Photograph taken from the pad center facing east.

Figure 8. D-3 Owl Comes Out
Photograph taken from center facing west across the proposed pad. The Access road follows the two-track in the field (upper-right).

2.8.2 D-3 Stink Gun

The proposed D-3 Stink Gun multi-well site will include the D-3 Stink Gun #7-1H, D-3 Stink Gun #7-2H, D-3 Stink Gun #7-3H, D-3 Stink Gun #7-4H well bores. The proposed Site and associated access route is located on the Fort Berthold Reservation in the NW¼ NE¼ Section 7, T150N, R91W, in McLean County (Figure 9).

The D-3 Stink Gun #7-1H borehole is proposed to be approximately 759 feet from the north line (FNL) and 1,518 feet from the east line (FEL). The borehole will be vertical then horizontal directionally drilled (approximately 11,843 feet) due east to the bottom hole target within the northeast quarter of Section 9, at 791' FNL and 250' FEL.

The D-3 Stink Gun #7-2H borehole is proposed to be approximately 989' FNL and 1,518' FEL. The borehole will be vertical then horizontal directionally drilled (approximately 11,964') due east-southeast to the bottom hole target within the southeast quarter of Section 9, at 2,582' FSL and 250' FEL.

The D-3 Stink Gun #7-3H borehole is proposed to be approximately 529' FNL and 1,518' FEL. The borehole will be vertical then horizontal directionally drilled (approximately 12,442') north-northeast to the bottom hole target within the northeast quarter of Section 4, at 1950' FNL and 250' FEL. The D-3 Stink Gun #7-4H borehole is proposed to be approximately 299' FNL and 1,517' FEL. The borehole will be vertical then horizontal directionally drilled (approximately 12,012') north-northeast to the bottom hole target within the northeast quarter of Section 4, at 250' FNL and 1,320' FEL.

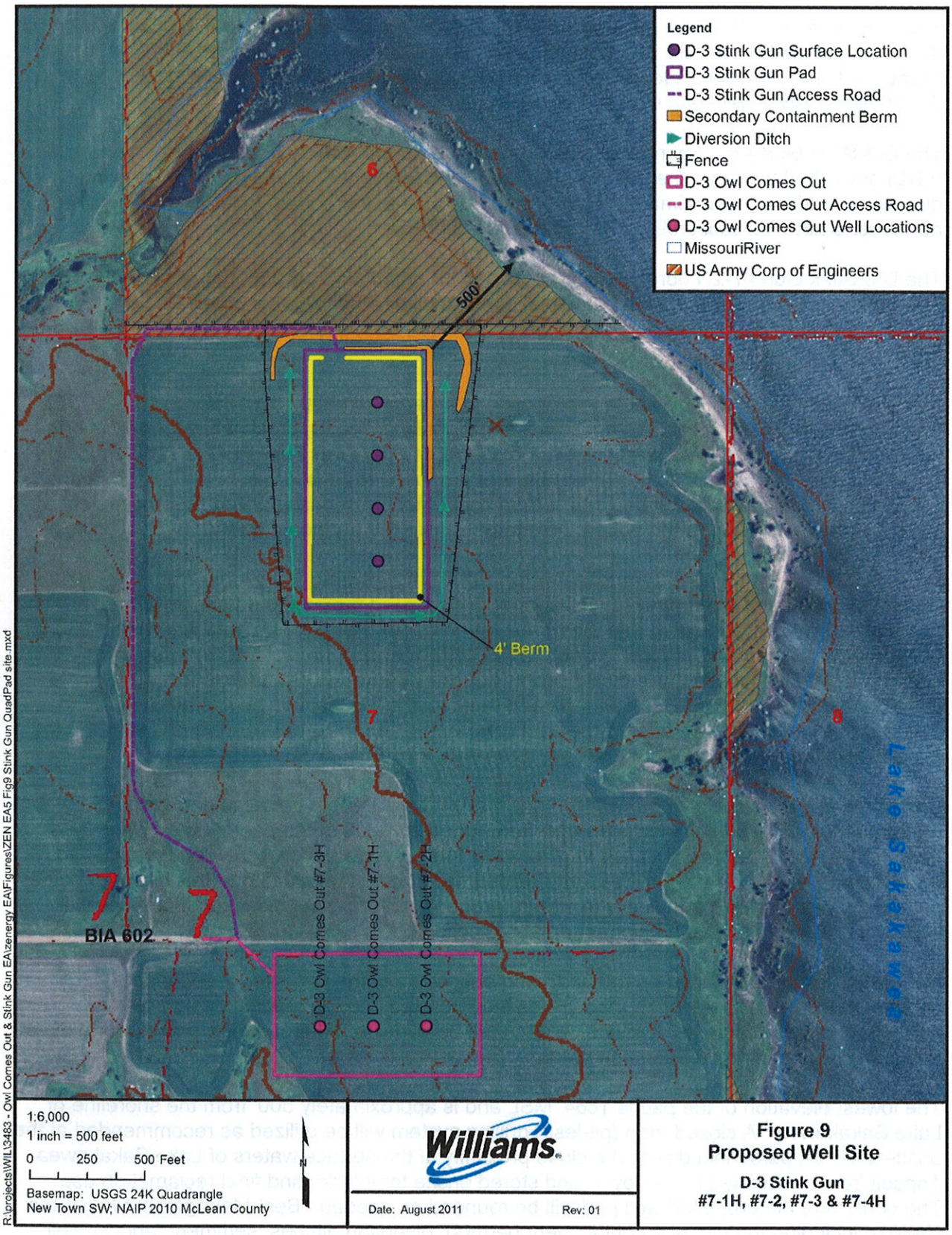
Different locations of the proposed well pad were evaluated during the on-site assessment. The pad site was initially staked so that the northeast corner of the proposed pad was within 300 feet of Lake Sakakawea. Moving the location to the northwest corner of quarter-section was discussed, but this location was dismissed as it was closer to the drainage leading directly to Lake Sakakawea in Section 6. It was agreed that moving the location so it is no closer than 500' from Lake Sakakawea offered the best compromise for the location while still allowing the mineral resources located under the Lake to be developed.

Due to the close proximity of the well to Lake Sakakawea a 4-foot containment berm will be built on top of the pad to contain surface water from transferring off of the pad during drilling operations. An 18" berm will be left in place after interim reclamation and will be maintained for the life of the well. D-3 and BIA resource officers will conduct monitoring of this berm and other potential erosion areas periodically to ensure proper functioning condition. Maintenance will occur as needed to maintain environmental protections.

Soil stockpiles will be placed on the north and east sides of the pad site. A secondary containment berm and retention area will be incorporated into the grading design on the northeast corner of the site. A diversion ditch will be constructed around the entire pad to direct any surface runoff into the retention areas.

The lowest elevation of the pad is 1864' MSL and is approximately 500' from the shoreline of Lake Sakakawea. A closed-loop (pit-less) drilling system will be utilized as recommended at the onsite visit BIA personnel due to the close proximity of the surface waters of Lake Sakakawea. Topsoil from the site will be removed and stored onsite for interim and final reclamation use. The corners of the proposed well pad will be rounded as needed. Best Management Practices (BMP's) including the use of a containment berm(s), diversion ditches, sediment fencing, soil compaction and reseeding of native species will be utilized during construction and after final reclamation.

Figure 9. D-3 Stink Gun Location



The installation of groundwater monitoring wells was discussed at the on-site assessment in order to detect a release of oil from the site. Monitoring wells were determined to not be an effective mitigation strategy because there will be no reserve pits at the site and a surface release will be detected prior to any contamination being evident in subsurface soils.

The level area of the well pad used for drilling and completion will be approximately 1,120 feet by 530 feet in size, or approximately 13.6 acres, for drilling purposes. Interim site reclamation after well completions will reduce the pad working surface size to less than half of original surface disturbance and reseeded. The four well sites, if developed separately, would require approximately 16.8 acres of surface disturbance. Approximately 3.2 acres of surface disturbance will be saved by using the multi-well pad approach (not counting access road development).

The access route will be constructed from BIA 602 to the proposed well site. The access route was moved during the on-site to avoid a historic property located along the quarter-section line. The access route will proceed to the north from BIA 602 through a portion of previously cultivated grassland until it reaches the section line and an existing two-track trail. The route continues north and then turns east along the north section line (existing two-track) to the pad site. The access route will be approximately 3,881 feet long with a maximum disturbance width (ROW) of 100 feet resulting in a maximum 8.9 acres of potential disturbance.

The BIA requires all electrical utilities to be underground. Utilities and gathering lines may be constructed within the access route corridor at a later date.

Figure 10. D-3 Stink Gun Site
The proposed well site is located on an east sloping, cultivated agricultural field approximately 500' from Lake Sakakawea. Photograph taken from the northeast pad corner facing southeast across the pad site.

Figure 11. D-3 Stink Gun Access Road
The proposed access road follows a section line two-track trail. Photo taken of the proposed access road facing west from the pad site.

2.9 Reclamation

A closed-loop (pitless) drilling system will be utilized on both the D-3 Owl Comes Out and D-3 Stink Gun well sites due to the close proximity of Lake Sakakawea. Cuttings and fluids will be contained in tanks and will be removed and disposed of offsite at approved waste disposal sites in accordance with NDIC rules and regulations; therefore, no reclamation of reserve pits will be necessary.

