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

MAR 27 2012

MEMORANDUM

TO: Superintendent, Fort Berthold Agency

FROM: ACTING 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 (EA) has been completed and a Finding of No Significant Impact (FONSI) has been issued. The EA authorizes land use for the drilling of six oil and gas wells located atop a single pad on the Fort Berthold Indian Reservation.

All the necessary requirements of the National Environmental Policy Act have been completed. Attached for your files is a copy of the EA, FONSI and Notice of Availability. The Council on Environmental Quality (CEQ) regulations require that there be a public notice of availability of the (40 C.F.R. Section 1506.6(b)). Please post the attached notice of availability at the Agency and Tribal buildings for 30 days.

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

Attachment

cc: Tex Hall, Chairman, Three Affiliated Tribes (with attachment)
Elgin Crows Breast, Tribal Historic Preservation Officer (with attachment)
Derek Enderud, BLM, Bureau of Land Management (with attachment)
Grady Wolf, KLJ (with attachment)
Eric Wortman, EPA (with attachment)
Jonathon Shelman, Corps of Engineers
Jeff Hunt, Fort Berthold Agency

Finding of No Significant Impact

QEP Energy Company (QEP)

Environmental Assessment for

Drilling of MHA 1-06-07H-147-92, MHA 3-06-07H-147-92, MHA 5-06-07H-147-92, MHA 6-06-07H-147-92, MHA 7-06-07H-147-92, and MHA 8-06-07H-147-92 Oil & Gas Wells
Fort Berthold Indian Reservation
Dunn County, North Dakota

The U.S. Bureau of Indian Affairs (BIA) has received a proposal to drill six oil and gas wells located atop a single well pad as follows:

- MHA 1-06-07H-147-92, MHA 3-06-07H-147-92, MHA 5-06-07H-147-92, MHA 6-06-07H-147-92, MHA 7-06-07H-147-92, and MHA 8-06-07H-147-92 Oil & Gas Wells

Associated federal actions by BIA include determinations of effect regarding environmental resources and positive recommendations to the Bureau of Land Management regarding the Applications for Permit to Drill.

The potential of the proposed action to impact the human environment is analyzed in the following Environmental Assessment (EA), as required by the National Environmental Policy Act. Based on the EA, I have determined that the proposed project will not significantly affect the quality of the human or natural 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 solicited for the preceding NEPA document was sufficient to ascertain potential environmental concerns associated with the currently proposed project.
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 alternatives.
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 action is 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 project will improve the socio-economic condition of the affected Indian community.

ACTING Regional Director

3-27-12
Date

ENVIRONMENTAL ASSESSMENT

United States Bureau of Indian Affairs

Great Plains Regional Office
Aberdeen, South Dakota

QEP Energy Company

Drilling of MHA 1-06-07H-147-92, MHA 3-06-07H-147-92, MHA 5-06-07H-147-92, MHA 6-06-07H-147-92, MHA 7-06-07H-147-92, and MHA 8-06-07H-147-92 (11-31G 6-Well Pad) Oil & Gas Wells

Fort Berthold Indian Reservation

March 2012

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

CHAPTERS

FIGURES

TABLES

CHAPTER 1 PURPOSE AND NEED FOR ACTION

1.1 Introduction

This EA (Environmental Assessment) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, and the regulations of the Council on Environmental Quality (CEQ), 40 CFR parts 1500 through 1508. An EA is an informational document intended for use by both decision-makers and the public. It discloses relevant environmental information concerning the proposed action and the no-action alternative.

1.2 Description of the Proposed Action

The Fort Berthold Reservation encompasses 988,000 acres, 457,837 of which are in tribal and individual Indian ownership by the Three Affiliated Tribes (Mandan, Hidatsa, and Arikara) and its members. The reservation is located in west central North Dakota and is split into three areas by Lake Sakakawea, which traverses the center of the reservation. It occupies sections of six counties: Dunn, McKenzie, McLean, Mercer, Mountrail, and Ward.

The Fort Berthold Reservation lies atop the Bakken Formation, a geologic formation rich in oil and gas deposits that extends approximately 25,000 square miles beneath North Dakota, Montana, Saskatchewan, and Manitoba, with approximately two-thirds of the acreage beneath North Dakota. The Three Forks Formation lies beneath the Bakken. The North Dakota Department of Mineral Resources estimates that there are approximately 2 billion barrels of recoverable oil in each of these Formations. (The Bakken contains about 169 billion barrels of oil and the Three Forks contains about 20 billion barrels; however, most of this is not expected to be recoverable.) The Department's director estimates that there are 30–40 years of production remaining or more if technology improves.

The proposed action includes approval by the Bureau of Indian Affairs (BIA) and Bureau of Land Management (BLM) for QEP Energy Company (QEP) to drill and complete six wells from a single well pad targeting the Bakken and Three Forks Formations. The proposed action is located on the Fort Berthold Reservation and is proposed to be located in SW¼ of Section 31, T148N, R92W, 5th P.M. (Dunn County). Please refer to ***Figure 1.1, Project Location Map.***

The proposed 11-31G well pad would support six wells. The six wells are proposed to be paired into one group of four wells and one group of two wells, as shown below:

- MHA 1-06-07H-147-92, MHA 3-06-07H-147-92, MHA 5-06-07H-147-92, and MHA 7-06-07H-147-92
- MHA 6-06-07H-147-92 and MHA 8-06-07H-147-92

Both groups would have their own spacing unit in which the minerals are to be developed. The wells beginning with MHA 1, 2, 5, or 6 would target the Bakken Formation, while the wells beginning with MHA 3, 4, 7, or 8 would target the Three Forks Formation. Proposed completion activities include acquisition of rights-of-way (ROW), infrastructure for the proposed wells, and roadway improvements.

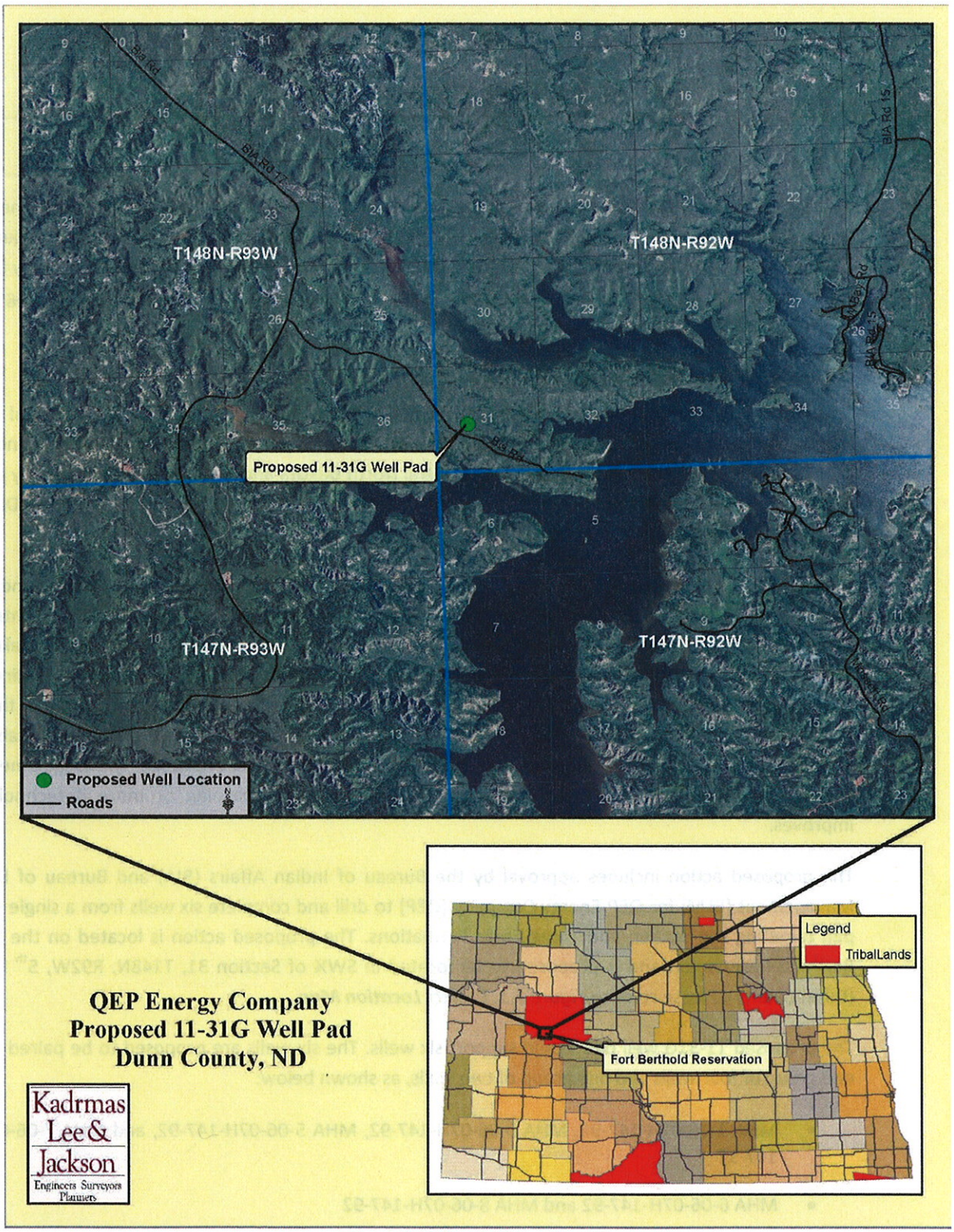

Figure 1.1, Project Location Map

1.3 Need for the Proposed Action

The Tribes own their mineral resources, which are held in trust by the United States government through the BIA. The BIA's positive recommendation to the BLM for approval of the Applications for Permit to Drill (APDs) to drill the six wells would provide important benefits to the Three Affiliated Tribes, including revenue that could contribute to the Tribal budgets, satisfy Tribal obligations, and fund land purchase programs to stabilize its land base. It would also provide individual members of the Tribes with needed employment and income. Furthermore, the proposed action gives the United States an opportunity to reduce its dependence on foreign oil and gas by exploring for domestic sources of oil and gas.

1.4 Purpose of the Proposed Action

The purpose of the proposed action is to allow the Three Affiliated Tribes to provide for oil and gas development on the identified lands on the Fort Berthold Reservation. Additionally, the purpose is to access commercially recoverable oil and gas resources on the lands subject to QEP's lease areas by drilling six wells at the identified location.

1.5 Regulations that Apply to Oil and Gas Development Activities

The BIA must comply with NEPA before it issues a determination of effect regarding environmental resources and provides a recommendation to the BLM regarding the APD. Therefore, an EA for the proposed wells is necessary to analyze the direct, indirect, and cumulative impacts of the proposed project.

Oil and gas development activities on Indian lands are subject to a variety of federal environmental regulations and policies under authority of the BIA and BLM. This inspection and enforcement authority derives from the United States trust obligations to the Tribes, the Indian Mineral Leasing Act of 1938, the Indian Mineral Development Act of 1982, and the Federal Oil and Gas Royalty Management Act of 1982. Under the BIA's regulations at 25 CFR Part 225, the BLM exercises authority over oil and gas development on Tribal lands under its implementing regulations at 43 CFR Part 3160 and its internal supplemental regulations and policies. The BLM's authority includes the inspection of oil and gas operations to determine compliance with applicable statutes, regulations, and all applicable orders. These include, but are not limited to, conducting operations in a manner which ensures the proper handling, measurement, disposition, and site security of leasehold production; and protecting other natural resources, environmental quality, life, and property.

CHAPTER 2 ALTERNATIVES

2.1 Introduction

This chapter provides information on the development and evaluation of project alternatives. The development of alternatives is directly related to the purpose and need for the project. Two alternatives are being considered for this project: a no action alternative and a proposed action alternative.

2.2 Alternative A: No Action

Under the no action alternative (Alternative A), the BIA and BLM would not authorize the development of the proposed six well pad, resulting in no drilling or completion of the six proposed oil and gas wells. There would be no environmental impacts associated with Alternative A. However, the Three Affiliated Tribes would not receive potential royalties from production or other economic benefits from oil and gas development on the Reservation. Further, the oil and gas resources targeted by the proposed action would not be explored for commercial production or recovered and made available for domestic energy use.

2.3 Alternative B: Proposed Action

The proposed action (Alternative B) includes authorization by the BIA and BLM to construct a multiple well pad, resulting in the drilling and completion of six oil and gas wells, as well as associated ROW acquisition, roadway improvements, and infrastructure for the wells. Infrastructure would include oil and gas gathering pipelines, water pipelines, and buried electrical and telecommunication lines, all of which would be located within the area cleared during the on-site surveys. In addition, a communication tower would be constructed at the well pad location. The free standing, unguyed, communication tower would be up to 60 feet tall. The access road would be located in ROW acquired by QEP. Extra spoil from pad construction would be placed on Arrow Midstream Holdings, LLC/Arrow Pipeline, LLC (Arrow) pipeline ROW.

The project would consist of two-640 acre spacing units developed by the six wells, located atop a single well pad with an access road and associated infrastructure. The well pad is where the actual surface disturbance caused by drilling activities would occur. The spacing unit is the location of the minerals that are to be developed. The location of the proposed well site, access road, and proposed horizontal drilling techniques were chosen to minimize surface disturbance.

The well pad and stockpile location would require new ROW for site area, access points, and associated infrastructure. ROW would be located to avoid sensitive surface resources and any cultural resources identified during site surveys. The access road would be improved as necessary to eliminate overly steep grades, maintain current drainage patterns, and provide all-weather driving surfaces.

Intensive, pedestrian resource surveys of the proposed well pad and access road corridor were conducted on October 19, 2011 by KL&J. The purpose of this survey was to gather site-specific data and photos with regards to botanical, biological, threatened and endangered species, eagle, and water resources. The study area consisted of 11.7 acres centered on the proposed well pad center point and a 200-foot wide corridor along the proposed access road. Resources were evaluated using

visual inspection and pedestrian transects across the site. In addition, a survey for eagles and eagle nests within 0.5 miles of the project disturbance area was conducted. This survey consisted of pedestrian transects focusing specifically on potential nesting sites within 0.5 miles of the project disturbance areas, including cliffs and wooded draws. Wooded draws were observed both from the upland areas overlooking the draws and from bottomlands within the actual draws.

BIA EA on-site assessment of the well pad and access road corridor was also conducted on October 19, 2011. The BIA Environmental Protection Specialist and representatives from QEP and KL&J were present. The site was evaluated for cultural resources clearance on October 19, 2011 with representatives from the Tribal Historic Preservation Office and KL&J. Construction suitability with respect to topography, stockpiling, drainage, erosion control, and other surface issues were considered. The well pad and access road location was finalized, and the BIA gathered information needed to develop site-specific mitigation measures and BMPs to be incorporated into the final APDs. Those present at the on-site assessment agreed that the selected location, along with the minimization measures QEP plans to implement, are positioned to minimize impacts to sensitive wildlife and botanical resources. In addition, comments received from the United States Fish and Wildlife Service (USFWS) have been considered in the development of this project.

The six proposed wells would be located in the SW¼ of Section 31, Township 148 North, Range 92 West, 5th P.M. to access potential oil and gas resources within the spacing units defined as the W½ of Sections 6 and 7, Township 147 North, Range 92 West, 5th P.M. and the E½ of Sections 6 and 7, Township 147 North, Range 92 West, 5th P.M. Since the well heads are located outside of the spacing unit, QEP would only utilize hydraulic fracturing on the section of the bore that is located within the spacing unit. Please refer to ***Figure 2.1, Location of Spacing Units.***

The proposed wells would be accessed from the southeast. A new access road approximately 741 feet long would be constructed in the SW¼ of section 31, Township 148 North, Range 92 West. The proposed access road would be used to access the wells on the six well pad. The access road has been situated to avoid drainages and wooded draws to the extent possible. Minor spot grading may be needed to flatten existing landscape grades along the proposed access road alignment. Culverts and cattle guards would be installed as needed along this new access road. Please refer to ***Figure 2.2, Proposed Access Road.***

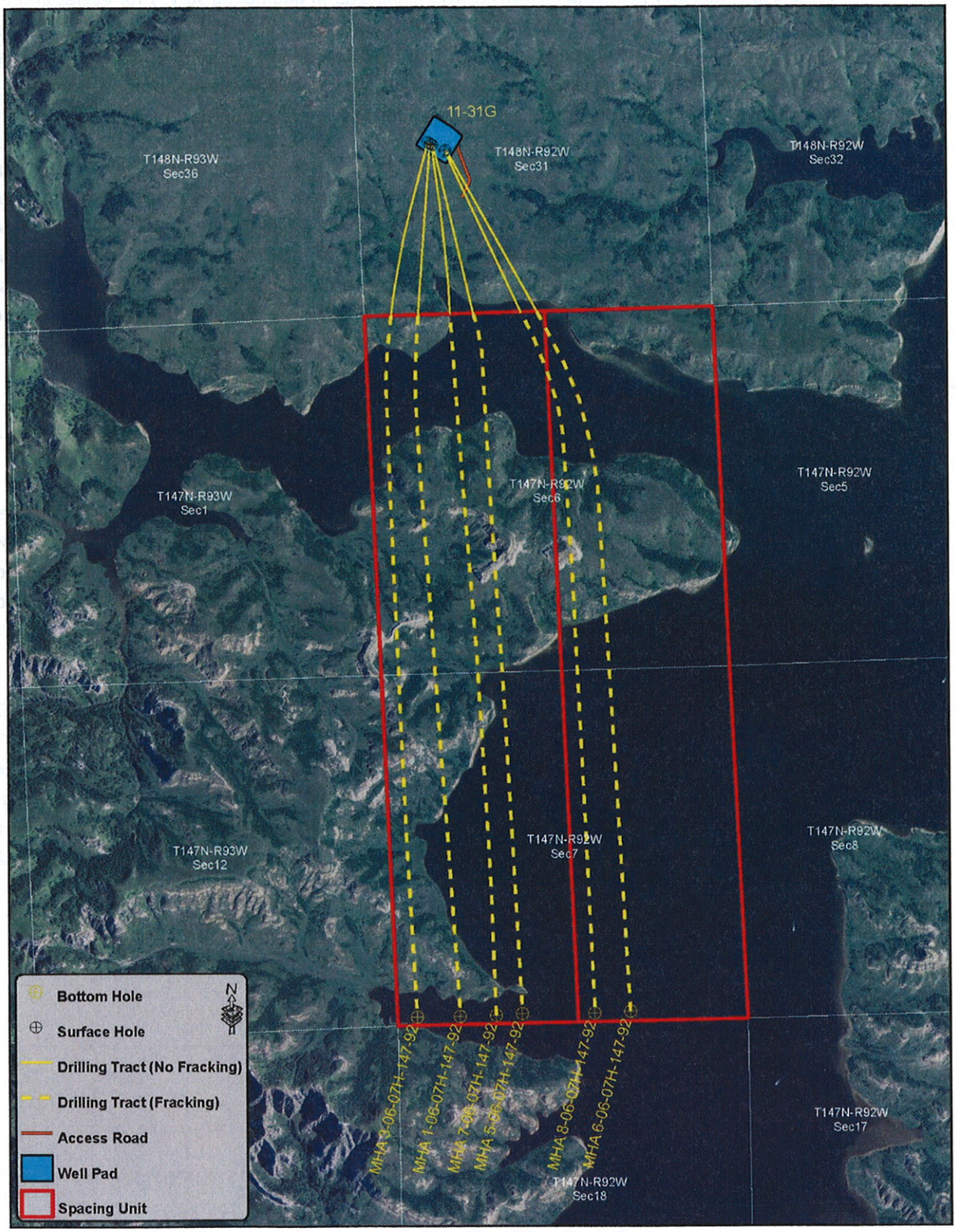

Figure 2.1, Location of Spacing Units

Figure 2.2, Proposed Access Road

2.4 Field Camps

Self-contained trailers may temporarily house key personnel on-site during drilling operations. No long-term residential camps are proposed. Sewage would be collected in standard portable chemical toilets or service trailers on-site and then transported off-site to a state-approved wastewater treatment facility. Other solid waste would be collected in enclosed containers and disposed of at a state-approved facility.

2.5 Access Roads

Existing roadways and two track trails would be used to the extent possible to access the proposed wells; however, the construction of approximately 741 feet of new access road (1.12 acres) would also be required. The new access road would be constructed off of the existing QEP MHA 3-05-08H-147-92 well site access road, and travel north to the proposed well pad. The running surface of the access road would be surfaced with crushed scoria from a previously approved location, and erosion control measures would be installed as necessary. A maximum ROW width of 66 feet would be disturbed, consisting of a 20 to 28-foot wide roadway with the remainder of the disturbed area due to borrow ditches and construction slopes. The remainder of the 200-foot survey area not used for QEP's access road would have ROW acquired to support oil, gas and/or water pipelines; telecommunications; and supporting infrastructure. The outslope portions of the constructed access road would be re-seeded upon completion of construction to reduce access road related disturbance. Access road construction shall follow road design standards outlined in the BLM's Gold Book.

Construction of the proposed wells is planned to occur in 2012. It is anticipated that construction of the proposed project may take place during the migratory bird nesting and breeding season (between February 1 and July 15). In the event that construction should occur during the migratory bird nesting and breeding season, a qualified biologist would conduct pre-construction surveys for migratory birds or their nests within five days prior to the initiation of all construction activities. Mowing of the site prior to nesting/breeding season may be completed in lieu of the pre-construction survey. The findings of these surveys would be reported to USFWS.

2.6 Well Pads

The proposed well pad would consist of a leveled area covered with several inches of crushed scoria. The pad would be used for the drilling rig and related equipment, as well as contain an excavated, reinforced lined[1] pit to store dry drill cuttings. The drill cuttings pit would be reclaimed to BLM and North Dakota Industrial Commission (NDIC) standards immediately upon finishing completion operations. The dry cuttings would be stabilized and placed into an on-site cuttings pit. The level well pad required for drilling and completing operations would be approximately 512 feet x 500 feet (approximately 6.92 acres). Cut and fill slopes on the edge of the well pad would be 2:1 where less than 8 feet and 3:1 where 8 feet or greater. In areas where livestock are present, the entire well pad would also be fenced. By placing six wells on one pad location, the disturbance has been minimized from approximately 30-acres (5 acres/well location) to the approximate 8.65 acres that would be located within the well pad fenced area.

