United States Department of the Interior

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

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
DESCRM
MC-208

FEB 18 2011

MEMORANDUM

TO: Superintendent, Fort Berthold Agency

FROM: Regional Director, Great Plains Region

SUBJECT: Environmental Assessment and Finding of No Significant Impact

In compliance with the regulations of the National Environmental Policy Act (NEPA) of 1969, as amended, for two proposed exploratory oil/gas well pads with up to six oil wells by XTO Energy, on the Fort Berthold Reservation, an Environmental Assessment (EA) has been completed and a Finding of No Significant Impact (FONSI) has been issued.

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

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

Attachment

cc: Tex Hall, Chairman, Three Affiliated Tribes (with attachment)
Elgin Crows Breast, THPO (with attachment)
Derek Enderud, Bureau of Land Management (with attachment)
Jonathon Shelman, Corps of Engineers (with attachment)
Jeff Hunt, One Stop Shop, Fort Berthold Agency

Finding of No Significant Impact

GuyBlackHawk 24X-27 & Lawrence 24X-26 Well Pads

Fort Berthold Indian Reservation, Dunn County, North Dakota

The U.S. Bureau of Indian Affairs (BIA) received a proposal for two oil/gas well pads that could accommodate up to 6 wells each, access road easements, and related infrastructure on the Fort Berthold Indian Reservation within Dunn County, North Dakota. The GuyBlackHawk well pad and access road is located in the south-central portion of Section 27 in Township 149N and Range 92W. The Lawrence well pad is located in the SE ¼ of the SW ¼ of Section 26 in Township 149N and Range 92W. The Lawrence access road extends from the GuyBlackHawk access road to the Lawrence well pad traversing through the south-central portion of Section 27, northeastern corner of Section 34, and southwestern corner of Section 26. Associated federal actions by BIA include determinations of effect regarding cultural resources, approvals of leases, rights-of-way and easements, and a positive recommendation to the Bureau of Land Management regarding the Application for Permit to Drill.

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

This determination is based on the following factors:

1. Agency and public involvement was solicited and environmental issues related to the proposal were identified.
2. Protective and prudent measures were designed to minimize impacts to air, water, soil, vegetation, wetlands, wildlife, public safety, water resources, and cultural resources. The remaining potential for impacts was disclosed for both the Proposed Action and the No Action Alternative.
3. Guidance from the U.S. Fish and Wildlife Service has been fully considered regarding wildlife impacts, particularly in regard to threatened or endangered species. This guidance includes the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.) (MBTA), the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.) (NEPA), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250) (BGEPA), Executive Order 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds", and the Endangered Species Act (16 U.S.C. 1531 et seq.) (ESA).
4. The proposed actions are designed to avoid adverse effects to historic, archeological, cultural and traditional properties, sites and practices. The Tribal Historic Preservation Officer has concurred with BIA's determination that no historic properties will be affected.
5. Environmental justice was fully considered.
6. Cumulative effects to the environment are either mitigated or minimal.
7. No regulatory requirements have been waived or require compensatory mitigation measures.
8. The proposed projects will improve the socio-economic condition of the affected Indian community.

Regional Director

2/18/11
Date

FINAL

ENVIRONMENTAL ASSESSMENT

United States Bureau of Indian Affairs

Great Plains Regional Office
Aberdeen, South Dakota

XTO Energy, Inc.

GuyBlackHawk 24X-27 & Lawrence 24X-26 Exploratory Wells

Fort Berthold Indian Reservation

February 2011

For information contact:
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Aberdeen, South Dakota 57401
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ACRONYMS AND ABBREVIATIONS

AAQM	Ambient Air Quality Monitoring
ac	acre
AIRFA	American Indian Religious Freedom Act
APD	Application for Permit to Drill
APE	Area of Potential Effect
BIA	U.S. Bureau of Indian Affairs
BLM	U.S. Bureau of Land Management
BMP	Best Management Practices
°C	Celsius degrees
CEQ	Council of Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
E	East; Easting
EA	Environmental Assessment
e.g.	For example
EIS	Environmental Impact Statement
EJ	Environmental Justice
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
°F	Fahrenheit degrees
FBIR	Fort Berthold Indian Reservation
FEL	From East [section] Line
FNL	From North [section] Line
FONSI	Finding of No Significant Impact
FSL	From South [section] Line
FWL	From West [section] Line
GAL/MIN	Gallons per minute
GPS	Global Positioning System
H_2S	Hydrogen Sulfide
HCPC	Historic Climax Plant Community
HPRCC	High Plains Regional Climate Center
HUC	Hydrologic Unit Code
in	inch(es)
i.e.	that is; such as
MHA Nation	Three Affiliated Tribes of the Mandan, Hidatsa, and Arikara Nation
MTNHP	Montana Natural Heritage Program
N	North; Northing
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
National Register	National Register of Historic Places
ND	North Dakota
NDDA	North Dakota Department of Agriculture
NDDH	North Dakota Department of Health
NDIC	North Dakota Industrial Commission
NDPR	North Dakota Parks and Recreation
NE	Northeast
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act

ACRONYMS AND ABBREVIATIONS

NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxide
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRO	Natural Resource Options, Inc.
NTL	Notice to Lessees
NWR	National Wildlife Refuge
O_3	Ozone
Pb	Lead
PBS&J	Post, Buckley, Schuh, and Jernigan
PM	Particulate Matter
PPB	Parts Per Billion
PPM	Parts Per Million
R	Range
Reservation	Fort Berthold Indian Reservation
ROW	Right-of-way
S	South
SAAQS	State Ambient Air Quality Standards
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Office
SMU	Soil Map Unit
SO_2	Sulfur Dioxide
SYN	Synonym
T	Township
TCP	Traditional and Cultural Property
TE	Threatened and Endangered Species
THPO	Tribal Historic Preservation Officer
$\mu g/m^3$	Micrograms per cubic meter
µmhos/cm	Micromhos per centimeter
US	United States
USA	United States of America
USC	United States Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator coordinate system
VOC	Volatile Organic Compound
W	West
XTO	XTO Energy, Inc.

1.0 Purpose and Need for the Proposed Action

XTO Energy, Inc. (XTO) is proposing to initiate the exploration phase of oil development. The exploration phase would begin by locating exploratory wells (up to six) on a single well pad at two proposed project sites on the Fort Berthold Indian Reservation (FBIR; Reservation) (Figures 1a and 1b). The proposed well pad location is on land held in trust by the United States in Dunn County, North Dakota. The U.S. Bureau of Indian Affairs (BIA) is the surface management agency for potentially affected tribal lands and individual allotments. The proposed project would also include the use of an existing access road and the development of two new access roads (Figures 1a and 1b).

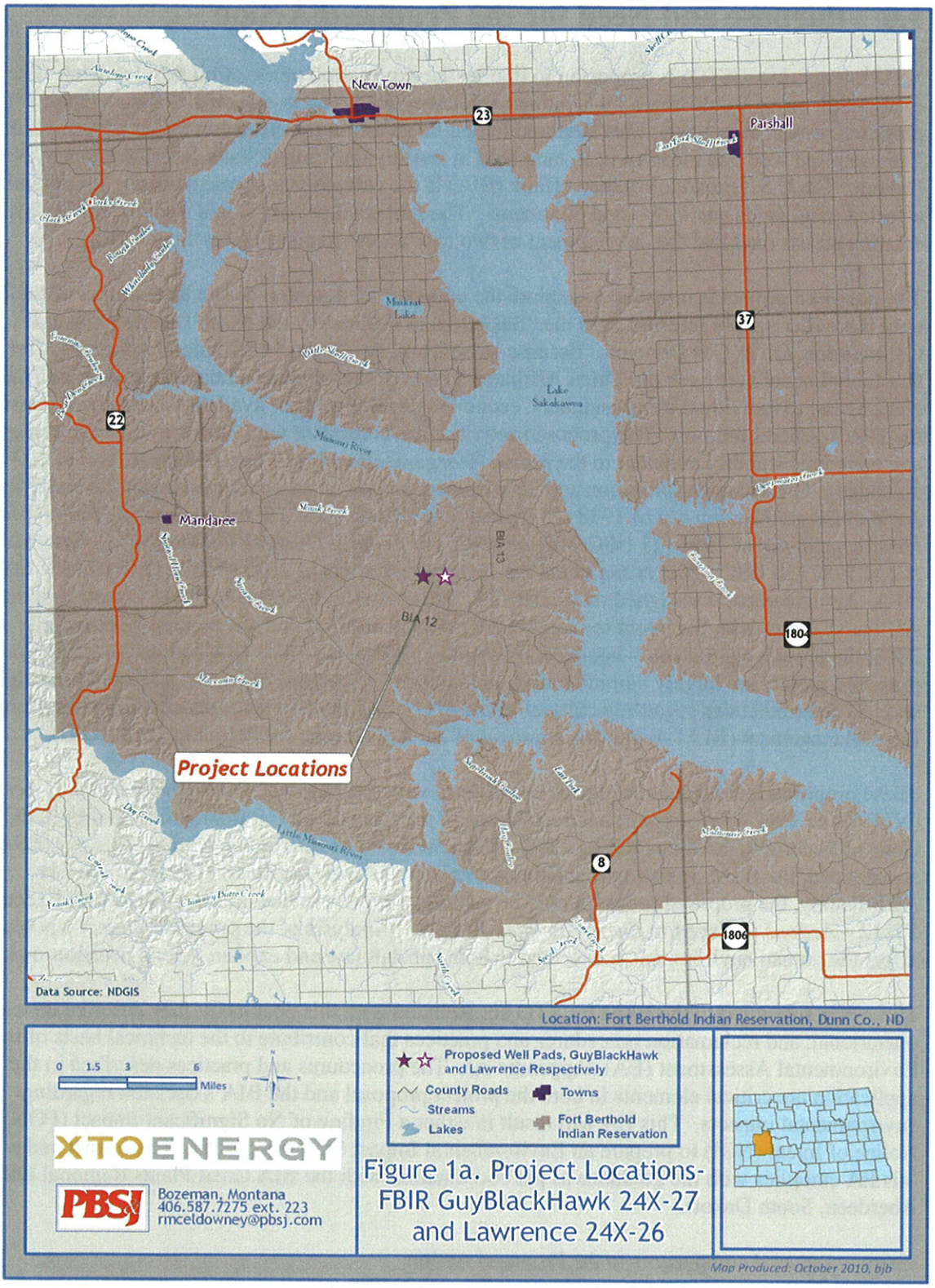
The proposed project is intended to explore the commercial potential on the Reservation of the Bakken oil pool (hereafter simply referred to as the "Bakken"), as defined by the North Dakota Industrial Commission, Oil & Gas Division. Because leasing and development of mineral resources offer substantial benefits to both the Three Affiliated Tribes of the Mandan, Hidatsa, and Arikara Nation (MHA Nation) and to individual tribal members, economic development of available resources is consistent with the BIA's general mission. The proposed activities are consistent with efforts to improve self-governance and economic stability pursuant to the *Indian Reorganization Act* (*Wheeler-Howard Act* of 1934, as amended). Oil and gas exploration and development activities are conducted under the authority of the *Indian Mineral Leasing Act* of 1938 (25 United States Code [USC] 396a, *et seq.*), the *Indian Mineral Development Act* of 1982 (25 USC 2101, *et seq.*), the *Federal Onshore Oil and Gas Royalty Management Act* of 1982 (30 USC 1701, *et seq.*), and the *Energy Policy Act* of 2005 (Public Law 109-58, 119 Statute 594). An agreement was signed on January 13, 2010 between the State of North Dakota and the Three Affiliated Tribes with the intent to increase the production of oil and gas on the FBIR; initially signed in 2008, the present agreement is intended to continue indefinitely. The BIA actions in connection with the proposed project are largely administrative and include 1) approval of leases, easements and rights-of-way; 2) determinations regarding cultural resource effects; and 3) a recommendation to the Bureau of Land Management (BLM) regarding approval of the Application for Permit to Drill (APD).

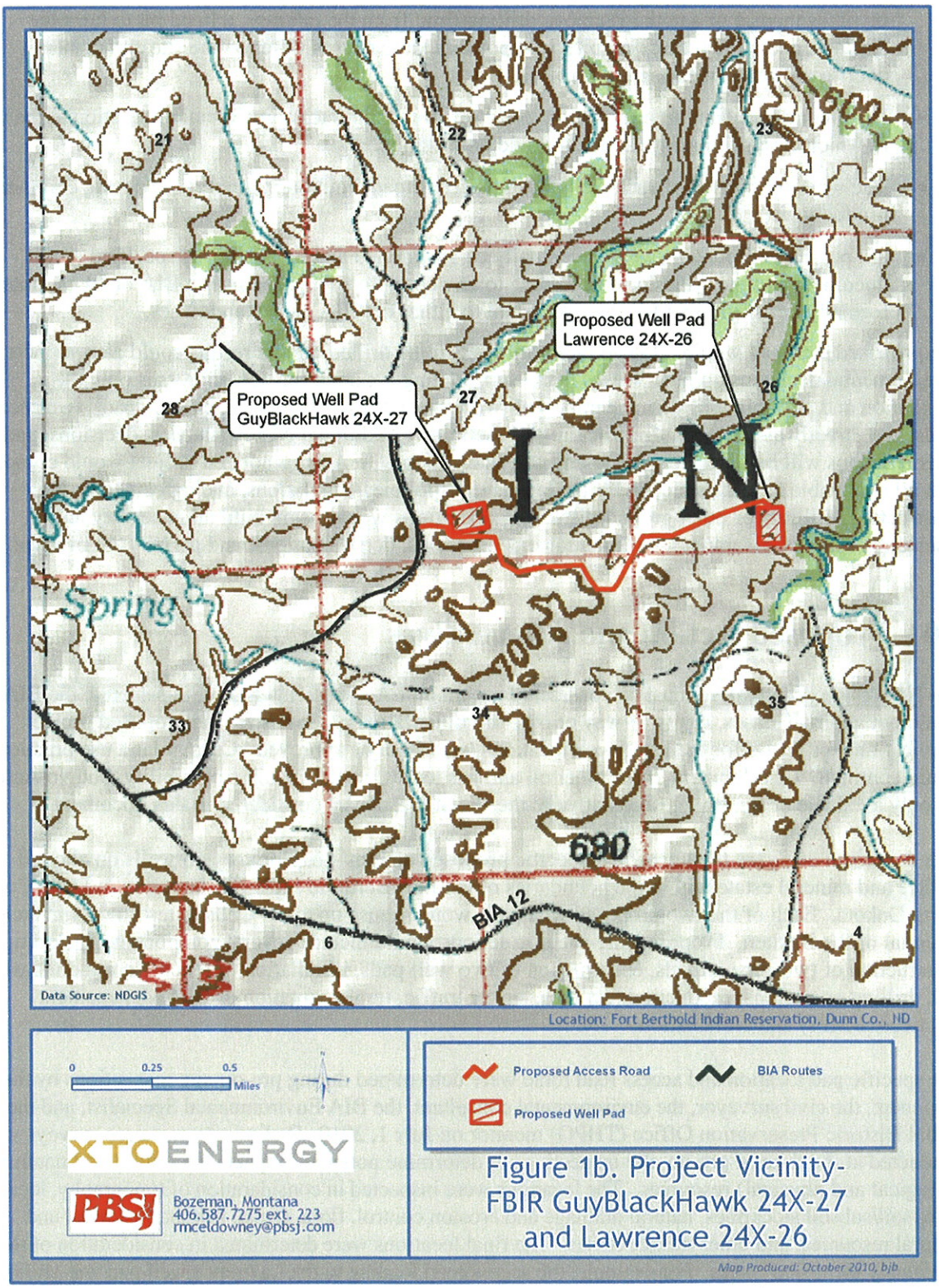
These proposed federal actions require compliance with the *National Environmental Policy Act* of 1969 (NEPA) (42 USC 4321, *et seq.*) and regulations of the Council on Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR] 1500–1508); *Section 7* of the *Endangered Species Act* (ESA) of 1973, as amended; the BLM operating regulations, *Onshore Oil and Gas Orders* (43 CFR 3164.1). Additionally, the proposed project would be subject to agency review in accordance with Executive Order 13212 – *Actions to Expedite Energy-Related Projects*. Analysis of the proposed project's potential to affect the human environment is expected to both substantiate and explain federal decision-making.

The APDs submitted to the BLM by XTO are included with this document; they describe developmental, operational, and reclamation procedures and practices that contribute to the technical basis of this Environmental Assessment (EA) (Appendix A). The procedures and practices described in the application are critical elements in both the project proposal and the BIA's decision regarding environmental impacts. This EA will result in either a Finding of No Significant Impact (FONSI) or a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS). The format and content of this EA complies with the guidance as per coordination with the BIA Great Plains Regional Office, Aberdeen, South Dakota.

There are several components to the Proposed Action.

- Construction of two new access roads would be needed.
    - Each well pad would be constructed to accommodate drilling operations.


New Town
Parshall
Mandaree
Lake Sakakawea
Missouri River
Little Missouri River
BIA 13
BIA 12
Project Locations
23
37
22
8
1806
Data Source: NDGIS
Location: Fort Berthold Indian Reservation, Dunn Co., ND
0 1.5 3 6
Miles
Proposed Well Pads, GuyBlackHawk and Lawrence Respectively
County Roads
Towns
Streams
Lakes
Fort Berthold Indian Reservation
XTOENERGY
PBSJ
Bozeman, Montana
406.587.7275 ext. 223
rmceldowney@pbsj.com
Figure 1a. Project Locations- FBIR GuyBlackHawk 24X-27 and Lawrence 24X-26
Map Produced: October 2010, bjb


Proposed Well Pad
Lawrence 24X-26
Proposed Well Pad
GuyBlackHawk 24X-27
I
N
Spring
BIA 12
Data Source: NDGIS
Location: Fort Berthold Indian Reservation, Dunn Co., ND
0
0.25
0.5
Miles
Proposed Access Road
BIA Routes
Proposed Well Pad
XTOENERGY
PBSJ
Bozeman, Montana
406.587.7275 ext. 223
rmceldowney@pbsj.com
Figure 1b. Project Vicinity-
FBIR GuyBlackHawk 24X-27
and Lawrence 24X-26
Map Produced: October 2010, bjb

- A semi-closed loop system would be used for all wells drilled from each pad. A semi-closed loop involves the use of a tank to remove drilling fluid from the cuttings, a lined pit to bury the cuttings, and a lined catch-all pit to temporarily store excess water on the site and cement overflow when cementing the drill hole.
- Drilling and production information could result in long-term commercial production at the sites, in which case supporting facilities would be installed.
- The working portion of each well pad and access road would remain in place during commercial production.
- All project components would eventually be abandoned and reclaimed, as specified in this document and the APDs, and according to any conditions imposed by the BIA or BLM, unless formally transferred with federal approval to either the BIA or the landowner.