If commercial production equipment is installed, the well pad will be reduced in size to approximately half the original size, reclaiming the rest of the original pad surface. The working area of each well pad and the running surface of access roads will be surfaced with scoria or crushed rock. The outslope portions of roads will be covered with stockpiled topsoil and re-seeded with a seed mixture of native species, reducing the residual access-related disturbance to about 28' wide. Other interim reclamation measures 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. Figure 12 and Figure 13 show a typical reclaimed site from the Gold Book.

Figure 12. 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 13. Well pad after reclamation.
The well pad and access road have been regraded 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 and 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 general public within one mile of a well; precautions include automated sampling and alarm systems operating continuously at multiple locations on the well pad.

Satellite imagery was used to identify occupied homes within one and five miles of the proposed well site(s) (Table 2). Pouch Point cabin site is not within line of site of the proposed sites.

Table 2. Distance and Location of Residences

Well Name	Nearest residence	# Residences within 1 mile	# Residences within 5 miles*
D-3 Owl Comes Out	6,000' West	0	19
D-3 Stink Gun	6,500' Southwest	0	19
* does not include 77 seasonal residences near Pouch Point Recreation area.			

Impacts from construction will be largely temporary. Noise, fugitive dust, and traffic hazards will be present 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.

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 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 14). 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.

3.4.1.1 D-3 Owl Comes Out

The D-3 Owl Comes Out is located within the Garrison Dam Sub-Basin, the Van Hook State Wildlife Management Area Watershed and the Lower Van Hook Sub-Watershed. D-3 will construct and maintain a 4-foot containment berm on the well pad during drilling operations. Surface water runoff from the edges of the pad will be contained in a secondary containment system which includes a diversion ditch around the pad leading to retention area in front of a secondary containment berm.

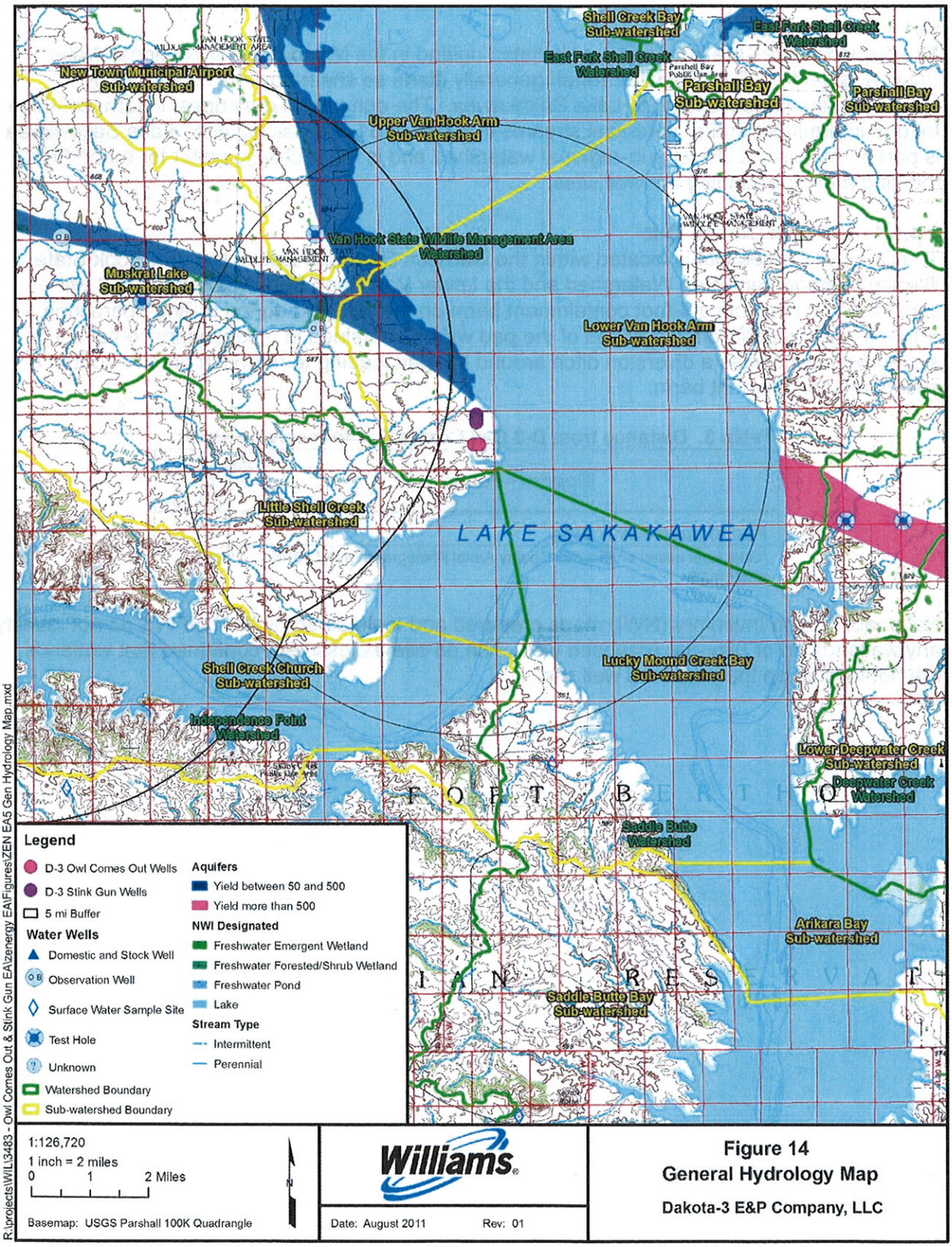
Table 3. Distance from D-3 Owl Comes Out to receiving water

Source - Point	Distance (feet)
Pad to Lake Sakakawea[1]	875

[1]Lake level based on McLean County Aerial Photograph (NAIP 2010) and high water mark

National Wetland Inventory (NWI) maps prepared and maintained by the USFWS do not identify any wetlands on or near the proposed well. The on-site assessment confirmed that wetlands are not located on the proposed well site.

Figure 14. General Hydrology Map



3.4.1.2 D-3 Stink Gun

The D-3 Stink Gun well site is located within the Garrison Dam Sub-Basin, the Van Hook State Wildlife Management Area Watershed and the Lower Van Hook Sub-Watershed.
D-3 will construct and maintain a 4-foot containment berm on the well pad during drilling operations. Surface water runoff from the edges of the tri-pad will be contained in a secondary containment system which includes a diversion ditch around the pad leading to retention area in front of a secondary berm at the north edge of the pad.

Table 4. Distance from D-3 Stink Gun to receiving water

Source - Point	Distance (feet)
Pad to Lake Sakakawea	500

[1]Lake level based on McLean County Aerial Photograph (NAIP 2010) and high water mark.

National Wetland Inventory (NWI) maps prepared and maintained by the USFWS do not identify any wetlands on or near the proposed well. The on-site assessment confirmed that wetlands are not located on the proposed well site.

3.4.2 Groundwater

3.4.2.1 McLean County

The preglacial rocks in McLean County contain thick sequences of water-bearing rocks, but only those at relatively shallow depths are of economic importance as aquifers. These aquifers occur in the Fox Hills and Hell Creek Formations of Cretaceous age and the Fort Union Group of Paleocene age.

The Fox Hills Formation underlies the entire county. It consists of interbedded sandstone, shale, and siltstone and ranges in thickness from 233 to about 450 feet. The depth to the top of the formation ranges from about 540 feet in the eastern part of the county to about 1,200 feet in the western part.

The Hell Creek Formation, which conformably overlies the Fox Hills Formation, consists of interbedded silty shale and sandstone. In the eastern part of the county, the Hell Creek Formation was reached at a depth of 317 feet where it has a total thickness of 223 feet. The depth and thickness of the formation in the western part of the county is unknown.

3.4.2.2 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.

3.4.3 Water Wells and Water Use Permits

There is no domestic or stock water supply wells within five miles of the proposed well sites and only one observation well (Figure 14). It is located 3.2 mile from the D-3 Stink Gun wells in section 34 of T151N, R92W and is drilled into the White Sheild Aquifer (Table 5). There has also only been one water test well drilled within five miles of the proposed locations.

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 will have little to no potential for impact due to drilling these wells.

Table 5. Water Wells Within 5 miles

LOCATION	Distance To Nearest Proposed Well (miles)	Permit Type	Aquifer	Well Depth (feet)	Date
NE SE 34 T151N R92W	3.2	Observation Well	White Shield	138	8/6/1966

[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 if 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 sites are considered unlikely due to the use of closed-loop drilling system. There will be no pits or lagoons. Impacts to shallow aquifers from surface activities and spills will also 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 Wildlife and Habitat

3.5.1 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 corridor. Scoping letters and consultation with the US Fish and Wildlife Service (USFWS), ND Game and Fish Department, BLM and the North Dakota Natural Heritage Inventory were made and comments received are presented in Appendix B.

Currently, seven species and one Designated Critical Habitat is listed as potential in McLean and Mountrail Counties, North Dakota (Table 6).

Table 6. County Endangered, Threatened, and Candidate species and Designated Critical Habitat

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

[1] USFWS (updated October, 2010)

Determinations concerning direct and cumulative effects of the proposed activities on each species and their habitat and is presented below. USFWS has issued a concurrence letter to the species effects determinations made and is located in Appendix B.