The well pad area would be cleared of vegetation, stripped of topsoil, and graded to specifications in the APDs submitted to the BLM and would comply with the standards and guidelines prescribed in the BLM's "Gold Book." Topsoil would be stockpiled and stabilized until disturbed areas are reclaimed

[1] The lining would have a minimum thickness of 30 mils.

and re-vegetated. Excavated subsoils would be used in pad construction, with the finished well pad graded to ensure water drains away from the drill site. Erosion control at the site would be maintained through the use of best management practices (BMPs), which may include, but are not limited to, water bars, bar ditches, diversion ditches, bio-logs, silt fences, and re-vegetation of disturbed areas. A minimum of an 18-inch berm would be constructed around the entire pad to protect against run-off and contaminants from leaving the pad. Construction of the proposed wells is planned to occur in 2012. It is anticipated that construction of the proposed project may take place during the migratory bird nesting and breeding season (between February 1 and July 15). In the event that construction should occur during the migratory bird nesting and breeding season, a qualified biologist would conduct a pre-construction survey for migratory birds or their nests within five days prior to the initiation of all construction activities. Mowing of the site prior to nesting/breeding season may be completed in lieu of the pre-construction survey. The findings of the survey would be reported to USFWS.

2.7 Drilling

Following access road construction and well pad preparation, a drilling rig would be rigged up at the multiple well site. The time for rigging up, drilling the well, and rigging down the well is anticipated to be about 30 days. During this phase, vehicles and equipment would access the site several times a day.

Initial drilling would be vertical to a depth of approximately 9,800 feet to reach the Bakken Formation and 10,200 feet to reach the Three Forks Formation, at which it would angle to become horizontal. The laterals along the horizontal plane would extend over 12,800 feet. This horizontal drilling technique would minimize surface disturbance.

For the first 2,000 feet drilled at each well (commonly referred to as a "surface hole"), a fresh water based mud system with non-hazardous additives would be used to minimize contaminant concerns. Water would be obtained from a commercial source for this drilling stage. About 8 gallons of water would be used per foot of hole drilled, for a total of about 40,000 gallons (20,000 gallons in the hole and 20,000 gallons as working volume at the surface). After setting and cementing the surface casing, an oil-based mud system consisting of about 80 percent diesel fuel and 20 percent saltwater would be used to drill the remainder of the vertical hole and curve. Once the seven-inch production casing is set and cemented through the curve (into the lateral) a saltwater based drilling mud would be utilized for the horizontal portion of the wellbore.

A modified closed loop drilling system would be utilized. As part of this, QEP would implement a modified closed loop circulation drilling mud system, whereby drill cuttings from the well are separated from the drilling fluid at the shale shaker. The liquid drilling mud is then returned to the active drilling mud tanks for continued use.

The wet cuttings from the shaker are collected in a catch tank then transferred, by a track hoe, to an open top tank. The track hoe then mixes in the Solibond material with the cuttings to dry and solidify the cuttings. The dry and stackable cuttings are then moved and placed in the earthen, reinforced lined cuttings pit. The reinforced lining of the cuttings pit would have a thickness of 30 mils to prevent seepage and contamination of underlying soil.

The cuttings are stacked up starting in one end of the earthen pit until they reach a point approximately 3 feet below ground level. A loader then brings dry dirt from the cuttings pit spoil pile and covers the dry drilling cuttings. This process continues by stacking drill cuttings then covering with dirt until the end of drilling. At this point, all the dry, stackable cuttings will be buried and covered by dirt leaving a stable level surface.

Any minimal free fluid present in the pit, while the pit is open and in use, would be removed and disposed of in accordance with BLM and NDIC rules and regulations. All liquids from drilling would be transported off-site. The drill cuttings pit would be reclaimed to BLM and NDIC standards immediately upon finishing completion operations.

2.8 Casing and Cementing

Casing and cementing methods would be used to isolate all near-surface aquifers and hydrocarbon zones encountered during drilling.

2.9 Completion and Evaluation

Once each well is drilled and cased, approximately 30–45 additional days would be required to complete and evaluate it. Completion and evaluation activities include cleaning out the well bore, pressure testing the casing, perforating and fracturing to stimulate the horizontal portion of the well, and running production tubing for potential future commercial production. Fluids utilized in the completion process would be captured in tanks and would be disposed of in accordance with BLM and NDIC rules and regulations. Once the wells are completed, site activity and vehicle access would be reduced. If the wells are determined to be successful, tank trucks and/or natural gas/oil gathering lines would transport the product to market.

2.10 Commercial Production

If commercially recoverable oil and gas resources are found at the proposed site, the site would become established as a production facility. Production equipment, including well pumping units, vertical heater treaters, storage tanks and flare systems with associated piping would be installed. A minimum of an 18-inch berm would be constructed around the entire pad to protect against runoff and contaminants from leaving the pad. Tank batteries would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% the capacity of the largest tank in the battery and 24-hour record precipitation. Additionally, tertiary containment measures consisting of earthen berms, fiber rolls, straw wattles or additional BMP's would be placed in drainages in close proximity to the proposed pads to guard against accidental release of fluids from the site. All permanent above ground production facilities would be painted shale green to blend into the surrounding landscape.

During initial production, oil would be collected in the storage tanks and periodically trucked into an existing oil terminal to be sold. Produced water would also be captured in storage tanks and periodically trucked to an approved disposal site. The frequency of trucking activities for both oil resources and produced water would be dependent upon volumes and rates of production. All haul routes used would be either private roads or roads that are approved for this type of transportation use by the local governing tribal, township, county, and/or state entities. All associated applicable permits would be obtained and restrictions complied with. Production facilities at the proposed site would be tied to regional oil, gas, and/or water pipelines. The oil, gas, and/or water pipelines would

be constructed within the 200-foot cleared corridor or additional NEPA analysis and subsequent approval from the BIA would be undertaken.

Natural gas would be flared on-site in accordance with BIA's Notice to Lessees 4A and NDIC regulations, which prohibit gas flaring for more than the initial year of operation.

When any of the proposed wells cease to flow naturally, a pump jack would be installed. After production ceases, the wells would be plugged and abandoned, and the land would be fully reclaimed in accordance with BIA and BLM requirements.

QEP would avoid, minimize, and mitigate the environmental effects of the six wells by incorporating applicable conditions, mitigation measures, and BMPs from the BLM's regulations, BLM's Gold Book (4th Edition, 2006), and applicable BLM Onshore Oil and Gas Orders, including Numbers 1, 2, and 7.

2.11 Operation and Maintenance

QEP has contracted Arrow as the pipeline provider for the wells proposed in this EA. As current estimates expect the Bakken field to remain active for 30 to 40 years, it is important that pipeline systems are designed to perform for this period of time. Pipelines, if designed effectively and well maintained, may have an indefinite life expectancy.

To ensure their long-term viability, steel pipelines (type 5L X52) would be coated with a fusion bonded epoxy coating, which would protect the steel pipelines against corrosive elements in the soil. In addition to the epoxy, a cathodic protection system would be utilized to minimize external corrosion of the pipelines. The corrosion tolerance for each steel pipeline is 1/16-inch. Due to the non-corrosive nature of Bakken crude and low concentrations of hydrogen sulfide, Arrow does not anticipate excessive corrosion beyond the 1/16-inch threshold during the operating lifetime of the pipeline.

All welds completed on the steel pipelines are subjected to a 100 percent Non-Destructive Testing. After the welds have passed testing and covered for corrosion protection, the external coating of the pipe is inspected using a jeepmeter to detect holes and cracks. Before the pipelines are put into service, the steel pipe is hydrotested to approximately 1.5 times the minimum design pressure of 1,180 pounds per square inch gauge (psig). The produced water pipe is designed to sustain a minimum pressure of 750 psig and is hydrotested to approximately 900 psig prior to being approved for service.

2.12 Reclamation

Other interim reclamation measures to be implemented upon well completion include reduction of cut and fill slopes where necessary, redistribution of stockpiled topsoil, and re-seeding of the disturbed areas. If commercial production equipment is installed, the well site would be reduced in size to accommodate the production facilities, while leaving adequate room to conduct normal well maintenance and potential recompletion operations, with the remainder of the well pad reclaimed. Reclamation activities would include leveling, re-contouring, treating, backfill, and re-seeding with native vegetation. Erosion control measures would be installed as appropriate. Stockpiled topsoil would be redistributed and reseeded as recommended by the BIA.

In addition, reclamation of the pipeline corridor would occur within 6 months after construction. If conditions prevent reclamation activities or seed germination, Arrow would spread and crimp straw

for ground cover to minimize erosion. Additional reclamation activities would occur throughout the life of the pipeline, due to routine maintenance or addition of infrastructure.

Trenches would be back-filled immediately after the pipeline is installed and testing is complete, assuming frozen or saturated soils are not present. Back-fill piles would be stored opposite of the topsoil piles during construction. If construction is to occur during winter, Arrow would partially fill the trench with useable, non-frozen, back-fill soil to the extent possible. The trench would be back-filled and topsoil distributed as soon as practicable after the soil has thawed. Topsoil piles would be covered to eliminate the potential for rill erosion and subsequent loss of soil during spring snow melt and precipitation events.

Disturbed areas would be covered with stockpiled topsoil and reseeded as recommended by the BIA. QEP and Arrow would control noxious weeds within their appropriate ROW and other applicable facilities by approved chemical or mechanical methods.

Reclamation would be considered successful when seeded areas are established, adjacent vegetative communities spread back into the disturbed areas, and noxious weeds are under control. If reclamation is not considered successful after two years, the BIA may require additional efforts to establish vegetation.

Final reclamation would occur when the pipeline is decommissioned. All surface facilities would be removed and compacted areas would be ripped or scarified. All disturbed areas would be re-contoured to match topography of the original landscape as closely as possible and re-seeded with vegetation consistent with surrounding native species to ensure a healthy and diverse mix free of noxious weeds. An exception to these reclamation measures may occur if the BIA approves assignment of the access road either to the BIA roads inventory or to concurring surface allottees. The pipelines would be purged with water to remove hydrocarbons, capped, and abandoned in place. Long-term monitoring would be required to ensure successful reclamation.

If no commercial production were developed from the six proposed wells, or upon final abandonment of commercial operations, all disturbed areas would be promptly reclaimed. As part of the final reclamation process, all well facilities would be removed, well bores would be plugged with cement, and dry hole markers would be set in accordance with NDIC and BLM requirements. The access road and well pad area would be re-contoured to match topography of the original landscape and reseeded with a native grass seed mixture that is consistent with surrounding native species to ensure a healthy and diverse vegetative community that is free of noxious weeds. Erosion control measures would be installed as appropriate. Maintenance of the grass seeding would continue until such time that the productivity of the stand is consistent with surrounding undisturbed vegetation and is free of noxious weeds. An exception to these reclamation measures may occur if the BIA approves assignment of the access road either to the BIA roads inventory or to concurring surface allottees.

2.13 Potential for Future Development

Development beyond the six wells discussed in this document is not included with this proposal. Further development would be subject to applicable regulations, including 43 CFR Part 3160, and the BLM's Onshore Oil and Gas Order No. 1 – Approval of Operations on Onshore Federal and Indian Oil and Gas Leases, and would be subject to review under NEPA, as appropriate.

CHAPTER 3 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND IMPACTS

3.1 Introduction

This chapter describes the existing conditions within the study area. The existing conditions, or affected environment, are the baseline conditions that may be affected by the proposed action. This chapter also summarizes the positive and negative direct environmental impacts of the project alternatives, as well as cumulative impacts. Indirect impacts are discussed in impact categories where relevant. Information regarding the existing environment, potential effects to the environment resulting from the proposed alternatives, and avoidance, minimization, and/or mitigation measures for adverse impacts is included.

3.2 Climate, Geologic Setting, and Land Use

The proposed wells and access road are situated geologically within the Williston basin, where the shallow stratigraphy 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 and Three Forks Formations are a well-known source of hydrocarbons; its middle member is targeted by the proposed project. Although earlier oil and gas exploration activity within the Fort Berthold Reservation was limited and commercially unproductive, recent advances in drilling technologies, including horizontal drilling techniques, now make accessing oil in the Bakken and Three Forks Formations feasible.

According to Great Plains Regional Climate Center data collected at the Dunn Center weather station from 1918–2011, temperatures in excess of 80 degrees Fahrenheit are common in summer months. The area receives approximately 16.42 inches of precipitation annually, predominantly during spring and summer. Winters in this region are cold, with temperatures often falling near zero degrees Fahrenheit. Snow generally remains on the ground from November to March, and approximately 36 inches of snow are received annually.

The topography within the project area is primarily identified as part of the Northwestern Great Plains, River Breaks Ecoregion, which consists of broken terraces and upland areas that descend to the Missouri River and its major tributaries. They have formed particularly in soft, easily erodible strata of the Bullion Creek, Sentinel Butte, and Golden Valley formations.

The western and southern portions of the Fort Berthold Reservation consist of prairie grasslands and buttes. The northern and eastern areas of the Reservation provide fertile farmland. The proposed project area is located within a predominately rural area. According to National Agricultural Statistics Services (NASS) data, land within the proposed project area is completely grasslands (100%). Please refer to ***Figure 3.1, Land Use.***

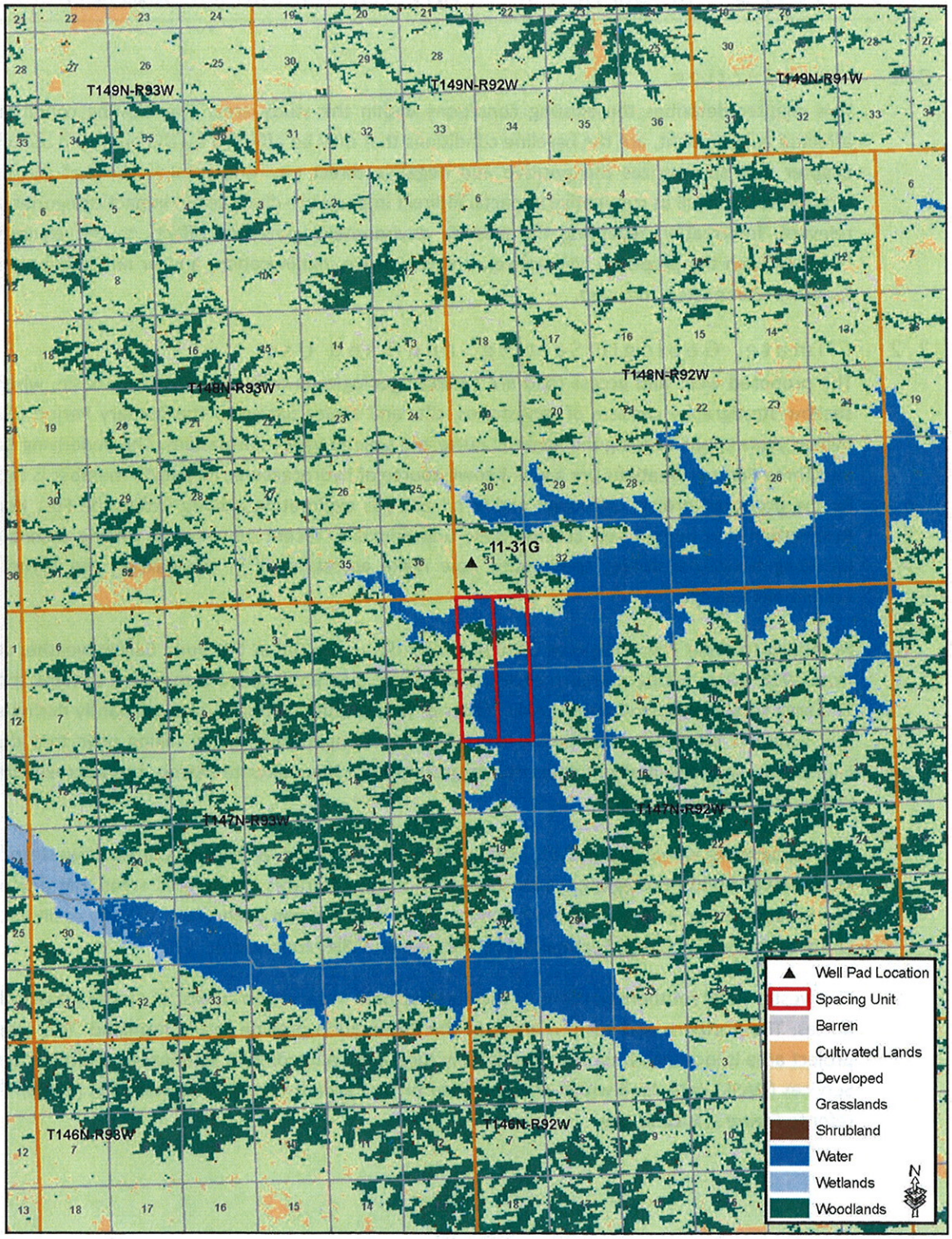

Figure 3.1, Land Use

3.2.1 Climate, Geologic Setting and Land Use Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact land use, climatic conditions, or geological setting.

Alternative B (Proposed Action) – Alternative B would result in the conversion of approximately 9.77 acres of land from present use to part of an oil and gas network. Of this, 8.65 acres would be as a result of well pad construction and 1.12 acres would be from access road construction.

Mineral resources would be impacted through the development of oil and gas resources at the proposed well sites, as is the nature of this project. Impacts to the geologic setting and paleontological resources are not anticipated.

3.3 Soils

The NRCS (Natural Resource Conservation Service) Soil Survey of Dunn County dates from 1982, with updated information available online through the NRCS Web Soil Survey indicated there are three soil types within the project impact area. Location and characteristics of these soils are identified in ***Table 3.1, Soils.***

Table 3.1, Soils

MAP UNIT SYMBOL	SOIL NAME	PERCENT SLOPE	COMPOSITION (IN UPPER 60 INCHES)			EROSION FACTOR[2]		HYDROLOGIC SOIL GROUP[3]
			% SAND	% SILT	% CLAY	T	KF	
13D	Wabek gravelly loam	2 to 15	85.3	7.8	6.9	2	.28	A
101C	Amor loam	6 to 9	39.9	38.5	21.6	3	.43	B
102B	Shambo loam	2 to 6	39.1	36.9	24.0	5	.32	B

These soils listed have moderate susceptibility to sheet and rill erosion. In addition, Shambo and Amor loams can tolerate high to moderate levels of erosion without loss of productivity, whereas Wabek gravelly loam only tolerates low levels of erosion without loss of productivity. All the soils are well drained to excessively drained. Depth to the water table is generally recorded at greater than six feet. None of the soils listed within the project impact area are susceptible to flooding or ponding.

[2] Erosion Factors indicate susceptibility of a soil to sheet and rill erosion by water. Kf indicates the erodibility of material less than two millimeters in size. Values of K range from 0.02 to 0.69. Higher values indicate greater susceptibility. T Factors estimate maximum average annual rates of erosion by wind and water that will not affect crop productivity. Tons/acre/year range from 1 for shallow soils to 5 for very deep soils. Soils with higher T values can tolerate higher rates of erosion without loss of productivity.

[3] Hydrologic Soil Groups (A, B, C, and D) are based on estimates of runoff potential according to the rate of water infiltration under the following conditions: soils are not protected by vegetation, soils are thoroughly wet, and soils receive precipitation from long-duration storms. The rate of infiltration decreases from Group A (high infiltration, low runoff) to D (low infiltration, high runoff).

3.3.1 Soil Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact soils.

Alternative B (Proposed Action) – Construction activities associated with the proposed well site, access road, and associated utilities would result in soil disturbances, though impacts to soils are not anticipated to be significant. Stockpile quantities identified in the design plats for the location were calculated using an assumed 6 inches of existing topsoil. A minimum of 5,585 cubic yards of topsoil would be stockpiled on the northeast edge of the pad and approximately 30,600cubic yards of sub-soil material would be stockpiled on Arrow Pipeline's ROW along the southwest edge of the pad (these areas were included in the fenced area of impact).

Based on NRCS soil data, topsoil exists in approximately 6-8 inches at the well site, yielding sufficient quantity of topsoil for construction and reclamation activities. Topsoil depths taken during the onsite survey indicated a soil depth of greater than 8 inches at the well site. The sub-soil stockpile would be positioned to assist in diverting runoff away from the disturbed area, thus minimizing erosion, and allowing for interim reclamation soon after the well is put into production. The topsoil stockpile would be located on the northeast side of the well pad.

Soil impacts would be localized, and BMPs would be implemented to minimize these impacts. Surface disturbance caused by well development, road improvements, and facilities construction would result in the removal of vegetation from the soil surface. This can damage soil crusts and destabilize the soil. As a result, the soil surface could become more prone to accelerated erosion by wind and water. BMPs used at the site to reduce these impacts would include erosion and sediment control measures during and after construction, segregating topsoil from subsurface material for future reclamation, chipping any woody vegetation that is removed on-site and incorporating it into topsoil stockpiles, re-seeding of disturbed areas immediately after construction activities are completed, the use of construction equipment appropriately sized to the scope and scale of the project, ensuring the road gradient fits closely with the natural terrain, and maintaining proper drainage. According to discussions at the field on-site assessment and standard industry practices, BMPs identified in the BLM Gold Book shall be utilized, to further minimize site erosion.

Another soil resources issue is soil compaction, which can occur by use of heavy equipment. When soil is compacted, it decreases permeability and increases surface runoff. This is especially evident in silt and clay soils. In addition, soils may be impacted by mixing of soil horizons. Soil compaction and mixing of soil horizons would be minimized by the previously discussed topsoil segregation.

Contamination of soils from various chemicals and other pollutants used during oil development activities is not anticipated. In the rare event that such contamination may occur, the event shall be immediately reported to the BLM, the NDIC, and where appropriate the North Dakota Department of Health and the procedures of the surface management agency shall be followed to contain spills and leaks.

3.4 Water Resources

The Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act of 1977, provides the authority to Environmental Protection Agency (EPA) and United States Army Corps of Engineers (USACE) to establish water quality standards, control discharges into surface and ground waters, develop waste treatment management plans and practices, and issue permits for discharges

(Section 402) and for dredged or fill material (Section 404). Within the Fort Berthold Reservation, the Missouri River and Lake Sakakawea are both considered navigable waters and are therefore subject to Section 10 of the Rivers and Harbors Act of 1899.

The EPA also has the authority to protect the quality of drinking water under the SDWA (Safe Drinking Water Act) of 1974. As amended in 1986 and 1996, the SDWA requires many actions to protect drinking water and its sources: rivers, lakes reservoirs, springs, and ground water wells[4]. The Energy Policy Act of 2005 excludes hydraulic fracturing operations related to oil, gas, or geothermal production activities from EPA regulation under the SDWA[5].

3.4.1 Surface Water

The project area is situated in the Great Plains region of North Dakota that borders the Badlands to the west. This is an arid area with few isolated surface water basins. The majority of the surface waters in the region are associated with the Missouri River, Lake Sakakawea, and tributaries to these water bodies. Surface water generally flows overland until draining into these systems.