The proposed well pad would allow exploratory wells to be drilled, in that results could also support developmental decisions on other leases in the surrounding area, but this EA addresses only the installation and possible long-term operation of two well pads (up to six wells on each pad), two access roads, and directly associated infrastructure and facilities. Additional NEPA analysis, decisions, and federal actions will be required prior to any other development. Any authorized project would comply with all applicable federal, state, and tribal laws, rules, policies, regulations, and agreements. No construction, drilling, or other ground-disturbing operations would begin until all necessary leases, easements, surveys, clearances, consultations, permissions, determinations, and permits are in place.

2.0 Proposed Action and Alternatives

The **No Action Alternative** must be considered within an EA. If this alternative is selected, the BIA would not approve leases, rights-of-way or other administrative proposals for the proposed project. Applications for APDs for the listed well locations would not be approved. Current land use practices would continue. Development under other oil and gas leases would remain a possibility, but No Action is the only available or reasonable alternative to the specific proposal considered in this document.

This document analyzes the impacts of specific proposed actions – exploratory oil wells on allotted surface and mineral estate within the boundaries of the Fort Berthold Indian Reservation in Dunn County, North Dakota. Each of the two proposed well pads would house up to six wells to test the commercial potential of the Bakken. Proposed site-specific actions would include several components, including the construction of two access roads, construction of two well pads, installation of fencing around the well pad, drilling operations, production facilities, tanker traffic, implementation of Best Management Practices (BMPs) and reclamation.

The specific pad location and access road route were determined during pre-on-site inspections by the proponent, the civil surveyor, the environmental consultant, the BIA Environmental Specialist, and the Tribal Historic Preservation Office (THPO) monitor on July 1, 2010. Preliminary resource surveys were conducted at the time of pre-on-site inspections to determine potential impacts to cultural and natural (i.e., biological and physical) resources. The locations were inspected in consideration of topography, location of topsoil/subsoil stockpiles, natural drainage and erosion control, flora, fauna, habitat, historical and cultural resources, and other surface issues. The final locations were determined in consideration of the previously identified issues. For example, the access road leading to the Lawrence well pad was shifted to avoid crossing several drainages and cultural resources. Additionally, both well pads were shifted to avoid cultural resources and the Lawrence well pad positioned to still allow the rancher access to his pastures. Avoidance measures and other protective measures were incorporated into the final project design to

minimize impacts to evaluated resources, as appropriate (see Section 2.9). More in-depth cultural and natural resource surveys were also conducted later in July 2010. The proposed well pad and access road were surveyed on July 14-15 and August 22-23, 2010. During the inspections, the BIA gathered information needed to develop site-specific mitigation measures that would be incorporated into the final APDs.

All construction activities would follow lease stipulations, practices, and procedures outlined in the APDs and in guidelines and standards from the book, *Surface Operating Standards for Oil and Gas Exploration and Development* (also known as the Gold Book; USDI-USDA 2007), conditions described in this EA, and any conditions added by either the BIA or BLM. All lease operations would be conducted in full compliance with applicable laws and regulations, including 43 CFR 3100, *Onshore Oil and Gas Orders 1, 2, 6 and 7*, approved plans of operations and any applicable Notices to Lessees. If any additional infrastructure is required at the site, such as spur pipelines or utilities (i.e., electricity, water, and phone), the infrastructure would be installed in previously disturbed right-of-way identified and accounted for in this EA. If the infrastructure would require disturbance outside of the approved right-of-way, additional NEPA documentation and environmental analysis will be required. The remainder of this chapter describes the proposed action in detail.

2.1 Field Camps

Self-contained trailers may house a few key personnel during drilling operations, but any such arrangements would be very short-term. No longer-term residential camps are proposed. Construction and drilling personnel would commute to the project site from the nearest town. Human waste would be collected in standard portable chemical toilets or service trailers located on-site, then transported off-site to a state-approved wastewater treatment facility. Other solid waste would be collected in enclosed containers and disposed of at a state-approved facility. During drilling, electricity would be generated onsite with generators.

2.2 Access Road

An existing road would connect BIA 12 to the access road for the GuyBlackHawk and Lawrence sites. This existing road currently serves other oil/gas exploration activities. From this existing road a new access road of approximately 560 linear feet would be constructed to connect with the GuyBlackHawk well pad (Figure 2.2a; Figure 1b). From the new access road for Guy BlackHawk, a new access road of approximately 6,175 linear feet would be constructed to connect with the Lawrence well pad (Figure 2.2b; Figure 1b). The GuyBlackHawk and Lawrence sites initially share about 500 feet of access road. Existing conditions of the proposed access road are shown in Figure 2.2. Signed agreements to allow road construction in affected surface allotments would be part of a right-of-way (ROW) agreement that would be procured after approval of the FONSI and APDs. A maximum disturbed ROW width of 66 feet (33 feet either side of centerline) would result in approximately 0.85 acre and 9.36 acres of surface disturbance for the GuyBlackHawk and Lawrence access roads, respectively.

Figure 2.2a: View is east at the proposed two-track road for the proposed Guy BlackHawk 24X-27 well pad. Source: PBS&J, July 2010.

Figure 2.2b: View is southeast at the proposed two-track road stemming from GuyBlackHawk access road to the proposed Lawrence 24X-26 well pad. Source: PBS&J, July 2010.

Construction would follow road design standards outlined in the Gold Book (USDI-USDA 2007). A minimum of six inches of topsoil would be stripped from the access road corridors, with the stockpiled topsoil redistributed on the outslope areas of borrow ditches following road construction. These borrow ditch areas would be re-seeded as soon as practical with a native seed mixture determined by the BIA. If commercial production is established at the proposed location, the access road would be graveled with a minimum of four inches of gravel and the roadway would remain in place for the life of the well. Details of road construction are addressed in the Multi-Point Surface Use & Operations Plan in the respective APDs (Appendix A).

2.3 Well Pad

The proposed well pads would consist mainly of an area leveled for the drilling rig and related equipment. A semi-closed loop system would be used for drilling procedures. The well pad areas would be cleared of vegetation, stripped of topsoil, and graded to specifications in the APDs (Appendix A). Topsoil would be stockpiled and stabilized until disturbed areas were reclaimed and revegetated. At least the top 10 inches of topsoil from the GuyBlackHawk 24X-27 and at least the top 20 inches from the Lawrence 24X-26 project areas would be stock piled into two piles in order for it to be more accessible for interim reclamation. All disturbed woody vegetation would be mulched and added to the top of the topsoil stock piles. The topsoil stockpiles would be seeded with native species to maintain its viability. Excavated subsoils would be used in pad construction, with the finished well pad graded to ensure positive water drainage away from the drill site. Erosion control would be maintained through prompt revegetation and by constructing all necessary surface water drainage control, including berms, diversion ditches, and waterbars. Existing conditions of the proposed GuyBlackHawk and Lawrence well pads are shown respectively in Figures 2.3a and 2.3b.

Figure 2.3a: View is looking south-southeast toward the center of the proposed GuyBlackHawk 24X-27 well pad from the middle of the sorth side. Source: PBS&J, July 2010.

Figure 2.3b: View is looking west toward the center of the proposed Lawrence 24X-26 well pad from the middle of the east side. Source: PBS&J, July 2010.

The level area of well pad required for drilling and completion operations (including pits for drilled cuttings) for GuyBlackHawk would be approximately 600 feet by 400 feet (5.51 acres). Cut and fill slopes on the edge of the pad and stockpiles of soil would result in approximately 1.61 acre of additional surface disturbance, resulting in a total surface disturbance of roughly 6.67 acres. Details of pad construction and reclamation are diagrammed in the APD (Appendix A).

The level area of well pad required for drilling and completion operations (including pits for drilled cuttings) for Lawrence would be approximately 600 feet by 400 feet (5.51 acres). Cut and fill slopes on the edge of the pad and stockpiles of soil would result in approximately 1.07 acre of additional surface disturbance, resulting in a total surface disturbance of roughly 6.59 acres. Details of pad construction and reclamation are diagrammed in the APD (Appendix A).

2.4 Drilling

After securing leases for mineral estates, XTO submitted APDs to the BLM on November 1, 2010 and January 6, 2011 proposing to drill from allotted surfaces in the listed locations. The BLM North Dakota Field Office forwarded copies of the APD to BIA's Fort Berthold Agency in New Town, North Dakota, for review and concurrence. BLM will not approve an APD until BIA completes its NEPA process and recommends APD approval. No drilling would begin until a permit has been obtained from the BLM.

Initial drilling would be vertical to an approximate depth ranging from 9,500 to 10,500 feet at the kickoff point where the drill bit would begin to be angled for horizontal drilling. Drilling would become roughly horizontal at an approximate depth of 10,000 to 11,500 feet below the land surface, followed by lateral reaches in the Bakken. Completed wellbores would range in length from 20,000 to 25,000 feet. The minimum setbacks section borders required by NDIC would be maintained or achieved through directional drilling.

Rig transport and on-site assembly would take about five to twelve days for the initial well. Drilling operations would require approximately 15 to 40 days to reach the target depth, using a rotary drilling rig rated for drilling operations to a vertical depth of approximately 14,000 to 20,000 feet. A typical drill rig is shown in Figure 2.4. For the first 1,500 to 2,500 feet drilled, a fresh-water based mud system with non-hazardous additives such as bentonite would be used to minimize contaminant concerns. Approximately 50,000 to 90,000 gallons of water would be obtained from a commercial source for this drilling stage. This water would be collected and reused as much as possible.

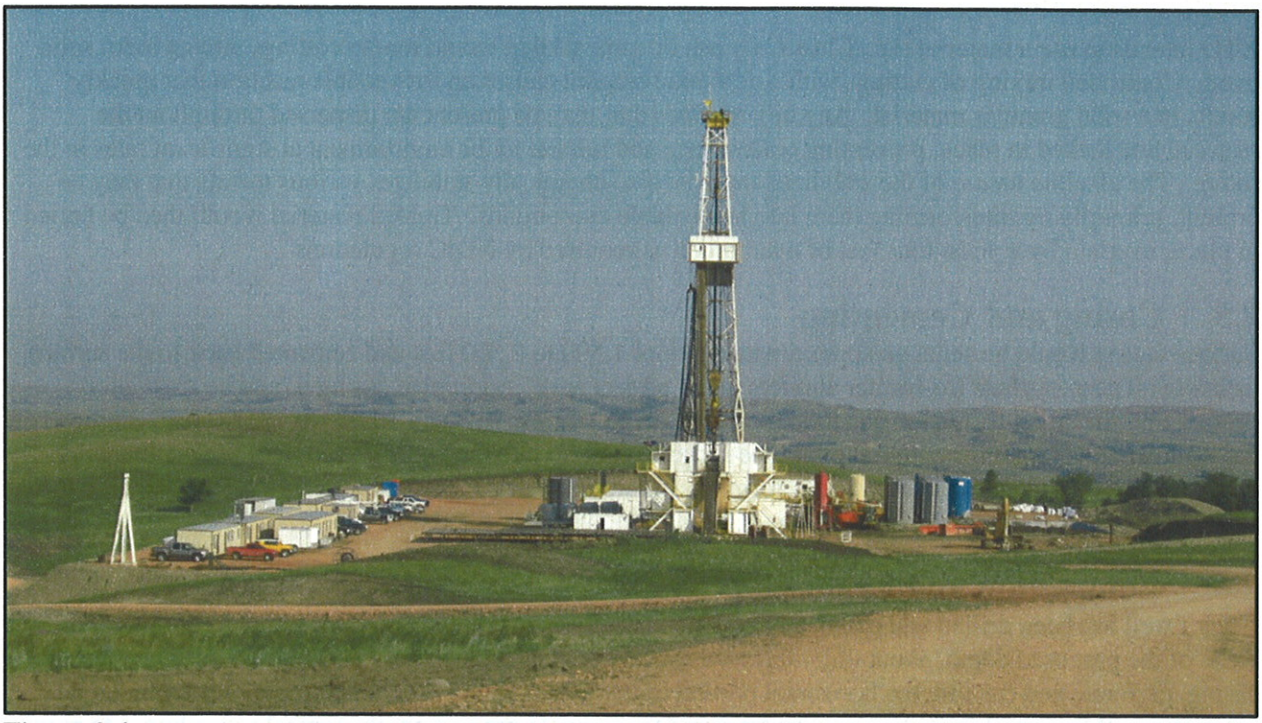


Figure 2.4: A typical drilling rig and well pad. Source: PBS&J, July 2010.

Oil-based drilling fluids could reduce the potential for hole sloughing while drilling through water-sensitive formations (shales). After setting and cementing the near-surface casing, an oil-based mud system (approximately 80% diesel fuel and 20% saltwater) would be used to drill the vertical and drill curve portion of the hole (9,000 to 10,000 feet long). About 10,000 to 18,000 gallons of saltwater and 40,000 to 72,000 gallons of diesel fuel would be used to complete drilling to final vertical depth. These fluids would be captured and reused at other wells as much as possible. The horizontal portion of the hole would be drilled using a salt-water based mud. Roughly 50,000 to 90,000 gallons of saltwater would be needed for the horizontal portion of the hole. This water is also reused as much as possible and obtained from a commercial source. Miscellaneous drilling fluids would be contained in steel tanks placed on plastic/vinyl liners and within secondary containment berms. Drilling fluids would be recycled back into the steel tanks for reuse. Upon completion of drilling operations at each well, oil-based fluids would be collected again to the extent possible to be recycled and used elsewhere. Drilling fluids would be removed and disposed of in accordance with North Dakota Industrial Commission (NDIC) rules and regulations.

As part of the semi-closed loop system used at the site, the drill cuttings would be run through a centrifuge to remove fluids prior to being placed into a pit used to dispose of the semi-dry cuttings. This pit would be lined with an impervious (plastic/vinyl) liner to prevent any contamination of the underlying soil. Liners would be installed with sufficient bedding (either straw or dirt) to cover any rocks, would overlap the pit walls, extend under the mud tanks, and would be held in place with a trench covered with dirt. In addition, a catch-all pit would be needed to temporarily store excess water on the site and cement overflow that may occur when

cementing in the surface casing. This pit would be located away from the cuttings pit, would be lined with an impervious liner, installed with sufficient bedding to cover any rocks, and secured in place with a trench and covered with dirt. Both the cutting pit and catch-all pit will have nets placed over them to prevent birds from entering them. Material contained in the catch-all pit would be removed prior to departure from the site. Pits would also be fenced on all four sides to protect personnel as well as wildlife and livestock from accidentally falling into the pit. In addition, the entire well pad would be fenced. Fencing would be installed in accordance with guidelines from the Gold Book (USDI-USDA 2007) and maintained until the pits are backfilled or the site is abandoned.

XTO intends to use a material (i.e., Class C fly ash or cement) that would render cuttings into an inert, solid mass. Controlled mixing of cuttings with a non-toxic reagent causes an irreversible reaction that quickly results in a solid granular material. Any oily residues that may be present are dispersed throughout the material and locked in place, preventing coalescence and release to the environment at significant rates in the future. The alkaline nature of the stabilized material also chemically stabilizes various metals that may be present, primarily by transforming them into less soluble compounds. Treated material would then be buried in place, overlain by at least four feet of overburden as required by NDIC regulations.

2.5 Casing and Cementing

Surface casing would be set at an approximate depth of 1,500 to 2,500 feet and cemented back to the surface, isolating all near -surface freshwater aquifers in the project area. Additional casing would be used after drilling into the target formation at a total measured depth ranging between 10,000 to 13,000 feet. Portions of the well from the target formation through the kickoff point up into the vertical section of the wellbore are planned to be cemented to isolate various formation as well as enhance wellbore integrity. The lateral portion of the hole would be lined with a liner, part of which contains pre-drilled holes.

2.6 Completion and Evaluation

After a well has been drilled and cased, a completion (work-over) unit would be moved onto the site. For wells of the proposed depth, about thirty days are usually needed to clean out the well bore, pressure test the casing, perforate and fracture the horizontal portion of the hole, and run production tubing for commercial production. If the target formation is to be fractured to stimulate production, the typical procedure is to pump down the hole a mixture of sand and a transport medium (e.g., water, nitrogen) under extreme pressure. The resulting fractures are propped open with sand, increasing the capture zone of the well and maximizing efficient drainage of the field. After fracturing, fracture fluids and excess sand are pumped back to the surface and removed. Fluids used in the completion procedure would be captured either in reserve pits or in tanks for disposal in strict accordance with NDIC rules and regulations.

2.7 Commercial Production

If drilling, testing, and production support commercial production from the proposed location, additional equipment would be installed, including a pumping unit at the well head, a vertical heater/treater, tanks (usually four 400 barrel steel tanks), and a flare/production pit. An impervious dike surrounding production tanks and the heater/treater and sized to hold 100 percent of the capacity of the largest tank plus one full day's production would also be constructed from compacted subsoil. Load out lines would be located inside the diked area, with a heavy screen-covered drip barrel installed under the outlet. A metal access staircase would protect the dike and support flexible hoses used by tanker trucks. The BIA would choose a color for all permanent aboveground production facilities from standard environmental colors recommended by BLM or the Rocky Mountain Five-State Interagency Committee. Belowground electric power lines and utilities would be installed from the main lines to the well pad within the disturbed ROW.

Oil would be collected in tanks and periodically trucked to an existing oil terminal for sales. Any produced water would be captured in tanks and periodically trucked to an approved disposal site. The frequency of trucking activities for both product and water would depend upon volumes and rates of

production. The duration of production operations cannot be reliably predicted, but some oil wells have pumped for over one hundred years.

Large volumes of gas are not expected from these locations. Small volumes of gas would be flared in accordance with Notice to Lessees (NTL) 4A and NDIC regulations, which prohibit flaring for more than the initial year of operation (NDIC 38-08-06.4). Any proposal for gathering and marketing gas from this well may require additional analysis under NEPA and consideration of impacts by BIA.