3.5.2 Species Assessments

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

area. A determination was made concerning direct and cumulative effects of the proposed activities on each species. Determinations made for federally listed species are:

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

3.5.2.1 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). Due to the transient nature and no recent recorded sightings in the area the proposed project ***may affect, is not likely to adversely affect*** this species.

3.5.2.2 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.

No individuals were observed in the area of the proposed D-3 Owl Comes Out and D-3 Stink Gun sites during the visit on October 18, 2010. The proposed D-3 Owl Comes Out site is located approximately 1,110 feet from the shoreline and the constructed pad elevation at 1,918 MSL will be approximately 64 vertical feet above of Lake Sakakawea full pool elevation. The proposed D-3 Stink Gun site is located approximately 500 feet from the shoreline and approximately 15 vertical feet above the Lake Sakakawea high water mark.

High water levels at the time of the surveys afforded little nesting habitat available along the lake shore; however, if lake levels recede exposing sandy beaches and sandbars, further habitat opportunities may arise. If the site will be constructed during the nesting season (April 15 - September 1) shoreline surveys for least terns will be conducted five days prior to construction. If birds or nests are discovered all construction will be stopped and the BIA and USFWS will be consulted for additional information on how to proceed. Mitigation measures recommended will be taken to avoid any disturbance of raptor or migratory bird nesting sites. The proposed project ***may affect, is not likely to adversely affect*** this species.

3.5.2.3 Pallid Sturgeon

Pallid sturgeon are found in the Mississippi, Missouri, and Yellowstone River systems and are adapted for living close to the bottom of large, shallow rivers with sand and gravel bars. Pallid sturgeon populations in North Dakota have decreased since the 1960's (Grondahl and Martin no date). Although the proposed Owl Comes Out site is located approximately 500 feet from the Missouri River system all BMP's will be implemented, including a containment berm surrounding the proposed well pad site and utilizing a closed-loop (pit-less) drilling system, as such the project ***may affect, is not likely to adversely affect*** this species.

3.5.2.4 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 Parks and Wildlife 2008).

The proposed well site is located within the Central Flyway. Approximately 75% of the whooping crane sightings in North Dakota occur within a 90-mile corridor that includes the proposed well location. Because collisions with power lines are the primary cause for fledgling mortality, it is BIA directive that any utility lines be constructed underground. Land use in the area is previously cultivated grasslands and agricultural fields. The pads and access roads are placed in a location that may have some potential of impacting whooping crane stop-over habitat. No individual whooping cranes were observed in the area during the on-site visits.

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

3.5.2.5 Piping Plover and Critical Habitat

Piping plovers are found along the Missouri and Yellowstone River systems on gravel shorelines and sandbars and also 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. NDPRD records indicate historic piping plover sightings and critical habitat within 2-miles of the project site.

No individuals were observed in the area during the onsite visit on October 18, 2010. The NDPRD has one record of a piping plover (*Charadrius meldous*) observed in Section 8, T150N R092W in 1988. The proposed D-3 Owl Comes Out site is located approximately 1,110 feet from the shoreline and the constructed pad elevation at 1,900 MSL will be approximately 50 vertical feet above of Lake Sakakawea full pool elevation. The D-3 Stink Gun site is located approximately 500 feet from the shoreline and approximately 15 vertical feet above the high water mark. The proposed sites will be within line-of-sight of Lake Sakakawea.

High water levels at the time of the survey afforded little nesting habitat available along the lake shore; however, if lake levels recede exposing sandy beaches and sandbars, further habitat opportunities may arise. If the site will be constructed during the nesting season (April 15 - September 1) shoreline surveys for plovers will be conducted five days prior to construction. If birds or nests are discovered all construction will be stopped and the BIA and USFWS will be consulted for additional information on how to proceed. Mitigation measures recommended will be taken to avoid any disturbance of migratory bird nesting sites. The proposed project ***may affect, is not likely to adversely affect*** this species.

3.5.2.6 Sprague's Pipit

The Sprague's pipit is a ground nesting bird that breeds and winters on open grasslands. It feeds mostly on insects and spiders and some seeds. The Sprague's pipit is closely tied with native prairie habitat and breeds in the north-central United States in Minnesota, Montana,

North Dakota and South Dakota as well as south-central Canada. During the breeding season, Sprague's pipits prefer large patches of native grassland with a minimum size requirement thought to be approximately 145 ha (358.3 ac). The species prefers to breed in well-drained, open grasslands and avoids grasslands with excessive shrubs. Preferred grass height is estimated to be between 10 and 30 cm. They may avoid roads, trails, and habitat edges.

The proposed access will be developed along the two-track trail between agricultural fields (habitat edges). Vegetative height at time of survey was approximately 50 cm in adjacent grassland areas. The proposed pad sites will be developed within agricultural fields. Based upon these factors the proposed project will have ***may affect, is not likely to adversely affect*** this species.

3.5.2.7 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.

Portions of the access route to the D-3 Stink Gun site along the fence line contain a few of the potential vegetative species and moderate residual vegetative cover. The proposed well sites will be developed within agricultural fields. Relatively small amounts of habitat critical to the life stages of the Dakota skipper may be altered by the proposed access road development. Based upon these factors the proposed project will have ***may affect, is not likely to adversely affect*** on this species.

3.5.3 Wildlife (General)

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

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

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.

Table 7 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, etc.

Table 7. Wildlife (General)

Location	Observed	Suitable Habitat

D-3 Owl Comes Out	None	Pronghorn antelope, small mammals, sharp-tailed grouse, and a variety of grassland and song nesting birds
D-3 Stink Gun	None	Pronghorn antelope, small mammals, sharp-tailed grouse, and a variety of grassland and song nesting birds

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. On-site assessments confirmed that no threatened or endangered species will be impacted by proposed roads or wells. Ground clearing might impact habitat for unlisted species, including small birds, ground dwelling mammals, and other wildlife species. Proposed projects may affect raptor and migratory bird species through direct mortality, habitat degradation, and/or displacement of individual birds. Fragmentation of native prairie habitat is a specific concern for grouse species.

Precautions benefitting all wildlife include:

- Locations overlying existing disturbances;
- No 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.

3.6.1 D-3 Owl Comes Out

The D-3 Owl Comes Out site and access road is located on a gentle slope with an approximate 3-6% grade comprised mostly of Williams-Bowbells loams with smaller amount of Max-Zahl loams according to the NRCS Mapping Units (MUs). The surface is cultivated and topsoil is approximately 14 inches deep across the site.

Table 8. D-3 Owl Comes Out Soils

Soil Name	Pad Acres	Road Acres	Total Acres
Williams-Bowbells	12.2	0.9	13.1
Max-Zahl	2.5	0	2.5
Zahl-Max	0.5	0	0.5

3.6.2 D-3 Stink Gun

The D-3 Stink Gun site is located on a gentle slope with an approximate 3-6% grade comprised entirely of Williams-Bowbells loams according to the MUs. The access road crosses a few acres of Max-Zahl loams on the ½-section line. The majority of the site is cultivated and topsoil is approximately 12 inches deep.

Table 9. D-3 Stink Gun Soils

Soil Name	Pad Acres	Road Acres	Total Acres
Williams-Bowbells	18.6	6.0	13.1
Max-Zahl	0	1.5	7.5

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 Owl Comes Out

The pad site is located within a cultivated agricultural field. Oat stubble and voluntary oat regrowth was dominant at the survey time. Smooth brome (*Bromus inermis*) and Kentucky bluegrass (*Poa pratensis*) dominates the two-track in which the access road first departs the end of BIA 602. The southwest corner of the pad nears a native grassy drainage with patches of choke cherry (*Prunus virginiana*).

3.7.2 D-3 Stink Gun

The pad site is located in a cultivated agricultural field. Oat stubble and voluntary oat regrowth was dominant at the survey time. Native and introduced species exist along the proposed access route following the section line. Needle-and-thread (*Stipa comata*), green needlegrass (*Stipa viridula*), blue grama (*Bouteloua gracilis)*, are the native grass species found along the two-track trail.

Smooth brome (*Bromus inermis*) and Kentucky bluegrass (*Poa pratensis*) dominate the previously cultivated field in which the access road first departs BIA 602. The field was un-grazed and at the time of on-site investigation, residual cover was high (50 cm). Scattered species along the route include Prairie coneflower (*Ratibida columnifera),* prairie wildrose (*Rosa arkansana*), white sage (*Artemisia ludoviciana),* fringed sagebrush (*Artemisia frigida*), Missouri goldenrod (*Solidago missouriensis*), and buck brush (*Symphoricarpos occidentalis*).

3.7.3 Noxious Weeds

The North Dakota Agriculture Commission (ND Department of Agriculture 2002) identifies twelve noxious weed plant species in the state (Table 10**Error! Reference source not found.**). Nine of the twelve noxious weed species have been reported in McLean county and seven reported in Mountrail County. Absinth wormwood, Canada thistle, field bindweed, leafy spurge, musk thistle, saltcedar, spotted knapweed, Russian knapweed and yellow star thistle are known

to occur (ND Department of Agriculture 2007). None of these were observed on the proposed project during the on-site assessment.