The proposed well sites are located in the Lake Sakakawea basin, meaning surface waters within this basin drain to Lake Sakakawea. In addition, the proposed well site is located in the Waterchief Bay Watershed and the Lower Moccasin Creek and Charging Eagle Bay Sub-Watersheds. Please refer to ***Figure 3.2, Surface Water Resources.*** Runoff throughout the study area is by sheet flow until collected by ephemeral and perennial streams draining to Lake Sakakawea. The proposed 11-31G well pad drains to the southeast approximately 1,200 feet before entering a wooded draw. The runoff would then flow approximately 3,290 feet into an unnamed bay of Lake Sakakawea.

3.4.1.1 Surface Water Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact surface water.

Alternative B (Proposed Action) – The east corner of the well pad would be rounded to minimize disturbance to a grass drainage. Straw wattles would be placed along the northeast side of the well pad to minimize erosion. Fiber matting would be placed in the drainage northeast of the pad to stabilize the soil and minimize erosion. Construction site plans contain measures to divert surface runoff around the well pad. Culverts would be implemented as needed. Roadway engineering and the implementation of BMPs to control erosion would minimize runoff of sediment downhill or downstream.

[4] The SDWA does not regulate private wells that serve fewer than 25 individuals.

[5] The use of diesel fuel during hydraulic fracturing is still regulated under the SDWA.

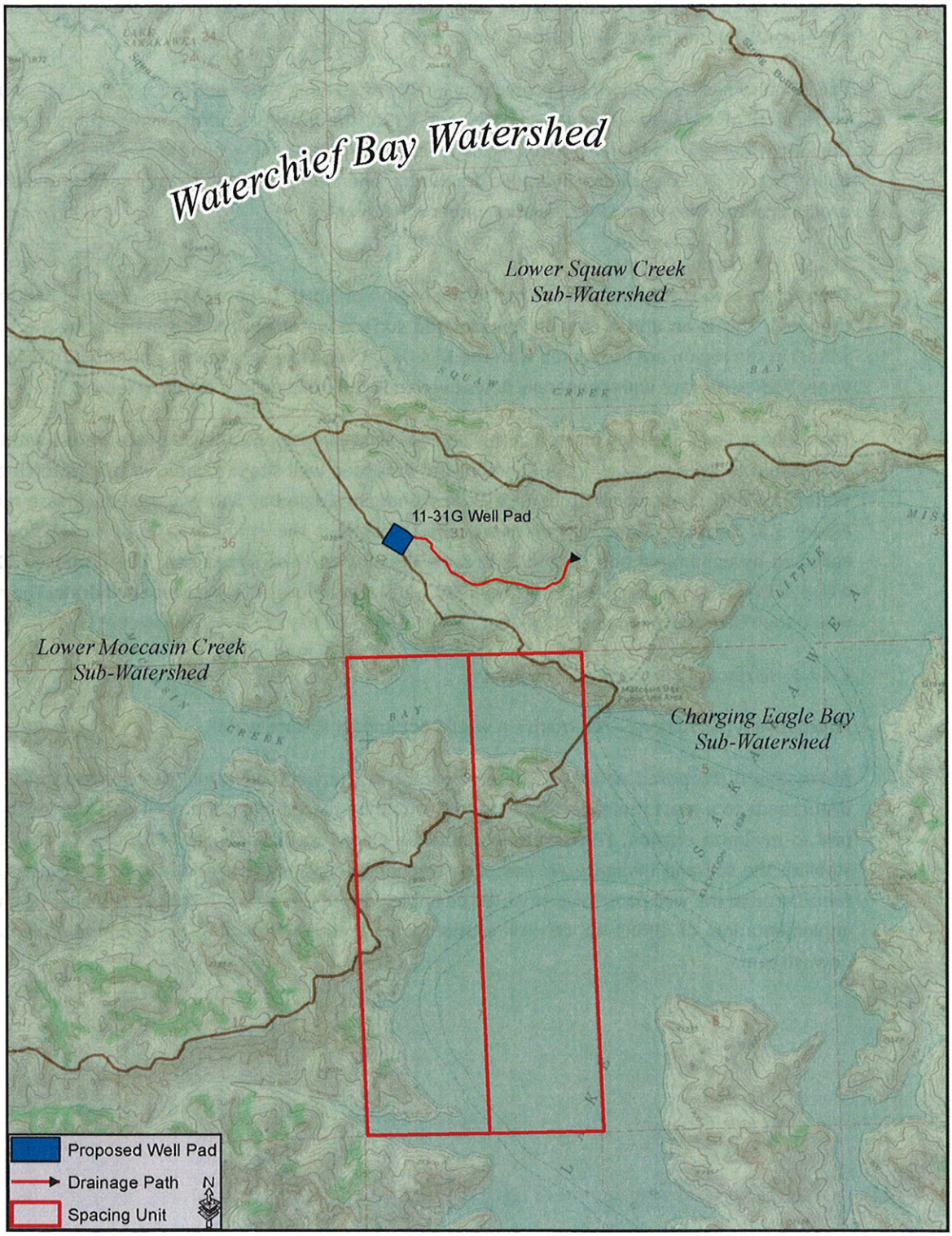

Figure 3.2, Surface Water Resources

A minimum of an 18-inch high berm would be constructed around the entire pad to control runoff. The tank batteries would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% of the capacity of the largest tank in the battery and a 24-hour record precipitation. Spoil piles would be placed on the southwest edge of the pad to divert water around the pad. Tertiary containment measures consisting of earth berms, fiber rolls or additional BMP's would be placed in drainages in close proximity to the proposed pads. In addition, a modified closed loop system would be used during the drilling process. The cuttings would be stabilized, dried and placed into an on-site cuttings pit. Due to the implementation of secondary and tertiary containment measures and modified closed loop drilling system, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Alternative B is not anticipated to result in measurable increases in runoff or impacts to surface waters.

Additionally, Arrow has committed to developing a spill response plan. The response plan would include monitoring protocols, notification procedures, spill detection and on-scene spill mitigation procedures, response activities, contacts, training and drill procedures, and response plan review and update procedures. The spill response plan would be submitted to the BIA prior to the commencement of construction activities.

To further protect against spills, Arrow would install valves at each end of the proposed pipelines. The installation of valves would allow Arrow to isolate the proposed gathering pipeline, if a leak or rupture should occur.

If the proposed pipeline crosses drainages or other environmentally sensitive areas, Arrow may bore underneath to minimize environmental impacts. A typical bore depth is eight feet; however, bore depths may vary based upon landscape position. Arrow has committed to implementing erosion control devices as necessary along the proposed alignment to reduce the potential for sediment transport off-site.

3.4.2 Ground Water

The North Dakota State Water Commission's electronic Ground and Surface Water Data Query revealed no active or permitted groundwater wells within one-mile of the proposed site. The nearest active water well is located approximately 1.03 miles east of the proposed pad location. The Squaw Creek Aquifer is located north of the proposed well pad, the Little Missouri River Aquifer is located east and south of the proposed well pad, and the Goodman Creek Aquifer is located southeast of the proposed well pad; however, no sole source aquifers have been identified within the state of North Dakota. Please refer to ***Figure 3.3, Aquifers and Groundwater Wells.***

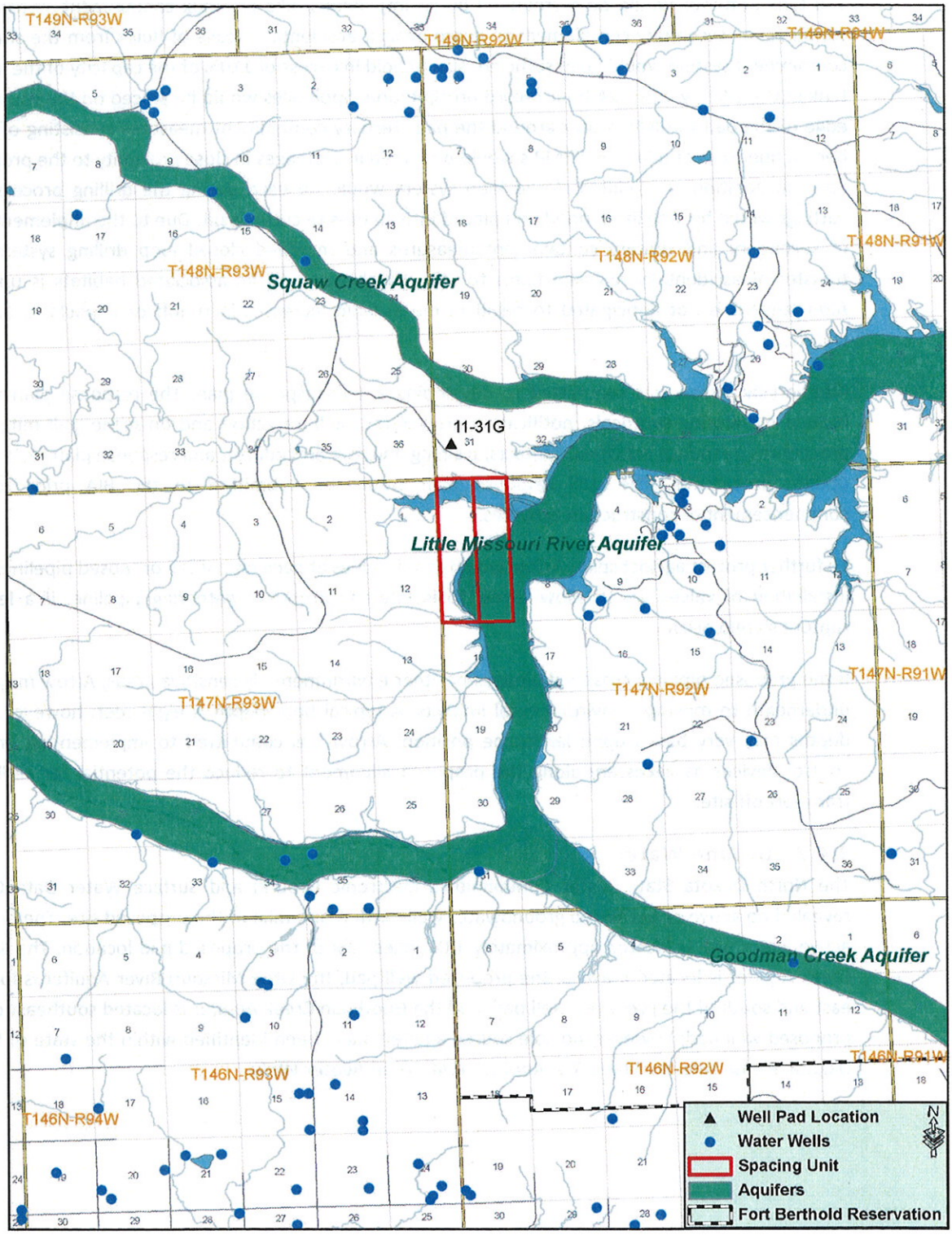

Figure 3.3, Aquifers and Groundwater Wells

3.4.2.1 Ground Water Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact groundwater.

Alternative B (Proposed Action) – Limited scientific data are available regarding the effects of hydro-fracturing (or "fracking") on ground water[6]. Five geologic formations above the Three Forks and Bakken formations contain salts, which work to stop the flow of fluid through the geologic formations. These formations lie between groundwater aquifers and the Three Forks and Bakken formations, making the leaching of fluids from the fracking process into groundwater supplies unlikely. The proposed spacing unit would be located directly below the Little Missouri River Aquifer which is classified as a near surface aquifer. Initial drilling of the proposed wells would be vertical to an approximate depth of 10,000 feet, well below all known aquifers within the region. As required by applicable law, all proposed wells would be cemented and cased to isolate aquifers from potentially productive hydrocarbon and disposal/injection zones. In addition, the first 2,000 feet drilled at each well would utilize a fresh water based mud system with non-hazardous additives to minimize contamination concerns. Due to the depth of the proposed wells and aforementioned precautions that would be implemented by QEP, no significant impacts to groundwater are expected to result from Alternative B.

3.5 Air Quality

The Clean Air Act, as amended, requires the EPA to establish air quality standards for pollutants considered harmful to public health and the environment by setting limits on emission levels of various types of air pollutants. The NDDH (North Dakota Department of Health) operates a network of AAQM (Ambient Air Quality Monitoring) stations. The nearest AAQM station is located in Dunn Center, North Dakota, approximately 18.3 miles south-southwest of the proposed project site. Criteria pollutants tracked under EPA's National Ambient Air Quality Standards in the Clean Air Act include SO_2 (sulfur dioxide), PM (particulate matter), NO_2 (nitrogen dioxide), O_3 (ozone), Pb (lead), and CO (carbon monoxide). In addition, the NDDH has established state air quality standards. State standards must be as stringent as (but may be more stringent than) federal standards. The federal and state air quality standards for these pollutants are summarized in ***Table 3.2, Federal and State Air Quality Standards and Reported Data for Dunn Center*** (EPA 2006, NDDH 2009, Dunn Center 2009).

North Dakota was one of thirteen states in 2009 that met standards for all criteria pollutants. The state also met standards for fine particulates and the eight-hour ozone standards established by the EPA (NDDH 2009).

[6] The EPA is currently scoping a study on fracking, which will address potential impacts to ground water. The study is anticipated to be completed in 2014.

Table 3.2, Federal and State Air Quality Standards and Reported Data for Dunn Center

POLLUTANT	AVERAGING PERIOD	EPA AIR QUALITY STANDARD		NDDH AIR QUALITY STANDARD		DUNN CENTER 2009 REPORTED DATA	
		µg/m³	PARTS PER MILLION	µg/m³	PARTS PER MILLION	µg/m³	PARTS PER MILLION
SO_2	24-Hour	365	0.14	260	0.099	—	.0055
	Annual Mean	80	0.030	60	0.023	—	.0005
PM_{10}[7]	24-Hour	150	—	150	—	44.5	—
	Annual Mean	50	—	50	—	11.3	—
$PM_{2.5}$[8]	24-Hour	35	—	35	—	14.2	—
	Weighted Annual Mean	15	—	15	—	3.4	—
NO_2	Annual Mean	100	0.053	100	0.053	—	.0015
CO	1-Hour	40,000	35	40,000	35	—	—
	8-Hour	10,000	9	10,000	9	—	—
Pb	3-Month	1.5	—	1.5	—	—	—
O_3	1-Hour	240	0.12	235	0.12	—	.064
	8-Hour	—	0.08	—	0.08	—	.055

Additionally, the Fort Berthold Reservation complies with the North Dakota National Ambient Air Quality Standards and visibility protection. The Clean Air Act affords additional air quality protection near Class I areas. Class I areas include national parks greater than 6,000 acres in size, national monuments, national seashores, and federally designated wilderness areas larger than 5,000 acres designated prior to 1977. There are no Federal Class I areas within the project area. The Theodore Roosevelt National Park is the nearest Class I area, located approximately 37.1 miles west of the proposed project site.

3.5.1.1 Air Quality Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact air quality.

Alternative B (Proposed Action) – The Fort Berthold Reservation complies with North Dakota National Ambient Air Quality Standards and visibility protection. In addition, the Dunn Center AAQM Station reported air quality data well below the state and federal standards. Alternative B would not include any major sources of air pollutants. Construction activities would temporarily generate minor amounts of dust and gaseous emissions of PM, SO_2, NO_2, CO, and volatile organic compounds. Emissions would be limited to the immediate project areas and are not anticipated to cause or contribute to a violation of National Ambient Air Quality Standards. No detectable or long-term impacts to air quality or visibility are expected within the airsheds of the Fort Berthold Reservation, State, or Theodore Roosevelt National Park. No mitigation or monitoring measures are recommended. QEP will obtain a synthetic minor source permit from the EPA as required.

[7] PM_{10} refers to particulates 10 micrometers (µ) or less in size.

[8] $PM_{2.5}$ refers to particulates 2.5 micrometers (µ) or less in size.

3.6 Threatened, Endangered, and Candidate Species

In accordance with Section 7 of the ESA (Endangered Species Act) of 1973, 50 CFR Part 402, as amended, each federal agency is required to ensure the following two criteria: First, any action funded or carried out by such agency must not be likely to jeopardize the continued existence of any federally-listed endangered or threatened species or species proposed to be listed. Second, no such action can result in the destruction or adverse modification of habitat of such species that is determined to be critical by the Secretary. An endangered species is one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future. A candidate species is a plant or animal for which the USFWS has sufficient information on its biological status and threats, to propose it as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other higher priority listing activities. While candidate species are not legally protected under the ESA, it is within the spirit of the ESA to consider these species as having significant value and worth protecting.

The proposed action area was evaluated to determine the potential for occurrences of federally-listed threatened, endangered, and candidate species. The USFWS October 2011 Endangered, Threatened, and Candidate Species and Designated Critical Habitat in North Dakota county list identified the black-footed ferret, gray wolf, interior least tern, pallid sturgeon, and whooping crane as endangered species that may be found within Dunn County. The piping plover is listed as a threatened species and the Dakota Skipper and Sprague's pipit are listed as candidate species. In addition, Dunn County contains designated critical habitat for the piping plover adjacent to Lake Sakakawea. None of these species were observed in the field during field surveys. Habitat requirements, the potential for suitable habitat within the project area, and other information regarding listed species for Dunn County are as follows:

3.6.1 Threatened Species

Piping Plover (*Charadrius melodus*)

The piping plover is a small migratory shorebird. Historically, piping plovers could be found throughout the Atlantic Coast, Northern Great Plains, and the Great Lakes. Drastically reduced, sparse populations presently occur throughout this historic range. In North Dakota, breeding and nesting sites can be found along the Missouri River. Preferred habitat for the piping plover includes riverine sandbars, gravel beaches, alkali areas of wetlands, and flat, sandy beaches with little vegetation. The USFWS has identified critical habitat for the piping plover on the Missouri River system. Critical habitat includes reservoir reaches composed of sparsely vegetated shoreline beaches, peninsulas, islands composed of sand, gravel, or shale, and their interface with water bodies.

There is no existing or potential habitat within the project area. Critical habitat in the form of sandy/gravely Lake Sakakawea shoreline exists approximately 0.32 miles south of the proposed project site.

3.6.1.1 Threatened Species Impacts/Mitigation

Alternative A (No Action)—Alternative A would have no effect to the piping plover and would not impact designated piping plover critical habitat.

Alternative B (Proposed Action)—Suitable habitat for the piping plover is largely associated with Lake Sakakawea and its shoreline. Potential habitat for this species exists approximately 0.32 miles south of the proposed site.

A minimum of an 18-inch high berm would be constructed around the entire pad to control runoff. The tank batteries would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% of the capacity of the largest tank in the battery and a 24-hour record precipitation event. Subsoil stockpiles would be placed on the southwestern edge of the pad to divert water around the pad. Tertiary containment measures consisting of earth berms, fiber rolls or additional BMP's would be placed in drainages in close proximity to the proposed pad. In addition, a modified closed loop system would be used during the drilling process. The cuttings would be stabilized, dried and placed into an on-site cuttings pit. Due to the implementation of secondary and tertiary containment measures and modified closed loop drilling system, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Due to the proximity of the proposed project to Lake Sakakawea (approximately 0.32 miles) the proposed project may affect but is not likely to adversely affect the piping plover. The proposed project is not likely to impact critical habitat for the piping plover.

3.6.2 Endangered Species

Black-Footed Ferret (*Mustela nigripes*)

The black-footed ferret historically could be found throughout the Rocky Mountains and Great Plains. Preferred habitat for the black-footed ferret includes areas around prairie dog towns, as ferrets rely on prairie dogs for food and live in prairie dog burrows. Black-footed ferrets require at least an 80-acre prairie dog town to survive. In North Dakota, historically the southwestern corner of the state provided suitable habitat and supported the black-footed ferret. However, this species has not been confirmed in North Dakota for nearly 30 years and is presumed extirpated.

Gray Wolf (*Canis lupus*)

The gray wolf is the largest wild canine species in North America. It is found throughout northern Canada, Alaska, and the forested areas of Northern Michigan, Minnesota, and Wisconsin and has been re-introduced to Yellowstone National Park in Wyoming. While the gray wolf is not common in North Dakota, occasionally individual wolves do pass through the state. Historically, its preferred habitat includes biomes such as boreal forest, temperate deciduous forest, and temperate grassland. Gray wolves live in packs of up to 21 members, although some individuals will roam alone. The project area is located far from other known wolf populations.

Interior Least Tern (*Sterna antillarum*)

The interior least tern nests along inland rivers. The interior least tern is found in isolated areas along the Missouri, Mississippi, Ohio, Red, and Rio Grande Rivers. In North Dakota, it is sighted along the Missouri River during the summer nesting season. The interior least tern nests in sandbars or barren beaches, preferably in the middle of a river for increased safety while nesting. These birds nest close together, using safety in numbers to scare away predators.

There is no existing or potential habitat within the project area. Potential habitat in the form of sandy/gravely Lake Sakakawea shoreline may exist approximately 0.32 miles south of the proposed site.

Pallid Sturgeon (Scaphirhynchus albus)

The pallid sturgeon is known to exist in the Yellowstone, Missouri, middle and lower Mississippi, and Atchafalaya Rivers, and seasonally in some tributaries. In North Dakota, the pallid sturgeon is found principally in the Missouri River and upstream of Lake Sakakawea in the Yellowstone River. Dating to prehistoric times, the pallid sturgeon has become well adapted to living close to the bottom of silty river systems. According to the USFWS, its preferred habitat includes "a diversity of water depths and velocities formed by braided river channels, sand bars, sand flats, and gravel bars." Weighing up to 80 pounds, pallid sturgeons are long lived, with individuals possibly reaching 50 years of age.

Potential habitat for pallid sturgeon can be found in Lake Sakakawea approximately 0.32 miles south of the proposed site.

Whooping Crane (*Grus americana*)

The whooping crane is the tallest bird in North America. In the United States, this species ranges through the Midwest and Rocky Mountain regions from North Dakota south to Texas and east into Colorado. Whooping cranes migrate through North Dakota along a band running from the south central to the northwest parts of the state. They use shallow, seasonally and semi-permanently flooded palustrine (marshy) wetlands for roosting and various cropland and emergent wetlands for feeding. During migration, whooping cranes are often recorded in riverine habitats, including the Missouri River. Currently there are three wild populations of whooping cranes, yielding a total species population of about 383. Of these flocks, only one is self-sustaining.

The proposed project site and access road do not contain shallow, emergent wetlands or cropland food sources; however the proposed project is located in the Central Flyway where 75 percent of confirmed whooping crane sightings have occurred. Lake Sakakawea, which provides potential stopover habitat for whooping crane migration, is approximately 0.32 miles away.

3.6.2.1 Endangered Species Impacts/Mitigation

Alternative A (No Action)—Alternative A would have no effect to the gray wolf, interior least tern, pallid sturgeon, or whooping crane.