Drilling and testing results would also help determine if additional exploration activities are warranted in the overall area. Should future oil/gas exploration activities be proposed by XTO on the FBIR, that proposal and associated federal actions would require additional NEPA analysis and BIA consideration prior to implementation.

2.8 Reclamation

A semi-closed loop system would be used for drilling activities. The cuttings stored in the lined pit would be treated, solidified, backfilled, and buried as soon as possible after well completion. Other interim reclamation measures to be accomplished within the first year include reduction of the cut and fill slopes, redistribution of stockpiled topsoil, and reseeding of disturbed areas. Figures 2.8a and 2.8b show how a well pad and access road could be reclaimed. If commercial production equipment is installed, the pad would be reduced in size, with the rest of the original pad reclaimed. Reclamation would include leveling, re-contouring, treating, backfilling, and reseeding. Erosion control measures would be installed. All cut and fill slopes would be hydroseeded with native species and covered with erosion control matting. Silt fences would be placed below fill slopes. Stockpiled topsoil would be redistributed and reseeded as recommended by the BIA. The working part of the well pad and the running surface of the access road would be surfaced with scoria or crushed rock from a previously approved location and erosion control measures would be installed as necessary. The outslope portions of road would be covered with stockpiled topsoil and reseeded with a seed mixture determined by the BIA, reducing the residual access-related disturbance to about 28 feet wide and about 0.36 acre in size for the GuyBlackHawk access road, and about 2.15 acres for the Lawrence access road.

If there is no commercial production from the proposed six wells at each well pad, or upon final abandonment of commercial operations, all disturbed areas would be promptly reclaimed. All facilities would be removed, well bores would be plugged with cement, and dry hole markers would be set. The access road and work areas would be scarified, re-contoured, and re-seeded. An exception to these reclamation measures might occur if the BIA approves assignment of an access road either to the BIA roads inventory or to concurring surface allottees.

Figure 2.8a: Construction of the well pad and access road are minimized to the size necessary to perform drilling and complete operations in a safe manner. Source: USDI-USDA, 2007.

Figure 2.8b: The well pad and access road were reclaimed by returning the land to its original contours, spreading the topsoil, and vegetating the site. Source: USDI-USDA, 2007.

2.9 Preferred Alternative

The preferred alternative is to complete all of the administrative actions and approvals necessary to authorize or facilitate the proposed oil developments previously described. The proposed GuyBlackHawk 24X-27 and the proposed Lawrence 24X-26 well pads would initiate exploration activities with the drilling of one well on each pad. Depending on the success of the initial wells and subsequent wells, up to six wells may be drilled on each single well pad. For the GuyBlackHawk well pad the first well would be named FBIR GuyBlackHawk 24X-27 with additional wells named in succession as FBIR GuyBlackHawk 24X-27B, 24X-27C, 24X-27D, 24X-27E, and 24X-27F. For the Lawrence well pad the first well would be named FBIR Lawrence 24X-26 with additional wells named in succession as FBIR Lawrence 24X-26B, 24X-26C, 24X-26D, 24X-26E, and 24X-26F. The intent would be to drill the additional wells over a period of several years.

The proposed six wells on the GuyBlackHawk 24X-27well pad would be located in the south central portion of Section 27, Township 149N, Range 92W to access one spacing unit (1,280 acres) consisting of Sections 22 and 27, Township 149 north, Range 92 west (Figure 2.9a). Approximately 560 feet of new road construction would be required from an unnamed existing road. Photographs of the proposed road alignment and well pad location are shown in Figures 2.2a and 2.3a. Initial drilling would be vertical to an approximate depth of 9,500 to 10,500 feet. Directional drilling will honor all minimum setback requirements from section lines established by the NDIC. The completed well bores will total about 20,000 to 25,000 feet at a depth of about 10,000 to 11,000 feet, including a 10,000 to 11,500 feet lateral reach in the Bakken.

The surface hole location for the initial GuyBlackHawk 24X-27 well is approximately 2,588 feet FWL and about 663 feet FNL in the SE¼SW¼ of Section 27. The bottom hole target for the initial drilling target is approximately 250 feet FNL and about 2,640 feet FWL on the centerline between the NW¼ and NE¼ of Section 22. Therefore, the bottom hole target in Section 22 is approximately 9,636 feet north of and 41 feet east of the initial surface well. The bottom hole targets of the additional wells that may be drilled from this well pad would be different from the first well. The bottom hole targets would be determined such that optimum reservoir development occurs within each unit and all applicable footage setbacks would be respected.

The proposed six wells on the Lawrence 24X-26 well pad would be located in the SE ¼ of the SW ¼ of Section 26, Township 149N, Range 92W to access one spacing unit (1,280 acres) consisting of Sections 23 and 26 Township 149 north, Range 92 west (Figure 2.9b). Approximately 6,175 feet of new road construction would be required from an unnamed existing road. Photographs of the proposed road alignment and well pad location are shown in Figures 2.2a and 2.3a. Initial drilling would be vertical to an approximate depth of 9,500 to 10,500 feet. Directional drilling will honor all minimum setback requirements from section lines established by the NDIC. The completed well bores will total about 20,000 to 25,000 feet at a depth of about 10,000 to 11,000 feet, including a 10,000 to 11,500 feet lateral reach in the Bakken.

The surface hole location for the initial Lawrence 24X-26 well is approximately 2,325 feet FWL and about 314 feet FSL in the SE¼SE¼ of Section 26. The bottom hole target for the initial drilling target is approximately 250 feet FNL and about 2,638 feet FWL on the centerline between the NW¼ and NE¼ of Section 23. Therefore, the bottom hole target in Section 23 is approximately 9,990 feet north of and 305 feet east of the initial surface well. The bottom hole targets of the additional wells that may be drilled from this well pad would be different from the first well. The bottom hole targets would be determined such that optimum reservoir development occurs within each unit and all applicable footage setbacks would be respected.

Figure 2.9a: Spacing unit (1,280 acres) and bottom hole location for FBIR GuyBlackHawk 24X-27.

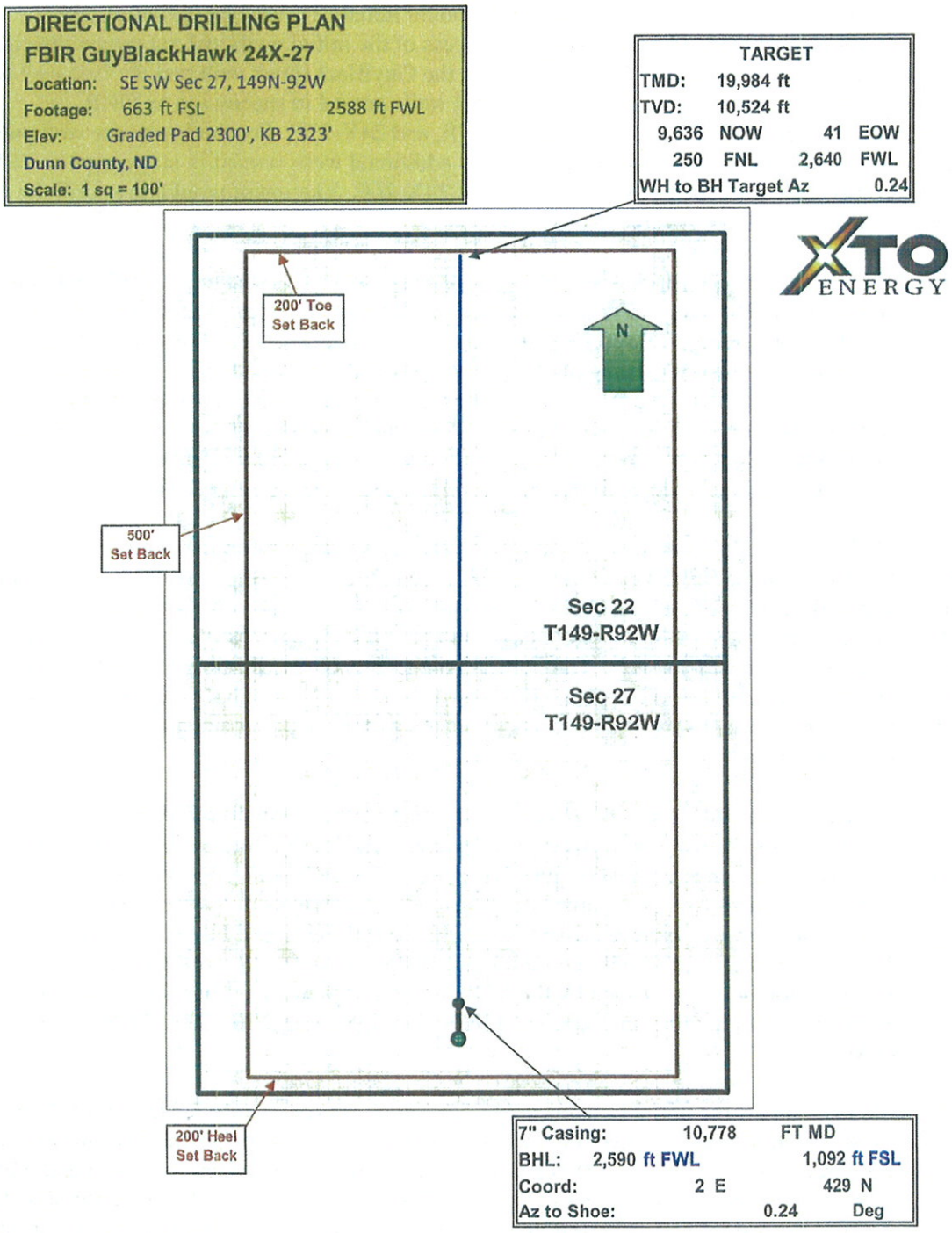
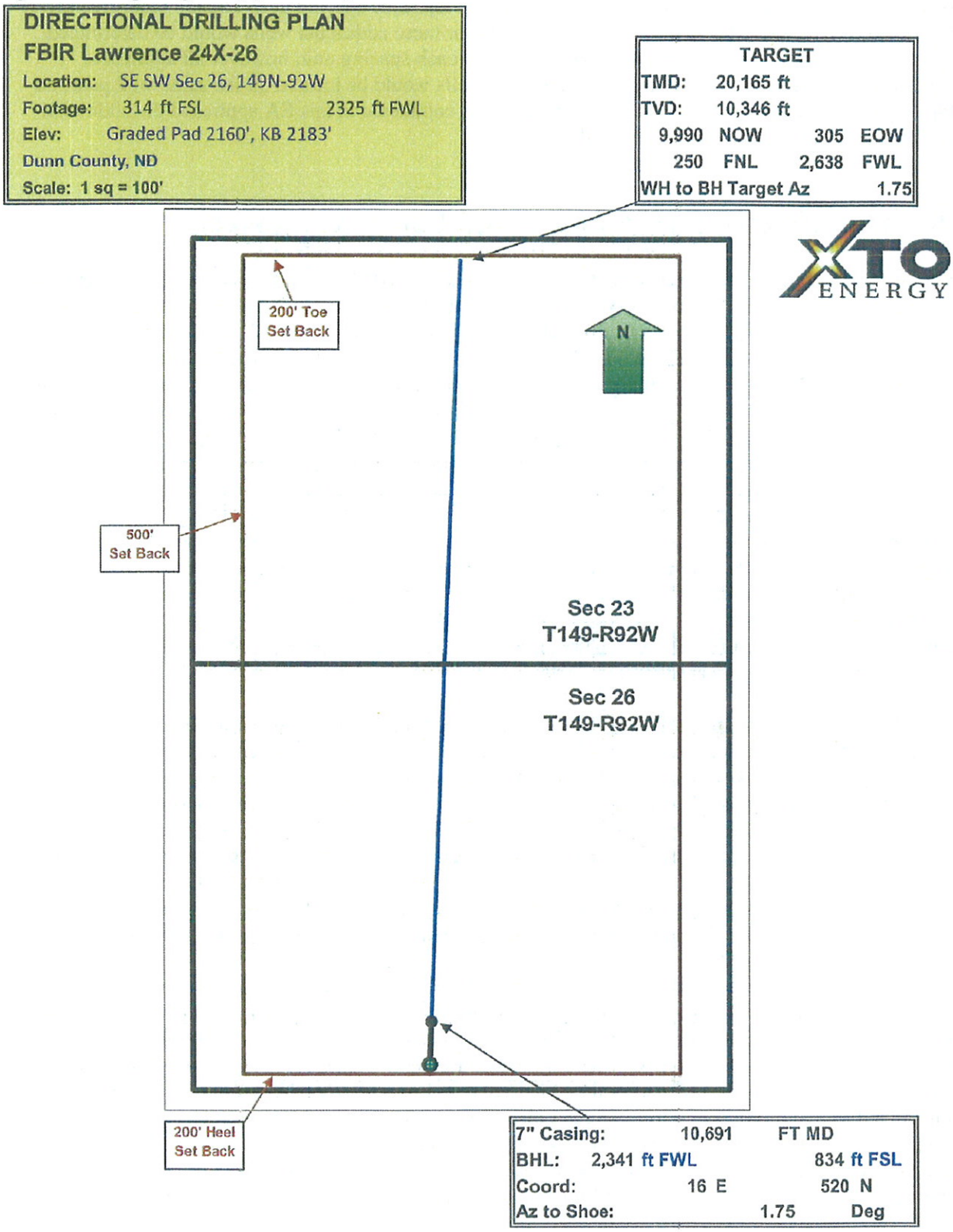


Figure 2.9b: Spacing unit (1,280 acres) and bottom hole location for FBIR Lawrence 24X-26.



The bottom hole targets of the other five additional wells that may be drilled from each of these well pads would be different from the first wells, but would access the same spacing units already identified above and in Figures 2.9a and 2.9b. The bottom hole targets for these additional wells would be determined such that optimum reservoir development occurs within each spacing unit, however all applicable setbacks would be respected. Because the additional wells would be located on the same well pads, no additional surface disturbance would occur; the analysis conducted in this EA applies to the additional five potential wells on each of the two well pads.

3.0 The Affected Environment and Potential Impacts

The Fort Berthold Indian Reservation is the home of the Three Affiliated Tribes of the Mandan, Hidatsa and Arikara Nation (MHA Nation). Located in west-central North Dakota, the reservation encompasses more than a million acres, of which almost half are held in trust by the United States for either the MHA Nation or individual allottees. The remainder of the land not held in trust is owned in fee simple title, sometimes by the MHA Nation or individual tribal members, but usually by non-tribal individuals. The reservation occupies portions of six counties, including Dunn, McKenzie, McLean, Mercer, Mountrail and Ward. The proposed project would take place in Dunn County. In the 1950's much of the land on the Reservation was inundated and the rest divided into three sections by Lake Sakakawea (an impoundment of the Missouri River upstream of the Garrison Dam near Riverdale, North Dakota).

The proposed well pads, associated wells, and access roads would be geologically situated within the Williston Basin, where the shallow structure consists of sandstones, silts, and shales dating to the Tertiary Period (65 million to 2 million years ago), including the Sentinel Butte Formation. The underlying Bakken is a well-known source of hydrocarbons; its middle member is targeted by the proposed projects. Earlier oil/gas exploration activity within the reservation, and near the project site in particular, were technologically limited and commercially unproductive.

Much of the Reservation land surface is included in the Northern Great Plains Level III Ecoregion (Bryce et al. 1996). This unglaciated area extends south and west of the Missouri River and varies from undulating plains to highly dissected, erosional landscape of the Little Missouri Badlands. Within this ecoregion mean annual precipitation ranges between 13 and 17 inches. Mean temperatures fluctuate between -3° and 21° F in January and between 60° and 91° F in July, with 80 to 140 frost-free days each year (Bryce et al. 1996). Lands within the proposed spacing units occur from approximately 2,240 to 2,300 feet above mean sea level. These lands are primarily grasslands and shrublands dissected by woody riparian areas and are currently used primarily for livestock grazing. Both proposed sites for the well pads are gently sloped and situated on a hillside that is elevated (400-500 feet) above Lake Sakakawea.

The broad definition of the human environment under NEPA leads to the consideration of the following elements: air quality, public health and safety, water resources, wetland/riparian habitat, threatened and endangered species, wildlife and fisheries, soils, vegetation and invasive species, cultural resources, socio-economic conditions, and environmental justice. Potential impacts to these elements were analyzed for both the No Action and Proposed Action Alternatives. Impacts may be beneficial or harmful, direct or indirect, and short-term or long-term. The EA also analyzes the potential for cumulative impacts and ultimately makes a determination as to the significance of any impacts. In the absence of significant negative consequences, it should be noted that a significant *benefit* from the project does *not* in itself require preparation of an Environmental Impact Statement.

3.1 The No Action Alternative

Under the No Action Alternative, the proposed project would not be constructed, drilled, installed, or operated. Existing conditions would not be impacted for the following critical elements: air quality, public health and safety, water resources, wetland and riparian habitat, threatened and endangered species, wildlife and fisheries, soils, vegetation and invasive species, and cultural resources. There would be no project-related ground disturbance, use of hazardous materials, or trucking of product to collection areas. Surface disturbance, deposition of potentially harmful biologic material, trucking and other traffic would not change from current levels. Economic benefits to both tribe and many tribal members would remain at the currently depressed levels if exploration and commercial development of available resources were abandoned. Loss of employment and royalty income could affect tribal and individual economies and planning on a large scale.

3.2 Air Quality

This section describes the existing conditions, potential impacts from the Proposed Action, and suggested mitigation measures for air quality resources in the project area.

The North Dakota Department of Health (NDDH) operates a network of ambient air quality monitoring stations. The closest stations that bracket the project site and monitor a full suite of air quality constituents are Dunn Center to the south, TRNP-NU to the west, Lostwood NWR to the north, and Beulah North to the southeast (NDDH 2010). Wind directions are predominantly from the northwest or southeast at Dunn Center and TRNHP-NU, from the south-southwest or northwest at Lostwood, and from northwest, southwest, or southeast at Beulah North (NDDH 2010). The Dunn Center monitoring station is closest to the GuyBlackHawk 24X-27 and Lawrence 24X-26 project sites and is located roughly 30 air-miles to the south-southwest.