Table 10. Noxious weeds known to occur in McLean and Mountrail Counties

Common Name	Scientific Name	5 year (2003-2007) Average Reported Acres of Noxious Weeds[1]	
		McLean County	Mountrail County
Absinth wormwood	*Artemisia absinthium*	1,825	1,085
Canada thistle	*Cirsium arvense*	7,102	21,232
Dalmatian toadflax	*Linaria genistifolia*	NR	NR
Diffuse knapweed	*Centaurea diffusa*	NR	NR
Field bindweed	*Convolvulus arvensis*	1,756	1,429
Leafy spurge	*Euphorbia esula*	1,598	21,928
Musk thistle	*Carduus nutans*	193	2
Purple loosestrife	*Lythrum salicaria*	NR	NR
Russian knapweed	*Acroptilon repens*	5	NR
Saltcedar	*Tamarix spp.*	38	721
Spotted knapweed	*Centaurea maculosa*	3	164
Yellow starthistle	*Centaurea solstitialis*	5	NR

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

Potential re-disturbance of 42.3 acres presents 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 the well pad. Areas stripped of topsoil must be re-seeded and reclaimed at the earliest opportunity. Certified weed-free straw and seed must be used for all construction, seeding, and reclamation efforts. Prompt and appropriate construction, operation, and reclamation are expected to reduce vegetative impacts to minimal levels, effectively negating the potential to establish or spread invasive species.

3.8 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 well pads and access roads were conducted on October 18, 2010 by personnel of SWCA Environmental Consultants, using an intensive pedestrian methodology. For the Dakota-3 Owl Comes Out 7-1H, 7-2H, 7-3H triple well pad project approximately 22.66 acres were inventoried (Lechert 2011a), and for the Stink Gun 7-1H, 7-2H, 7-3H, 7-4H quadruple well pad project approximately 42.72 acres were inventoried (Lechert 2011b). 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 these undertakings. This determination was communicated to the THPO on March 17, 2011; however, the THPO did not respond within the allotted 30 day comment period. The Cultural Resource Survey reports of these findings have been submitted under separate cover for review and are included only as a reference in this EA.

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 11.

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 11. 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 12, 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 13. 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 12. 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 13. 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 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.

3.12 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.

3.13 Cumulative Impacts

Cumulative impacts result when the effects of an action are added to or interact with other effects in a particular place and within a particular time. It is the combination of these effects, and any resulting environmental degradation, that is the focus of the cumulative impact analysis. While impacts can be differentiated as direct, indirect, and cumulative, the concept of cumulative impacts takes into account all disturbances since cumulative impacts result in the compounding of the effects of all actions over time. Thus the cumulative impacts of an action can be viewed as the total effects on a resource, ecosystem, or human community of that action and all other activities affecting that resource no matter what entity (federal, non-federal, or private) is taking the actions.

The landscape and vegetation of the Great Plains have undergone continual transformations due to the influences of nature and human actions. Cumulative effects have occurred as a loss and alteration of habitats caused by cultivation, range management practices, fire suppression, exotic species introductions, resource development, and other practices. Environmental impacts may accumulate either over time or in combination with similar activities in the area. Unrelated activities may also have negative impacts on critical elements, thereby contributing to cumulative degradation of the environment. Past and current disturbances near the proposed project include farming, grazing, roads, and other oil/gas development. Virtually all-available acreage is already organized into agricultural leases or range units to utilize surface resources for economic benefit.

The proposed projects would be one of various proposed developments in the area. As such, it would contribute only a portion of the cumulative impacts. In some instances, the cumulative impact on the environment of the proposed project and oil/gas development activities would be the sum of the individual impacts from each project in the region. There are other impacts, however, that cumulatively may be greater than the sum of the individual projects. By building multi-well sites, overall impacts to surface disturbance will be reduced versus developing each well bore individually.

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 14 and on Figure 15. There are 6 active wells within five miles of the sites considered in this document with at least 11 confidential sites in the area as reported by the NDIC. The immediate area is currently being developed by D-3 and other producers. Within ten miles, there are currently 86 active wells with 73 proposed. Within 20 miles, there is approximately 647 total oil and gas wells in various stages of development or production, with ever increasing development within the Fort Berthold boundaries.

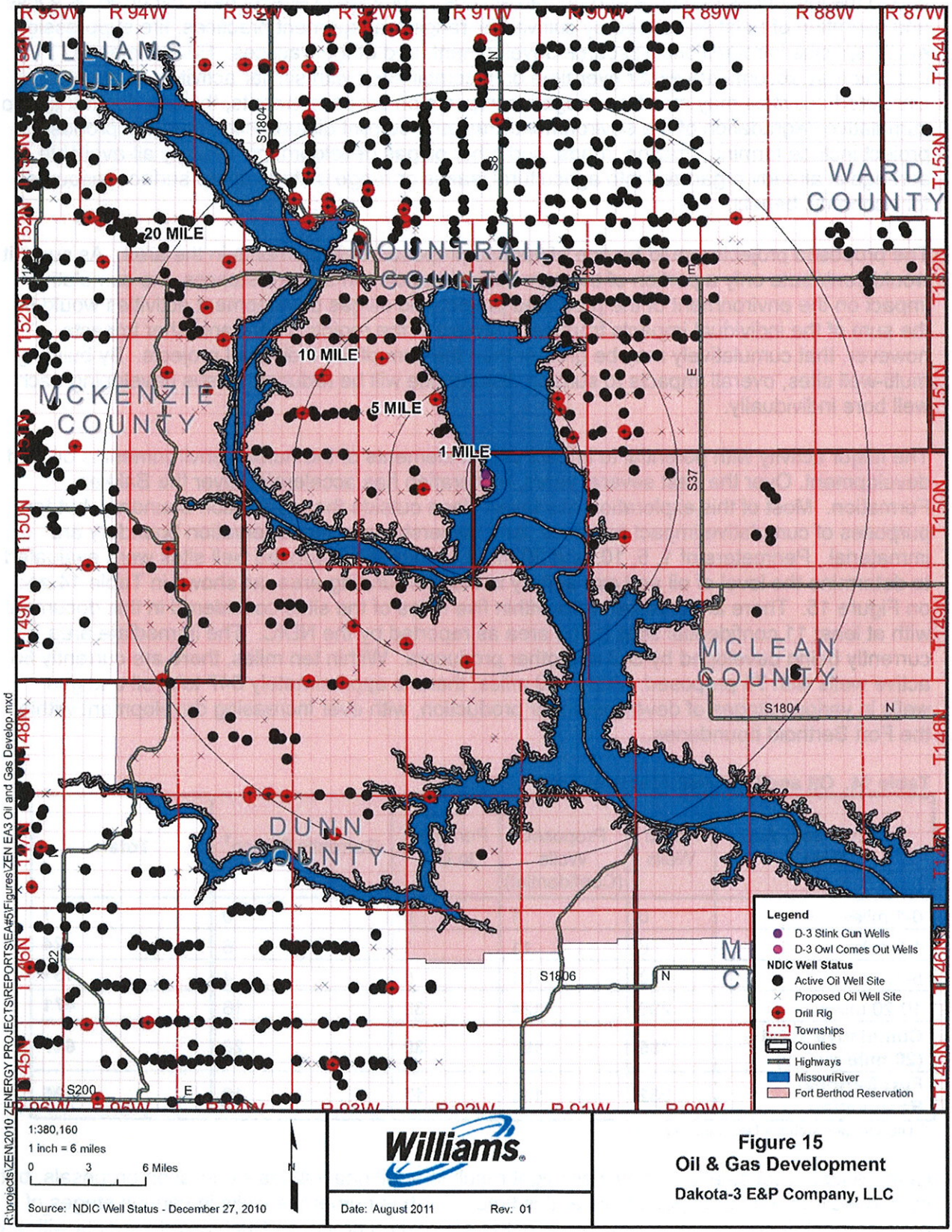
Table 14. Oil and Gas Well Status in Area

Distance from Well Sites	Active Wells	Proposed Wells (Confidential)	Permitted to Drill	Currently Drilling[1]	**Totals**
0-1 miles	0	1	0	0	**1**
1-5 miles	6	11	1	6	**24**
5-10 miles	**80**	61	6	4	**151**
10-20 miles	299	124	32	16	**471**
Cumulative Total (20-mile radius)	**385**	**197**	**39**	**26**	**647**
Fort Berthold Reservation	**232**	**138**	**17**	**18**	**405**

*NDIC OG well status – December 27, 2010

Commercial success at any new well might result in additional oil/gas exploration proposals, but such developments are speculative at this time. D-3 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,

Figure 15. Oil and Gas Development



and other opportunities to reduce surface disturbance and impacts to the human environment. D-3 also has developed a natural gas gathering system and has 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.

There will be ground disturbing activities to lands that have not been previously cultivated or otherwise physically manipulated. The sites will not disturb native prairie rangelands and access roads will follow existing two-track trails when possible. 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. Increased truck traffic on adjacent roadways can be expected and has a documented negative, but manageable, impact on road conditions.

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

3.14 Mitigation and Commitments by D-3

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.

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 locations were determined in consideration of the previously identified issues.

Avoidance measures and other protective measures were incorporated into the final project design to minimize impacts to evaluated resources, as appropriate. During the onsite inspections, site-specific mitigation measures were discussed and developed. Those measures are presented here and will be incorporated in the Permit to Construct.