Alternative B (Proposed Action)—Due to lack of preferred habitat characteristics and/or known populations the proposed project is anticipated to have no effect on the gray wolf or black-footed ferret.

Suitable habitat for the interior least tern and pallid sturgeon is largely associated with Lake Sakakawea and its shoreline. Lake Sakakawea is located approximately 0.32 miles south of the proposed well pad.

A minimum of an 18-inch high berm would be constructed around the entire pad to control runoff. The tank batteries would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% of the capacity of the largest tank in the battery and a 24-hour record precipitation event. Subsoil stockpiles would be placed on the southwestern edge of the pad to divert water around the pad. Tertiary containment measures consisting of earth berms, fiber rolls or additional BMP's would be placed in all drainages in close proximity to the proposed pad. In addition, a modified modified modified closed loop system would be used during the drilling process. The cuttings would be stabilized, dried and placed into an on-site

cuttings pit. Due to the implementation of secondary and tertiary containment measures and modified closed loop drilling system, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Due to the proximity of the proposed project to Lake Sakakawea (approximately 0.32 miles) the proposed project may affect but is not likely to adversely affect the interior least tern or pallid sturgeon.

The proposed project is located in the Central Flyway where 75 percent of confirmed whooping crane sightings have occurred. Due to the proximity of the site to Lake Sakakawea and their occurrence within the 75 percent of confirmed sightings corridor, adjacent habitat may be used as stopover habitat. The proposed project may affect but is not likely to adversely affect whooping cranes or their habitat. If a whooping crane is sighted within one-mile of a well site or associated facilities while under construction, all work would cease within one-mile of that part of the project and the USFWS would be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area.

3.6.3 Candidate Species

Dakota Skipper (*Hesperia dacotae*)

The Dakota skipper is a small butterfly with a one-inch wing span. These butterflies historically ranged from southern Saskatchewan, across the Dakotas and Minnesota, to Iowa and Illinois. The preferred habitat for the Dakota skipper consists of flat, moist bluestem prairies and upland prairies with an abundance of wildflowers. Dakota skippers are visible in their butterfly stage from mid-June to early July.

The proposed site is located on moderately grazed rangeland that does contain bluestem prairies with abundant wildflowers. Although grazing is evident, it is moderate in nature; therefore, the project site does contain suitable habitat for the Dakota skipper. No Dakota skippers were observed during the field visits; however, the visits occurred after the brief Dakota skipper butterfly stage.

Sprague's pipit (*Anthus spragueii*)

The Sprague's pipit is a small songbird found in prairie areas throughout the Northern Great Plains. Preferred habitat includes rolling, upland mixed-grass prairie habitat with high plant species diversity. The Sprague's pipit breeds in habitat with minimal human disturbance.

The proposed site is located on moderately grazed rangeland that does contain bluestem prairies with abundant wildflowers. Although grazing is evident, it is moderate in nature; therefore, the project site does contain suitable habitat for the Sprague's pipit. No Sprague's pipits were observed during the field visits.

3.6.3.1 Candidate Species Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact Dakota skippers, Sprague's pipits or their associated habitats.

Alternative B (Proposed Action)—The proposed site contains suitable habitat for both the Dakota skipper and Sprague's pipit. Due to the presence of potential habitat for the Dakota skipper and Sprague's pipit within the project area, the proposed project may impact individuals or habitat through earthwork associated with construction activities, habitat conversion, and/or fragmentation. An "effect determination" under Section 7 of the *Endangered Species Act* has not been made due to the current unlisted status of the species.

3.7 Bald and Golden Eagles

Protection is provided for the bald and golden eagle through the BGEPA (Bald and Golden Eagle Protection Act). The BGEPA of 1940, 16 U.S.C. 668–668d, as amended, was written with the intent to protect and preserve bald and golden eagles, both of which are treated as species of concern within the Department of the Interior. The BGEPA prohibits, except under certain specified conditions, the taking, possession, or commerce of bald and golden eagles. Under the BGEPA, to "take" includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb, wherein "disturb" means to agitate or bother a bald or golden eagle to the degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, causing injury, death, or nest abandonment.

The bald eagle (*Haliaeetus leucocephalus*) is sighted in North Dakota along the Missouri River during spring and fall migration periods and periodically in other places in the state such as the Devils Lake and Red River areas. The ND Game and Fish Department estimated in 2009 that 66 nests were occupied by bald eagles, though not all eagle nests were visited and verified. Preferred habitat for the bald eagle includes open areas, forests, rivers, and large lakes. Bald eagles tend to use the same nest year after year, building atop the previous year's nest. No bald eagles or nests were observed within 0.5 miles of proposed project disturbance areas during the field surveys conducted on October 19, 2011.

The golden eagle (*Aquila chrysaetos*) can be spotted in North Dakota throughout the badlands and along the upper reaches of the Missouri River in the western part of the state. Golden eagle pairs maintain territories that can be as large as 60 square miles and nest in high places including cliffs, trees, and human-made structures. They perch on ledges and rocky outcrops and use soaring to search for prey. Golden eagle preferred habitat includes open prairie, plains, and forested areas. No golden eagle nests were observed within 0.5 miles of proposed project disturbance areas during the field surveys conducted on October 19, 2011.

The United States Geological Survey (USGS) Northern Prairie Wildlife Research Center maintains information on bald eagle and golden eagle habitat within the state of North Dakota. According to the USGS data, the 0.5 mile buffered survey area for the proposed project area does contain recorded habitat for both the bald eagle and the golden eagle. In addition, Dr. Anne Marguerite Coyle of Dickinson State University has completed focused research on golden eagles and maintains a database of golden eagle nest sightings. According to Dr. Coyle's information, the closest recorded golden eagle nest is located approximately 1.2 miles southeast of the proposed project site. Please refer to ***Figure 3.4, Bald and Golden Eagle Habitat and Nest Sightings.***

Figure 3.4, Bald and Golden Eagle Habitat and Nest Sightings

3.7.1 Bald and Golden Eagle Impacts/Mitigation

Alternative A (No Action)—Alternative A would not impact bald or golden eagles.

Alternative B (Proposed Action)—The proposed project is located within areas of recorded suitable bald and golden eagle habitat. However, no evidence of eagle nests were found within 0.5 miles of the project areas and no nest sightings have been recorded within 0.5 miles of the project areas. Therefore, no impacts to bald or golden eagles are anticipated to result from the proposed project. If a bald or golden eagle nest is sighted within 0.5 miles of the project construction area, construction activities shall cease and the USFWS shall be notified for advice on how to proceed. Furthermore, electrical lines, if installed, would be buried to prevent the potential for electrical line strikes by bald or golden eagles.

3.8 Migratory Birds and Other Wildlife

Intensive, pedestrian resource surveys of the proposed well pad and access road corridor were conducted on October 19, 2011 by KL&J. The purpose of this survey was to gather site-specific data and photos with regards to botanical, biological, and water resources. The study area consisted of 11.7 acres centered on the proposed well pad center point and a 200-foot wide corridor along the proposed access road. Resources were evaluated using visual inspection and pedestrian transects across the site. In addition, a survey for eagles and eagle nests within 0.5 miles of the project disturbance area was conducted. This survey consisted of pedestrian transects focusing specifically on potential nesting sites within 0.5 miles of the project disturbance area, including cliffs and wooded draws. Wooded draws were observed both from the upland areas overlooking the draws and from bottomlands within the actual draws.

The BIA EA on-site assessment of the well pad and access road was also conducted on October 19, 2011. The BIA Environmental Protection Specialist, as well as representatives from QEP and KL&J were present. The site was evaluated for cultural resources clearance on October 19, 2011 with representatives from the Tribal Historic Preservation Office and KL&J. Construction suitability with respect to topography, stockpiling, drainage, erosion control, and other surface issues were considered. The well pad and access road location were finalized, and the BIA gathered information needed to develop site-specific mitigation measures and BMPs to be incorporated into the final APDs. Those present at the on-site assessment agreed that the selected locations, along with the minimization measures QEP plans to implement, are positioned to minimize impacts to sensitive wildlife and botanical resources. In addition, comments received from the USFWS (United States Fish and Wildlife Service) have been considered in the development of this project.

The MBTA (*Migratory Bird Treaty Act*), 916 U.S.C. 703–711, provides protection for 1,007 migratory bird species, 58 of which are legally hunted. The MBTA regulates impacts to these species such as direct mortality, habitat degradation, and/or displacement of individual birds. The MBTA defines "taking" to include by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing, or transporting any migratory bird, nest, egg, or part thereof, except when specifically permitted by regulations.

The proposed project study area lies in the Central Flyway of North America. As such, this area is used as resting grounds for many birds on their spring and fall migrations, as well as nesting and breeding grounds for many waterfowl species. In addition, the project areas contain suitable habitat for mule

deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), sharp-tailed grouse (*Tympanuchus phasianellus*), ring-necked pheasant (*Phasianus colchicas*), raptors, American badger (*Taxidea taxus*), song birds, coyote (*Canis latrans*), red fox (*Vulpes vulpes*), Eastern cottontail rabbit (*Sylvilagus floridanus*), wild turkey (*Meleagris gallopavo*), jackrabbit (*Lepus townsendii*), and North American porcupine (*Erethizon dorsatum*).

During the pedestrian field surveys, migratory birds, raptors, big and small game species, non-game species, potential wildlife habitats, and and/or bird nests were identified if present. No wildlife was observed during the field surveys.

3.8.1 Migratory Birds and Other Wildlife Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact migratory birds or other wildlife.

Alternative B (Proposed Action) – Due to the presence of suitable habitat at the project site for many wildlife and avian species, ground clearing, drilling, and long-term production activities associated with the proposed project may impact individuals by displacing animals from suitable habitat. Construction of the wells is anticipated to take place during 2012. If construction is to occur in the spring during the migratory bird nesting and breeding season, QEP would have a qualified biologist conduct pre-construction surveys for migratory birds or their nests within five days prior to the initiation of all construction activities. Mowing of the site prior to nesting/breeding season may be completed in lieu of the pre-construction survey. The findings of these surveys would be reported to USFWS.

During drilling activities, the noise, movements, and lights associated with the drilling are expected to deter wildlife from entering the area. In addition, the drill cuttings would be dried prior to being placed in the cuttings pit. It is expected that very minimal free fluid would be present in the pit. The absence of exposed liquids in the pit would minimize their attractiveness to wildlife. Immediately after the drilling rig leaves the location, the cuttings pit would be netted with State and Federal approved nets. These would remain in place until the closure of the cuttings pit.

In addition, design considerations will be implemented to further protect against potential habitat degradation. A minimum of an 18-inch high berm would be constructed around the entire pad to control runoff. The tank batteries would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% of the capacity of the largest tank in the battery and a 24-hour record precipitation event. Subsoil stockpiles would be placed on the southwestern edge of the pad to divert water around the pad. Tertiary containment measures consisting of earth berms, fiber rolls or additional BMP's would be placed in all drainages in close proximity to the proposed pad. In addition, a modified closed loop system would be used during the drilling process. The cuttings would be stabilized, dried and placed into an on-site cuttings pit. Due to the implementation of secondary and tertiary containment measures and modified closed loop drilling system, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. BMPs to minimize wind and water erosion of soil resources would also be put into practice.

Additionally, all reasonable, prudent, and effective measures to avoid the taking of migratory bird species would be implemented during the construction and operation phases. These measures would

include: the use of suitable mufflers on all internal combustion engines; certain compressor components to mitigate noise; only utilizing approved roadways; placing wire mesh or grate covers over barrels or buckets placed under valves and spigots to collect dripped oil.

While many species of wildlife may continue to use the project area for breeding and feeding and continue to thrive, the activities associated with oil and gas development may displace animals from otherwise suitable habitats. As a result, wildlife may be forced to utilize marginal habitats or relocate to unaffected habitats where population density and competition increase. Consequences of such displacement and competition may include lower survival, lower reproductive success, lower recruitment, and lower carrying capacity leading ultimately to population-level impacts. Therefore, the proposed project may affect individuals and populations within these wildlife species, but is not likely to result in a trend towards listing of any of the species identified.

3.9 Vegetation

Botanical resources were evaluated using visual inspection. The project area was also investigated for the presence of invasive plant species.

Vegetation at the proposed project site largely consisted of native upland grasses and shrubs. Kentucky bluegrass (*Poa pratensis*), green needlegrass (*Nasella viridula*), western wheatgrass (*Agropyron smithii*), little bluestem (*Andropogon scoparius*), blue grama (*Bouteloua gracilis*), smooth brome (*Bromus inermis*), purple coneflower (*Echinacea angustifolia*), and western snowberry (*Symphoricarpos occidentalis*) were observed at the proposed project site. Green ash (*Fraxinus pennsylvanica*) and silver buffaloberry (*Shepherdia argentea*) were observed growing in the drainages. No wetland plant species were observed. There are no threatened or endangered plant species listed for Dunn County. Please refer to ***Figure 3.5, Dominant Well Pad Vegetation, Figure 3.6, Well Pad Vegetation View South, Figure 3.7, Well Pad Vegetation View West,*** and ***Figure 3.8, Proposed Access Road View Southeast*** for examples of vegetation observed at the site.

Figure 3.5, Dominant Well Pad Vegetation

Figure 3.6, Well Pad Vegetation View South

Figure 3.7, Well Pad Vegetation View West

Figure 3.8, Proposed Access Road View Southeast

In addition, the project area was surveyed for the presence of noxious weeds. Of the eleven species declared noxious under the North Dakota Century Code (Chapter 63-01.0), three are known to occur in Dunn County. Please refer to ***Table 3.3, Noxious Weed Species.*** No noxious weeds were identified during the on-site assessment. In addition, counties and cities have the option to add species to the list to be enforced within their jurisdictions. There are no additional noxious weeds listed for Dunn County.

Table 3.3, Noxious Weed Species

COMMON NAME	SCIENTIFIC NAME	2010 DUNN COUNTY REPORTED ACRES
Absinth wormwood	*Artemesia absinthium L.*	43,800
Canada thistle	*Cirsium arvense (L.) Scop*	39,300
Dalmatian toadflax	*Linaria genistifolia ssp. Dalmatica*	—
Diffuse knapweed	*Centaurea diffusa Lam*	—
Leafy spurge	*Euphorbia esula L.*	6,200
Musk thistle	*Carduus nutans L.*	—
Purple loosestrife	*Lythrum salicaria*	—
Russian knapweed	*Acroptilon repens (L) DC.*	—
Salt cedar (tamarisk)	*Tamarix ramosissima*	—
Spotted knapweed	*Centaurea maculosa Lam.*	—
Yellow Toadflax	*Linaria vulgaris*	—

3.9.1 Vegetation Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact vegetation.

Alternative B (Proposed Action) – Ground clearing activities associated with construction of the proposed well pad, access road, and associated infrastructure would result in vegetation disturbance; however, the areas of proposed surface disturbances are minimal in the context of the setting, and these impacts would be further minimized in accord with the BLM Gold Book standards for well reclamation. Following construction, interim reclamation measures to be implemented include reduction of cut and fill slopes, redistribution of stockpiled topsoil, and re-seeding of disturbed areas with a native grass seed mixture consistent with surrounding vegetation. If commercial production equipment is installed, the well site would be reduced in size to accommodate the production facilities, while leaving adequate room to conduct normal well maintenance and potential recompletion operations, with the remainder of the well pad reclaimed. Reclamation activities would include leveling, re-contouring, treating, backfill, and re-seeding with a native grass seed mixture from a BIA/BLM-approved source. Erosion control measures would be installed as appropriate. Stockpiled topsoil would be redistributed and re-seeded as recommended by the BIA.

If no commercial production develops from any of the proposed wells, or upon final abandonment of commercial operations, all disturbed areas would be promptly reclaimed. The access road and well pad areas would be re-contoured to match topography of the original landscape as closely as possible

and re-seeded with vegetation consistent with surrounding native species to ensure a healthy and diverse mix free of noxious weeds. Seed would be obtained from a BIA/BLM-approved source. Re-vegetation of the site would be consistent with the BLM Gold Book standards. QEP would use certified weed-free seed mixtures for re-vegetation. Erosion control measures would be installed as appropriate in a manner that is consistent with the BLM Gold Book standards. Maintenance of the re-vegetated site would continue until such time that the stand was consistent with the surrounding undisturbed vegetation and the site free of noxious weeds. The surface management agency would provide final inspection of the site to deem the reclamation effort complete.

3.10 Wetlands

Wetlands are defined in both the 1977 Executive Order 11990, Protection of Wetlands, and in Section 404 of the *Clean Water Act* of 1986, as those areas that are inundated by surface or groundwater with a frequency to support and under normal circumstances do or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Three parameters that define a wetland, as outlined in the Federal Manual for Delineating Jurisdictional Wetlands (USACE, 1987), are hydric soils, hydrophytic vegetation, and hydrology. Wetlands are an important natural resource serving many functions, such as providing habitat for wildlife, storing floodwaters, recharging groundwater, and improving water quality through purification.

No wetlands or riparian areas were identified within the proposed project areas during the field survey.

3.10.1 Wetland Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact wetlands.

Alternative B (Proposed Action) – Due to the absence of wetlands within the proposed project area, Alternative B would not impact wetlands.

3.11 Cultural Resources

Section 106 of the *National Historic Preservation Act* of 1966, as amended, requires that projects needing federal approval and/or federal permits be evaluated for the effects on historic and cultural properties included or eligible for listing on the NRHP (National Register of Historic Places). The *Archaeological and Historic Preservation Act* of 1974 provides for the survey, recovery, and preservation of significant scientific, prehistoric, archaeological, or paleontological data when such data may be destroyed or irreparably lost due to a federal, federally licensed, or federally funded project.

The NAGPRA (*Native American Graves Protection and Repatriation Act*) of 1990 is triggered by the possession of human remains or cultural items by a Federally-funded repository or by the discovery of human remains or cultural items on Federal or Tribal lands and provides for the inventory, protection, and return of cultural items to affiliated Native American groups. Permits are required for intentional excavation and removal of Native American cultural items from Federal or Tribal lands.

The *American Indian Religious Freedom Act* of 1978 requires consultation with Native American groups concerning proposed actions on sacred sites on Federal land or affecting access to sacred sites. It establishes Federal policy to protect and preserve for American Indians, Eskimos, Aleuts, and

Native Hawaiians the right to free exercise of their religion in the form of site access, use and possession of sacred objects, as well as the freedom to worship through ceremonial and traditional rites. The Act requires Federal agencies to consider the impacts of their actions on religious sites and objects important to these peoples, regardless of eligibility for listing on the NRHP.

In accordance with 16 U.S.C. 470hh(a), information concerning the nature and location of archaeological resources and traditional cultural properties, and detailed information regarding archaeological and cultural resources, is confidential. Such information is exempt from the *Freedom of Information Act* and is not included in this EA.

A cultural resource inventory of this well pad (formerly MHA 2&4-5&6-06-07H-147-92) was conducted by personnel of Kadrmas, Lee & Jackson, Inc., using an intensive pedestrian methodology. Approximately 11.7 acres were inventoried on April 4, 2011 (Ó Donnchadha 2012). No historic properties were located that appear to possess the quality of integrity and meet at least one of the criteria (36 CFR 60.6) for inclusion on the National Register. As the lead federal agency, and as provided for in 36 CFR 800.5, on the basis of the information provided, BIA reached a determination of **no historic properties affected** for this undertaking. This determination was communicated to the THPO on January 23, 2012; however, the THPO did not respond within the allotted 30 day comment period.

3.11.1 Cultural Resources Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact cultural resources.

Alternative B (Proposed Action) – No cultural resource sites were identified within the APE. As such, cultural resources impacts are not anticipated. If cultural resources are discovered during construction or operation, work shall immediately be stopped, the affected site secured, and BIA and THPO notified. In the event of a discovery, work shall not resume until written authorization to proceed has been received from the BIA. All project workers are prohibited from collecting artifacts or disturbing cultural resources in any area under any circumstances.

3.12 Socioeconomic Conditions

Socioeconomic conditions depend on the character, habits, and economic conditions of people living within the proposed project area. Business, employment, transportation, utilities, etc. are factors that affect the social climate of a community. Other factors that distinguish the social habits of one particular area from another include the geography, geology, and climate of the area.

The Fort Berthold Reservation is home to six major communities, consisting of New Town, White Shield, Mandaree, Four Bears, Twin Buttes, and Parshall. These communities provide small business amenities such as restaurants, grocery stores, and gas stations; however, they lack the larger shopping centers that are typically found in larger cities of the region such as Minot and Bismarck. According to 2000 US Census data, educational/health/social services is the largest industry on the Reservation, followed by the entertainment/recreation/accommodation/food industry[9]. The Four Bears Casino, Convenience Store, and Recreation Park are also major employers with over 320 employees, 90% of whom are tribal members. In addition, several industries are located on the

[9] Since 2000, there has been an increasing focus on oil and gas development on the Fort Berthold Reservation. As such, it is anticipated that these trends have likely shifted; however, data from the 2010 US Census for these categories has not been released for the Fort Berthold Reservation.

Reservation, including Northrop Manufacturing, Mandaree Enterprise Cooperative, Three Affiliated Tribes Lumber Construction Manufacturing Corporation, and Uniband.

Several paved state highways provide access to the Reservation including ND Highways 22 and 23 and Highway 1804. These highways provide access to larger communities such as Bismarck, Minot and Williston. Paved and gravel BIA Route roadways serve as primary connector routes within the Reservation. In addition, networks of rural gravel roadways are located throughout Reservation boundaries providing access to residences, oil and gas developments, and agricultural land. Major commercial air service is provided out of Bismarck and Minot, with small-scale regional air service provided out of New Town and Williston.

3.12.1 Socioeconomic Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact the socioeconomic conditions in the project area. However, Alternative A would not permit the development of oil and gas resources, which could have positive effects on employment and income through the creation of jobs and payment of leases, easement, and/or royalties to Tribal members.

Alternative B (Proposed Action) – Alternative B is not anticipated to substantially impact the socioeconomic conditions in the project areas, but it does have the potential to yield beneficial impacts on Tribal employment and income. Qualified individual tribal members may find employment through oil and gas development and increase their individual incomes. Additionally, the proposed action may result in indirect economic benefits to tribal business owners resulting from construction workers expending money on food, lodging, and other necessities. The increased traffic during construction may create more congested traffic conditions for residents. QEP will follow Dunn County, BIA, and North Dakota Department of Transportation rules and regulations regarding rig moves and oversize/overweight loads on state and county roads used as haul roads in order to maintain safe driving conditions.

3.13 Environmental Justice

Per Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, measures must be taken to avoid disproportionately high adverse impacts on minority or low-income communities.

The Three Affiliated Tribes qualify for environmental justice consideration as both a minority and low-income population. The population of North Dakota is predominantly Caucasian. Tribal members compromise 5.3% of North Dakota's population and 10.9% of the population of Dunn County.