Criteria pollutants tracked under the National Ambient Air Quality Standards (NAAQS) of the *Clean Air Act* and the State Ambient Air Quality Standards of North Dakota (SAAQS) include sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), inhalable particulate matter (PM_{10}), and continuous fine inhalable particulate matter (PM_{fine}). Lead (Pb) and carbon monoxide (CO) are not monitored by any nearby monitoring stations. The SAAQS are generally equivalent to, or more stringent than, the NAAQS for most pollutants. The existing air quality at the four monitoring stations did not exceed SAAQS air quality standards in 2009 (Table 3.2). In fact, in 2009 North Dakota was one of thirteen states that met standards for all criteria pollutants (NDDH 2010). The state also met standards for fine particulates and the eight-hour ozone standards established by the U.S. Environmental Protection Agency (EPA) (NDDH 2010).

The *Clean Air Act* mandates prevention of significant deterioration in designated attainment areas. Class I areas are of special national significance and include national parks greater than 6,000 acres in size, national monuments, national seashores, and federally designated wilderness areas larger than 5,000 acres and designated prior to 1977. Both visibility impairment and increases in pollutant concentrations are capped. There is a Class I airshed at Theodore Roosevelt National Park, which covers approximately 110 square miles of land in three units within the Little Missouri National Grassland between Medora and Watford City. This Class I airshed is located roughly 40 air-miles west of the project site. The project site can be considered a Class II attainment airshed, which affords it a lower level of protection from significant deterioration.

Table 3.2: ***Comparison of the North Dakota state ambient air quality standards at four monitoring stations.***[1]

Pollutant (unit[2])	Averaging Period	SAAQS Standard	Monitoring Station			
			Dunn Center	TRNP-NU	Lostwood NWR	Beulah North
SO_2 (ppb)	1-Hour	273	20.1	20.3	57.1	41
	24-Hour	99	6.0	4.0	15.0	7
	Annual Arithmetic Mean	23	0.5	0.6	1.7	1.6
NO_2 (ppb)	Annual Arithmetic Mean	53	1.5	1.0	1.7	2.8
O_3 (ppb)	One exceedance per year (1-Hour)	120	57	58	60	60
$PM_{2.5}$ ($\mu g/m^3$)	24-Hour	35 (NAAQS)	15.0	14.9	18.1	15.0
	Annual Mean	15 (NAAQS)	3.4	3.0	3.8	3.4
PM_{10} ($\mu g/m^3$)	24-Hour	150	54.0	44	31	34.0
	Annual Mean	50	11.3	9.2	8.5	11.0
CO (ppm)	1-Hour	9	--	--	--	--
	8-Hour	35	--	--	--	--
Pb ($\mu g/m^3$)	3-Month	1.5	--	--	--	--

[1] Source: NDDH (2010).
[2] ppb = Parts per billion; ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter

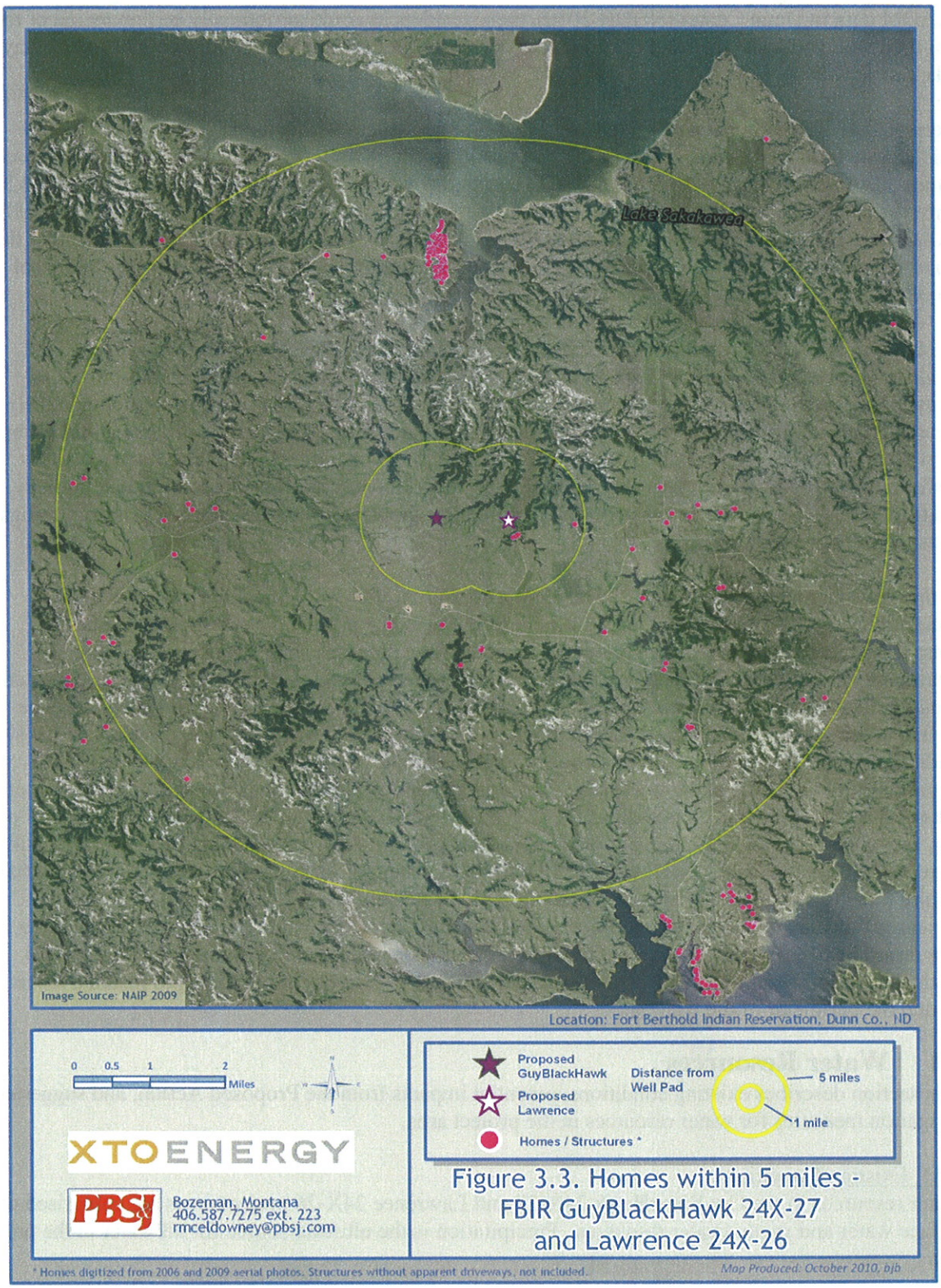
The EPA has Title V permitting responsibilities on the Reservation. Construction would generate temporary and nearly undetectable gaseous emissions of PM_{10} and SO_2. Construction would generate levels of NO_x, CO, and volatile organic compounds (VOCs) that range from nearly undetectable to significant depending upon how much is vented or combusted. Impacts to air quality in the "near field" would not be anticipated. No detectable or long-term impacts on air quality or visibility would be expected within the airsheds of the reservation, park, or state. The Title V permitting process is on-going. XTO would take the necessary steps to reduce and/or control air emissions and would obtain all necessary permits required by the State or Federal Agencies.

3.3 Public Health and Safety

This section describes existing conditions, potential impacts from the Proposed Action, and suggested mitigation measures for public health and safety resources in the project area.

Health and safety concerns include naturally occurring toxic gases, hazardous materials used or generated during installation or production, and traffic hazards from heavy drill rigs and tankers. Hydrogen sulfide (H_2S) is a naturally occurring gas that at low concentrations has a 'rotten egg odor'. For this reason, it is often referred to as 'sour gas'. It is extremely toxic in concentrations above 500 parts per million (ppm); it has not been found in measurable quantities in the Bakken. Before reaching the Bakken, drilling would penetrate the Mission Canyon Formation, which is known to contain varying concentrations of hydrogen sulfide (H_2S). Release of H_2S at dangerous concentrations is considered very unlikely, but H_2S Contingency Plans submitted to the BLM establish precautions and emergency response plans for both the drilling crew and the public. These plans comply fully with relevant portions of *Onshore Oil and Gas Order 6*. Precautions include automated sampling and alarm systems operating continuously at multiple locations on the well pad. No direct impacts from H_2S are anticipated.

Interpretation of 2009 aerial photography revealed no residences within a one-mile radius and 145 residences within a five-mile radius of the proposed GuyBlackHawk pad (Figure 3.3). The four closest homes occur at a distance of 1.04 to 1.41 miles east and south from the proposed well pad (Figure 3.3).


Lake Sakakawea
Image Source: NAIP 2009
Location: Fort Berthold Indian Reservation, Dunn Co., ND
0 0.5 1 2
Miles
XTOENERGY
PBSJ
Bozeman, Montana
406.587.7275 ext. 223
rmceldowney@pbsj.com
Proposed GuyBlackHawk
Proposed Lawrence
Homes / Structures *
Distance from Well Pad
5 miles
1 mile
Figure 3.3. Homes within 5 miles - FBIR GuyBlackHawk 24X-27 and Lawrence 24X-26
* Homes digitized from 2006 and 2009 aerial photos. Structures without apparent driveways, not included.
Map Produced: October 2010, bjb

Since the prevailing wind directions are from the west, northwest, or southeast, according to the 2009 SAAQM data in Dunn Center (NDDH 2010), these residences could periodically be downwind of the proposed well pad. The majority of residences occur north of the site along the shores of Skunk Bay on Lake Sakakawea.

Interpretation of 2009 aerial photography revealed four residences within a one-mile radius and 136 residences within a five-mile radius of the proposed Lawrence well pad (Figure 3.3). The four closest homes occur at a distance of 0.23 to 0.87 mile east and south from the proposed well pad (Figure 3.3). Since the prevailing wind directions are from the west, northwest, or southeast, according to the 2009 SAAQM data in Dunn Center (NDDH 2010), these residences could periodically be downwind of the proposed well pad. The majority of residences occur north-northwest of the site along the shores of Skunk Bay on Lake Sakakawea.

The EPA specifies chemical reporting requirements under Title III of the *Superfund Amendments and Reauthorization Act* (SARA) of 1986, as amended. No materials used or generated by this project for production, use, storage, transport, or disposal are on either the SARA list or on EPA's list of extremely hazardous substances in 40 CFR 355. Project design and operational precautions mitigate against impacts from toxic gases, flaring, hazardous materials and traffic. All operations, including flaring, would conform to instructions from BIA fire management staff. Impacts are considered minimal, unlikely, and insignificant. No laws, regulations or other requirements have been waived; no compensatory mitigation measures are required.

At the well site and access road any adverse impacts from traffic would be temporary and then intermittent. Noise, fugitive dust, and traffic hazards would be present for about 60 days during construction, drilling and well completion, and would then diminish sharply during commercial operations. Initially, approximately 50 trips to and from the site over several days could be expected to transport the drill rig and associated equipment to the site. A similar number of trips would also be needed to remove the drill rig and other temporary facilities once the drill rig is removed from the site. Additionally, relatively more activity could be expected at the site during each successive drilling operation (up to 6 wells) at the well pads than during on-going production. Actual potential production is unknown at this time, but other wells in the area have initially produced 500 to 1,000 barrels of oil per day, as well as roughly 200 barrels of water per day. Assuming that an oil tanker can typically haul 140 barrels of oil per load and a water tanker 110 barrels of water per load, production service may initially require three to seven oil tankers and two to three water tankers per day. Over time, as production decreases this may decline to two to three oil tankers and one water tanker per day. Dust would be suppressed as necessary or as required by the BIA to reduce impacts, both during construction and production. Contingent upon consent of the landowner, XTO Energy is proposing to install a fence around the perimeter of the well pad.

3.4 Water Resources

This section describes existing conditions, potential impacts from the Proposed Action, and suggested mitigation measures for water resources in the project area.

3.4.1 Existing Conditions

Water resources in the GuyBlackHawk 24X-27 and Lawrence 24X-26 project areas are comprised of surface water and groundwater resources. Precipitation is the ultimate source for all water in the project area.

Precipitation

Based on 58 years of data at the closest active weather station (Keene 3 S, ND) to the project area, the average annual precipitation in the area is 15.67 inches (in) (HPRCC 2010a). Precipitation in May, June,

and July typically accounts for roughly 50% of the annual precipitation, with the month of June averaging the highest precipitation (3.29 in). Annual snowfall averages 34.80 in, with the majority of snow falling between November and March. December and January typically have the most snowfall, averaging 6.4 and 7.3 in, respectively (HPRCC 2010a). During the 2010 growing season (May – September), evapo-transpiration typically ranged between 0.10 in/day and 0.42 in/day (HPRCC 2010b).

Surface Water

The project area is located within the Lake Sakakawea sub-basin (Hydrologic Unit Code [HUC] #10110101) (NDSWC 2009) which has a drainage area of approximately 6,790 square miles (USGS 2010). Lake Sakakawea was created by the damming of the Missouri River with the Garrison Dam in 1956. Measuring over 368,000 acres and 178 miles long it is the third largest man-made reservoir in the United States after Lake Mead and Lake Powell (NDLSSP 2008). The proposed well pads occur in the Independence Point watershed, within the Skunk Creek sub-watershed (NDSWC 2009). All streams in this sub-watershed drain to Lake Sakakawea (Figure 3.4a).

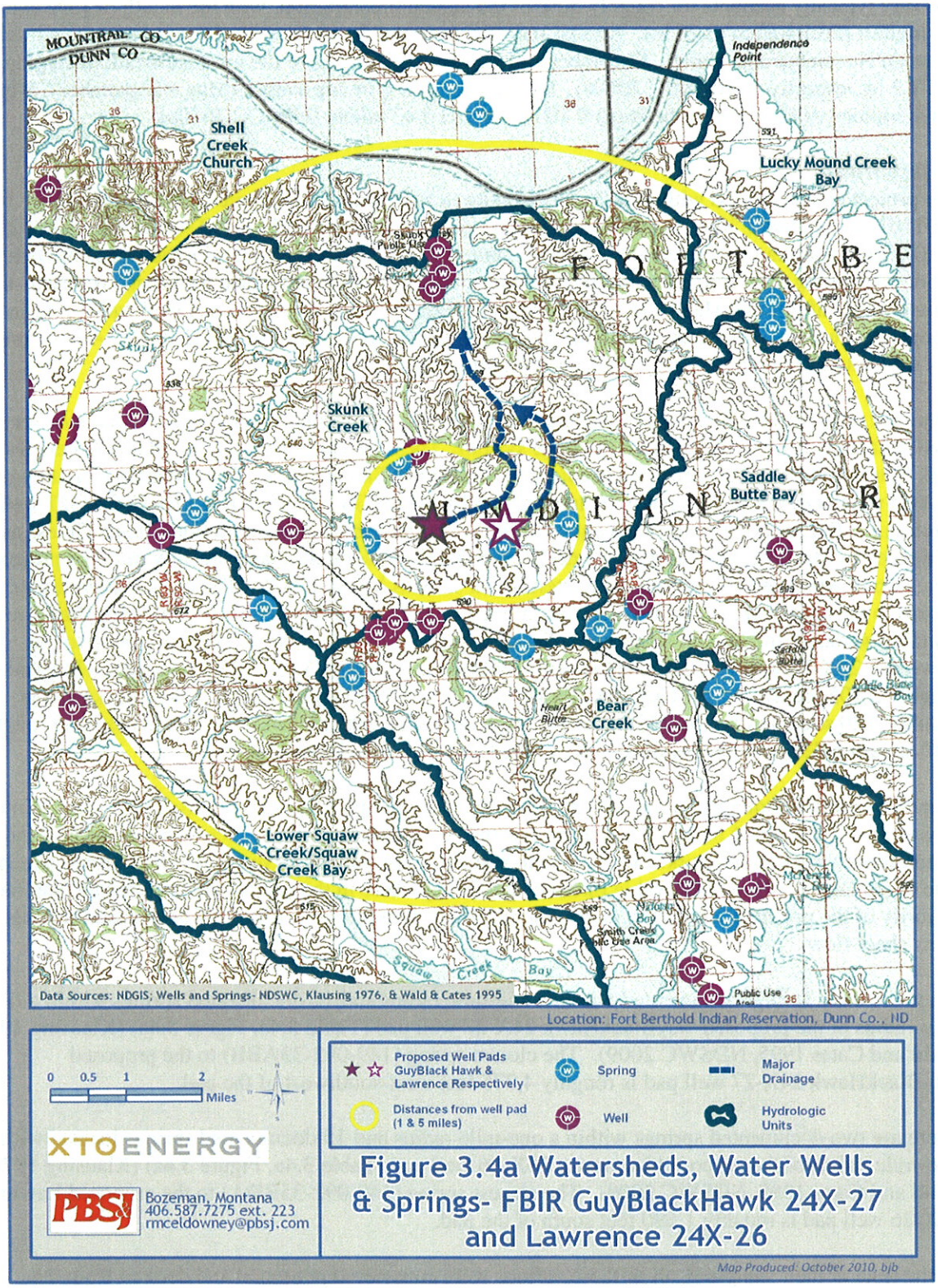
There are three streams in the sub-watershed considered to be perennial by the U.S. Geological Service (USGS) and all are part of the same drainage system. These perennial streams are Skunk Creek, South Fork Skunk Creek, and an unnamed tributary to South Fork Skunk Creek. The remaining 27 streams in the sub-watershed are considered to be intermittent by the USGS. The GuyBlackHawk 24X-27 well pad is roughly 4,022 feet east of the headwaters of the perennial tributary to South Fork Skunk Creek, as evidenced by standing water in the channel (Figure 3.4b). Several drainages occur within the project area, two of which are considered to be intermittent streams by the USGS. The closest intermittent stream to the project area is located just east of the Lawrence 24X-26 well pad. This same drainage contains wetlands and several standing bodies of water (e.g., stock ponds). The stock pond to the Lawrence 24X-26 well pad is located roughly 340 feet east (Figure 3.4b). Water was also observed roughly 3,305 feet east of the GuyBlackHawk 24X-27 well pad (Figure 3.4b). Lake Sakakawea is roughly 3.20 stream miles, or 2.12 air miles, north of the GuyBlackHawk 24X-27 well pad and roughly 3.59 stream miles, or 2.16 air miles, north of the Lawrence 24X-26 well pad.