3.14.1 Spill Prevention and Erosion Control

D-3 has made commitments to the following mitigation measures:

- Utilization of a closed-loop (pit-less) drilling system at both sites due to the close proximity of the surface waters of Lake Sakakawea.

- Construction containment berms (4-foot) on top of the pads to contain surface water from transferring off pads during drilling operations.
- Establish secondary containment berms and retention areas constructed down slope of the site(s). A diversion ditch will also be constructed around the pads to direct any surface runoff into the retention areas.
- Rounding corners of the proposed well pads as depicted in final plats.
- Use of all Best Management Practices (BMP's) including containment berm(s), diversion ditches, sediment fencing, matting, soil compaction during construction and reseeding of native species after final reclamation.

3.14.2 Wildlife Protections

D-3 has made commitments to the following wildlife protection and mitigation measures:

- If portions of the projects are to be constructed during the spring nesting season (February 1 - July 15) ground and/or aerial surveys for migratory birds (including raptors) and nests will again be conducted within 5 days of construction.

- 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.

- If the sites are scheduled to be constructed during the nesting season for piping plovers and least terns (April 15 - September 1) shoreline surveys will be conducted five days prior to construction. If birds or nests are discovered, all construction will be stopped and the BIA and USFWS will be consulted for additional information on how to proceed. Mitigation measures recommended will be taken to avoid any disturbance of raptor or migratory bird nesting sites.

- 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 the BIA.

3.14.3 Utilities

Underground utilities including electric, gas, water, and oil gathering lines are planned be constructed within the evaluated corridor in the future. If utilities are not able to remain within this corridor an additional evaluation will be conducted and an addendum to this EA will be prepared.

3.14.4 Dust Control

D-3 will practice watering and/or application of a dust suppressant as necessary the access roads during construction, especially during periods of high winds and/or low precipitation.

3.14.5 Fire Control

D-3 implements fire prevention and control measures including, but not limited to, the following:

- Requiring construction crews to carry fire extinguishers in their vehicles and/or equipment.
- Training construction crews in the proper use of fire extinguishers.
- Contracting with the local fire district to provide fire protection.

3.14.6 Traffic and Roads

Cooperative efforts by operators, agencies, and the tribe are currently being developed and implemented across FBIR. These measures include the following.

- Requiring construction personnel to stay within the ROW or follow designated access roads.
- Increasing the pipeline infrastructure, centralizing water depots, and developing salt water disposal wells to reduce overall truck traffic and road degradation.
- Utilizing Tribal TERO fees for oil and gas activities, TAT Tribal funds, and IRR funds to increase the pace of maintenance and repair of roads impacted by increased truck traffic and unusually adverse weather conditions.

3.14.7 Cultural Resources

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.

4.0 Consultation and Coordination

Project scoping letters and maps were mailed on January 6, 2011. Direct mail recipients and a record of comments were received are listed in Table 15. An example scoping letter and response letters are found in Appendices A and B. Species effect determination concurrence was received from USFWS on March 9, 2011 and is found in Appendix B.

Table 15. Scoping Record

Agency Scoping	Comments
US Fish and Wildlife Service	Concurrence with mitigation efforts and T&E Species determinations
North Dakota Game and Fish Department	Comments received and incorporated
Bureau of Land Management	No Response
US Army Corps of Engineers	No Response
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 Carlson McCain and Associates, Inc, under contract to D-3 and under the direction of BIA. Federal officials, oil and gas representatives, and consultants included the following:

Bureau of Indian Affairs
Marilyn Bercier
Mark Herman

Dakota-3 E&P Company, LLC
Nelson Klitzka, Landman and Project Manager
Jennifer Head, Regulatory Team Lead

Carlson McCain
Todd Hartleben, Senior 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. Omemik, D.E. Pater, M. Ulmer, J.Schaar, J. Freeouf, R. Johnson, P. Kuck, and S.H. Azevedo. 1998. Ecoregions of North Dakota and South Dakota. Jamestown, North Dakota: Northern Prairie Wildlife Research Center Online. Http://www.npwrc.usgs.gov/resource/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.

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).

Lechert, Stephanie. 2011. A Class I and Class III Cultural Resource Inventory of the Dakota-3 Owl Comes Out #7-1H, #7-2H, and #7-3H Well Pad and Access Road on the Fort Berthold Indian Reservation, McLean County, North Dakota. Submitted by SWCA Environmental Consultants to the BIA Great Plains Regional Office.

Lechert, Stephanie. 2011. A Class I and Class III Cultural Resource Inventory of the Dakota-3 Stink Gun #7-1H, #7-2H, #7-3H, and #7-4H Mega Well Pad and Access Road on the Fort Berthold Indian Reservation, McLean County, North Dakota. Submitted by SWCA Environmental Consultants to the BIA Great Plains Regional Office.

North Dakota State Industrial Commission. 2010. 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/histOlY_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. McLean 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.

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

Appendix A

Scoping and Concurrence Request

McCain
and Associates, Inc.

ENGINEERS & SCIENTISTS
Knowledge. Commitment. Service.

January 6, 2011

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

Re: D-3 Owl Comes Out Tri-Pad
Zenergy Operating Company, LLC

Dear Mr. Towner:

On behalf of Zenergy Operating Company, LLC (Zenergy), McCain and Associates, Inc. is submitting information concerning development of the proposed Owl Comes Out Tri-Pad. The proposed multi-well site (Site) will include the D-3 Owl Comes Out #7-1H, D-3 Owl Comes Out #7-2H, and D-3 Owl Comes Out #7-3H well bores. The Site and associated access route is located on the Fort Berthold Reservation in Section 7, T150N, R91W, in Mountrail County (Figure 1).

An on-site biological assessment of the Site was conducted on October 18, 2010, with the Bureau of Indian Affairs (BIA). 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.

Project Description
The proposed site is planned to have three well bores, D-3 Owl Comes Out #7-1H, D-3 Owl Comes Out #7-2H, and D-3 Owl Comes Out #7-3H, drilled horizontally to access petroleum resources under the surface waters of Lake Sakakawea (Missouri River) within sections 6, 7, 8, and 9 (Figure 2).

The proposed tri-well pad working surface will initially be constructed approximately to 890 feet by 530 feet in size, or approximately 10.8 acres. An additional 3-4 acres will be disturbed during construction of ditch and containment berm off the surfaced pad. Interim site reclamation after well completions will reduce the pad working surface size to less than half of original size and reseeded. The overall surface use loss (fenced area) will be approximately 16.1 acres.

The access route will begin at BIA 602 and proceed southeasterly to the west side of tri-pad approximately 223 feet. A maximum disturbance width (ROW) of 100 feet will result in a maximum 0.9 acres of potential disturbance.

The tri-pad site is located with a cultivated agricultural field. Oat stubble and voluntary oat regrowth was dominant at the survey time. Smooth brome (*Bromus inermis*) and Kentucky bluegrass (*Poa pratensis*) dominates the two-track in which the access road first departs the end of BIA 602.

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Bismarck, ND 58503

tel | 701-255-1475 fax | 701-255-1477
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Topsoil stockpiles will be spread to surrounding area to reduce erosion and sedimentation potential into drainage and lake. A four foot containment berm will be constructed on top of the pad site to contain surface runoff. Containment berms and retension ponds will be constructed on the east side and southwest corner of the pad site. A diversion ditch will also be constructed around the entire pad to direct any surface runoff into the containment areas. The lowest elevation of the pad is 1918' MSL and is approximately 875' from the shoreline of Lake Sakakawea. A closed-loop (pit-less) drilling system will be utilized due to the close proximity of the surface waters of Lake Sakakawea. Topsoil from site will be removed at a depth of 14 inches and spread onsite for interim and final reclamation use. The corners of the proposed well pad will be rounded as needed. Best Management Practices (BMP's) including the use of a containment berm(s), sediment fencing, soil compaction and reseeding of native species will be utilized during construction and after final reclamation. All electrical utilities will be underground.

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 line-of sight of the proposed project. No nests were observed during the on-site review. The project area was also surveyed for migratory bird species. At the time of the survey none were observed using the immediate area or shoreline.

If the site will be constructed during the nesting season (February 15 – July 15) aerial or ground surveys for migratory birds (including raptors) and nests, including intensive shoreline survey for piping plovers and least terns, will again be conducted five days prior to construction. If migratory birds or nests are discovered, the USFWS will be contacted for additional information on how to proceed. Mitigation measures recommended will be taken to avoid any disturbance of raptor or migratory bird nesting sites.

High Value Habitat Avoidance
The location of the Site was selected because it is accessible due to the topography of the area, will have high success for reclamation, will still allow development of the mineral resources under the lake while maintaining a minimum 500' buffer from surface waters.

The proposed pad site is located at top of a gently rolling cultivated agricultural field draining to the southwest and east. The southwest corner of pad nears a native drainage with some chokecherry shrubs although will not impact the stand. A closed-loop (pit-less) drilling system will be utilized eliminating or greatly reducing potential for contamination or leaching. No high value wildlife habitat will be compromised by pad construction.

The ND Parks and Recreation Department (NDPRD) houses the North Dakota Natural Heritage biological conservation database. A record review was done to determine if any current or historic plant or animal species of concern, especially piping plover and least tern nesting records, or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. One record of a piping plover (Charadrius meldous) has been recorded in Section 8, T150N R092W and was last recorded as observed in 1988. At the time of the field visit, no significant ecological communities (including plover and tern nesting

habitat) was observed in the area due to the high water levels of the reservoir. Water levels will dictate habitat availability during the annual nesting season.