According to 2005–2009 U.S. Census Bureau data, the Fort Berthold Reservation has lower than statewide averages of per capita income and median household income, whereas Dunn County has higher per capita income and median household income than the statewide averages. In addition, Dunn County has slightly lower rates of unemployment than the state average, while Fort Berthold's rate of unemployment was substantially greater[10]. Please refer to ***Table 3.4, Employment and Income.***

[10]While more current data reflecting income, unemployment, and poverty levels within the Fort Berthold Reservation are not available, it is anticipated that 2010 numbers may show different trends. The exploration and production of oil and gas resources on the Reservation since 2006 have created

Table 3.4, Employment and Income

LOCATION	PER CAPITA INCOME	MEDIAN HOUSEHOLD INCOME	UNEMPLOYMENT RATE	INDIVIDUALS LIVING BELOW POVERTY LEVEL
Dunn County	$25,006	$45,270	2.0%	8.9%
Fort Berthold Reservation	$15,945	$40,603	7.8%	25.2%
Statewide	$24,978	$45,140	2.4%	12.3%

Source: U.S. Census Bureau, 2005-2009 American Community Survey

Population decline in rural areas of North Dakota has been a growing trend as individuals move toward metropolitan areas of the state, such as Bismarck and Fargo. While Dunn County's population has been slowly declining, the Fort Berthold Reservation has witnessed a steady increase in population. American Indians are the majority population on the Fort Berthold Reservation but are the minority population in Dunn County and the State of North Dakota. Please refer to ***Table 3.5, Demographic Trends***.

Table 3.5, Demographic Trends

LOCATION	POPULATION IN 2009	% OF STATE POPULATION	% CHANGE 2000–2009	PREDOMINANT RACE	PREDOMINANT MINORITY
Dunn County	3,318	0.52%	-7.8%	White	American Indian (10.9%)
Fort Berthold Reservation	6,094	0.95%	+3.0%	American Indian[11]	White (28.8%)
Statewide	639,725	—	-0.4%	White	American Indian (5.0%)

Source: U.S. Census Bureau, 2005-2009 American Community Survey.

3.13.1 Environmental Justice Impacts/Mitigation

Alternative A (No Action) – Alternative A would not result in environmental justice impacts.

Alternative B (Proposed Action) – Alternative B would not require relocation of homes or businesses, cause community disruptions, or cause disproportionately adverse impacts to members of the Three Affiliated Tribes. The proposed project has not been found to pose significant impacts to any other critical element (public health and safety, water, wetlands, wildlife, soils, or vegetation) within the human environment. The proposed project is not anticipated to result in disproportionately adverse impacts to minority or low-income populations. Oil and gas development of the Bakken and Three

employment opportunities and have likely affected these economic indicators. However, this assessment uses the best available data.

[11] According to the North Dakota Tourism Division, there are 10,400 enrolled members of the Three Affiliated Tribes.

Forks Formations is occurring both on and off the Fort Berthold Reservation. Employment opportunities related to oil and gas development may lower the unemployment rate and increase the income levels on the Fort Berthold Reservation. In addition, the Three Affiliated Tribes and allotted owners of mineral interests may receive income from oil and gas development on the Fort Berthold Reservation in the form of royalties, if drilling and production are successful, as well as from TERO (Tribal Employee Rights Office) taxes on construction of drilling facilities.

3.14 Infrastructure and Utilities

The Fort Berthold Reservation's infrastructure consists of roads, bridges, utilities, and facilities for water, wastewater, and solid waste.

Known utilities and infrastructure within the vicinity of the proposed project includes paved and gravel roadways. There are no known water pipelines in the vicinity of the proposed project. The Bureau of Reclamation manages the Fort Berthold Rural Water System. The nearest existing waterlines were noted east of Lake Sakakawea. This area would not be affected by the proposed project.

3.14.1 Infrastructure and Utility Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact infrastructure or utilities.

Alternative B (Proposed Action) – Vehicular traffic associated with construction, operation, and maintenance of the proposed action would increase the overall traffic on the local roadway network. Alternative B would also require construction of a new scoria roadway approximately 741 feet long.

To minimize potential impacts to the roadway conditions and traffic patterns in the area, all haul routes used would either be private roads or roads that have been approved for this type of transportation use by the local governing tribal, township, county, and/or state entities. QEP would follow Dunn County, BIA, and North Dakota Department of Transportation rules and regulations regarding rig moves and oversize/overweight loads on state and county roads used as haul roads. All contractors are required to permit their oversize/overweight roads through these entities. QEP's contractors would be required to adhere to all local, county, tribal, and state regulations regarding rig moves, oversize/overweight loads, and frost restrictions.

The well site may also require the installation of supporting electrical lines. In addition, if commercially recoverable oil and gas are discovered at the well site, a natural gas gathering system would be installed. It is expected that electric lines, telecommunication lines, and other pipelines would be constructed within the survey area, or additional NEPA analysis and BIA approval would be completed prior to construction of these utilities. Other utility modifications would be identified during design and coordinated with the appropriate utility company.

Drilling operations at the proposed well site would generate produced water. In accordance with the BLM Gold Book and BLM Onshore Oil and Gas Order Number 7, produced water would be disposed of via subsurface injection, or other appropriate methods that would prevent spills or seepage. Produced water may be trucked to nearby oil fields where injection wells are available.

Safety hazards posed from increased traffic during the drilling phase are anticipated to be short-term and minimal for the proposed site. It is anticipated that approximately 30 to 40 trips, over the course of several days, would be required to transport the drilling rig and associated equipment to the

proposed well site. If commercial operations are established at the proposed well sites following drilling activities, the pump would be checked daily and oil and water hauling activities would commence. Oil would be hauled using a semi tanker trailer, typically capable of hauling 140 barrels of oil per load. Traffic to and from the well site would depend upon the productivity of the well. A 1,000 barrel per day well would require approximately seven tanker visits per day, while a 300 barrel per day well would require approximately two visits per day.[12] Produced water would also be hauled from the site using a tanker, which would typically haul 110 barrels of water per load. The number of visits would be dependent upon daily water production[13].Established load restrictions for state and BIA roadways would be followed and haul permits would be acquired as appropriate. Pipelines are anticipated to be installed which would reduce much of the traffic.

3.15 Public Health and Safety

Health and safety concerns associated with this type of development include hydrogen sulfide (H_2S) gas[14] and hazardous materials used or generated during well installation or production.

3.15.1 Public Health and Safety Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact public health and safety.

Alternative B (Proposed Action) – Project design and operational precautions would minimize the likelihood of impacts from H_2S gases and hazardous materials as described below.

H_2S Gases. It is unlikely that the proposed action would result in release of H_2S in dangerous concentrations; however, QEP will submit H_2S Contingency Plans to the BLM as part of the site APDs. These plans establish safety measures to be implemented throughout the drilling process to prevent accidental release of H_2S into the atmosphere. The Contingency Plans are designed to protect persons living and/or working within 3,000 feet (0.57 miles) of each well location and include emergency response procedures and safety precautions to minimize the potential for an H_2S gas leak during drilling activities. Satellite imagery revealed that there are no residences/buildings within 3,000 feet of the proposed site.

Hazardous Materials. The Environmental Protection Agency (EPA) specifies chemical reporting requirements under the Superfund Amendments and Reauthorization Act of 1986, as amended. No materials used or generated by this project for production, use, storage, transport, or disposal are on either the Superfund list or on the EPA's list of extremely hazardous substances in 40 CFR 355.

The Spill Prevention, Control, and Countermeasure (SPCC) rule includes EPA requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining shorelines. The rule requires specific facilities to prepare, amend, and implement SPCC Plans.

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[12]A typical Bakken oil well initially produces at a high rate and then declines rapidly over the next several months to a more moderate rate. In the vicinity of the proposed project areas, initial rates of 500 to 1,000 BOPD (barrels of oil per day) could be expected, dropping to 200 to 400 BOPD after several months.

[13]A typical Bakken oil well initially produces water at 200 bbls per day and then declines rapidly over the next several months to a more moderate rate. In the vicinity of the proposed project areas, initial rates of 200 BWPD (barrels of water per day) could be expected, dropping to 30 to 70 BWPD after several months.

[14]H_2S is extremely toxic in concentrations above 500 parts per million. H_2S has not been found in measurable quantities in the Bakken Formation. However, before reaching the Bakken, drilling would penetrate the Mission Canyon Formation, which is known to contain varying concentrations of H_2S.

Spill Response Plan. Arrow has committed to developing a spill response plan. The response plan would include monitoring protocols, notification procedures, spill detection and on-scene spill mitigation procedures, response activities, contacts, training and drill procedures, and response plan review and update procedures. The spill response plan would be submitted to the BIA prior to the commencement of construction activities.

Pipeline Marking Procedures. Third-party intrusions are one of the biggest contributing factors to spills. To aid in the prevention of such intrusions, Arrow would fully comply with the marking requirements specified in the US Department of Transportation's rules and regulations, specifically contained in 49 CFR Parts 192 and 195.

3.16 Cumulative Considerations

Cumulative impacts result from the incremental consequences of an action "when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Effects of an action may be minor when evaluated in an individual context, but these effects can add to other disturbances and collectively may lead to a measureable environmental change. By evaluating the impacts of the proposed action with the effects of other actions, the relative contribution of the proposed action to a projected cumulative impact can be estimated.

3.16.1 Past, Present, and Reasonably Foreseeable Actions

Oil and gas development in western North Dakota has occurred with varying intensity for the past 100 years. Gas development began in the area in 1909, and the first recorded oil well was drilled in 1920. North Dakota's oil production has boomed twice prior to the current boom; first in the 1950s, peaking in the 1960s, and again in the 1970s, peaking in the 1980s. North Dakota is currently experiencing its third oil boom, which has already far surpassed the previous booms in magnitude. This oil boom is occurring both within and outside the Fort Berthold Reservation.

According to the NDIC, as of January 17, 2011, there were approximately 722 active and/or confidential oil and gas wells within the Fort Berthold Reservation and 1,758 within the 20-mile radius outside the boundaries of the Fort Berthold Reservation. Please refer to ***Figure 3.9, Existing and Proposed Oil and Gas Wells.***

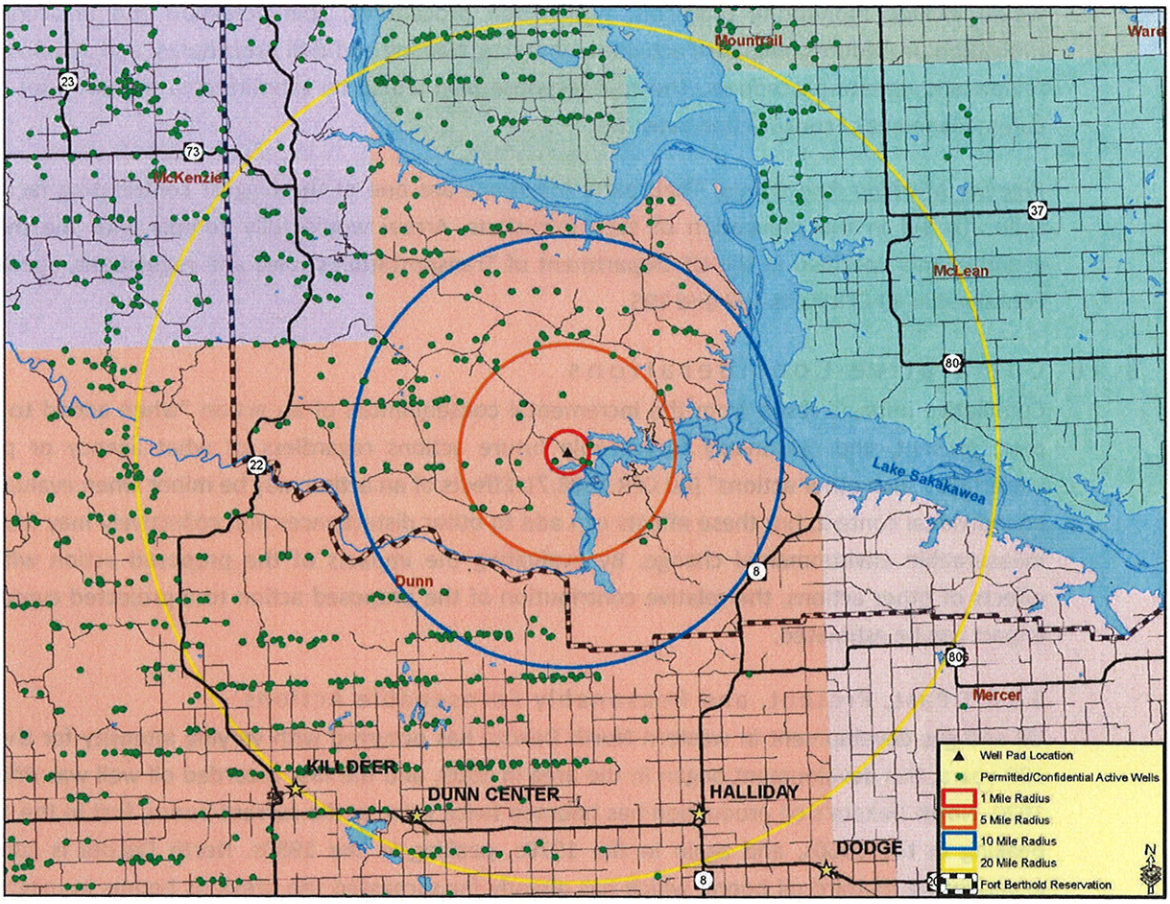

Figure 3.9, Existing and Proposed Oil and Gas Wells

There are six known oil and gas wells within one mile of the well pad site. Please refer to ***Table 3.6, Summary of Active and Proposed Wells.***

Table 3.6, Summary of Active and Proposed Wells

DISTANCE FROM SITE	NUMBER OF ACTIVE OR PROPOSED WELLS
1 mile radius	6
5 mile radius	41
10 mile radius	189
20 mile radius	677

As mentioned previously in this EA, the Bakken Formation (the primary target of the proposed action) covers approximately 25,000 square miles beneath North Dakota, Montana, Saskatchewan, and Manitoba, with approximately two-thirds of the acreage beneath North Dakota. The Three Forks Formation (the secondary target of the proposed action) lies beneath the Bakken. The North Dakota Department of Mineral Resources estimates that there are approximately 2 billion barrels of recoverable oil in each of these Formations and that there will be 30–40 remaining years of production, or more if technology improves.

Commercial success at any new well can be reasonably expected to result in additional nearby oil/gas exploration proposals; however, it is speculative to anticipate the specific details of such proposals. While such developments remain speculative until APDs have been submitted to the BLM or BIA, it is reasonable to assume based on the estimated availability of the oil and gas resources that further development will continue in the area for the next 30–40 years. It is also reasonable to assume that natural gas and oil gathering and/or transportation systems will be proposed and likely built in the future to facilitate the movement of products to market. Currently, natural gas gathering systems are being considered and/or proposed on the Fort Berthold Reservation, and some small systems have been approved and installed.

3.16.2 Cumulative Impact Assessment

The proposed project is not anticipated to directly impact other oil and gas projects. It is a reasonable generalization that, while oil and gas development proposals and projects vary based on the developer, well location, permit conditions, site constraints, and other factors, this proposed action is not unique among others of its kind. It is also a reasonable generalization based on regulatory oversight by the BIA, BLM, NDIC, and other agencies as appropriate, that this proposed action is not unique in its attempts to avoid, minimize, or mitigate harm to the environment through the use of BMPs and site-specific environmental commitments. The following discussion addresses potential cumulative environmental impacts associated with the proposed project and other past, present, and reasonably foreseeable actions.

Land Use — As oil and gas exploration and production of the Bakken and Three Forks Formations proceed, lands atop these formations are converted from existing uses (often agricultural or vacant) to industrial, energy-producing uses. The proposed project would convert grasslands to a well pad, access road, and associated infrastructure. However, the well pad and access road have been selected to avoid or minimize sensitive land uses and to maintain the minimum impact footprint possible. In addition, the BIA views these developments to be temporary in nature as impacted areas would be restored to original conditions upon completion of oil and gas activity. By placing six wells on one pad location, QEP has minimized land conversion utilizing one location instead of six locations.

Air Quality — Air emissions related to construction and operation of past, present, or reasonably foreseeable oil and gas wells, when added to emissions resulting from the proposed project, are anticipated to have a negligible cumulative impact. Dunn County is currently well below the Ambient Air Quality Standards, and it is anticipated that mobile air source toxics from truck traffic for the proposed project and other projects, as well as air emissions related to gas flaring, would be minor; therefore, the contribution of the proposed project to air emissions is not expected to be significant.

Threatened and Endangered Species — The potential for cumulative impacts to threatened and endangered species comes to those listed species that may be affected by the proposed project or

candidate species that may be impacted by the proposed project. The proposed project occurs within the central flyway through which whooping cranes migrate and whooping cranes may forage in adjacent cropland. The indirect impact through the disruption of the use of this grassland may cause a cumulative impact when added to past, present, and reasonable foreseeable actions. Continual development (e.g., agriculture, oil and gas, and wind) within the central flyway has compromised whooping crane habitat both through direct impacts via conversion of potential habitat to other uses and indirect impacts due to disrupting the use of potential stopover habitat, as whooping cranes prefer isolated areas and are known to avoid large-scale development. However, the proposed action, when added to other development directly and indirectly impacting whooping cranes and their habitat, is not anticipated to significantly contribute to cumulative impacts occurring to the whooping crane population.

As previously stated, habitat for the interior least tern, pallid sturgeon, and piping plover is primarily associated with Lake Sakakawea and its shoreline. When added to other past, present, and reasonably foreseeable projects, such as oil and gas wells and water intake structures on Lake Sakakawea, the proposed project may have an indirect cumulative impact on potential habitat (Lake Sakakawea and its shoreline) for these species due to potential leaks or spills. However, due to the implementation of a modified closed loop drilling system, as well as secondary and tertiary containment measures for the proposed project, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Furthermore, electrical lines, if installed, would be buried to prevent the potential for electrical line strikes by the interior least tern and piping plover. Therefore, it is unlikely the project would contribute to cumulative impacts to the interior least tern, pallid sturgeon, and piping plover.

Please refer to the discussion below (Wetlands, Eagles, Other Wildlife, and Vegetation) for an analysis of potential cumulative impacts to candidate species (Dakota skipper and Sprague's pipit).

Wetlands, Wildlife, and Vegetation — The proposed project, when added to previously constructed and reasonably foreseeable oil and gas wells, would contribute to habitat loss and fragmentation associated with construction of well pads, access roads, and associated development. By placing multiple wells at one location, habitat loss has been minimized. The North Dakota Parks and Recreation Department notes in its undated publication, *"North Dakota Prairie: Our Natural Heritage"* that approximately 80% of the state's native prairie has been lost to agriculture, with most of the remaining areas found in the arid west; ongoing oil and gas activity has the potential to threaten remaining native prairie resources. While many species of wildlife may continue to use the project area for breeding and feeding and continue to thrive, the activities associated with oil and gas development may displace animals from otherwise suitable habitats. As a result, wildlife may be forced to utilize marginal habitats or relocate to unaffected habitats where population density and competition increase. Consequences of such displacement and competition may include lower survival, lower reproductive success, lower recruitment, and lower carrying capacity leading ultimately to population-level impacts.

However, the proposed action and other similar actions are carefully planned to avoid or minimize these impacts. Multiple components of the process used by the BIA to evaluate and approve such actions, including biological and botanical surveys, on-site assessments with representatives from multiple agencies and entities, public and agency comment periods on this EA, and the use of BMPs and site-specific environmental commitments are in place to ensure that environmental impacts

associated with oil and gas development are minimized. The practice of utilizing existing roadways to the greatest extent practicable further minimizes impacts to wildlife habitats and prairie ecosystems. The proposed wells have been sited to avoid sensitive areas such as surface water, wetlands, and riparian areas. Reclamation activities are anticipated to minimize and mitigate disturbed habitat.

Infrastructure and Utilities — The proposed action, along with other oil and gas wells proposed and drilled in the Bakken and Three Forks Formations, requires infrastructure and utilities to provide needed resource inputs and accommodate outputs such as fresh water, power, communications, site access, transportation for products to market, disposal for produced water and other waste materials. As with the proposed action, many other well sites currently being proposed and/or built are positioned to make the best use of existing roads and to minimize the construction of new roads; however, some length of new access roads are commonly associated with new wells. The well pad has been positioned in close proximity to existing roadways to minimize the extent of access road impacts in the immediate area. Additionally, existing two track roadways have been utilized wherever possible to minimize impacts to the surrounding landscape. The contribution of the proposed project and other projects to stress on local roadways used for hauling materials may result in a cumulative impact to local roadways. However, abiding by permitting requirements and roadway restrictions with the jurisdictional entities are anticipated to offset any cumulative impact that may result from the proposed project and other past, present, or future projects. BMPs would be implemented to minimize impacts of the proposed project.

The proposed action has been planned to avoid impacts to resources such as wetlands, floodplains, surface water, cultural resources, and threatened and endangered species. Unavoidable impacts to these or other resources would be minimized and/or mitigated in accordance with applicable regulations.

3.17 Irreversible and Irretrievable Commitment of Resources

Removal and consumption of oil or gas from the Bakken and Three Forks Formations would 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 earth-moving operations or in collisions with vehicles, and energy expended during construction and operation.

3.18 Short-term Use of the Environment Versus Long-term Productivity

Short-term activities would not significantly detract from long-term productivity of the project area. The area dedicated to the access road and well pad would be unavailable for livestock grazing, wildlife habitat, or other uses. However, allottees with surface rights would be compensated for loss of productive acreage and project footprints would shrink considerably once the wells were drilled and non-working areas reclaimed and reseeded. Successful and ongoing reclamation of the landscape would reestablish the land's use for wildlife and livestock grazing, stabilize the soil, and reduce the potential for erosion and sedimentation. The primary long-term resource loss would be the extraction of oil and gas resources from the Bakken and three Forks Formations, which is the purpose of this project.