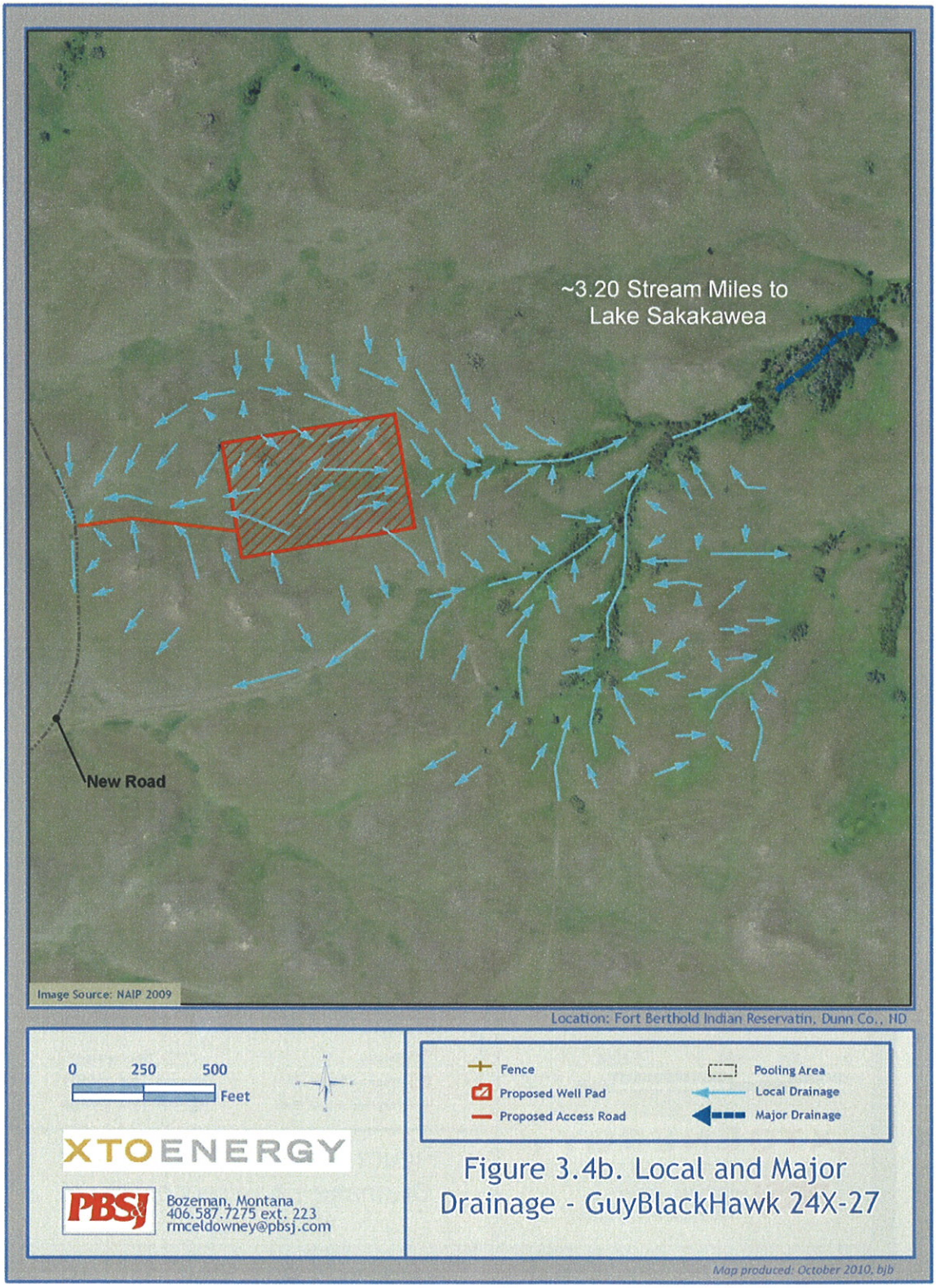
Vegetated swales dominated by snowberry (*Symphoricarpos* spp.) and mesic grass species occur in the project area, but none of these swales show evidence of channelized flow, such as a defined bed and bank or an ordinary high water mark. Bed and bank features were only observed in the intermittent streams. Due to the lack of rills or observable micro-channels anywhere in the project area, it appears that the majority of the precipitation falling on the site infiltrates into the soil. If run-off does occur, it is likely to be as sheet-flow.

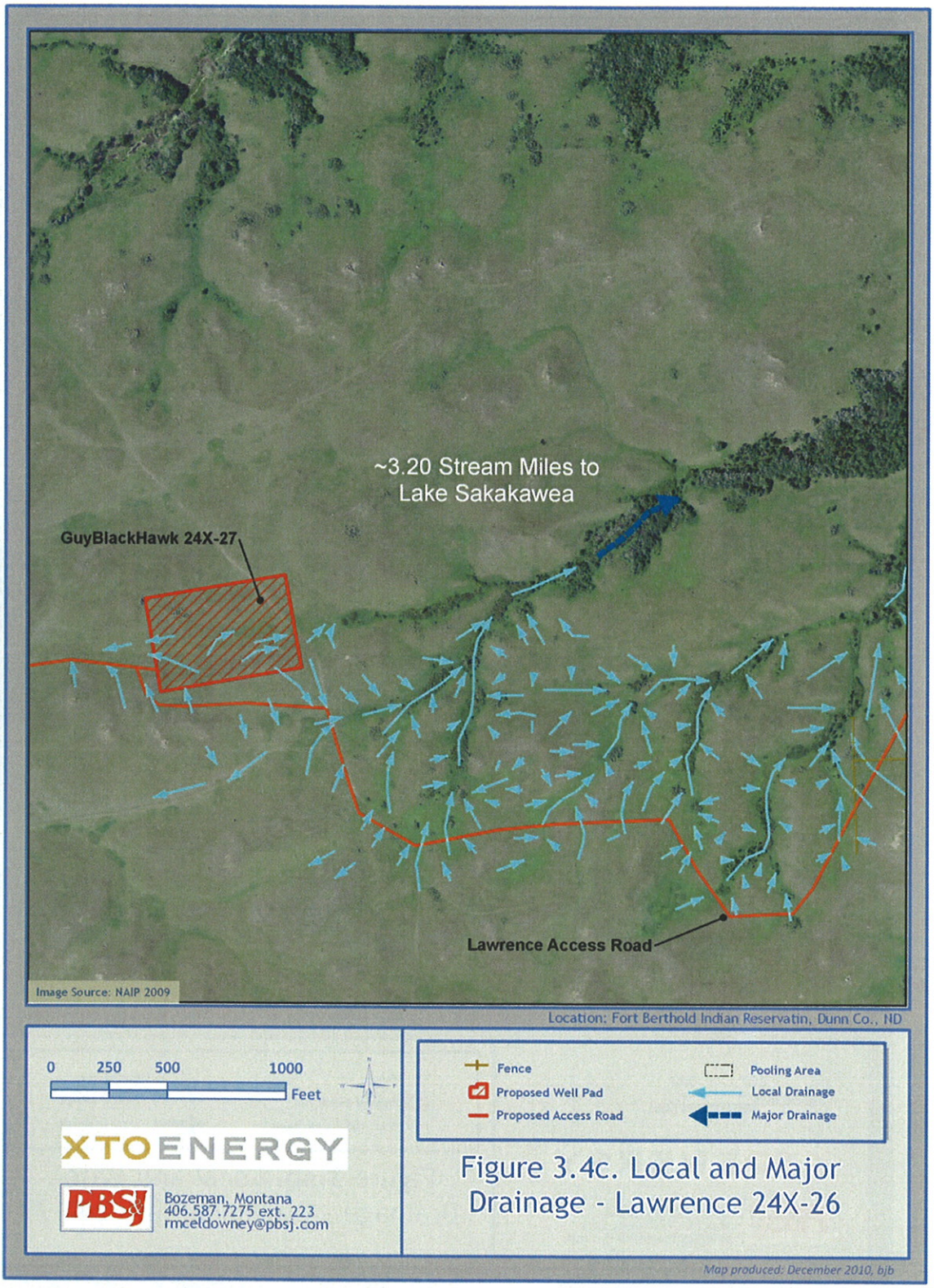
There are three springs documented within a one-mile radius and 12 documented springs within a five-mile radius of the proposed GuyBlackHawk 24X-27 well pad (Table 3.4a, Figure 3.4a) (Klausing 1976, Wald and Cates 1995, NDSWC 2009). The closest spring (149-092-33ABB) to the proposed GuyBlackHawk 24X-27 well pad is roughly 4,775 feet west-southwest of the pad.

There are two documented springs within a one-mile radius and 15 documented springs located within a five-mile radius of the proposed Lawrence 24X-26 well pad (Table 3.4a, Figure 3.4a) (Klausing 1976, Wald and Cates 1995, NDSWC 2009). The closest spring (149-092-35BDA) to the proposed Lawrence 24X-26 well pad is roughly 1,590 feet south of the pad.

At the time of their sampling, all of these springs were considered perennial and derived from the Paleocene Sentinel Butte Formation (Klausing 1976, Wald and Cates 1995). Spring water temperatures in the project vicinity have historically ranged from 49° to 52°F (Klausing 1976).


MOUNTRAIL CO
DUNN CO
Independence Point
Shell Creek Church
Lucky Mound Creek Bay
Skunk Creek
Saddle Butte Bay
Bear Creek
Lower Squaw Creek/Squaw Creek Bay
Squaw Creek Bay
Data Sources: NDGIS; Wells and Springs- NDSWC, Klausing 1976, & Wald & Cates 1995
Location: Fort Berthold Indian Reservation, Dunn Co., ND
0 0.5 1 2 Miles
XTOENERGY
PBSJ
Bozeman, Montana
406.587.7275 ext. 223
rmceldowney@pbsj.com
Proposed Well Pads GuyBlack Hawk & Lawrence Respectively
Distances from well pad (1 & 5 miles)
Spring
Well
Major Drainage
Hydrologic Units
Figure 3.4a Watersheds, Water Wells & Springs- FBIR GuyBlackHawk 24X-27 and Lawrence 24X-26
Map Produced: October 2010, bjb


~3.20 Stream Miles to
Lake Sakakawea
New Road
Image Source: NAIP 2009
Location: Fort Berthold Indian Reservatin, Dunn Co., ND
0 250 500
Feet
XTOENERGY
PBSJ
Bozeman, Montana
406.587.7275 ext. 223
rmceldowney@pbsj.com
Fence
Proposed Well Pad
Proposed Access Road
Pooling Area
Local Drainage
Major Drainage
Figure 3.4b. Local and Major Drainage - GuyBlackHawk 24X-27
Map produced: October 2010, bjb


~3.20 Stream Miles to
Lake Sakakawea
GuyBlackHawk 24X-27
Lawrence Access Road
Image Source: NAIP 2009
Location: Fort Berthold Indian Reservatin, Dunn Co., ND
0 250 500 1000
Feet
Fence
Proposed Well Pad
Proposed Access Road
Pooling Area
Local Drainage
Major Drainage
XTOENERGY
PBSJ
Bozeman, Montana
406.587.7275 ext. 223
rmceldowney@pbsj.com
Figure 3.4c. Local and Major Drainage - Lawrence 24X-26
Map produced: December 2010, bjb

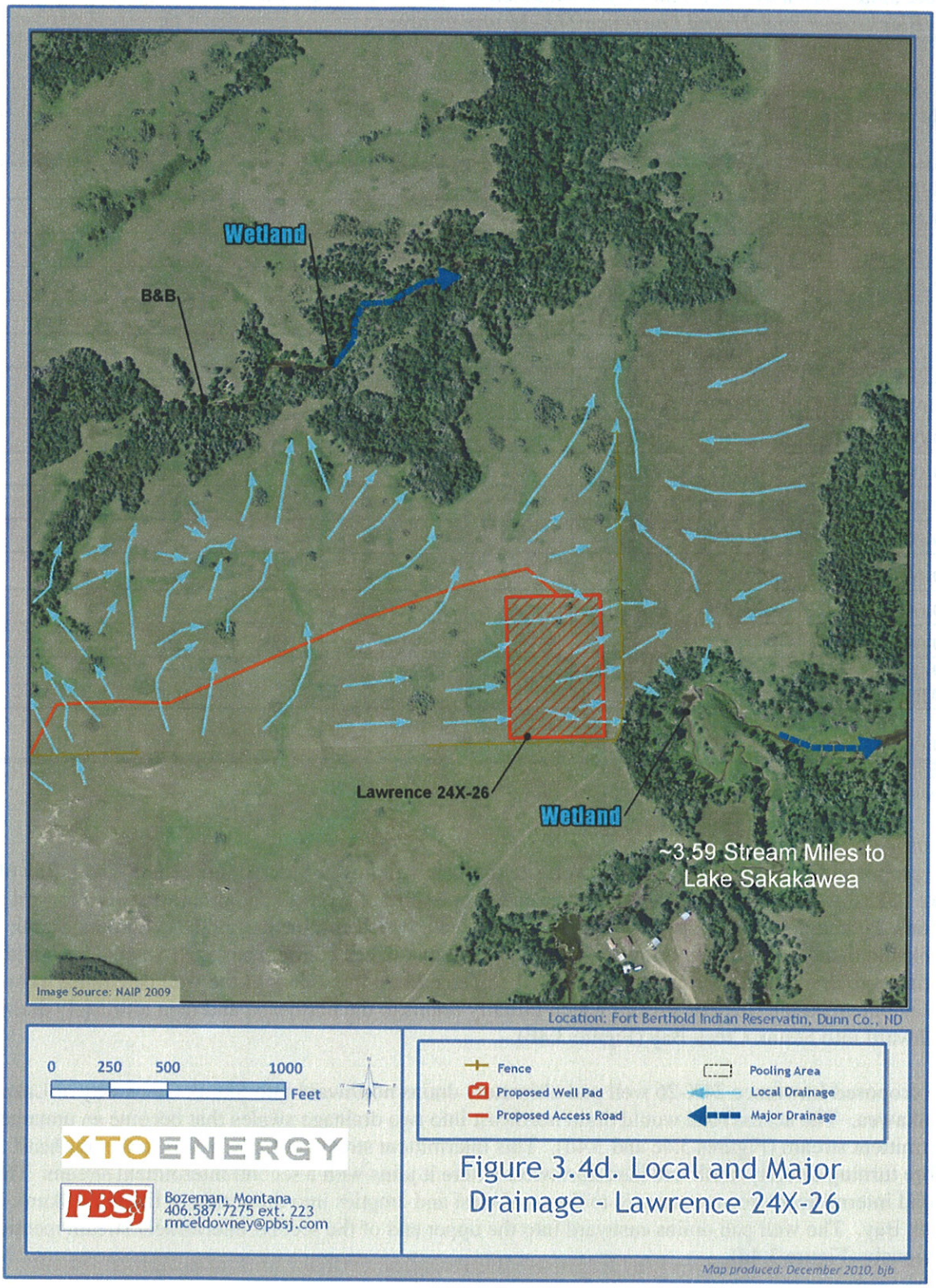

Wetland
B&B
Lawrence 24X-26
Wetland
~3.59 Stream Miles to Lake Sakakawea
Image Source: NAIP 2009
Location: Fort Berthold Indian Reservatin, Dunn Co., ND
0 250 500 1000
Feet
Fence
Proposed Well Pad
Proposed Access Road
Pooling Area
Local Drainage
Major Drainage
XTOENERGY
PBSJ
Bozeman, Montana
406.587.7275 ext. 223
rmceldowney@pbsj.com
Figure 3.4d. Local and Major Drainage - Lawrence 24X-26
Map produced: December 2010, bjb

Table 3.4a: ***Summary information for documented springs located within 5 miles of the proposed GuyBlackHawk 24X-27 and Lawrence 24X-26 project areas.***

Spring Identification	Sample Date	Lithology	Flow Rate (gal/min)	Specific Conductance (µmhos/cm)	Temp. (°C)	Distance from Well Pad Center (miles)	
						Guy-BlackHawk	Lawrence
148-091-07BAA	8/3/1972	--	3	1,800	8	>5.00	4.86
148-092-03ABA	8/3/1972	--	6	1,350	9.5	2.91	2.04
148-092-04CBD	8/8/1950	Coal	36	447	8	2.24	1.86
148-092-11AAC	8/3/1972	Coal	8	461	8	4.41	3.59
148-092-11ACA	8/8/1950	Coal	2.9	550	9.5	4.36	3.56
148-093-01DDC	8/2/1972	Sandstone	24	497	8	2.30	2.86
148-093-23BADB	11/20/1992	--	--	4,510	9	4.93	>5.00
149-091-16BBB	8/16/1972	Coal	5	1,800	11	>5.00	4.59
149-091-16BCB	8/16/1972	Coal	6	1,250	11.5	>5.00	4.43
149-091-16BCC	8/16/1972	Coal	4	1,400	9.5	>5.00	4.38
149-092-25CDC	8/2/1972	--	8	700	--	1.78	0.82
149-092-27BBB	8/2/1972	Coal	50	553	10	0.92	1.63
149-092-30CAB	8/3/1972	Coal	15	1,690	8.5	3.14	4.09
149-092-32CCD	8/4/1972	--	--	1,500	9.5	2.51	3.38
149-092-33ABB[1]	None	--	--	--	--	0.90	1.84
149-092-35BDA	11/8/1950; 8/2/1972	Coal	80	825; 725	10	0.97	0.30

[1] USGS 7.5 minute topographic quadrangle.
Sources: Klausing 1976; Wald and Cates 1995; NDSWC 2010.

Existing Onsite Drainage

The proposed GuyBlackHawk 24X-27 well site ultimately drains northward into Skunk Creek Bay of Lake Sakakawea. The access road and the western one-third of the well pad drain westward toward the unnamed perennial tributary to South Fork Skunk Creek, which confluences with South Fork Skunk Creek and then drains to the northwest. South Fork Skunk Creek confluences with Skunk Creek and continues to drain to the northwest (Figure 3.4b). The eastern two-thirds of the well pad drains eastward into an unnamed intermittent stream, which initially drains to the northeast, and then ultimately drains northward into Skunk Creek Bay (Figure 3.4b).