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 well site and access route will result in approximately 16.1 total acres of disturbance. Potential impacts to wildlife include displacement due to construction activities and loss of ground and nesting cover in grassland areas. Road and pad construction may temporarily impact habitats of unlisted species, including migratory birds, small and large mammals, and other wildlife species.

There are no wetlands, floodplains, or major drainage facilities that will be significantly negatively affected by the proposed well site. Mitigation efforts mentioned above will greatly reduce potential negative effects of wells drilled near Lake Sakakawea. Current land uses are expected to continue with little change other than the acreage required for development. Increased truck traffic on adjacent roadways can be expected and has a documented negative, but manageable, impact on road conditions.

Due to the time of the site visit and water levels, shoreline nesting species were not observed. If construction is delayed until spring a pre-construction survey (as mentioned previously) will be performed to ensure shoreline nesting migratory birds are not located in the area.

Biological Species Assessment
Assessments for Federally listed threatened and endangered species were conducted by evaluating historic and present occurrences and by determining if potential habitat exists within the project area. A determination was made concerning direct and cumulative effects of the proposed activities on each species. Threatened and endangered species with documented occurrences in Mountrail County are listed in Table 1.

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

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

[1] USFWS (updated September, 2010)

Determinations made for federally listed species are:

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

Gray Wolf
Gray wolves, an Endangered Species in North Dakota, were historically found throughout much of North America including the Upper Great Plains. Human activities have restricted their present range to the northern forests of Minnesota, Wisconsin, and Michigan and the Northern Rocky Mountains of Idaho, Montana, and Wyoming. They now only occur as occasional visitors in North Dakota. The most suitable habitat for the gray wolf is found around the Turtle Mountains region where documented and unconfirmed reports of gray wolves in North Dakota have occurred (Grondahl and Martin, no date). Due to the transient nature and no recent recorded sightings in the area the proposed project ***may affect, is not likely to adversely affect*** this species.

Interior Least Tern
The interior least tern nests on midstream sandbars along the Yellowstone and Missouri River systems. Interior least terns construct bowl-shaped depression nests on sparsely vegetated sandbars and sandy beaches. Their nesting period occurs between mid-May through mid-August.

No individuals were observed in the area during the onsite visit on October 18, 2010. The proposed well site is located approximately 1,110 feet from the shoreline and constructed pad elevation at 1,918 MSL will be approximately 64 vertical feet above of Lake Sakakawea full pool elevation. Water levels at the time of the survey afforded little nesting habitat available along the lake shore; however, if lake levels recede exposing sandy beaches and sandbars, further habitat opportunities may arise. If the site will be constructed during the nesting season (May 15 - Aug 15) shoreline surveys for least terns will be conducted five days prior to construction. If birds or nests are discovered all construction will be stopped and the BIA and USFWS will be consulted for additional information on how to proceed. Mitigation measures recommended will be taken to avoid any disturbance of raptor or migratory bird nesting sites. The proposed project ***may affect, is not likely to adversely affect*** this species.

Pallid Sturgeon
Pallid sturgeon are found in the Mississippi, Missouri, and Yellowstone River systems and are adapted for living close to the bottom of large, shallow rivers with sand and gravel bars. Pallid sturgeon populations in North Dakota have decreased since the 1960's (Grondahl and Martin no date). The proposed well site is located approximately 500 feet from the Missouri River system. BMP's will be implemented, including a containment berm surrounding the proposed well pad site and utilizing a closed-loop (pit-less) drilling system, as such the project ***may affect, 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 Parks and Wildlife 2008).

The proposed well site is located within the Central Flyway. Approximately 75% of the whooping crane sightings in North Dakota occur within a 90-mile corridor that includes the proposed well location. Because collisions with power lines are the primary cause for fledgling mortality, it is BIA directive that any utility lines be constructed underground. Land use in the area is previously cultivated grasslands and agricultural fields. The pad and access road are

placed in a location that may have some potential of impacting whooping crane stop-over habitat. No individual whooping cranes were observed in the area during the on-site visits.

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

Piping Plover and Critical Habitat
Piping plovers are found along the Missouri and Yellowstone River systems on gravel shorelines and sandbars and also 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. NDPRD records indicate piping plover sightings and critical habitat within 2-miles of the project site.

No individuals were observed in the area during the onsite visit on October 18, 2010. The NDPRD has one record of a piping plover (Charadrius meldous) observed in Section 8, T150N R092W in 1988. The proposed well site is located approximately 1,110 feet from the shoreline and constructed pad elevation at 1,918 MSL will be approximately 64 vertical feet above of Lake Sakakawea full pool elevation. Water levels at the time of the survey afforded little nesting habitat available along the lake shore; however, if lake levels recede exposing sandy beaches and sandbars, further habitat opportunities may arise. If the site will be constructed during the nesting season (May 15 - Aug 15) shoreline surveys for least terns will be conducted five days prior to construction. If birds or nests are discovered all construction will be stopped and the BIA and USFWS will be consulted for additional information on how to proceed. Mitigation measures recommended will be taken to avoid any disturbance of raptor or migratory bird nesting sites. The proposed project ***may affect, is not likely to adversely affect*** this species.

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

The proposed pad site will be developed within an agricultural field. Based upon these factors the proposed project will have ***may affect, is not likely to adversely affect*** this species.

Dakota Skipper
Dakota skippers are found in native prairie containing a high diversity of wildflowers and grasses. Habitat includes two prairie types: 1) low (wet) prairie dominated by bluestem grasses, wood lily, harebell, and smooth camas; and 2) upland (dry) prairie on ridges and hillsides dominated by bluestem grasses, needlegrass, pale purple coneflower and upright coneflowers and blanket flower. Dakota skipper populations have declined historically due to widespread conversion of native prairie.

The proposed pad site will be developed within an agricultural field. Based upon these factors the proposed project will have ***may affect, is not likely to adversely affect*** on this species.

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

- Use of a closed-loop (pit-less) drilling system.
- Construction of diversion ditch and secondary containment area around the proposed site.
- Construction of a 4' high containment berm on the pad.
- A spring survey for migratory nesting birds 5 days prior to construction
    - Shoreline survey for piping plover and least tern (May 15- Aug 15)
- Interim and final reclamation including:
    - Use of BMPs (soil compaction, berms, silt fences, wattles, fabric etc.) to reduce erosion
    - Monitoring and maintenance of potential erosion areas.
    - Seeding of native species.
    - Indefinite monitoring of seeding success and weed species control.

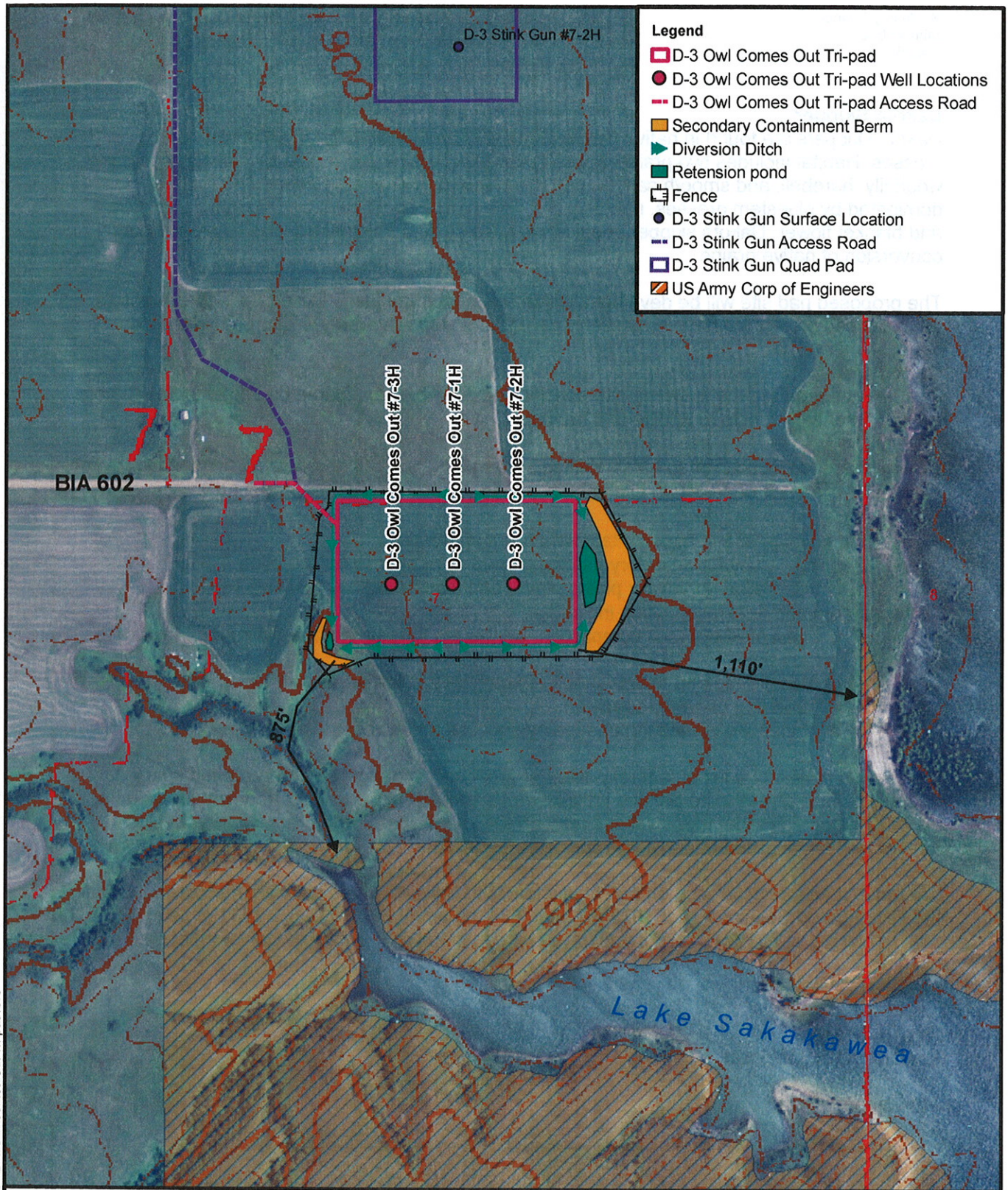
Based on a review of a list of federally listed or proposed endangered or threatened species under U.S. Fish and Wildlife Service jurisdiction, in addition to occasional transient individuals, we have determined that these actions ***may affect, is not likely to adversely affect*** listed threatened,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