3.19 Permits

QEP will be required to acquire the following permits prior to construction:

- *Application for Permit to Drill* – Bureau of Land Management
- *Application for Permit to Drill* – North Dakota Industrial Commission
- *Synthetic Minor Source Permit* – Environmental Protection Agency

3.20 Environmental Commitments/Mitigation

The following commitments have been made by QEP:

- Topsoil will be segregated and stored on-site to be used in the reclamation process. All disturbed areas would be re-contoured to original elevations as close as possible as part of the reclamation process. Subsoil would be stockpiled along the southwest edge of the pad, in the Arrow ROW, and would act as secondary containment to divert water around the well pad.
- BMPs (may include, but are not limited to, hydro-seeding, erosion mats and biologs) will be implemented to minimize wind and water erosion of soil resources.
- Per BIA guidance, interim reclamation and pipeline reclamation measures would occur within six months of construction; however, if circumstances prevent interim reclamation activities from occurring within this timeframe, QEP/Arrow would contact BIA to request an extension. When conditions prevent reclamation, such as winter when seed cover cannot be established, crimping straw and/or mulch would be utilized to cover bare ground areas until conditions improve. Additional reclamation activities for pipelines would occur throughout the life of the pipeline, due to routine maintenance or addition of infrastructure. Reclamation would be considered successful when seeded areas are established, adjacent vegetative communities spread back into the disturbed areas, and noxious weeds are under control.
- The proposed well pad and access road will avoid surface waters. The proposed project will not alter stream channels or change drainage patterns, except for storm water diversion purposes.
- A modified closed loop drilling system would be utilized. As part of this, QEP would implement a modified closed loop circulation drilling mud system, whereby drill cuttings from the well are separated from the drilling fluid at the shale shaker. The liquid drilling mud is then returned to the active drilling mud tanks for continued use.

  The wet cuttings from the shaker are collected in a catch tank then transferred, by a track hoe, to an open top tank. The track hoe then mixes in the Solibond material with the cuttings to dry and solidify the cuttings. The dry and stackable cuttings are then moved and placed in the earthen, reinforced lined cuttings pit.
- The reinforced lining of the cuttings pit would have a thickness of 30 mil to prevent seepage and contamination of underlying soil.

- Any minimal free fluid present in the pit would be removed and disposed of in accordance with BLM and NDIC rules and regulations. All liquids from drilling would be transported off-site.

- All spills or leaks of chemicals and other pollutants will be reported to the BLM and EPA. The procedures of the surface management agency shall be followed to contain leaks or spills.

- The six proposed wells will be cemented and cased to isolate aquifers from potentially productive hydrocarbon and disposal/injection zones.

- Disturbed vegetation will be re-seeded in kind upon completion of the project, and a noxious weed management plan would be implemented. The re-seeded site would be maintained until such time that the vegetation is consistent with surrounding undisturbed areas and the site is free of noxious weeds. Seed would be obtained from a BIA/BLM approved source.

- The proposed well pad and access road will avoid impacts to cultural resources. If cultural resources are discovered during construction or operation, work shall immediately be stopped, the affected site secured, and BIA and THPO notified. In the event of a discovery, work shall not resume until written authorization to proceed has been received from the BIA.

- The access road will be located at least 75 feet away from identified cultural resources. The boundaries of these 75-foot "exclusion zones" would be pin-flagged as an extra measure to ensure that inadvertent impacts to cultural resources are avoided.

- All project workers are prohibited from collecting artifacts or disturbing cultural resources in any area under any circumstances.

- QEP will ensure all contractors working for the company will adhere to all local, county, tribal, and state regulations and ordinances regarding rig moves, oversize/overweight loads, and frost law restrictions.

- All utility/pipelines will be installed belowground

- Utility modifications will be identified during design and coordinated with the appropriate utility company

- An H_2S Contingency Plan will be submitted to the BLM as part of the APD

- Established load restrictions for State and BIA roadways will be followed and haul permits would be acquired as appropriate.

- Shale green paint will be used on structures to not take away from the surrounding landscape.

- BMPs will be used during construction to ensure contaminants do not move off site.

- If a whooping crane is sighted within one-mile of a well site or associated facilities while it is under construction, all work will cease within one-mile of that part of the project and the USFWS will be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area.

- In the event that a construction activity needs to take place within the migratory bird nesting and breeding season (February 1 to July 15), pre-construction surveys for migratory birds or

their nests would be conducted within five days prior to the initiation of construction activities. Mowing the site prior to the nesting/breeding season may be completed in lieu of the pre-construction survey. The findings of these surveys would be reported to USFWS.

- If a bald or golden eagle nest is sighted within 0.5 miles of the project construction area, construction activities shall cease and the USFWS shall be notified for advice on how to proceed.

- Wire mesh or grate covers will be placed over barrels or buckets placed under valves and spigots to collect dripped oil. Suitable mufflers will be put on all internal combustion engines and certain compressor components to mitigate noise levels.

- A minimum of an 18-inch berm would be constructed around the entire pad to protect against runoff and contaminants from leaving the pad.

- Tank batteries would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% the capacity of the largest tank in the battery and a 24-hour record precipitation event.

- Earth berms, fiber rolls, straw wattles, and/or additional BMP's would be placed in all drainages in close proximity to the proposed wells to guard against accidental release of fluids from the site.

- The operator will provide dust control for their access roads and haul roads.

- Prior to mobilization, drilling rigs and associated equipment will be pressure washed or air blasted off Tribal lands to prevent the possible transportation of noxious or undesirable vegetation onto Tribal lands as well as USACE managed lands.

- All welds completed on the steel pipelines are subjected to a 100 percent Non-Destructive Testing.

- Arrow has committed to developing a spill response plan. The response plan would include monitoring protocols, notification procedures, spill detection and on-scene spill mitigation procedures, response activities, contacts, training and drill procedures and response plan review and update procedures. The spill response plan would be submitted to the BIA prior to the commencement of construction activities. Arrow would fully comply with the marking requirements specified in the US Department of Transportation's rules and regulations, specifically contained in 49 CFR Parts 192 and 195.

- Measures implemented during construction to avoid the taking of migratory bird species will include: the use of suitable mufflers on all internal combustion engines; certain compressor components to mitigate noise; only utilizing approved roadways; placing wire mesh or grate covers over barrels or buckets placed under valves and spigots to collect dripped oil; maintaining dry cuttings pit, and cover pit with netting that has a maximum mesh size of 1.5 inches.

CHAPTER 4 PREPARERS AND AGENCY COORDINATION

4.1 Introduction

This chapter identifies the names and qualifications of the principal people contributing information to this EA. In accordance with Part 1502.6 of the Council on Environmental Quality regulations for implementing NEPA, the efforts of an interdisciplinary team comprising technicians and experts in various fields were required to accomplish this study.

This chapter also provides information about consultation and coordination efforts with agencies and interested parties, which has been ongoing throughout the development of this EA.

4.2 Preparers

Kadrmas, Lee & Jackson, Inc. prepared this EA under a contractual agreement between QEP Energy Company and Kadrmas, Lee & Jackson. A list of individuals with the primary responsibility for conducting this study, preparing the documentation, and providing technical reviews is contained in ***Table 4.1, Preparers.***

Table 4.1, Preparers

AFFILIATION	NAME	TITLE	PROJECT ROLE
Bureau of Indian Affairs	Marilyn Bercier	Regional Environmental Scientist	Review of Draft EA and recommendation to Regional Director regarding FONSI or EIS
	Mark Herman	Environmental Engineer	
QEP Energy Company	Debbie Stanberry	Supervisor Regulatory Affairs	Project development, alternatives, document review
	Tracy Opp	Operations Specialist	Project development, alternatives, document review
Kadrmas, Lee & Jackson, Inc.	Nick Anderson	Environmental Planner	Field resources surveys, impact assessment, principal author
	Rick Leach	Surveyor	Site Plats
	Brian O'Donnchadha	Archaeologist	Cultural resources surveys
	Mike Huffington	Environmental Planner	Impact assessment exhibit creation
	Grady Wolf	Environmental Planner	Project Manager, field resources surveys, senior review
	Steve Czeczok	Environmental Planner	Document review, field resources surveys.

4.3 Agency Coordination

To initiate early communication and coordination, an early notification package to tribal, federal, state, and local agencies and other interested parties was distributed on November 8, 2011. This scoping package included a brief description of the proposed project, as well as a location map. Pursuant to Section 102(2) (D) (IV) of NEPA, a solicitation of views was requested to ensure that social, economic, and environmental effects were considered in the development of this project.

At the conclusion of the 30-day comment period, eight responses were received. These comments provide valuable insight into the evaluation of potential environmental impacts. The comments were referenced and incorporated where appropriate within the environmental impact categories addressed in this document. ***Appendix A contains Scoping Materials.***

4.4 Public Involvement

Provided the BIA approves this document and determines that no significant environmental impacts would result from the proposed action, a Finding of No Significant Impact (FONSI) will be issued. The FONSI is followed by a 30-day public appeal period. BIA will advertise the FONSI and public appeal period by posting notices in public locations throughout the Reservation. No construction activities may commence until the 30-day public appeal period has expired.

CHAPTER 5 REFERENCES

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Appendix A

Agency Scoping Materials

Appendix A

Agency Scoping Materials

SOV MASTER LIST

Save as new file for each project and edit accordingly with project specific contacts

CTitle	First	Last	Title	Department	Agency	Address	City	State	Zip
Mr.	Weldon	Loudenmilk	Regional Director		Bureau of Indian Affairs	115 4th Ave. SE	Aberdeen	SD	57401
Mr.	Jeffrey	Desjarlais	Environmental Protection Specialist		Bureau of Indian Affairs	202 Main Street	New Town	SD	58763
Mr.	Darryl	Turcotte	Environmental Protection Specialist		Bureau of Indian Affairs	202 Main Street	New Town	ND	58763
Sir		*or Madam*		Environmental Management Division	Bureau of Reclamation	PO Box 1017	Bismarck	ND	58502-1017
Mr.	Thomas	Schauer	Manager	Bismarck Airports District Office	Federal Aviation Administration	2301 University Drive, Bldg 238	Bismarck	ND	58504
Mr.	Dan	Cimarosti	Manager	ND Regulatory Office	US Army Corps of Engineers	1513 S. 12th St.	Bismarck	ND	58504
Mr.	Charles	Sorensen	Natural Resource Specialist	Riverdale Field Office	US Army Corps of Engineers	PO Box 527	Riverdale	ND	58565
Sir		*or Madam*	CENWO-PM-AC	Planning Branch	US Army Corps of Engineers, Omaha District	1616 Capital Avenue	Omaha	NE	68102
Ms.	Mary	Podoll	State Conservationist		Natural Resources Conservation Service	220 East Rosser Avenue	Bismarck	ND	58501
Mr.	Gerald	Paulson	Director, Transmission Linest Substations	ND Maintenance Office	US Department of Energy Western Area Power Admin.	PO Box 1173	Bismarck	ND	58502-1173
Ms.	Suzanne	Bohan	Director	NEPA Program, Region 8	US Environment Protection Agency	1595 Wynkoop Street	Denver	CO	80202-1129
Mr.	Richard	Clark	Wetlands Coordinator	Region 8, EPR-EP	US Environment Protection Agency	1595 Wynkoop Street	Denver	CO	80202-1129
Mr.	Jeffrey	Towner	Field Supervisor	ND Field Office	US Fish & Wildlife Service	3425 Miriam Ave.	Bismarck	ND	58501
Mr.	Irwin	Russell	Assistant State Conservationist		US Department of Agriculture	PO Box 1458	Bismarck	ND	58502-1458
Mr.	Scott	Davis	Executive Director		Indian Affairs Commission	600 E. Blvd. Ave. 1st Floor, Judicial Wing, Rm 117	Bismarck	ND	58505-0300
Mr.	Gregg	Wiche	Director	Water Resources Division	US Geological Survey	821 E. Interstate Ave.	Bismarck	ND	58501
Mr.	L. David	Glatt	Chief	Environmental Health Section Gold Seal Center	ND Department of Health	918 E. Divide Ave., 4th floor	Bismarck	ND	58501-1947
Mr.	Steve	Dyke	Conservation Section Supervisor		ND Game & Fish Department	100 Bismarck Expressway	Bismarck	ND	58501-5095
Mr.	Ed	Murphy	State Geologist		ND Geological Survey	600 E. Blvd. Avenue	Bismarck	ND	58505-0840
Mr.	Mark	Zimmerman	Director		ND Parks & Recreation Dept.	1600 E. Century Ave., Suite 3	Bismarck	ND	58503-0649
Mr.	Todd	Sando	State Engineer		ND State Water Commission	900 E. Blvd. Ave.	Bismarck	ND	58505-0850
Mr.	Scott	Hochhalter	Soil Conservation Specialist	NDSU Extension Service	Soil Conservation Committee	2718 Gateway Ave., #104	Bismarck	ND	58503
Mr.	Bill	Boyd	Construction Manager		Midcontinent Cable Company	719 Memorial Hwy	Bismarck	ND	58501
Mr.	Doug	Dixon	General Manager	Badlands Region	Montana Dakota Utilities	PO Box 1406	Williston	ND	58802-1406
Mr.	John	Skurupey	General Manager		McKenzie Electric Cooperitive	PO Box 649	Watford City	ND	58854-0649
Sir		*or Madam*		Right of Way Department	Northern Border Pipeline Company	13710 FNB Parkway, Suite 300	Omaha	NE	68154
Ms.	Mary	Massad	Manager/CEO		Southwest Water Authority	4665 2nd St. SW.	Dickinson	ND	58601
Mr.	David C.	Schelkoph	CEO		West Plains Electric Coop., Inc.	PO Box 1038	Dickinson	ND	58602-1038
Sir		*or Madam*	Manager		Xcel Energy	PO Box 2747	Fargo	ND	58108-2747
Sir		*or Madam*	Manager		Mountrail-Williams Electric Cooperative	355 Main St	New Town	ND	58763
Sir		*or Madam*	District Engineer	Dickinson District	ND Department of Transportation	1700 3rd Ave W, Suite 101	Dickinson	ND	58601-3009
Mr.	Lonny	Bagley	Field Office Manager	North Dakota Field Office	Bureau of Land Management	99 23rd Ave W, Suite A	Dickinson	ND	58601
Mr.	Mike	Nash	Assistant Field Office Manager	Division on Mineral Resources	Bureau of Land Management	99 23rd Ave W, Suite A	Dickinson	ND	58601
Mr.	Michael	Seivage	Tribal Chairman		Sisseton-Wahpeton Sioux Tribe	PO Box 509	Sisseton	SD	57262-0267
Ms.	Myra	Pearson	Tribal Chairman	Ft. Totten Tribal Business Office	Spirit Lake Sioux Tribe	PO Box 359	Ft. Totten	ND	58325
Mr.	Charles	Murphy	Tribal Chairman		Standing Rock Sioux Tribe	PO Box D	Fort Yates	ND	58538
Mr.	Joe	Gillies	Environmental Division Director	Natural Resources Department	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Elgin	Crows Breast	Tribal Historic Preservation Officer		Three Affiliated Tribes	HC3 Box 2	New Town	ND	58763
Mr.	Tex	Hall	Tribal Chairman		Three Affiliated Tribes	HC3 Box 2	New Town	ND	58763
Mr.	Merle	St. Claire	Tribal Chairman		Turtle Mountain Chippewa	PO Box 900	Belcourt	ND	58316-0900
Mr.	Damon	Williams	Tribal Attorney		Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Fred	Fox	Director	Energy Department	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Ms.	V. Judy	Brugh	Representative	Four Bears Segment	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Arnold	Strahs	Representative	Mandaree Segment	Three Affiliated Tribes	PO Box 665	Mandaree	ND	58757
Mr.	Scott	Eagle	Representative	Shell Creek Segment	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Mervin	Packineau	Representative	Parshall/Lucky Mound Segment	Three Affiliated Tribes	PO Box 468	Parshall	ND	58770
Mr.	Frank	Whitecalf	Representative	White Shield Segment	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Barry	Benson	Representative	Twin Buttes Segment	Three Affiliated Tribes	70879 E Ave NW	Halliday	ND	58636
Mr.	Fred	Poitra		Game and Fish Department	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Lester	Crowsheart	Director	Fort Berthold Rural Water	Three Affiliated Tribes	308 Four Bears Complex	New Town	ND	58763
Mr.	Brooks	Goodall	Operations Manager		Reservation Telephone Cooperative	PO Box 68	Parshall	ND	58770-0068
Mr.	Reinhard	Hauck	Auditor		Dunn County	PO Box 105	Manning	ND	58642
Ms.	Tim	Steffan	Chairman	County Commission	Dunn County	1740 Highway 22	Manning	ND	58642

November 8, 2011

Mr. Scott Davis
Indian Affairs Commission
600 E. Blvd. Ave. 1st Floor, Judicial Wing, Rm 117
Bismarck, ND 58505-0300

RE: QEP Energy Company
11-31G Well Pad
Fort Berthold Reservation
Dunn County, North Dakota

Dear Mr. Davis,

On behalf of QEP Energy Company (QEP), Kadrmas, Lee & Jackson, Inc. (KL&J) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) for the Bureau of Indian Affairs (BIA) and Bureau of Land Management (BLM). The proposed action includes approval by the BIA and BLM for the development, drilling, and completion of four wells on one well pad on the Fort Berthold Reservation.

The *11-31G* Well Pad would be located in the SW¼ of Section 31, Township 148 North, Range 92 West, 5th P.M. ***Please refer to the enclosed project location map***. The well pad has been positioned to utilize existing roadways for access to the greatest extent possible. Construction of the proposed well pad and access road is scheduled to begin in late 2011/early 2012.

To ensure that social, economic, and environmental effects are analyzed accurately, we solicit your views and comments on the proposed action. We are interested in existing or proposed developments you may have that should be considered in connection with the proposed project. We also ask your assistance in identifying any property or resources that you own, manage, oversee, or otherwise value that might be adversely impacted.

Please provide your comments by **December 8, 2011**. We request your comments by that date to ensure that we will have ample time to review them and incorporate them into the EA.

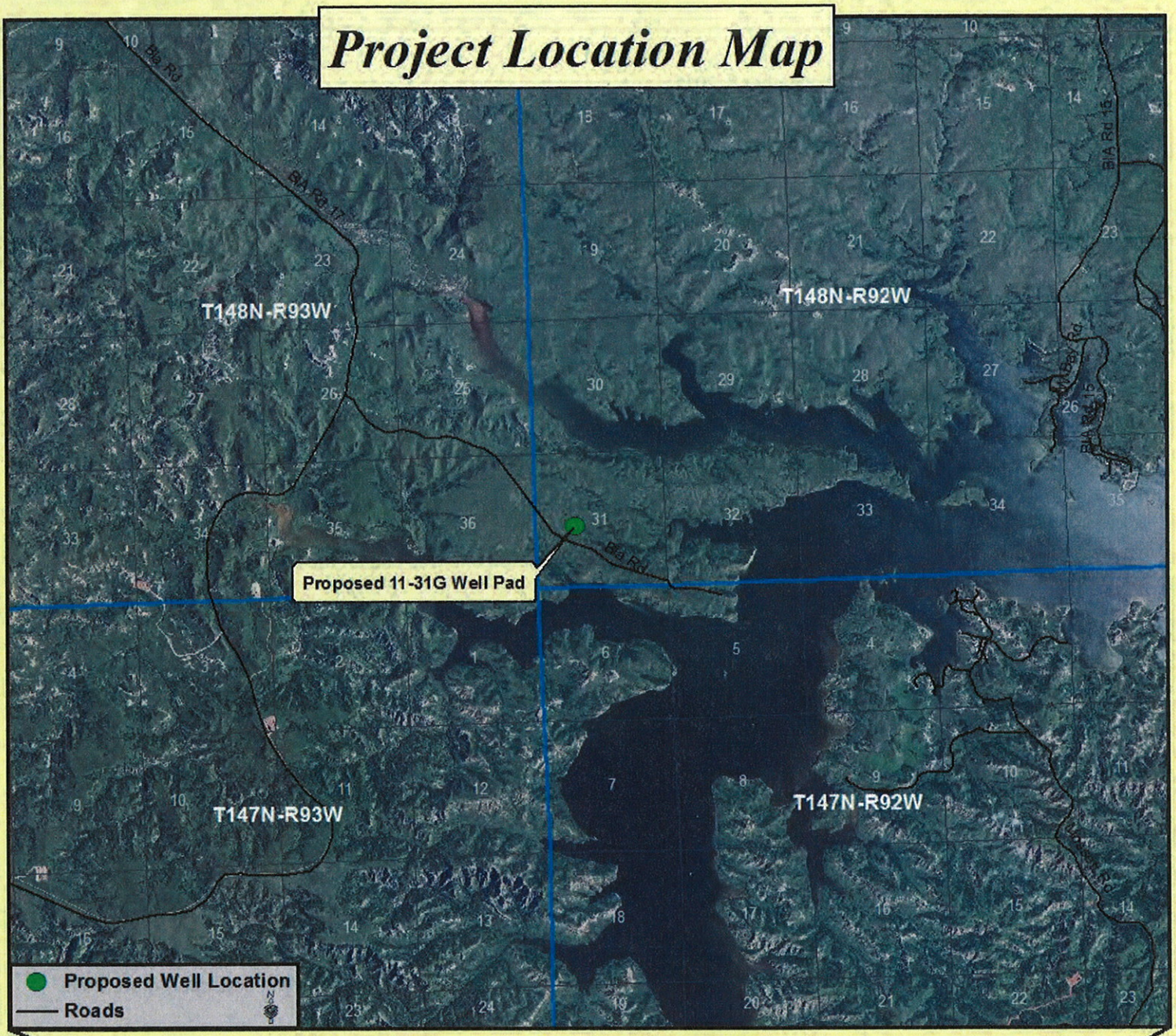
If you would like further information regarding this project, please contact me at (701) 355-8726. Thank you for your cooperation.

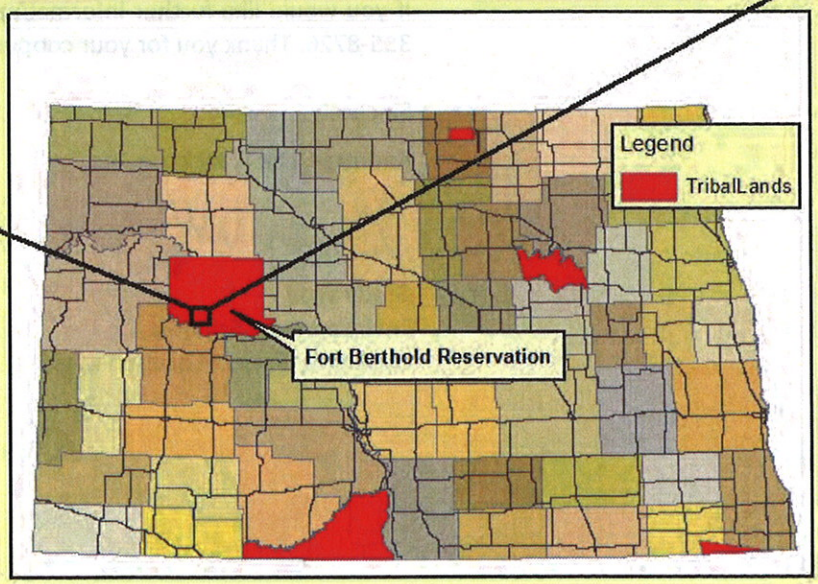
Sincerely,

Kadrmas, Lee & Jackson, Inc.