The proposed Lawrence 24X-26 well pad ultimately drains northward into Skunk Creek Bay of Lake Sakakawea. The access road would drain northeast into two drainage swales that become an unnamed intermittent stream (Figures 3.4c and 3.4d). This intermittent stream initially drains to the northeast before turning directly north and then northwest where it joins with a second intermittent stream. This second intermittent stream continues to the northwest and empties into the southern finger of Skunk Creek Bay. The well pad drains eastward into the upper end of the second intermittent stream mentioned previously (Figure 3.4d).

General Groundwater Considerations

Aquifers in Dunn County occur in five main pre-glacial formations, including the Upper Cretaceous Fox Hills and Hell Creek formations and the Tertiary Cannonball-Ludlow, Tongue River and Sentinel Butte

formations (Table 3.4b). Aquifers in the Fox Hills and Hell Creek formations occur at the deepest depths, while aquifers in the Tongue River and Sentinel Butte formations occur at shallower depths. Glacial drift aquifers also occur in Dunn County and overlay the Sentinel Butte aquifer. While smaller glacial drift aquifers may occur in the project vicinity, the only large, mapped aquifers in the area on the south side of the lake are located roughly 9.5 miles and 10.4 miles, respectively, west of the proposed GuyBlackHawk 24X-27 and Lawrence 24X-26 well pads (NDSWC 2009). The Goodman Creek Aquifer is located approximately 12.6 miles and 12.5 miles south, respectively, from the GuyBlackHawk 24X-27 and Lawrence 24X-26 well pads (Klausing 1979). Two other mapped aquifers occur on the far side (north) of the lake from the project area (NDSWC 2009).

Table 3.4b. ***Characteristics of pre-glacial aquifers occurring in Dunn County, North Dakota.***

Formation Name	**Lithology**	**Max. Thickness** (ft)	**Depth to Top of Formation** (ft)	**Water Yield** (gpm)
Sentinel Butte	Clay, claystone, shale, sandstone, siltstone, and lignite.	670	0 - 700	5 – 100 (sandstone) 1 – 200 (lignite)
Tongue River	Clay, claystone, shale, sandstone, siltstone, and lignite.	490	230 - 750	<100
Undifferentiated Cannonball-Ludlow	Cannonball - marine sandstone, clay, shale, and siltstone. Ludlow - continental siltstone, sandstone, shale, clay, and lignite.	660	570 – 1,130	<50
Hell Creek	Siltstone, sandstone, shale, claystone, and lignite	300	1,150 – 1,730	5 - 100
Fox Hills	Sandstone, shale, and siltstone	300	1,330 – 1,960	<200 - 400

Source: Klausing 1979.

There are 14 documented, producing water wells occurring within a five-mile radius of the proposed GuyBlackHawk well pad, and 13 documented within five miles of the Lawrence well pad (Figure 3.4a, Table 3.4c). The closest documented well (149-092-22CDC) to the GuyBlackHawk well pad is located approximately 5,070 feet north of the proposed well pad. The closest documented well to the Lawrence well pad is also well #149-092-22CDC, and is located approximately 7,970 feet northwest of the proposed well pad.

Table 3.4c: ***Information on locations of documented water wells that occur within a 5-mile radius of the proposed GuyBlackHawk 24X-27 and Lawrence 24X-26 well pads.***

Well Identification	Distance to Well from Center of Well Pad (miles)	
	GuyBlackHawk	Lawrence
148-092-03ABA	2.91	2.04
148-092-06AAD	1.30	1.61
148-092-06BAD	1.40	1.95
148-092-06BCA	1.62	2.20
148-092-06BDB	1.56	2.11
148-092-11CCB	4.16	3.48
149-091-33BCC	4.59	3.64
149-092-10ACAA	3.59	3.71

Table 3.4c (continued): ***Information on locations of documented water wells that occur within a 5-mile radius of the proposed GuyBlackHawk 24X-27 and Lawrence 24X-26 well pads.***

Well Identification	Distance to Well from Center of Well Pad (miles)	
	GuyBlackHawk	Lawrence
149-092-10DABC	3.29	3.41
149-092-10DCBB	3.08	3.25
149-092-22CDC	0.96	1.51
149-092-29DCC	1.88	2.84
149-093-24AC	4.16	>5.00
149-093-25DDD	3.58	4.53

Sources: Klausing 1976; Wald and Cates 1995, NDSWC 2010.

3.4.2 Water Resources Impacts

Construction and reclamation techniques included in the APD would minimize potential for impacts to both groundwater and surface water. The proposed project sites have been located to avoid direct and indirect impacts to surface water and to minimize the disruption of local drainages. Potential impacts to surface waters at the GuyBlackHawk 24X-27 well site are unlikely, primarily due to the long distance that would be traversed before a contaminant could enter a receiving waterbody and because of a lack of defined channels in the project vicinity and onsite containment measures and spill prevention/clean-up protocols. Potential impacts to surface waters at the Lawrence 24X-26 well site are also unlikely for the same reasons; however, the potential risk is slightly higher because there is a drainage immediately east of the Lawrence well pad. Impacts to the water quality of Lake Sakakawea are extremely unlikely. Roadway engineering and erosion control measures would mitigate migration of sediment downhill or downstream. No measurable increase in run-off or impacts to surface waters is expected.

The water quality of local aquifers would be protected by cementing the casings across aquifer zones. The cuttings and catch-all pits would be lined with an impermeable barrier. For these reasons the dewatering or contamination of local springs or groundwater resources would be unlikely. No significant impacts to surface water or groundwater are expected as a result of the proposed actions.

3.4.3 Water Resources Mitigation

The well bore of each well would be drilled with water to a point below the base of the Fox Hills formation prior to setting casing; this would prevent contamination of the formation. Surface casing would be cemented in place to a depth of about 1,500 to 2,500 feet, isolating aquifers in the Fox Hills Formation and extending a minimum of 50 feet into the underlying Greenhorn Formation. Intermediate casing would extend from the surface and be cemented between about 4,000 and 13,000 feet in depth to isolate potentially productive water and hydrocarbon bearing zones. A semi-closed loop system would be used for all drilling activities. Any produced water would be captured in tanks on site and periodically trucked to an approved disposal site. The frequency of trucking of either oil or water would depend upon production rates. The BIA and BLM would monitor all operations and record keeping at their discretion. Evidence of groundwater contamination related to the project would result in a stop work order until all appropriate measures were identified and implemented. No applicable laws or regulations would be waived; no compensatory mitigation measures are required to protect surface water or groundwater.

3.5 Wetland and Riparian Habitats

This section describes existing conditions, potential impacts from the Proposed Action, and suggested mitigation measures for wetland and riparian resources in the project area.

National Wetland Inventory maps, maintained by the U.S. Fish and Wildlife Service (USFWS), did not identify any jurisdictional wetlands within the proposed GuyBlackHawk 24X-27 and Lawrence 24X-26 project sites (USFWS 2010a). Physical inventories conducted on July 14-15, 2010 confirmed that there are no wetland habitats within the proposed well pads and access routes. Wetlands were observed outside of the project area in the drainage east of the Lawrence well pad (Figure 3.5) and in the drainage north of the access road to the Lawrence well pad (see Figure 3.7c). Riparian habitat is not present within the proposed well pads and access routes; however, they do occur in near-by drainages (Figures 3.7b-d).

Figure 3.5: View is north at wetlands occurring in the drainage directly east of the Lawrence 24X-26 well pad. The left photo shows a seep wetland on the hillside. The right photo shows a wetland in the bottom of the drainage. Source: PBS&J, July 14, 2010.

3.6 Threatened, Endangered, and Candidate Species

This section describes existing conditions, the potential impacts from the Proposed Action, and suggested mitigation measures for threatened and endangered species in the project areas.

3.6.1 Existing Conditions

Threatened and endangered (TE) plant and animal species are designated by the USFWS under the guidance of the *Endangered Species Act*. Based on the USFWS (2010b) list of *County Occurrence of Endangered, Threatened, and Candidate Species and Designated Critical Habitat in North Dakota*, range/habitat descriptions found in technical literature, North Dakota Natural Heritage Program database searches for the FBIR (NDPR 2010), and an interview with the Fort Berthold Fish & Game Director (Poitra 2010), the following eight species were considered with respect to this project (Table 3.6).

The North Dakota Natural Heritage Program biological conservation database had no known historical or current occurrences of plant or animal species of concern within the project area (NDPR 2010). Based on this information, available reports, conversations with a local biologist, and the absence of critical, essential, or designated habitat, the likelihood of listed species to occur in the project area range from unknown to unlikely to none.

Table 3.6: ***List of threatened, endangered, and candidate species for Dunn County, North Dakota.***

Common Name	Scientific Name	Designation	Critical Habitat
Black-footed Ferret	*Mustela nigripes*	Endangered	No
Gray Wolf	*Canis lupus*	Threatened	No
Interior Least Tern	*Sterna antillarum*	Endangered	No
Piping Plover	*Charadrius melodus*	Threatened	Yes
Whooping Crane	*Grus Americana*	Endangered	No
Pallid Sturgeon	*Scaphirhynchus albus*	Endangered	No
Dakota Skipper	*Hesperia dacotae*	Candidate	No
Sprague's Pipit	*Anthus spragueii*	Candidate	No

***Black-footed ferret (Mustela nigripes)*: Endangered**

Black-footed ferrets primarily feed on prairie dogs (*Cynomys* spp.) and use prairie dog burrows for shelter (MTNHP 2010). Inventories within the project sites conducted on July 14-15, 2010 did not find any active or inactive prairie dog colonies. Black-footed ferrets have not been documented on the FBIR (Poitra 2008; NDPR 2010). Impacts to black-footed ferrets are not expected, given the lack of occurrence, food source, and habitat.

***Gray wolf (Canis lupus)*: Threatened**

The project area does not contain preferred gray wolf habitat or a suitable prey base to sustain a permanent pack. Reported occurrences of gray wolves on the FBIR are infrequent; about 1-2 sightings occur each year near the Little Missouri River, which is west of the FBIR (Poitra 2010). No established packs have been documented or are suspected to occur on the FBIR (Poitra 2010; NDPR 2010). It is highly unlikely that wolves would colonize the project area, given its poor wolf habitat, unreliable food supplies, and the long distance from known populations in Minnesota, Canada, Montana, and Wyoming. No impacts to gray wolves are expected within the project site.

***Interior Least Tern (Sterna antillarum)*: Endangered**

In the northern United States, the Interior Least Tern is known to nest along midstream sandbars of the Missouri and Yellowstone Rivers (USFWS 2008). The breeding season extends from May through August in North Dakota, with a nesting season from mid-June to mid-July in North Dakota (USFWS 2008). Lake Sakakawea is not a major nesting area for Least Terns; however, tern nesting does occur in Douglas Creek Bay, Elbowwoods Bay, Deepwater Bay, Van Hook Arm, Hofflund Bay, and Tobacco Garden Bay (USACE 2007).

- Guy Blackhawk 24X-27: The closest and most recent known Least Tern nest site was in 2010 on Pouch Point, 6.4 air-miles north-northeast of the proposed project area (USACE 2010). The July 14-15, 2010 inventories found no sightings or potential nesting or foraging habitats within a 0.5 mile radius of the proposed well pad and access road. No impacts to the Interior Least Tern are expected.
- Lawrence 24X-26: The closest and most recent known Least Tern nest site was in 2010 on Pouch Point, 6.3 air-miles north-northeast of the proposed project area (USACE 2010). The July 14-15, 2010 inventories found no sightings or potential nesting or foraging habitats within a 0.5 mile radius of the proposed well pad and access road. No impacts to the Interior Least Tern are expected.

***Piping Plover (Charadrius melodus)*: Threatened**

Piping Plovers nest on barren sand and gravel shores of islands, lakes, and rivers along the Missouri River in North Dakota (USFWS 2009a). The breeding season in North Dakota extends from mid-April through August. Piping Plover critical habitat for the Northern Great Plains population was designated by the USFWS (67 FR 57638) in September 2002 (USACE 2007). Designated areas of critical habitat include prairie alkali wetlands and adjacent shorelines, river channels, sandbars, islands, reservoirs, and inland lakes, and sparsely vegetated shorelines, peninsulas, and islands associated with reservoirs and inland lakes. Piping Plover critical habitat supports all life history requirements including courtship, nesting, foraging, sheltering, brood-rearing, and dispersal habitats.

- Guy Blackhawk 24X-27: The closest reach of Piping Plover critical habitat is Lake Sakakawea, approximately 2.1 air-miles north-northeast of the proposed project area. There is no line of sight between the project area and critical habitat.
- Lawrence 24X-26: The closest reach of Piping Plover critical habitat is Lake Sakakawea, approximately 2.2 air-miles north-northwest of the proposed project area. There is no line of sight between the project area and critical habitat.

Major nesting areas within Lake Sakakawea include Douglas Creek Bay, Arikara Bay, Deepwater Bay, Van Hook Arm, Van Hook islands, Hofflund Bay, Little Egypt, Red Mike Bay, Renner Bay, and the northeast part of Mallard Island through DeTrobriand Bay (USACE 2007). Minor plover nesting areas include Elbowwoods Bay, Beacon Island, White Earth Bay, Tobacco Garden Bay, Beacon Point, Antelope Creek, Independence Point, and Beaver Creek Bay.

- Guy Blackhawk 24X-27: The closest and most recent known Piping Plover nest site was in 2010 on Pouch Point, 5.4 air-miles north-northeast of the proposed project site, along the north shore of Lake Sakakawea (USACE 2010). The July 14-15, 2010 inventories found no sightings or potential nesting or foraging habitats within a 0.5 mile radius of the proposed well pad and access road. No impacts to the Piping Plover are expected.
- Lawrence 24X-26: The closest and most recent known Piping Plover nest site was in 2010 on Pouch Point, 5.3 air-miles north of the proposed project site, along the north shore of Lake Sakakawea (USACE 2010). The July 14-15, 2010 inventories found no sightings or potential suitable nesting or foraging habitats within a 0.5 mile radius of the proposed well pad and access road. No impacts to the Piping Plover are expected.

***Whooping Crane (Grus Americana)*: Endangered**

Whooping Cranes breed in Alberta and Northwest Territories, Canada, and overwinter on the Texas coast (USFWS 2010c). They annually migrate through North Dakota during the spring and fall, making numerous stops to feed and roost before resuming migration. In North Dakota, peak migration occurs around April 19 and October 18 for the spring and fall migrations, respectively (Tetra Tech 2010). The proposed well sites occur within the 75% confirmed sightings band of the North Dakota Whooping Crane

migration corridor (Tacha 2010; USFWS 2010d). However, based on the crane population and their average flight distances, it is estimated that as little as 4% of crane stopovers are reported. This is because the migration corridor is sparsely population by people, observations may not be identified to the species, identified observations may not be reported, and those reported may not be confirmed (USFWS 2010d). From the 1960's to 2008 several Whooping Crane sightings were confirmed in Dunn County from 24 to 37 air-miles south to southwest of the proposed projects. The closest Whooping Crane sighting occurred in 1981 on the east side of the Missouri River in McLean County, about 11.0 miles east-northeast of the GuyBlackhawk 24X-27 and about 10.1 air-miles east-northeast of the Lawrence 24X-26 project sites. However no occurrences of Whooping Cranes have been confirmed within four square miles of the GuyBlackHawk and Lawrence project areas (Poitra 2008 and 2010; NDPR 2010; USFWS 2010c). Potential Whooping Crane habitat was also used to assess the impacts of these proposed projects on this species.

Based on the low likelihood that cranes would use the wetlands in the drainages west, south-southwest, and east of the GuyBlackHawk site, complete lack of cropland used for feeding habitat (within the four square mile vicinity), and the lack of confirmed sightings, impacts to Whooping Cranes as a result of the proposed GuyBlackhawk 24x-27 project are not expected.

Based on the low likelihood that cranes would use the wetlands in the drainages east and northwest of the Lawrence site, complete lack of cropland that serves as potential feeding habitat, lack of preferred roosting habitat (within the four square mile vicinity), and lack of confirmed sightings, impacts to Whooping Cranes as a result of the proposed Lawrence 24X-26 project are not expected.

***Pallid Sturgeon* (*Scaphirhynchus albus*): Endangered**

Pallid sturgeon occupy turbid river systems, in water depths ranging from approximately 3 to 25 feet, near the shore and in deeper chutes at the end of sandbars and islands (USFWS 1993). The Missouri River reach, Lake Sakakawea, is not within a pallid sturgeon Recovery Priority Management Area (RPMA). However, RPMA-2 begins at the upper reach of Lake Sakakawea (roughly 106 miles upstream of Independence Point) and goes upstream to the Fort Peck Dam in Montana and extends upstream on the Yellowstone River to the Tongue River in Montana. The closest downstream Missouri River RPMA to the project area is on the southern border of South Dakota (RMPA-3).

The Missouri River (Lake Sakakawea) is 2.1 and 2.2 air-miles northward from the proposed Guy Blackhawk 24X-27 and Lawrence 24X-26 sites, respectively. Fishery habitat within 300 feet of the project areas is absent. Unidentified minnows were observed in a beaver pond roughly 0.2 miles east of the Lawrence pad. Direct and indirect project-related activities are not expected to negatively impact water quality or quantity within the intermittent drainages closest to the Lawrence and GuyBlackHawk project sites. Therefore, it is considered extremely unlikely that the Missouri River (Lake Sakakawea) will receive runoff as a result of work-related activities within these project sites. No impacts to the pallid sturgeon are expected.

***Dakota Skipper* (*Hesperia dacotae*): Candidate**

The Dakota skipper is a small butterfly that once occurred throughout the north-central USA and south-central Canada (USFWS 2009b). Known occurrences of Dakota skippers now reside in western Minnesota, northeastern South Dakota, north-central North Dakota, and southeastern North Dakota (USFWS 2009b). The Dakota skipper lives in high quality native prairies that contain a high diversity of wildflowers and grasses. Exotic grasses and shrubs do not provide habitat for this insect. Adult Dakota skippers live for three weeks in June and obtain nectar, which is critical to their reproduction, from woody lilies (*Lilium* spp.), harebells (*Campanula* spp.), smooth camas (*Camassia* spp.), coneflowers (*Echninacea* spp.), and blanketflowers (*Gaillardia* spp.). Larval Dakota skippers feed on grasses in the fall and over-winter in shelters or just below ground level at the bases of native bunchgrasses. It is

possible that some portions of the Lawrence and GuyBlackhawk project sites may provide potential habitat; however, no Dakota skipper caterpillars or adults were observed during the July 2010 site visit. Potential impacts to the Dakota skipper are unknown.