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

Sincerely,

Ryan J. Krapp
Ecologist/GIS Specialist

Attachment



1:6,000
1 inch = 500 feet
0 250 500 Feet

Basemap: USGS 24K Quadrangle
New Town SW; NAIP 2010 Mountrail County

ZENERGY
Exploring for Tomorrow's Energy Today

Date: December 2010 Rev: 01

Figure 1
Proposed Tri-Well Site

D-3 Owl Comes Out Tri-pad

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Appendix B

Scoping Responses and Concurrence

United States Department of the Interior

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

MAR 9 2011

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 Owl Comes Out Tri-Pad

Dear Mr. Krapp:

This is in response to your January 6, 2011, scoping document regarding a proposed multi- well site 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 Owl Comes Out: T. 150 N., R. 91 W., Section 7, 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", and the Endangered Species Act (16 U.S.C. 1531 et seq.) (ESA).

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, not likely to adversely affect" determination for piping plover, interior least tern, and pallid sturgeon. This concurrence is predicated on Zenergy's commitment to use a closed-loop (pitless) drilling system since the pad is

within 300 feet of a wooded draw. Zenergy will also construct and maintain a four foot containment berm around the well pad. The Service believes that the absence of a reserve pit and the inclusion of a containment berm greatly reduces the potential of migration of fluids off the pad; additionally, the potential for leaching is minimized or eliminated, so risk to these species from contamination through drainage to the lake reduces the threat to an insignificant or discountable level.

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

In 2010, the Sprague's pipit was added to the candidate species list. Migratory bird species, such as the Sprague's pipit, that are candidates are still protected under the MBTA. Sprague's pipits require large patches of grassland habitat for breeding, with preferred grass height between 4 and 12 inches. The species prefers to breed in well-drained, open grasslands and avoids grasslands with excessive shrubs. They can be found in lightly to heavily grazed areas. They avoid intrusive human features on the landscape, so the impact of a development can be much larger than the actual footprint of the feature. If Sprague's pipit habitat is present within or adjacent to the proposed project area, the Service requests that you document any steps taken to avoid and minimize disturbance of this habitat.

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. No legal requirement exists to protect candidate species; however, it is within the spirit of the ESA to consider these species as having significant value and worth protecting. Although not required, Federal action agencies, such as the BIA, have the option of requesting a

conference on any proposed action that may affect candidate species such as the Dakota skipper and Sprague's pipit.

Migratory Birds

The letter states that Zenergy will implement the following measures to avoid/minimize take of migratory birds:

- Construction will be completed outside of the migratory bird nesting season (Feb. 1-July 15);
- If construction needs to take place within the breeding and nesting season, pre-construction surveys for migratory birds and their nests will be conducted within five days prior to the initiation of construction activities. If birds or nests are discovered, the Service will be contacted for additional information on how to proceed.

Bald and Golden Eagles

The document states that a ground survey for cliff, tree and ground raptor nests was conducted within line-of-sight of the proposed project. No eagles or nests were discovered within 0.5 mile of the project area. The eagle nest database maintained by North Dakota Game and Fish Department does not indicate any recorded eagle nests within 0.5 mile of the project area.

The Service believes that Zenergy's commitment to implement the aforementioned measures demonstrates that measures have been taken to protect migratory birds and bald and golden eagles to the extent practicable, pursuant to 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

United States Department of the Interior

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

MAR 9 2011

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 Stink Gun Quad Pad

Dear Mr. Krapp:

This is in response to your January 6, 2011, scoping document regarding a proposed multi- well site 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 Stink Gun Quad Pad: T. 150 N., R. 91 W., Section 7, 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", and the Endangered Species Act (16 U.S.C. 1531 et seq.) (ESA).

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, not likely to adversely affect" determination for piping plover, interior least tern, and pallid sturgeon. This concurrence is predicated on Zenergy's commitment to use a closed-loop (pitless) drilling system since the pad is within 300 feet of a wooded draw. Zenergy will also construct and maintain a four foot

containment berm around the well pad. The Service believes that the absence of a reserve pit and the inclusion of a containment berm greatly reduces the potential of migration of fluids off the pad; additionally, the potential for leaching is minimized or eliminated, so risk to these species from contamination through drainage to the lake reduces the threat to an insignificant or discountable level.

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

In 2010, the Sprague's pipit was added to the candidate species list. Migratory bird species, such as the Sprague's pipit, that are candidates are still protected under the MBTA. Sprague's pipits require large patches of grassland habitat for breeding, with preferred grass height between 4 and 12 inches. The species prefers to breed in well-drained, open grasslands and avoids grasslands with excessive shrubs. They can be found in lightly to heavily grazed areas. They avoid intrusive human features on the landscape, so the impact of a development can be much larger than the actual footprint of the feature. If Sprague's pipit habitat is present within or adjacent to the proposed project area, the Service requests that you document any steps taken to avoid and minimize disturbance of this habitat.

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. No legal requirement exists to protect candidate species; however, it is within the spirit of the ESA to consider these species as having significant value and worth protecting. Although not required, Federal action agencies, such as the BIA, have the option of requesting a

conference on any proposed action that may affect candidate species, such as the Dakota skipper and Sprague's pipit.

Migratory Birds

The letter states that Zenergy will implement the following measures to avoid/minimize take of migratory birds:

- Construction will be completed outside of the migratory bird nesting season (Feb. 1-July 15);
- If construction needs to take place within the breeding and nesting season, pre-construction surveys for migratory birds and their nests will be conducted within five days prior to the initiation of construction activities. If birds or nests are discovered, the Service will be contacted for additional information on how to proceed.

Bald and Golden Eagles

The document states that a ground survey for cliff, tree and ground raptor nests was conducted within line-of-sight of the proposed project. No eagles or nests were discovered within 0.5 mile of the project area. The eagle nest database maintained by North Dakota Game and Fish Department does not indicate any recorded eagle nests within 0.5 mile of the project area.

The Service believes that Zenergy's commitment to implement the aforementioned measures demonstrates that measures have been taken to protect migratory birds and bald and golden eagles to the extent practicable, pursuant to 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

January 21, 2011

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

Re: D-3 Owl Comes Out Tri-Pad
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 proposed multi-well site Section 7, T150N, R91W, 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 once again reviewed the project 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, we do have records for the occurrence of *Charadrius melodus* (piping plover) in sections adjacent to the project area indicating that the habitat in the project area may be suited for this specie or other rare, threatened, sensitive or endangered species. Avoid noise and disturbance during the nesting season. Seasonally restrict work that might disturb piping plovers during the nesting season. Please see the attached spreadsheet and map for more information on these occurrences. We defer further comments regarding animal species to the North Dakota Game and Fish Department and the United States Fish and Wildlife Service.

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

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 me at (701-328-5370 or kgduttenhefner@nd.gov) if additional information is needed.