Grady Wolf
Environmental Scientist
Enclosure (Project Location Map)

Project Location Map





QEP Energy Company
Proposed 11-31G Well Pad
Dunn County, ND

Kadrmas Lee & Jackson
Engineers Surveyors Planners

November 8, 2011

Jeffrey Towner
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, North Dakota 58501-7926

Re: QEP Energy Company
11-31G Well Pad
Fort Berthold Reservation
Dunn County, North Dakota

Dear Mr. Towner,

On behalf of QEP Energy Company (QEP), Kadrmas, Lee & Jackson, Inc. (KL&J) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) for the Bureau of Indian Affairs (BIA) and Bureau of Land Management (BLM). The proposed action includes approval by the BIA and BLM for the development, drilling, and completion of four wells on one well pad and one access road on the Fort Berthold Reservation. The four wells are to be placed on one pad to minimize environmental impacts. The proposed well pad is to be positioned in the following location:

- 11-31G well pad; T148N, R92W, SW¼ of Section 31

Please refer to the enclosed project location map.

The proposed action would advance the exploration and production of oil from the Bakken and Three Forks Pools. The well pad has been positioned to utilize existing roadways for access to the extent possible. Construction of the proposed well pad and access road is scheduled to begin in late 2011/early 2012.

An intensive, pedestrian resource survey of the proposed well pad and access road was conducted on October 19, 2011 by KL&J. The purpose of these surveys was to gather site-specific data and photos with regards to botanical, biological, threatened and endangered species, eagles, and water resources. A study area of 10 acres centered on the well pad center point and a 250-foot wide access road corridor was evaluated for the site. In addition, a 0.50 mile wide buffer around all areas of project disturbance was used to evaluate the presence of eagles and eagle nests. Resources were evaluated using visual inspection and pedestrian transects across the sites.

A BIA-facilitated EA on-site assessment of the well pad and access road was also conducted on October 19, 2011. The BIA Environmental Protection Specialist, as well as representatives from the Tribal Historic Preservation Office (THPO), QEP, and KL&J were present. During the assessment, construction suitability with respect to topography, stockpiling, drainage, erosion control, and other surface issues were

considered. Well pad and access road locations were adjusted as appropriate, to avoid conflicts with identified environmental areas of concern. Those present at the on-site assessment agreed that the chosen locations, along with the minimization measures QEP plans to implement, are positioned in areas which would minimize impacts to sensitive wildlife and botanical resources. BMPs and other commitments QEP has made to avoid, minimize, or mitigate impacts are listed at the end of this letter.

Threatened and Endangered Species: The proposed pad site occurs in Dunn County. In Dunn County, the interior least tern, whooping crane, black-footed ferret, pallid sturgeon, and gray wolf are all listed as endangered species. The piping plover is listed as a threatened species, and the Dakota skipper and Sprague's pipit are listed as a candidate species. Dunn County also contains designated critical habitat for the piping plover. None of these species were observed during the field survey and on-site assessment.

Whooping cranes use shallow, seasonally and semi-permanently flooded palustrine (marshy) wetlands for roosting, and various cropland and emergent wetlands for feeding. The proposed projects are located in the Central Flyway where 75 percent of confirmed whooping crane sightings have occurred. Lake Sakakawea is located approximately 0.32 miles south of the proposed 11-31Gwell pad. Due to the proximity of the site to Lake Sakakawea and their occurrence within the 75 percent of confirmed sightings corridor, adjacent habitat may be used as stopover habitat. The proposed project may affect but is not likely to adversely affect whooping cranes or whooping crane habitat. If a whooping crane is sighted within one-mile of a well site or associated facilities while under construction, all work would cease within one-mile of that part of the project and the USFWS would be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area.

Suitable habitat for the interior least tern, pallid sturgeon, and piping plover is largely associated with Lake Sakakawea and its shoreline. Lake Sakakawea is located approximately 0.32 miles south of the proposed 11-31G well pad. No additional habitat was identified during the on-site survey. The well pad and access road is located on an upland area composed of grassland. USFWS determined Lake Sakakawea's shoreline to be critical habitat for the piping plover.

The tank battery would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% the capacity of the largest tank in the battery and 24hr record precipitation. A minimum of an 18-inch high berm would be constructed around the entire pad to control runoff. Secondary containment measures consisting of earth berms, fiber rolls or additional BMP's would be placed in all drainages in close proximity to the proposed pad. In addition, solidification and drying of drill cuttings before placement in the pit and the 30 mil reinforced lining of the cuttings pit would

diminish the potential for pit leaching. Due to the implementation of secondary containment measures and dry cuttings pit, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Due to the proximity of the proposed project to Lake Sakakawea (approximately 0.32 miles at the nearest point) the proposed project may affect but is not likely to adversely affect the interior least tern, pallid sturgeon, and piping plover or their associated habitats.

The black-footed ferret historically could be found throughout the Rocky Mountains and Great Plains. There has not been a confirmed sighting of a black-footed ferret in North Dakota for over 30 years and they are presumed extirpated. Its preferred habitat includes areas around prairie dog towns, as it relies on prairie dogs for food and lives in prairie dog burrows. Black-footed ferrets require at least an 80-acre prairie dog town to survive. Due to a lack of suitable habitat and known populations, the proposed project is anticipated to have no effect to the black-footed ferret.

Historically, the gray wolfs preferred habitat includes biomes such as boreal forest, temperate deciduous forest, and temperate grassland. While the gray wolf is not common in North Dakota, occasionally individual wolves do pass through the state. The project area is located far from other known wolf populations and is positioned on rangeland that is grazed. No wolves or indications of wolves were observed during the field survey. Due to a lack of preferred habitat characteristics and known populations, the proposed project is anticipated to have no effect on the gray wolf.

The preferred habitat for the Dakota skipper consists of undisturbed, flat, moist bluestem prairies and upland prairies with an abundance of wildflowers. The proposed site is located on moderately grazed rangeland that does contain bluestem prairies with abundant wildflowers. Although grazing is evident, it is moderate in nature; therefore, the project site does contain suitable habitat for the Dakota skipper. Due to the presence of potential habitat for the Dakota skipper within the project area, the proposed project may impact individuals or habitat through earthwork associated with construction activities, habitat conversion, and/or fragmentation. An "effect determination" under Section 7 of the Endangered Species Act has not been made due to the current unlisted status of the species.

The Sprague's pipit is a small songbird found in prairie areas throughout the Northern Great Plains. Preferred habitat includes rolling, upland mixed-grass prairie habitat with high plant species diversity. The Sprague's pipit breeds in habitat with minimal human disturbance. The proposed project area consists of moderately grazed rangeland which may provide potential habitat for the Sprague's pipit. No Sprague's pipit were observed during the field surveys. Due to the presence of preferred habitat for the Sprague's pipit within the project area, the proposed project may impact individuals or habitat through earthwork associated with construction activities, habitat conversion, and/or fragmentation. An "effect determination" under Section 7 of the Endangered Species Act has not been made due to the current unlisted status of the species. In the event that construction activity needs to take

place within the nesting and breeding season, pre-construction surveys for migratory birds or their nests would be conducted within five days prior to the initiation of construction activities; or mowing of the site prior to and throughout the nesting/breeding season would be completed.

Botanical Resources: The proposed 11-31Gwell pad consists of moderately grazed native upland grasses. The proposed well pad and access road is surrounded by rolling topography with shrub-scrub around the well pad. The well pad and access road were mostly dominated by Kentucky bluegrass (*Poa pratensis)*, green needlegrass (*Stipa viridula)*, western wheatgrass *(Agropyron smithii),* little bluestem *(Andropogon scoparius),* blue grama (*Bouteloua gracilis*), smooth brome (*Bromus inermis*), purple coneflower (*Echinacea angustifolia*), and western snowberry (*Symphoricarpos occidentalis*). Silver buffalo berry (*Shepherdia argentae*) was observed growing near the well pad. No noxious weeds were observed within the study area. There are no threatened or endangered plant species listed for Dunn County.

Biological Resources: The project area contains suitable habitat for mule deer (*Odocoileus hemionus*), whitetail deer (*Odocoileus virginianus*), sharp-tailed grouse (*Tympanuchus phasianellus*), ring-necked pheasant (*Phasianus colchicas*), raptors, North American badger (*Taxidea taxus*), song birds, coyote (*Canis latrans*), red fox (*Vulpes vulpes*), Eastern cottontail rabbit (*Sylvilagus floridanus*), wild turkey (*Meleagris gallopavo*), jackrabbit (*Lepus townsendii*), and North American porcupine (*Erethizon dorsatum*). One sharp-tailed grouse was observed during the field survey. No additional wildlife was observed during the survey.

During drilling activities, the noise, movements and lights associated with having a drilling rig on-site is expected to deter wildlife from entering the area. The dry cuttings pit would only be used for solid material storage, and any fluid present in the pit would be removed and disposed of in accordance with BLM and North Dakota Industrial Commission (NDIC) rules and regulations. In addition, the reinforced lining of the cuttings pit would have a thickness of 30 mil to prevent seepage and contamination of underlying soil. Immediately after the drilling rig leaves the location, the cuttings pit would be netted with State and Federal approved nets. These would remain in place with proper maintenance until the closure of the cuttings pit. Interim reclamation and closure of the cuttings pit would occur within six months of construction; however, if circumstances prevent interim reclamation from occurring within this timeframe, QEP would contact BIA to request an extension.

Design considerations would be implemented to further protect against potential habitat degradation. A minimum of an 18-inch high berm would be constructed around the entire well pad to provide additional containment at the well pad to control runoff. The tank battery would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of

sufficient size to hold in excess of 110% the capacity of the largest tank in the battery and 24hr record precipitation. BMPs to minimize wind and water erosion of soil resources, as well as implementation of a semi-closed loop system with a dry cuttings pit during drilling, would also be put into practice. Secondary containment measures consisting of earthen berms, straw wattles or other BMP's would be installed in adjacent drainages to the well pad and access road.

All efforts would be made for construction activities to begin after July 15 and end prior to February 1, in order to avoid impacts to migratory birds during the breeding/nesting season. In the event that a construction activity needs to take place within the nesting and breeding season, a pre-construction survey for migratory birds or their nests would be conducted within five days prior to the initiation of construction activities; or mowing of the site prior to and throughout the nesting/breeding season may be completed in lieu of the pre-construction survey.

Additionally, all reasonable, prudent, and effective measures to avoid the taking of migratory bird species would be implemented during the construction and operation phases. These measures would include: the use of suitable mufflers on all internal combustion engines; certain compressor components to mitigate noise; only utilizing approved roadways; placing wire mesh or grate covers over barrels or buckets placed under valves and spigots to collect dripped oil; maintaining dry cuttings pit, and covering the pit with netting that has a maximum mesh size of 1.5 inches.

Eagles: A survey for eagle nests was conducted on October 19, 2011. The proposed project site was thoroughly searched and no eagles or eagle nests were observed. Dr. Anne Marguerite Coyle of Dickinson State University has completed focused research on golden eagles and maintains a database of golden eagle nest sightings. According to Dr. Coyle's information, the closest recorded golden eagle nest is located approximately 1.22 miles southeast of the proposed well pad. If a bald or golden eagle nest is sighted within 0.5 miles of the project construction area, construction activities shall cease and the USFWS shall be notified for advice on how to proceed.

Water Resources: The proposed 11-31G well pad drains to the east into a wooded draw. The runoff would then flow approximately 0.77 miles and drain into Lake Sakakawea.

The northeast corner of the well pad would be rounded to minimize disturbance to a grass drainage; however, a segment of the drainage would be rerouted around the pad. Straw wattles would be place along the north side of the well pad to minimize erosion. Fiber matting would be placed in the drainage northeast of the pad to stabilize the soil and minimize erosion.

A minimum of an 18-inch high berm would be constructed around the well pad to protect against runoff and contaminants from leaving the pad. Secondary

containment measures consisting of earthen berms, straw wattles or additional BMP's would be placed in adjacent drainages as needed.

Best Management Practices: BMPs for soil and wind erosion would be implemented as needed to include seeding of cut areas and soil piles as well as the use of diversion ditches, silt fences, straw wattles and matting for all fill areas. Any woody vegetation removed during site construction would be chipped and incorporated into topsoil stockpiles or removed from the location to a proper disposal site. The alteration of drainages near the proposed well pad would be avoided. Culverts to maintain drainage along the access road would also be installed where needed. The access road was adjusted during the on-site survey to avoid the cuttings pit and due to safety concerns regarding sight distance at the road approach.

The northeast corner of the well pad would be rounded to minimize disturbance to a grass drainage; however, a segment of the drainage would be rerouted around the pad. Straw wattles would be place along the north side of the well pad to minimize erosion. Fiber matting would be placed in the drainage northeast of the pad to stabilize the soil and minimize erosion.

Upon completion of the wells, a portion of the well pad would be reclaimed to further avoid environmental areas of concern. Per BIA guidance, interim reclamation measures would occur within six months of construction; however, if circumstances prevent interim reclamation from occurring within this timeframe, QEP would contact BIA to request an extension. When conditions prevent interim reclamation, such as winter when seed cover cannot be established, crimping straw and/or mulch would be utilized to cover bare ground areas until conditions improve.

Summary of Commitments to Avoid or Minimize Impacts: In an effort to minimize the potential environmental effects associated with the proposed project, QEP would also implement the following measures into the development of the site:

- A semi-closed loop system would be used during drilling. Drill cuttings would be solidified and dried before being placed in the reinforced lined cuttings pit. The reinforced lining of the cuttings pit would have a thickness of 30 mil to prevent seepage and contamination of underlying soil. Any minimal free fluid present in the pit would be removed and disposed of in accordance with BLM and NDIC rules and regulations. All liquids from drilling would be transported off-site. The drill cuttings pit would be reclaimed to BLM and NDIC standards immediately upon finishing completion operations.
- Per BIA guidance, interim reclamation measures would occur within six months of construction; however, if circumstances prevent interim reclamation from occurring within this timeframe, QEP would contact BIA to request an extension. When conditions prevent interim reclamation, such as

winter when seed cover cannot be established, crimping straw and/or mulch would be utilized to cover bare ground areas until conditions improve.

- All efforts would be made for construction activities to begin after July 15 and end prior to February 1, in order to avoid impacts to migratory birds during the breeding/nesting season. In the event that a construction activity needs to take place within the nesting and breeding season, pre-construction surveys for migratory birds or their nests would be conducted within five days prior to the initiation of construction activities or mowing of the site prior to and throughout the nesting/breeding season would prevent birds from nesting at the site.
- Measures implemented during construction to avoid the taking of migratory bird species would include: the use of suitable mufflers on all internal combustion engines; certain compressor components to mitigate noise; only utilizing approved roadways; placing wire mesh or grate covers over barrels or buckets placed under valves and spigots to collect dripped oil; maintaining dry cuttings pit, and covering the pit with netting that has a maximum mesh size of 1.5 inches.
- If a whooping crane is sighted within one-mile of a well site or associated facilities while under construction, all work would cease within one-mile of that part of the project and the USFWS would be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area.
- The tank battery would be surrounded by an impervious dike or Sioux containment system that would act as secondary containment to guard against accidental release of fluids from the site. The containment system would be of sufficient size to hold in excess of 110% the capacity of the largest tank in the battery and 24hr record precipitation. BMPs would be implemented to minimize wind and water erosion of soil resources.
- A minimum of an 18-inch berm would be constructed around the entire pad to protect against runoff and contaminants from leaving the pad.
- Secondary containment measures consisting of earthen berms, straw wattles or additional BMP's would be placed in adjacent drainages as needed. Topsoil will be segregated and stored on-site to be used in the reclamation process. All disturbed areas would be re-contoured to original elevations as close as possible as part of the reclamation process.
- The northeast corner of the well pad would be rounded to minimize disturbance to a grass drainage; however, a segment of the drainage would be rerouted around the pad. Straw wattles would be place along the north side of the well pad to minimize erosion. Fiber matting would be placed in the drainage northeast of the pad to stabilize the soil and minimize erosion.
- Shale green paint will be used on structures to not take away from the surrounding landscape.

To ensure that social, economic, and environmental effects are considered in the development of this project, we are soliciting your views and comments on the proposed development of this project, pursuant to Section 102(2) (D) (IV) of the

11-31G Well Pad
QEP
Fort Berthold Reservation

National Environmental Policy Act of 1969, as amended. We are particularly interested in any property that your department may own, or have an interest in, located within the project area. We would also appreciate being made aware of any proposed development your department may be contemplating in the area of the proposed project. Any information that might help us in our study would be appreciated.

It is requested that any comments or information be forwarded to our office on or before **December 8, 2011**. We request your comments by that date to ensure that we will have ample time to review them and incorporate them into the necessary environmental documentation.

If you would like further information regarding this project, please contact me at (701) 355-8726. Thank you for your cooperation.

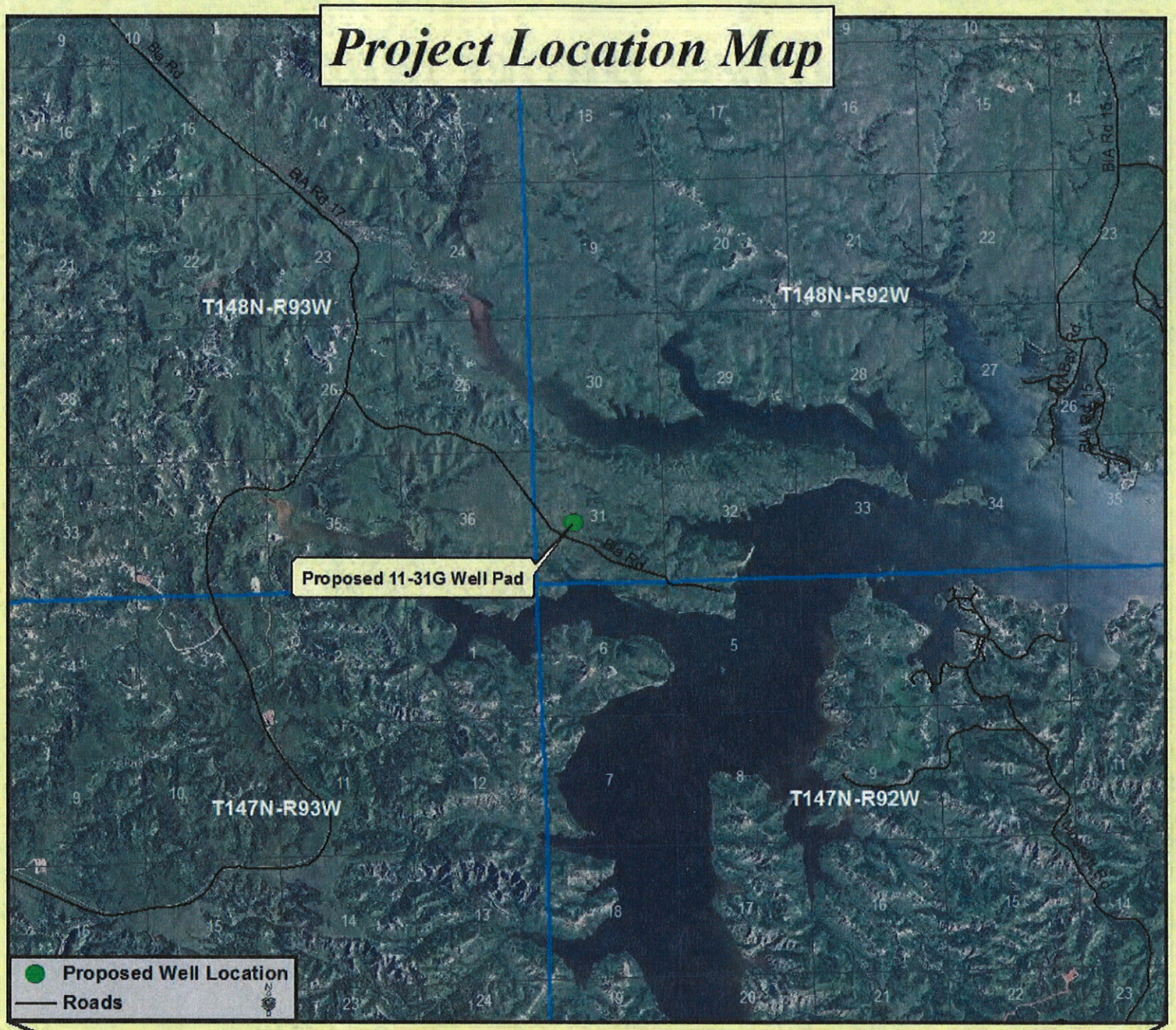
Sincerely,

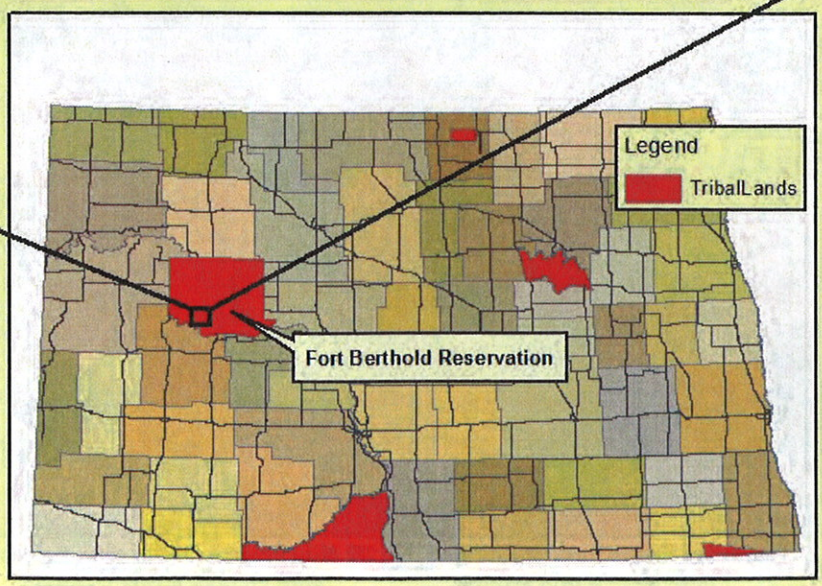
Kadrmas, Lee & Jackson, Inc.

Grady Wolf
Environmental Planner

Enclosures (Maps)

Project Location Map





QEP Energy Company
Proposed 11-31G Well Pad
Dunn County, ND

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Eagle Buffer Map

Appendix B

Agency Scoping Responses

"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

December 2, 2011

Grady Wolf
Environmental Scientist
Kadrmas, Lee & Jackson, Inc.
PO Box 1157
Bismarck, ND 58502-1157

Dear Mr. Wolf:

RE: Bullet Well Pad
11-26E Well Pad
11-31G Well Pad

QEP Energy Company is proposing 31 wells on three well pads on the Fort Berthold Reservation in Dunn 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.