***Sprague's Pipit (Anthus spragueii)*: Candidate**
Sprague's Pipits arrive on the breeding grounds in April, leave in September and October, and have up to two breeding periods: late April to early June and mid-July to early September (Stewart 1975). The Sprague's Pipit is known to use and breed in alkaline meadows and around the edges of alkaline lakes (MTNHP 2010). They construct a domed ground nest and primarily feed on insects and seeds (Ehrlich et al. 1988). Sprague's Pipits are most commonly associated with native prairie comprised of sparse native bunch grasses of intermediate height with low visual obstruction. They appear to prefer grasslands with low (<20%) shrub cover within 330 feet of native prairie (Madden et al. 2000, Grant et al. 2004; Sutter 1997; Dechant et al. 2003, and Jones 2010b). Sprague's Pipits generally avoid areas with exotic grasses, such as smooth brome (*Bromus inermis*) (Madden 2010). Sprague's Pipits respond positively to short-interval fire cycles (every 2 to 4 years), depending upon moisture levels and type of grassland (dry versus mesic) because fire reduces litter buildup, shrub cover, vegetation density, and plant height (Madden et al. 1999). Studies have indicated that Sprague's Pipits are area-sensitive and require large grassland areas, though the specific patch size has not been determined (Davis 2004; see Dechant et al. 2003).

The proposed GuyBlackhawk and Lawrence well pads and access roads occur in grasslands comprised of native forbs and grasses, few exotic grasses, and a lot of snowberry shrubs that are less than three feet tall. Surveys conducted within a 0.5 mile radius of the proposed well pads and access roads in July 2010 found no occurrence of the Sprague's Pipit. However, based on their habitat preferences for a mosaic of primarily native prairie, less than 20% cover of shrubs greater than three feet tall, and an abundance of native prairie, the project sites contain potential pipit habitat. Potential impacts to the Sprague's Pipit are unknown.

3.6.2 Threatened and Endangered Species Impacts
Physical inventories were conducted on July 14-15, 2010. No occurrence of candidate and listed TE plants or animals and denning, roosting, or nesting sites are known to be present or were observed during the site visits. Therefore, no direct or indirect impacts to the four endangered and two threatened species would be expected. Potential to impact the two candidate species is unknown, as the vegetation communities within the proposed GuyBlackHawk and Lawrence sites may provide suitable habitat for these species.

Based on the above information and the proposed mitigation measures below, a **no effect** determination is rendered for the black-footed ferret, gray wolf, Interior Least Tern, Piping Plover, Whooping Crane, and Pallid Sturgeon. Potential to impact the candidate species, the Dakota skipper and Sprague's pipit, is unknown. Candidate species receive no legal protection under the Endangered Species Act - that is, there are no legal prohibitions under the ESA against the "take" of a candidate species. Nonetheless, the USFWS promotes conservation actions for candidate species as they may eliminate the need to list the species as threatened or endangered.

3.6.3 Threatened and Endangered Species Mitigation
Impacts to potential habitat for the candidate species Dakota skipper and Sprague's Pipit could be minimized by reducing the area of ground disturbance, spot-treating (as opposed to broadcast spraying) noxious weeds with herbicides, and controlling exotic grasses and woody plants (USFWS 2009b; Madden et al. 1999 and 2000). The proposed project would minimize disturbance to potential habitat by placing multiple wells at a single well pad location, using the existing road network as much as possible, and treating noxious weeds as needed.

To further reduce the potential for negative impacts to threatened or endangered species and their habitat the follow mitigation is proposed for the Guy Blackhawk 24X-27 and Lawrence 24X-26 well pads and access roads:

- Any sighting of a protected species within one-mile of the project area would be immediately reported to the USFWS, NDGFD, the Tribe, and the BIA.
- If initial site construction occurs within the nesting season (February 1st thru July 15th), the project site would be surveyed as close to actual construction start as is reasonably possible by a qualified biologist for threatened or endangered species, and for avian nesting activity.
- If the site(s) is (are) constructed during the nesting season then the site(s) may be mowed prior to the nesting season in order to discourage nesting by migratory birds (e.g., Sprague's Pipit).
- To maintain some habitat integrity, disturbed ground would be reclaimed using native plants from approved plant lists as identified by the Tribe and BIA. As required by the NDIC, reclamation costs are guaranteed through the issuance of a bond.

3.7 General Wildlife and Fisheries

This section describes existing conditions, potential impacts from the Proposed Action, and suggested mitigation measures for wildlife and fishery resources in the project area.

3.7.1 Wildlife Habitat

Wildlife habitat in the vicinity of the project areas consists of grasslands, snowberry patches/swales, riparian areas, and shrubby thickets (Figure 3.7a). Wildlife species use all four habitat types, though to varying degrees based on their life histories and species specific requirements. Wildlife habitat types found within the proposed GuyBlackHawk 24X-27 and Lawrence 24X-26 well pads and access roads include grasslands, snowberry patches/swales, and shrubby thickets (Tables 3.7a and 3.7b). In addition the Lawrence project area includes a small amount of riparian habitat (Table 3.7b).

Figure 3.7a: Representative habitat types: grassland (foreground), shrubby thicket (photo left), snowberry patch (photo right), and riparian (background).

Within the GuyBlackHawk project area, grasslands comprise approximately 10 acres (83%), snowberry patches/swales comprise approximately 2 acres (16%), and shrubby thickets comprise less than one acre (1%) (Table 3.7a; Figure 3.7a). The proposed access road is approximately 560 feet long. The proposed

well pad is dominated by grassland (4.4 acres) with lesser amounts of snowberry patches/swales (1.4 acres) and shrubby thickets (0.2 acre). Grasslands also dominate the proposed access road with about 0.7 ac while snowberry patches/swales occupy about 0.1 acre, and no shrubby thicket habitat occurs.

Within the Lawrence project area, grasslands comprise approximately 17.85 acres (48%), snowberry patches/swales comprise approximately 18 acres (49%), shrubby thickets comprise approximately one acre (2.8%), and riparian areas comprise less than one acre (0.3%) (Table 3.7b; Figures 3.7a-d). The proposed access road is approximately 6,175 feet long. The proposed well pad is dominated by snowberry patches/swales (5 acres) with lesser amounts of grassland (0.4 acre) and shrubby thickets (0.2 acre). In contrast, grasslands dominate the proposed access road with almost 6 acres while snowberry patches/swales occupy just over 3 acres, and shrubby thickets occupy almost 0.2 acre.

Table 3.7a: ***Summary of wildlife habitat types and projected impacts for the proposed GuyBlackHawk 24X-27 project area.***

Habitat Type	Project Area[1] (acre)	Permanent Impact (acre)	Temporary Impact (acre)	Total Impact (acre)
Grassland	10.18	5.17	0.48	5.64
Snowberry patch/swale	1.92	1.59	0.13	1.73
Shrubby thicket	0.17	0.15	0.00	0.15
Riparian area	0.00	0.00	0.00	0.00
Total	**12.27**	**6.91**	**0.61**	**7.52**

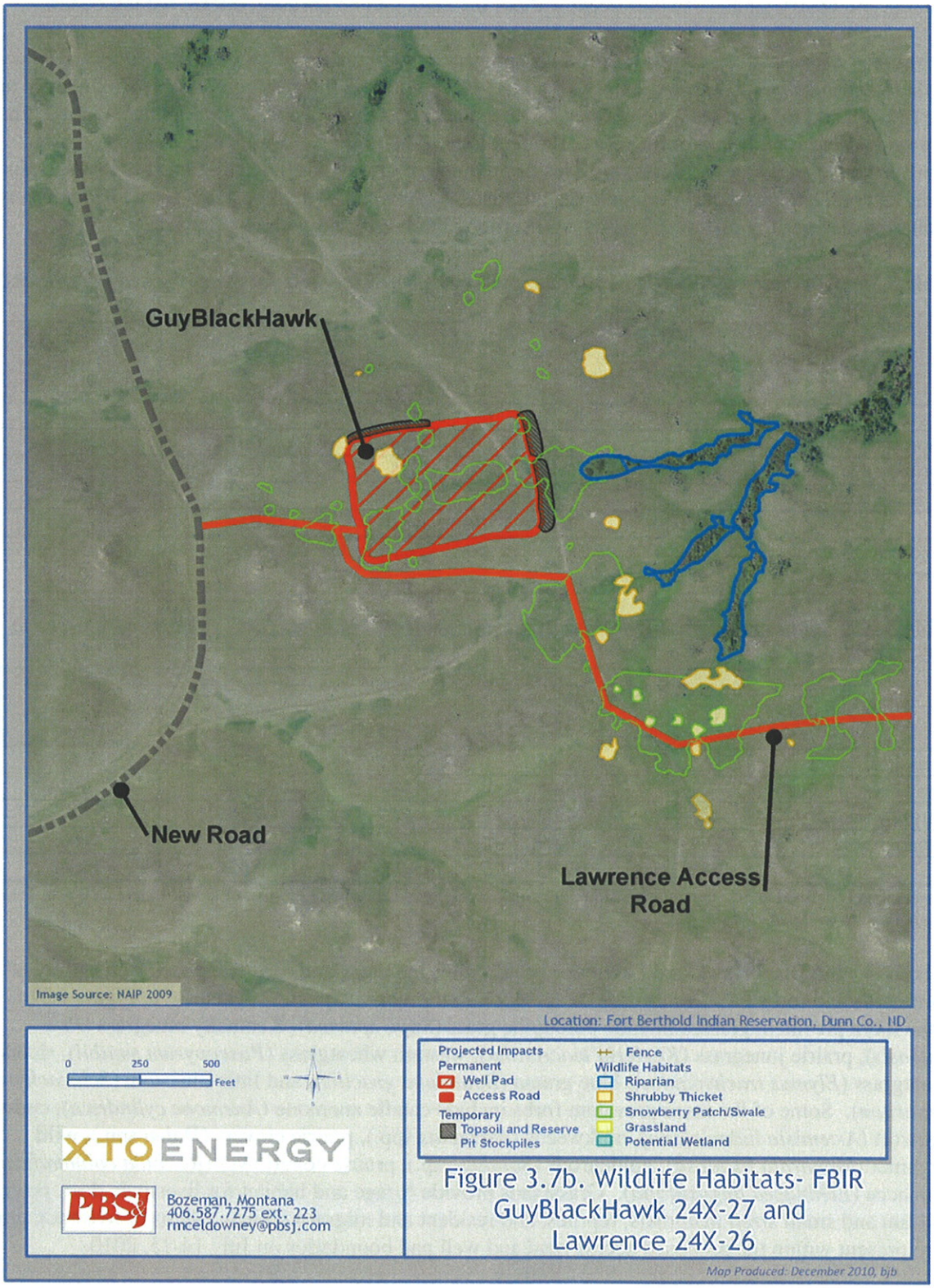
[1] Project area is defined as 100 feet on each side of the new access road centerline (200 feet total width) and a 10-acre area centered on the well pad.

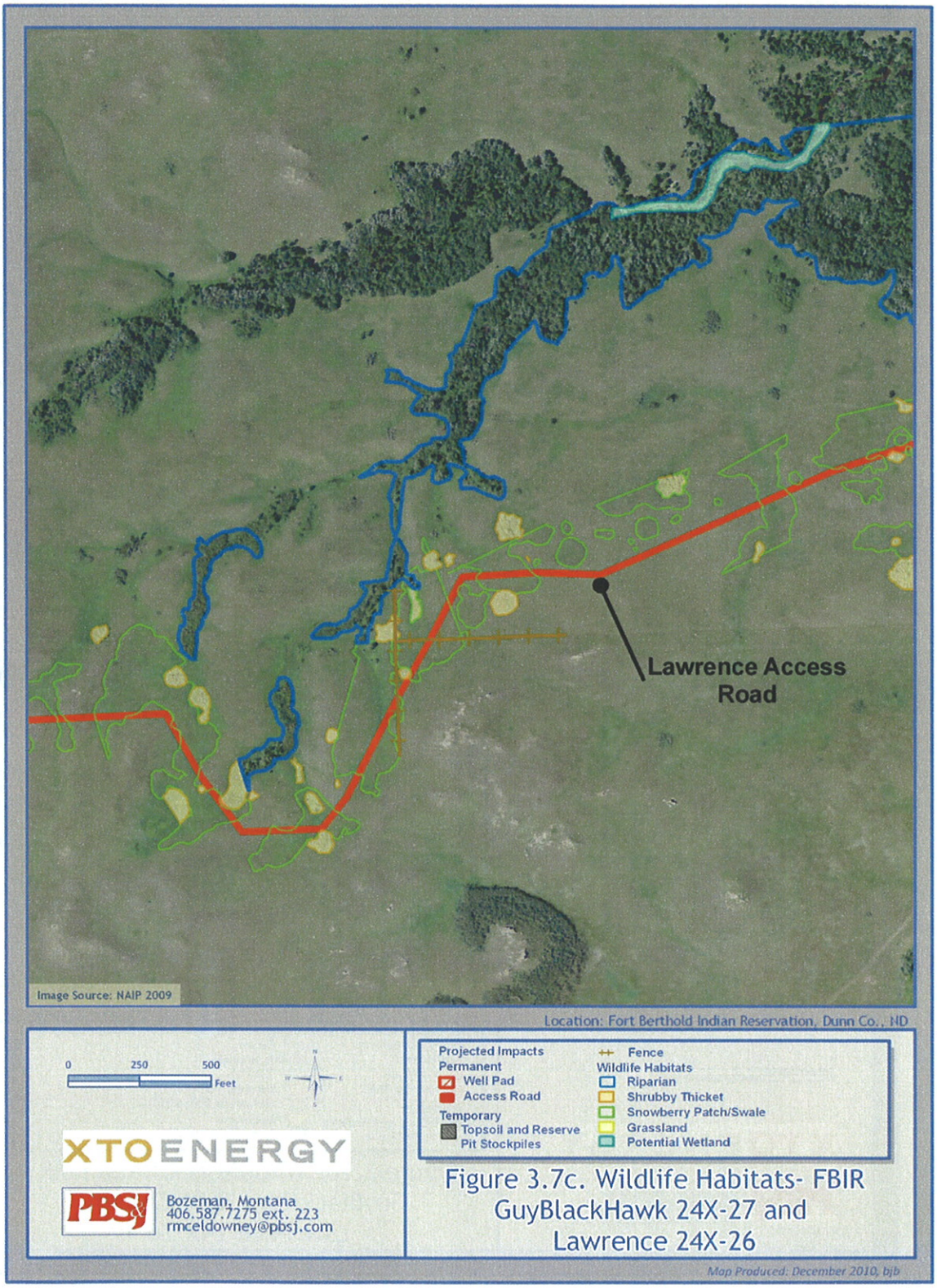
Table 3.7b: ***Summary of wildlife habitat types and projected impacts for the proposed Lawrence 24X-26 project area.***

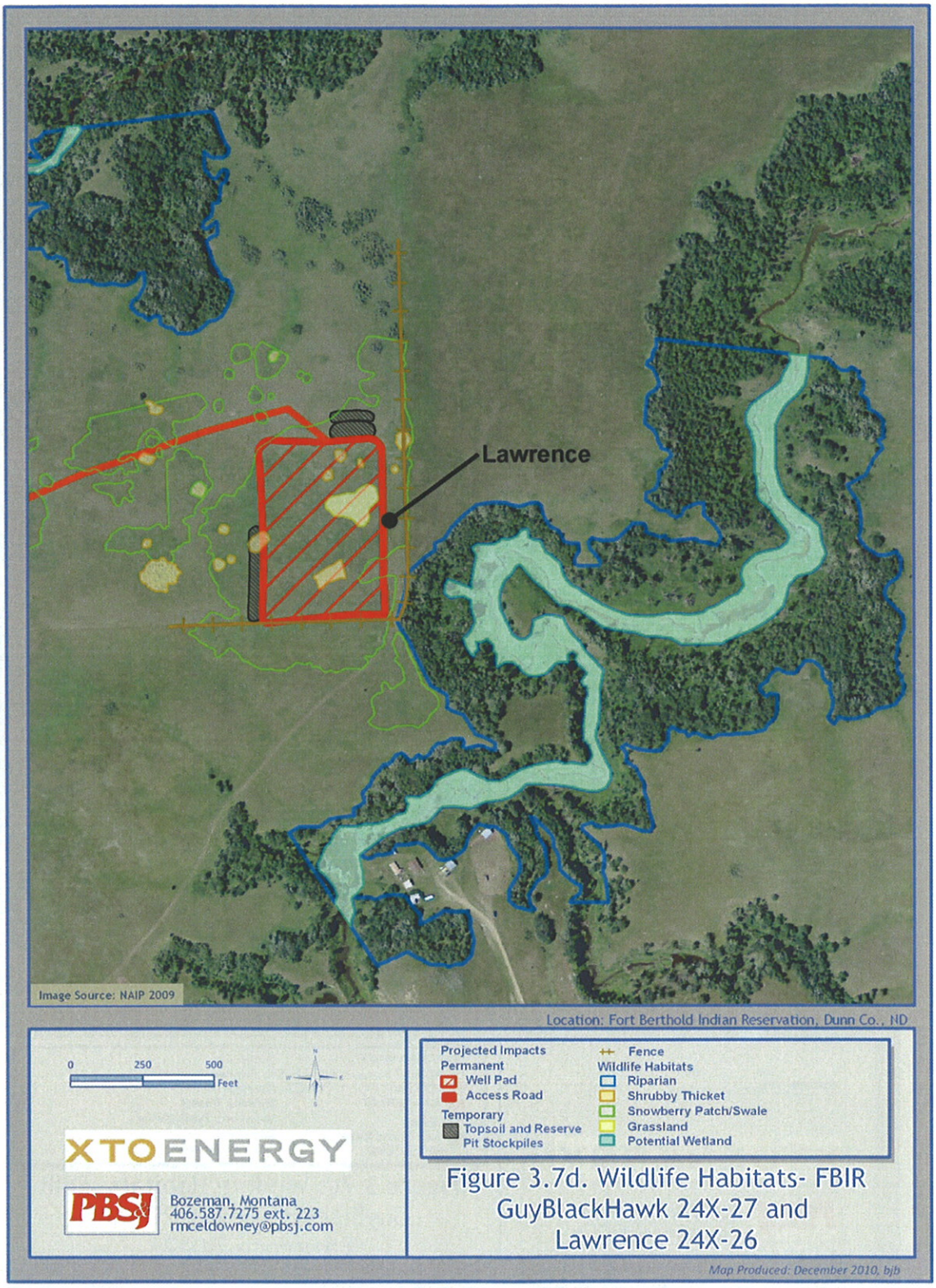
Habitat Type	Project Area[1] (acre)	Permanent Impact (acre)	Temporary Impact (acre)	Total Impact (acre)
Grassland	17.86	6.23	0.008	6.24
Snowberry patch/swale	18.45	8.68	0.605	9.28
Shrubby thicket	1.03	0.35	0.061	0.42
Riparian area	0.09	0.00	0.000	0.00
Total	**37.43**	**15.27**	**0.674**	**15.94**

[1] Project area is defined as 100 feet on each side of the new access road centerline (200 feet total width) and a 10-acre area centered on the well pad.