Sincerely,

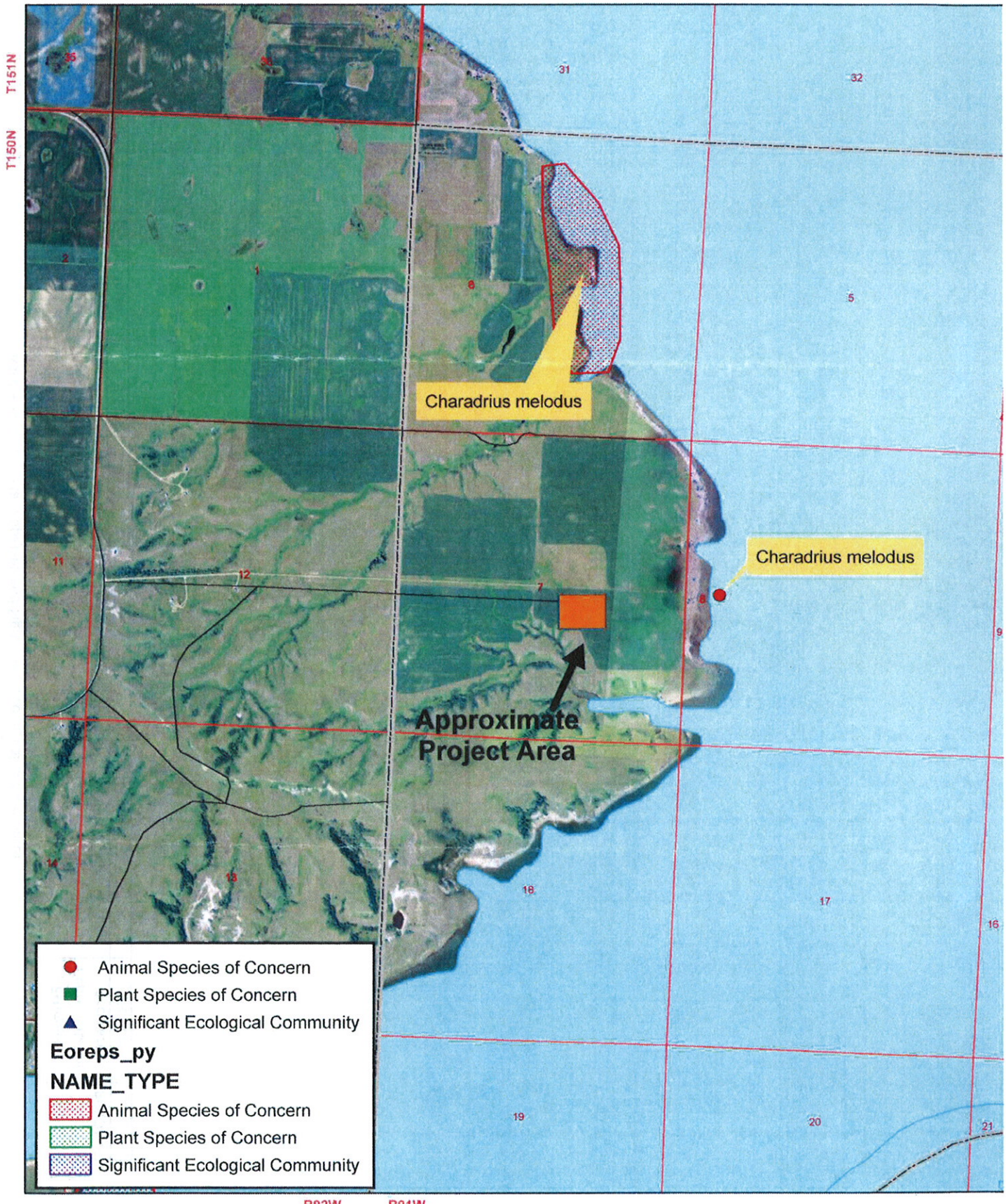
Kathy Duttenhefner

Kathy Duttenhefner
Coordinator/Biologist
Natural Resources Division

R.USNDNHI*2010-015
KD/1_21_2011/DL1_24_2011

Play in our backyard!

North Dakota Parks and Recreation Department
North Dakota Natural Heritage Inventory



January 2011

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
Charadrius melodus	Piping Plover	S1S2	G3	LE, LT	150N091W - 06	McLean	1988	Medium	S

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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.

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January 21, 2011

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

Re: D-3 Stink Gun Quad Pad
Zenergy Operating Company

Dear Mr. Krapp:

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Thank you for the opportunity to comment on this project. Please contact me at (701-328-5370 or kduttenhefner@nd.gov) if additional information is needed.

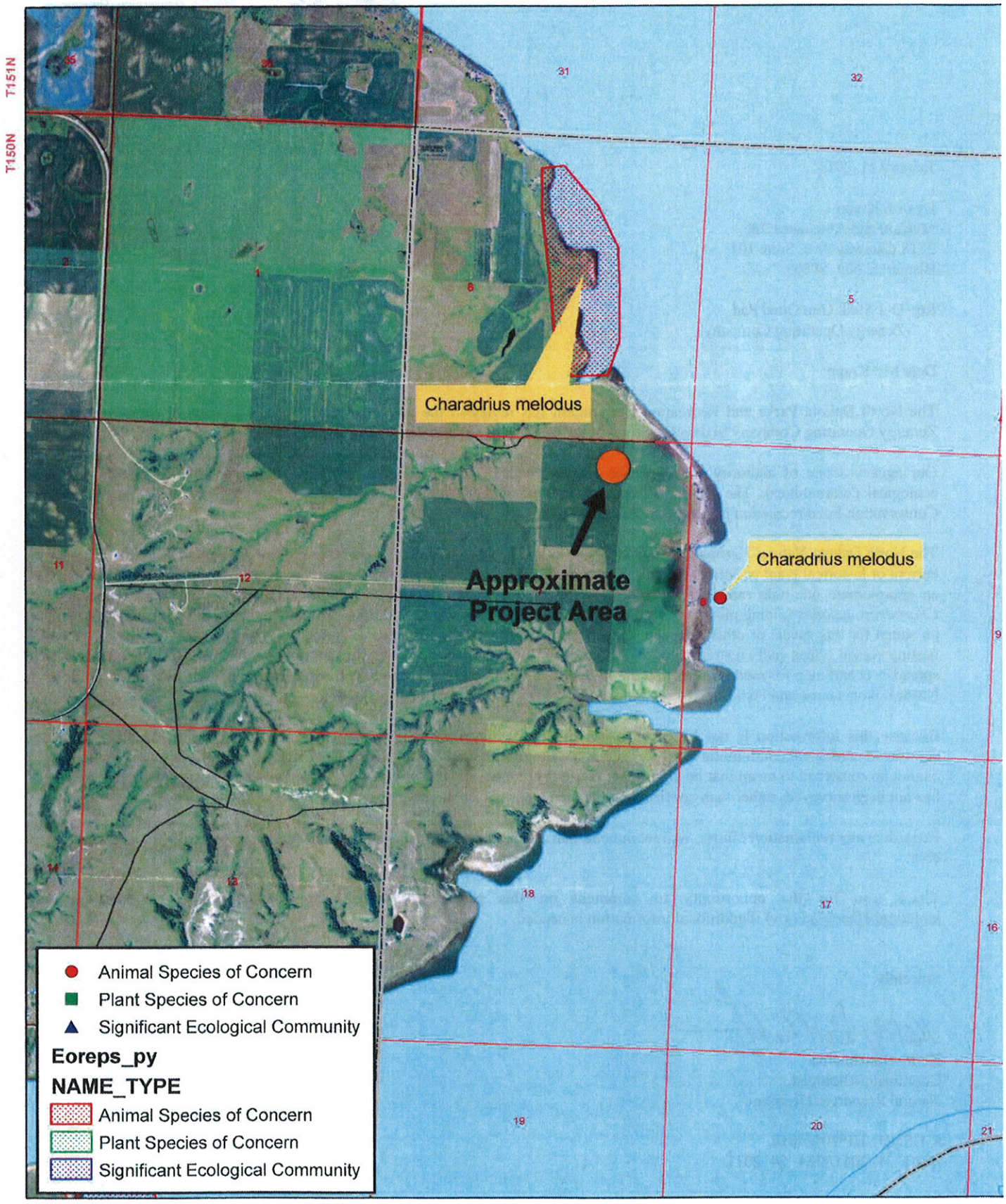
Sincerely,

Kathy Duttenhefner
Coordinator/Biologist
Natural Resources Division

R.USNDNHI*2010-019
KD/1_21_2011/DL1_24_2011

Play in our backyard!

North Dakota Parks and Recreation Department
North Dakota Natural Heritage Inventory



January 2011

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"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

January 31, 2011

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 Owl Comes Out Tri-Pad
D-3 Stink Gun Quad Pad

Zenergy, Inc. is proposing seven oil and gas wells located on two 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

North Dakota Natural Heritage Inventory Biological and Conservation Data Disclaimer

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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

MAR 17 2011

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 two oil well pads and access roads in McLean County, North Dakota. Approximately 65.38 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. Catalogued as BIA Case No. **AAO-1887/FB/11,** the proposed undertakings, locations, and project dimensions are described in the following reports:

Lechert, Stephanie
(2011a) A Class I and Class III Cultural Resource Inventory of the Dakota-3 Owl Comes Out #7-1H, #7-2H and #7-3H Well Pad and Access Road on the Fort Berthold Indian Reservation, McLean 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 Dakota-3 Stink Gun #7-1H, #7-2H, #7-3H and #7-4H Mega Well Pad and Access Road on the Fort Berthold Indian Reservation, McLean 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. We will adhere to the Standard Conditions of Compliance.

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

Dakota-3 E&P Company, LLC D-3: Owl Comes Out #7-1H, #7-2H & #7-3H
D-3 Stink Gun #7-1H, #7-2H, #7-3H & #7-4H

The Bureau of Indian Affairs (BIA) is planning to issue administrative approvals related to an Environmental Assessment to Authorize Land Use to construct two sites to drill seven horizontal oil/gas wells named D-3 Owl Comes Out #7-1H, #7-2H & #7-3H and D-3 Stink Gun #7-1H, #7-2H, #7-3H & #7-4H as shown on the attached map. Construction by Dakota-3 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 Earl Silk, 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 October 21, 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.