Due to the proximity of these well pads to Lake Sakakawea, we ask that additional steps be taken to completely contain any run-off from potential spills at these sites. We also suggest that botanical surveys be completed during the appropriate season and aerial surveys be conducted for raptor nests before construction begins.

Sincerely,

Greg Link
Chief
Conservation & Communication Division

js

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
1616 CAPITOL AVENUE
OMAHA NE 68102-4901

REPLY TO
ATTENTION OF

November 17, 2011

Planning, Programs, and Project Management Division

Kadrmas Lee & Jackson
Attention: Mr. Grady Wolf
128 Soo Line Drive
P.O. Box 1157
Bismarck, North Dakota 58502

Dear Mr. Wolf:

The U.S. Army Corps of Engineers, Omaha District (Corps) has reviewed your letter dated November 8, 2011, regarding the proposed development, drilling and completion of four wells on one well pad on the Fort Berthold Reservation in Dunn County, North Dakota. The Corps offers the following comments:

The Corps is aware of recent reports that describe environmental impacts associated with the use of oil waste pits in North Dakota. Oil waste pits may be susceptible to flooding, which may threaten drinking water supplies, wildlife, soil and other water resources. Due to the proximity of the proposed wells to Lake Sakakawea, a significant drinking water resource, the Corps requests the applicant consider using a closed loop drilling system. A closed loop drilling system may reduce or eliminate the discharge of toxic drilling wastes and their potential negative impacts to the environment.

The Corps is also aware that the Bureau of Indian Affairs is currently developing a programmatic environmental assessment (EA) for oil and gas development on the Fort Berthold Reservation. The Corps requests QEP Energy Company include some information about the programmatic evaluation in the site specific EA. It is important for the reader to know that an overarching analysis is currently underway that will address the scale and rapid development of oil and gas wells within this region.

Also, the proposed location for the pad that will accommodate fifteen wells appears to be located on top of a bluff that drains less than 1,000 feet into Lake Sakakawea. The Corps requests QEP Energy Company consider in their EA alternative locations that would move the pad site further away from the lake. By setting back the pad site from the lake, potential environmental impacts resulting from accidental spills or blowouts may be reduced. Additionally, removing the large pad from atop a lakeside bluff will also reduce the impact to visual resources experienced by recreational users on the lake.

Your plans should also be coordinated with the state water quality office in which the project is located to ensure compliance with federal and state water quality standards and regulations mandated by the Clean Water Act and administered by the U.S. Environmental Protection

Agency (EPA). Please coordinate with the North Dakota Department of Health concerning state water quality programs.

If you have not already done so, it is recommended you consult with the U.S. Fish and Wildlife Service and the North Dakota Game and Fish Department regarding fish and wildlife resources. In addition, the North Dakota State Historic Preservation Office should be contacted for information and recommendations on potential cultural resources in the project area.

Since the proposed project does not appear to be located within Corps owned or operated lands, we are providing no floodplain or flood risk information. To determine if the proposed project may impact areas designated as a Federal Emergency Management Agency special flood hazard area, please consult the following floodplain management office:

North Dakota State Water Commission
Attention: Jeff Klein
900 East Boulevard Avenue
Bismarck, North Dakota 58505-0850
jjkein@nd.gov
Telephone: 701-328-4898
Fax: 701-328-3747

Any proposed placement of dredged or fill material into waters of the United States (including jurisdictional wetlands) requires Department of the Army authorization under Section 404 of the Clean Water Act. You can visit the Omaha District's Regulatory website for permit applications and related information. Please review the information on the provided website (https://www.nwo.usace.army.mil/html/od-r/district.htm) to determine if this project requires a 404 permit. For a detailed review of permit requirements, preliminary and final project plans should be sent to:

U.S. Army Corps of Engineers
Bismarck Regulatory Office
Attention: CENWO-OD-R-ND/Cimarosti
1513 South 12th Street
Bismarck, North Dakota 58504

In addition, please update your records with our current mailing address:

U.S. Army Corps of Engineers, Omaha District
Environmental Resources and MRRP Plan Formulation
Attention: CENWO-PM-AC
1616 Capitol Ave.
Omaha, Nebraska 68102-4901

If you have any questions, please contact Mr. Shannon Sjolie of my staff at (402) 995-2887.

Sincerely,

Eric Laux
Acting Chief, Environmental Resources and Missouri River Recovery Program Plan Formulation Section

Copy Furnished:
CENWO-OD-R- ND/Cimarosti

Jack Dalrymple, Governor
Mark A. Zimmerman, Director

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

November 29, 2011

Mr. Grady Wolf
Kadrmas Lee & Jackson
128 Soo Line Drive
PO Box 1157
Bismarck, ND 58502-1157

Re: QEP Energy Company – 11-31G Well Pad, Fort Berthold Reservation, Dunn County, ND

Dear Mr. Wolf,

The North Dakota Parks and Recreation Department (the Department) has reviewed the above referenced proposal for the development, drilling, and completion of four wells on one pad on the Fort Berthold Reservation.

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

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, there are no documented occurrences in our database within or adjacent to project area. Because this information is not based on a comprehensive inventory, there may be species of concern or otherwise significant ecological communities in the area that are not represented in the database. The lack of data for any project area cannot be construed to mean that no significant features are present. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

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

We appreciate your commitment to rare plant, animal and ecological community conservation, management and inter-agency cooperation to date. For additional information please contact Kathy Duttenhefner (701-328-5370 or kgduttenhefner@nd.gov) of our staff. Thank you for the opportunity to comment on this proposed project.

Sincerely,

For Kathy Duttenhefner

Jesse Hanson, Manager
Planning and Natural Resources Division

R.USNDNHI*2011-242KD11/21/2011DL11.29.2011

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United States Department of the Interior

BUREAU OF RECLAMATION
Dakotas Area Office
P.O. Box 1017
Bismarck, North Dakota 58502

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IN REPLY REFER TO:
DK-5000
ENV-6.00

NOV 23 2011

RECEIVED
NOV 25 2011

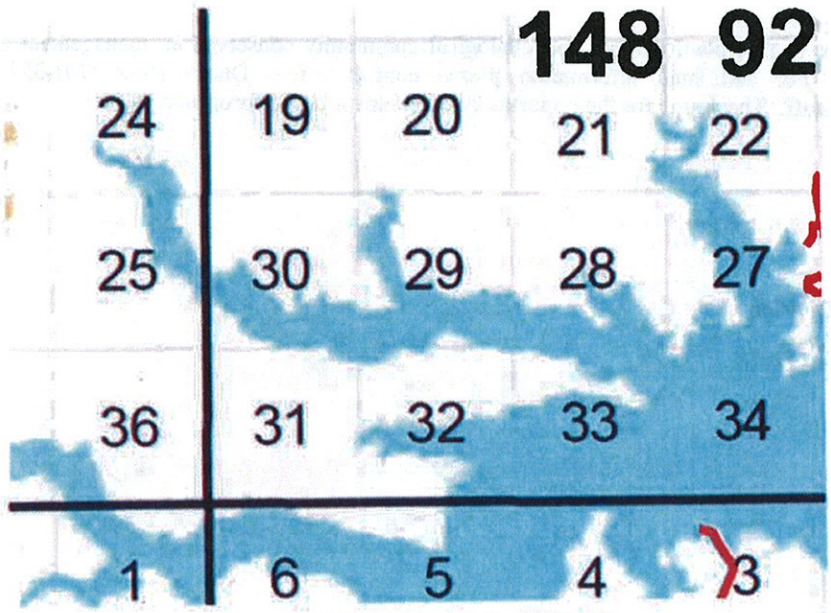
Mr. Grady Wolf
Environmental Scientist
KLJ
P.O. Box 1157
Bismarck, ND 58502-1157

Subject: Solicitation for an Environmental Assessment for the Proposed Construction of Four Exploratory Oil and Gas Wells on One Well Pad, Section 31, T148N, R92W, Saddle Butte SW, North Dakota, on the Fort Berthold Indian Reservation, Dunn County, North Dakota

Dear Mr. Wolf:

This letter is written to inform you that we received your letter of November 8, 2011, and the information and map of your proposed well pad has been reviewed by Bureau of Reclamation staff.

The proposed well pad in Section 31, T148N, R92W, Saddle Butte SW, North Dakota, Dunn County, appears to be clear of federal Reclamation facilities, in this case the rural water pipelines of the Fort Berthold Rural Water System, by several miles. Please note that municipal, rural, and industrial water lines commonly follow roads; therefore, we have provided the map below of the general area of your proposed action and the nearest federal Reclamation pipelines of the Fort Berthold Rural Water System (red lines):



Sections 31, T148N, R92W, Saddle Butte SW, ND

The map we have provided should aid you in identification of potential for adverse effect to, or crossings of, federal facilities. Also, should you need to cross a Fort Berthold Rural Water System pipeline while accessing your proposed project, please refer to the enclosed sheet for pipeline crossing specifications and contact our engineer Colin Nygaard, as shown below.

Since Reclamation is the lead federal agency for the Fort Berthold Rural Water System, we request that any work planned on the reservation be coordinated with Mr. Lester Crows Heart, Fort Berthold Rural Water Director, Three Affiliated Tribes, 308 4 Bears Complex, New Town, North Dakota 58763.

Thank you for providing the information and opportunity to comment. If you have any further environmental questions, please contact me at 701-221-1287 or for engineering questions Colin Nygaard, Civil Engineer, at 701-221-1260.

Sincerely,

Kelly B. McPhillips
Environmental Specialist

Enclosure

cc: Bureau of Indian Affairs
Great Plains Regional Office
Ms. Marilyn Bercier
Acting Regional Director - Indian Services
115 Fourth Avenue S.E.
Aberdeen, SD 57401

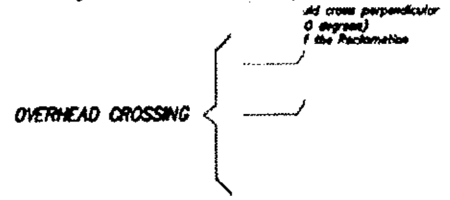
Mr. Lester Crows Heart
Fort Berthold Rural Water Director
Three Affiliated Tribes
308 4 Bears Complex
New Town, ND 58763
(w/encl)

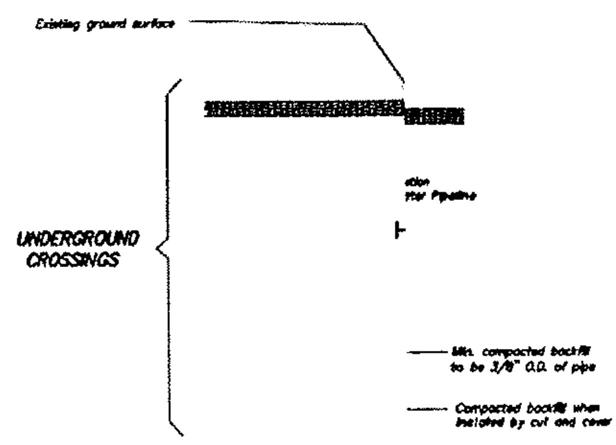
NOTES

1. Drawing is not to scale.
2. Clearances shown are minimum for all conditions.
3. Any additional permits required/needed for construction shall [illegible]
4. Overhead conductor clearances shown are for 120 degrees F a[illegible]
5. Erosion control measures, including re-vegetation, shall be im[illegible] construction activities.
6. The applicant shall submit a project description, and detailed [illegible] views, profiles and sections, and grading plans of proposed wo[illegible] Right-of-Way (ROW).
7. The applicant shall submit procedures, excavation plans, and s[illegible] Reclamation pipeline.
8. At the completion of construction activities the applicant shal[illegible] indicate the horizontal and vertical alignments of all utilities in [illegible] construction within Reclamation ROW.
9. Pipelines carrying hazardous materials or pollutants (e.g. oils, [illegible] contaminated water and nonpotable water, etc.) should be des[illegible] failure in the portion within Reclamation's ROW. The design sha[illegible]
   9.1. Designing the crossing pipeline with an additional 50 perce[illegible]
   9.2. Use secondary containment (pipe casing) for all hazardous [illegible]
10. All work within 18 inches of the facility shall be done using ha[illegible] excavation and backfill shall be made in the presence of Recla[illegible] representative.
11. The applicant and or his/her contractor shall be liable for all [illegible] and appurtenances as a result of construction and for any oth[illegible] by Reclamation, including power, municipal and industrial water [illegible] losses.
12. For crossings of all Reclamation facilities, Reclamation personn[illegible] obtain and provide copies of existing files showing information [illegible] (center of pipeline, approximate depth of cover, size of pipe, [illegible] applicant.
13. Typical Reclamation potable and raw water pipelines are PVC. I[illegible] containing metallic reinforcement (e.g., reinforced concrete) ar[illegible] suitable bonded dielectric coating and cathodic protection may [illegible]

potable or raw water pipeline

[illegible] overhead or buried utilities





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MR&I RURAL WATER SYSTEMS
STANDARD CROSSING AND CLEARANCE REQ.
POTABLE AND RAW WATER PIPELINES

DESIGNED [illegible]
DRAWN [illegible]
CHECKED [illegible]
TECH. APPR. [illegible]
APPROVED [illegible]
BISMARCK, NORTH DAKOTA 07-30-2010

769-603-25480

SHEET 1 OF 1

NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

November 17, 2011

Mr. Grady Wolf
Environmental Scientist
Kadrmas, Lee & Jackson, Inc.
P.O. Box 1157
Bismarck, ND 58502-1157

RECEIVED
NOV 21 2011

Re: QEP Energy Company, 11-31G Well Pad
Fort Berthold Reservation, Dunn County

Dear Mr. Wolf:

This department has reviewed the information concerning the above-referenced project submitted under date of May 25, 2011 with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. Development of the production facilities and any access roads, well pads or pipelines should have a minimal effect on air quality provided measures are taken to minimize fugitive dust. However, operation of the wells has the potential to release air contaminants capable of causing or contributing to air pollution. We encourage the development and operation of the wells in a manner that is consistent with good air pollution control practices for minimizing emissions. Detailed guidance is available at www.ndhealth.gov/AQ/OilandGasWells.htm.

   Any questions about air pollution control or permitting requirements should be addressed to Ms. Kathleen Paser at the U.S. Environmental Protection Agency, Region 8. She may be reached at (303) 312-6526 or Paser.Kathleen@epa.gov.

2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.

3. Oil and gas related construction activities located within tribal boundaries in North Dakota may be required to obtain a permit to discharge storm water runoff from the U.S.

Environmental Protection Agency. Further information may be obtained from the U.S. EPA's website or by calling the U.S. EPA – Region 8 at (303) 312-6312. Also, cities or counties may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local storm water management considerations are addressed.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,

L. David Glatt, P.E., Chief
Environmental Health Section

LDG:cc
Attach.

NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

Fill Material

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

United States Department of Agriculture

NRCS

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

November 17, 2011

Grady Wolf
Kadrmas, Lee & Jackson
128 Soo Line Drive
PO Box 1157
Bismarck, ND 58502-1157

RE: QEP Energy Company
11-31G Well Pad
11-26E Well Pad
Bullet well pad
Fort Berthold Reservation
Dunn County, ND

Dear Mr. Wolf:

The Natural Resources Conservation Service (NRCS) has reviewed your letters dated November 4 and 8, 2011, concerning proposed well pad sites on the Fort Berthold Reservation in Dunn County, North Dakota.

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

Wetlands – The Wetland Conservation Provisions of the 1985 Food Security Act, as amended, provide that if a USDA participant converts a wetland for the purpose of, or to have the effect of, making agricultural production possible, loss of USDA benefits could occur. NRCS has developed the following guidelines for the installation of buried utilities. If these guidelines are followed, the impacts to the wetland(s) will be considered minimal allowing USDA participants to continue to receive USDA benefits. Following are the requirements: 1) Disturbance to the wetland(s) must be temporary, 2) no drainage of the wetland(s) is allowed (temporary or permanent), 3) mechanized landscaping necessary for installation is kept to a minimum and preconstruction contours are maintained, 4) temporary side cast material must be placed in such a manner not to be dispersed in the wetland, and 5) all trenches must be backfilled to the original wetland bottom elevation.

NRCS would recommend that impacts to wetlands be avoided. If the alignment of the project requires passage through a wetland, NRCS can complete a certified wetland determination, if requested by the landowner/operator.

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

Sincerely,

JEROME M. SCHAAR
State Soil Scientist/MO 7 Leader

Grady Wolf

From: Sorensen, Charles G NWO [Charles.G.Sorensen@usace.army.mil]
Sent: Thursday, November 17, 2011 1:22 PM
To: grady.wolf@kljeng.com
Cc: Ames, Joel O NWO
Subject: Comments for QEP Energies 11-31G Well Pad Location (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Grady

Thank you for letting the U.S. Army Corps of Engineers Garrison Dam/Lake Sakakawea Project comment on QEP Energy Companies 11-31G well pad location within the Fort Berthold Reservation

At this time the U.S. Army Corps of Engineers Garrison Dam/Lake Sakakawea Project request that consideration and if possible implement the following management practices during the exploration phase of those wells listed in the request letter

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

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

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

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

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

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

If possible, all construction activities should occur between August 15th and April 1st.

If trees are present, the appropriate dates are August 15th - February 1st. By constructing during these dates, disruptions to wildlife during the breeding season maybe kept to a minimum.

Cumulative impacts are often overlooked, in the completion of NEPA compliance.To adequately assess cumulative impacts, the following activities should consider.

a. Has the project area already been degraded, and if so, to what extent?
b. Are other ongoing activities in the area causing impacts, and if so, to what extent?
c. What is the likelihood that this project will lead to a number of associated projects?
d. What are the trends for activities and impacts in the area?

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

Charles Sorensen
Natural Resource Specialist
U.S. Army Corps of Engineers
Garrison Dam/Lake Sakakawea Project
Riverdale, North Dakota Office
(701) 654 7411 ext 232

Classification: UNCLASSIFIED
Caveats: NONE

United States Department of the Interior

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

MAR 1 4 2012

Mr. Grady Wolf
Environmental Planner
Kadrmas, Lee & Jackson
128 Soo Line Drive
PO Box 1157
Bismarck, North Dakota 58502-1157

Re: QEP 11-31G Well Pad, Fort Berthold Reservation,
Dunn County, North Dakota
In response, please reference Tails # 2012-CPA-0239

Dear Mr. Wolf:
This is in response to your November 8, 2011, scoping letter and request for concurrence, subsequent email correspondence between you and Heidi Riddle of my staff, and a February 14, 2012, memorandum regarding a proposed oil and gas well on one pad to be drilled and completed by QEP Energy Company (QEP) on the Fort Berthold Reservation, Dunn County, North Dakota.

Specific location for the proposed pad is:

11-31G Well Pad: T. 148 N., R. 92 W., South West ¼ of Section 31

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

Threatened and Endangered Species
In an e-mail dated October 13, 2009, the Bureau of Indian Affairs (BIA) designated Kadrmas Lee & Jackson (KLJ) 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.

Your letter states that the proposed 11-31G well pad is located approximately 0.77 stream-miles from potential habitat for interior least tern, piping plover and pallid sturgeon. KLJ believes a setback distance of 1.0 stream-mile adequate to contain most spills before product can reach the lake through draws and drainages.

The Service recommended in a January 6, 2012, email that QEP implement a closed-loop drilling system. The Service believes that the absence of a reserve pit greatly reduces the potential of migration of fluids off the pad. Additionally, the potential for leaching is minimized or eliminated, so risk to federally-listed species occurring on or near Lake Sakakawea from contamination through potential drainage to the lake reduces the threat. On February 14, 2012, we received your memo which addresses our concerns regarding the use of a reserve pit. You stated that the proposed 11-31G well pad is located approximately 660 meters from the shoreline of Lake Sakakawea; therefore, according to your calculations, it would take approximately 254 years for bank erosion to reach the proposed pit site. Your analysis also concludes that any petroleum products that may be associated with the dry cuttings pit would naturally break down over time due to bioremediation from microorganisms. Additionally, QEP will implement secondary containment measures, including an impervious dike which will be of sufficient size to hold in excess of 110% of the capacity of the largest tank in the battery and 24-hr record precipitation. Based on the foregoing measures, the Service concurs with your "may affect, is not likely to adversely affect" determination for interior least tern, piping plover, pallid sturgeon and designated critical habitat for piping plover.

Your letter states that QEP has committed to ceasing work on the proposed site if a whooping crane(s) is sighted within 1.0 mile of the project area and immediately contacting the Service. Work may resume in coordination with the Service after the bird(s) leaves. Additionally, per BIA requirements, all new power lines must be buried. Therefore, the Service concurs with your "may affect, is not likely to adversely affect" determination for whooping crane.

The Service acknowledges your no effect determination for black-footed ferret and gray wolf.

The Dakota skipper and Sprague's pipit are candidate species for listing under the ESA; therefore, an effects determination is not necessary for these species. 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 QEP 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 cannot be completed outside of the migratory bird nesting season, QEP will either:

- Mow, maintain, or completely remove vegetation within the project area prior to and during the breeding season to deter migratory birds from nesting in the project area until construction is underway;
- If the project areas are not mowed and maintained as indicated above, 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 letter 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 the commitment to implement the aforementioned measures will assist in complying with the MBTA and the BGEPA.

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

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

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
DESCRM
MC-208

JAN 2 3 2012

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 a proposed oil well pad and a well pad expansion project in Dunn County, North Dakota. Approximately 67.2 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 Number AAO-1909/FB/11,** the proposed undertakings, locations, and project dimensions are described in the following reports:

Ó Donnchadha, Brian
(2012a) MHA 1-26-27H-149-91 Addendum: A Class III Cultural Resource Investigation in Dunn County, North Dakota. KLJ Cultural Resources for QEP, Denver.

(2012b) MHA 2&4-5&6-06-07H-147-92: A Class III Cultural Resource Investigation in Dunn County, North Dakota. KLJ Cultural Resources for QEP, Denver.

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

QEP: Drilling of MHA 1-06-07H-147-92, MHA 3-06-07H-147-92, MHA 5-06-07H-147-92, MHA 6-06-07H-147-92, MHA 7-06-07H-147-92, and MHA 8-06-07H-147-92 (11-31G 6-Well Pad) Oil & Gas Wells

The Bureau of Indian Affairs (BIA) is planning to issue administrative approvals related to an Environmental Assessment to Authorize Land Use to drill six wells from one well pad on the Fort Berthold Reservation as shown on the attached map. Construction by QEP is expected to begin in 2012.

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 April 25, 2012, 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.