At both the GuyBlackHawk and Lawrence project sites the grasslands are comprised of a variety of graminoids and forbs (see *Section 3.9 - Vegetation and Invasive Species*) (Table 3.7a; Figure 3.7b). Some of the more prevalent grasses include porcupine grass (*Stipa spartea*), Kentucky bluegrass (*Poa pratensis*), prairie junegrass (*Koeleria macrantha*), western wheatgrass (*Pascopyrum smithii*), slender wheatgrass (*Elymus trachycaulus*), blue grama (*Bouteloua gracilis*), and little bluestem (*Schizachyrium scoparium*). Some of the more prevalent forbs include candle anemone (*Anemone cylindrica*), cudweed sagewort (*Artemisia ludoviciana*), milkweeds (*Asclepias* spp.), prairie clovers (*Dalea* spp.), wild bergamot (*Monardia fistulosa*), goldenrods (*Solidago* sp.), prairie coneflower (*Ratibida columnifera*), and echinacea (*Echinacea angustifolia*). Grasslands provide forage and habitat for livestock, deer, pronghorn, medium and small sized mammals, reptiles, and resident and migratory birds. Signs of livestock grazing were present within the proposed access road and well pad boundaries on July 14-15, 2010.


GuyBlackHawk
New Road
Lawrence Access Road
Image Source: NAIP 2009
Location: Fort Berthold Indian Reservation, Dunn Co., ND
0
250
500
Feet
XTO ENERGY
PBSJ
Bozeman, Montana
406.587.7275 ext. 223
rmceldowney@pbsj.com
Projected Impacts
Permanent
Well Pad
Access Road
Temporary
Topsoil and Reserve Pit Stockpiles
Fence
Wildlife Habitats
Riparian
Shrubby Thicket
Snowberry Patch/Swale
Grassland
Potential Wetland
Figure 3.7b. Wildlife Habitats- FBIR
GuyBlackHawk 24X-27 and
Lawrence 24X-26
Map Produced: December 2010, bjb


Lawrence Access Road
Image Source: NAIP 2009
Location: Fort Berthold Indian Reservation, Dunn Co., ND
0 250 500
Feet
XTOENERGY
PBSJ
Bozeman, Montana
406.587.7275 ext. 223
rmceldowney@pbsj.com
Projected Impacts
Permanent
Well Pad
Access Road
Temporary
Topsoil and Reserve Pit Stockpiles
Fence
Wildlife Habitats
Riparian
Shrubby Thicket
Snowberry Patch/Swale
Grassland
Potential Wetland
Figure 3.7c. Wildlife Habitats- FBIR
GuyBlackHawk 24X-27 and
Lawrence 24X-26
Map Produced: December 2010, bjb


Lawrence
Image Source: NAIP 2009
Location: Fort Berthold Indian Reservation, Dunn Co., ND
0 250 500
Feet
XTOENERGY
PBSJ
Bozeman, Montana
406.587.7275 ext. 223
rmceldowney@pbsj.com
Projected Impacts
Permanent
Well Pad
Access Road
Temporary
Topsoil and Reserve Pit Stockpiles
Fence
Wildlife Habitats
Riparian
Shrubby Thicket
Snowberry Patch/Swale
Grassland
Potential Wetland
Figure 3.7d. Wildlife Habitats- FBIR
GuyBlackHawk 24X-27 and
Lawrence 24X-26
Map Produced: December 2010, bjb

Western snowberry (*Symphoricarpos occidentalis*) dominated patches and swales occur intermixed with grasslands (Figures 3.7b and 3.7c). The density of snowberry occurring as discrete patches on the hillslopes and in topographic low points, such as swales, varied considerably from approximately 10% to 80% cover within the project areas. Western snowberry is considered an "increaser" by Range Scientists, meaning that shrub size or density often increases where the land has been overgrazed or where fire has been absent. In addition, certain soils allow snowberry shrubs to grow better than other soils. In general, snowberry was found to be more prevalent than the historical climax plant community would predict (see Section 3.9.1). Snowberry does provide important cover and forage for small mammals (e.g., rabbits, deer mice, and voles) and Sharp-tailed Grouse, and is considered fair browse for mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), and pronghorn (*Antilocapra americana*) (USDA-FEIS 2009a). Snowberry is also used by songbirds for nesting, foraging, and perching (e.g., Clay-colored Sparrow) (Dechant et al. 2002) and by hummingbirds for nectar (NPIN 2009).

The shrubby thicket habitat type was either pre-dominantly composed of silver buffaloberry (*Shepherdia argentea*) or of mixed chokecherry (*Prunus virginiana*), serviceberry (*Amelanchier alnifolia*), hawthorne (*Crataegus* spp.), raspberry (*Rubus* spp), and other less common shrubs (Figure 3.7b-c). Understory plant species were often similar to adjacent grasslands or snowberry patches. Shrubby thickets are used by a wide variety of wildlife for thermal and escape/hiding cover, foraging, nesting, and/or perching. In North Dakota silver buffaloberry is considered to have good to fair nutritional value for mule deer, pronghorn, upland game birds, and small non-game birds; though it is considered of poor nutritional value for white-tailed deer (USDA-FEIS 2009b). In terms of cover, silver buffaloberry is considered to provide good to fair cover for mule deer, white-tailed deer, pronghorn, upland game birds, and passerine birds (USDA-FEIS 2009b).

Riparian areas are transitional zones between aquatic and terrestrial habitats. They are comprised of tree, shrub, and herbaceous species. In the project vicinity overstory trees are typically green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), and/or bur oak (*Quercus macrocarpa*) and understory shrubs include those found in shrubby thickets. They provide important cover, forage, and travel corridors for resident wildlife. Many riparian areas are nearby to the proposed well pads and access routes, but only a small portion of one riparian enters into the southeast corner of the Lawrence well pad (Figure 3.7d).

3.7.2 Wildlife and Fish Species

Wildlife species and their sign were searched for within a half-mile radius of the well pad center and access road centerline during the site visits on July 14-15, 2010 at the proposed GuyBlackHawk and Lawrence sites (Table 3.7c). Signs of a particular species' presence included tracks, scat, burrows, shed antlers, nests, and skeletons.

Table 3.7c: ***Wildlife species observed at the proposed GuyBlackHawk 24X-27 and Lawrence 24X-26 project sites.***

BIRDS
American Robin (*Turdus migratorius*)[1]
Bank Swallow (*Riparia riparia*)[1]
Black-capped Chickadee (*Poecile atricapillus*)[1]
Cedar Waxwing (*Bombycilla cedrorum*)[1]
Common Nighthawk (*Chordeiles minor*)[1]
Golden Eagle (*Aquila chrysaetos*)[2]
Gull (unidentified species)[1]
Least Flycatcher (*Empidonax minimus*)[1]
Long-Billed Curlew (*Numenius americanus*)[2]
Mallard (*Anas platyrhynchos*)[1,3]
Mountain Bluebird (*Sialia currucoides*)[2]

Northern Flicker (*Colaptes auratus*)[1]
Northern Harrier (*Circus cyaneus*)[2]
Sharp-tailed Grouse (*Tympanuchus phasianellus*)[2]
Song Sparrow (*Melospiza melodia*)[1]
Sparrow (species unidentified)[1]
Turkey Vulture (*Cathartes aura*)[1]
Western Meadowlark (*Sturnella neglecta*)[1]
Yellow Warbler (*Dendroica petechia*)[1]
FISHES[1]
Minnows
REPTILES AND AMPHIBIANS
None
MAMMALS[1]
Coyote (*Canis latrans*)
Nothern pocket gopher (*Thomomys talpoides*)
Mule deer (*Odocoileus hemionus*)
Racoon (*Procyon lotor*)
Vole (*Microtus* sp.)

[1] Observed by PBS&J on July 14-15, 2010.
[2] Observed by NRO on July 16-17, 2010 and August 22, 2010.
[3] Observed by PBS&J on July 14-15, 2010; Observed using an historic beaver pond located in a drainage north of the Lawrence site.

In addition to the bird species observed, the project area is also expected to provide breeding and foraging habitat to a variety of neotropical migrants, as well as foraging habitat for migrant and resident raptors such as Red-Tailed Hawk (*Buteo jamaicensis*), Rough-legged Hawk (*Buteo lagopus*), and Swainson's Hawk (*Buteo swainsoni*). Although not observed during the surveys, signs of livestock grazing and use were evident in all wildlife habitats.

Bald and Golden Eagles use a variety of habitat types and there have been numerous records of Golden Eagle nests on the Fort Berthold Reservation (USFWS 2009e; Poitra 2010). A one-half mile boundary was placed around the proposed access road and well pad and surveyed by two biologists for the presence of raptor species and nest sites on July 14-15, 2010. Potential nesting areas in cliffs, trees, trees near water, and the ground surface were surveyed. One raptor, a Turkey Vulture (*Cathartes aura*), and zero nest sites were observed during the surveys (Table 3.7b). During the field work completed by NRO on July 16-17 and August 22, one Golden Eagle (*Aquila chrysaetos*) was observed circling overhead near the northeast corner of the Lawrence well pad. No active Bald Eagle nests have been reported for this area by the ND Game and Fish Department (Johnson 2010). The Golden Eagle and Prairie Falcon nest database, maintained by the North Dakota Game and Fish Department (NDGF), was examined for known occurrences in vicinity of the propose projects. One Golden Eagle nest, last observed in 2006, is located roughly 7 miles SE of the proposed well pads. When last observed it appeared to be slumping and is likely now abandoned, though this location is still considered a Golden Eagle nest site by the NDGF (NDGF 2010). A Prairie Falcon nest site is located roughly 4.5 miles southeast of the proposed well pads. This aerie has not been observed for some time, but may still be occupied (NDGF 2010).

In addition to the mammal species observed, the project area is also expected to be used, at least occasionally, by bobcat (*Lynx rufus*), deer mouse (*Peromyscus maniculatus*), long-tailed weasel (*Mustela frenata*), meadow vole (*Microtus pennsylvanicus*), mountain lion (*Puma concolor*), prairie vole (*Microtus ochrogaster*), pronghorn, striped skunk (*Mephitis mephitis*), and white-tailed deer.

Based on known distributions and preferred habitat types, there are 24 wildlife species identified by the North Dakota Game and Fish Department as species of conservation priority (SoCP) that could

potentially occur in the project area (Table 3.7d) (Hagan et. al 2005). None of these species were observed during the site visits on July 14th-15th, but four species were observed by NRO biologists during the July 16th-17th and August 22nd site visits. On the proposed access road between GuyBlackHawk and Lawrence, three Sharp-tailed Grouse were flushed from the snowberry and one Northern Harrier was seen foraging over grasslands. A Long-Billed Curlew was seen near the northeast corner of the Lawrence Pad and flew in the direction of the stream. Although other species were not observed it is probable that these animals could use the project areas during different times of the year.

Table 3.7d: ***Species of Conservation Priority that potentially could occur in the proposed Guy BlackHawk 24X-27 and Lawrence 24X-26 project areas.***

Common Name	Scientific Name	Conservation Priority[1]
Birds		
Baird's Sparrow	*Ammodramus bairdii*	I
Grasshopper Sparrow	*Ammodramus savannarum*	I
Sprague's Pipit	*Anthus spragueii*	I
Golden Eagle	*Aquila chrysaetos*	II
Short-eared Owl	*Asio flammeus*	II
Burrowing Owl	*Athene cunicularia*	II
Upland Sandpiper	*Bartramia longicauda*	I
Ferruginous Hawk	*Buteo regalis*	I
Swainson's Hawk	*Buteo swainsoni*	I
Lark Bunting	*Calamospiza melanocorys*	I
Chestnut-collared longspur	*Calcarius ornatus*	I
Northern Harrier	*Circus cyaneus*	II
Black-billed Cuckoo	*Coccyzus erythropthalmus*	I
Bobolink	*Dolichonyx oryzivorus*	II
Prairie Falcon	*Falco mexicanus*	II
Loggerhead Shrike	*Lanius ludovicianus*	II
Marbled Godwit	*Limosa fedoa*	I
Long-billed Curlew	*Numenius americanus*	I
Dickcissel	*Spiza americana*	I
Sharp-tailed Grouse	*Tympanuchus phasianellus*	II
Herptiles		
Western hognose snake	*Heterodon nasicus*	I
Smooth green snake	*Liochlorophis vernalis*	I
Plains spadefoot	*Spea bombifrons*	I
Mammals		
Swift fox	*Vulpes velox*	II

Source: North Dakota Wildlife Conservation Strategy (Hagen et al. 2005).

[1] **Level I** = species that are in decline and presently receive little or no monetary support or conservation efforts.
Level II = have a moderate level of conservation priority *or* have a high level of conservation priority but a substantial level funding is available to them from other wildlife programs; and
Level III = species having a moderate level of conservation priority but are believed to be peripheral or non-breeding in North Dakota.

No fishery habitat occurs in the immediate project areas and Lake Sakakawea is greater than two air-miles north of the project areas. Riparian draws in close proximity to the access road and well pads are classified as intermittent drainages by the USGS. Minnows were observed in a beaver pond area roughly 0.2 miles east of the Lawrence well pad.

3.7.3 Wildlife and Fish Projected Impacts

Within the GuyBlackHawk 24X-27 project area an estimated 5.2 acres of grassland, 1.6 acres of snowberry patch/swale, and 0.2 acre of shrubby thicket would be permanently impacted due to construction of the proposed well pad and access road (Table 3.7a). An estimated additional 0.5 acre of grassland and 0.1 acre of snowberry patch/swale would be temporarily impacted from the stockpiling of topsoil and soil from the reserve pit (Table 3.7a).

Within the Lawrence 24X-26 project area an estimated 6.2 acres of grassland, 8.7 acres of snowberry patch/swale, and 0.4 acre of shrubby thicket would be permanently impacted due to construction of the proposed well pad and access road (Table 3.7b). An additional amount of 0.6 acre of snowberry patch/swale and less than 0.1 acre of each grassland and shrubby thicket would be temporarily impacted from the stockpiling of topsoil and soil from the reserve pit (Table 3.7b).

Construction of the project may result in direct wildlife mortality to those species (e.g., mice, voles, young birds/eggs, and pocket gophers) with limited mobility and/or to those who occupy burrows or nests at the time of construction. More mobile species (e.g., adult deer, coyotes, and most adult birds) would be able to avoid direct mortality by moving into adjacent habitat. Generally, these direct impacts to wildlife habitat and wildlife populations in the project area are considered minor due to the abundance of similar habitats in the vicinity.

During the early nesting season, eagles can be sensitive to human disturbance, which could potentially result in nest abandonment. Although eagle nesting was not observed, Golden Eagles do forage in the general vicinity. Other migratory birds are susceptible to nest abandonment during nesting as well, and are afforded protection under the *Migratory Bird Treaty Act* (MBTA).

According to the USFWS (2009e) wildlife mortality at oil facilities in North Dakota is most often associated with drilling reserve pits, flare pits, and/or drip buckets and barrels. For this reason a closed – loop system is recommended by the USFWS (2009e). A semi-closed loop will be used by XTO at both well pads for all wells drilled. If used, open pits that may contain oil would be cleaned up immediately to prevent accidental wildlife mortality in the immediate project area.

Habitat fragmentation can be either a direct or an indirect impact and is commonly associated with oil and gas projects. It can be defined as the separation of previously contiguous blocks of habitat into one or more disconnected pieces. Habitat fragmentation can occur in the physical sense of dividing up the landscape by a road or a development, or through an increase in the level of activity which may prevent or hinder wildlife movement. Either form of habitat fragmentation can result in impediments to wildlife dispersal and corresponding genetic exchange among populations.

The existing county road system, agricultural activities, and oil/gas exploration contribute to habitat fragmentation in the project vicinity. However, no substantial impediment to wildlife movement is yet apparent. The proposed well site and access road would contribute to temporary habitat fragmentation during the drilling process. If the wells were developed for commercial production, the project would add to more permanent habitat fragmentation in the project area primarily by increasing the amount of roads and level of activity in the area.

Other forms (i.e., increased noise or odor) of indirect impacts might affect local distributions of wildlife around proposed well pads and access roads. These types of impacts may affect the local distribution of particular animal species by displacing them into adjacent habitats; however, they are not expected to negatively affect local populations.

3.7.4 Wildlife Mitigation

Potential impacts to wildlife species and their habitats have been avoided and minimized through consultation with the BIA to locate the proposed well pad and access road outside of any riparian area, in using a relatively diffuse drilling density (up to 1,280 acres per drill site), using existing roads where possible, and by using directional drilling. Directional drilling has allowed the consolidation of well pads and access roads, thereby reducing habitat fragmentation in the area. Reclamation of habitat over the life of the project will further reduce long-term impacts to wildlife and their habitat. Additional mitigation measures are listed below.

- XTO intends to follow, to the greatest extent practicable, recommendations and guidance provided by the USFWS to minimize adverse impacts to migratory birds (USFWS 2009e).

- If initial site construction occurs within the nesting season (February 1st - July 15th) the project site would be surveyed as close to the actual construction start as is reasonably possible by a qualified biologist to determine if and where active nests occur in relation to the proposed construction activities. If active nests are found, construction may be delayed or suspended or buffers established to ensure no adverse impacts would occur until nesting has been completed.
- If site construction occurs during the nesting season (February 1st-July 15th) then the project site(s) may be mowed outside of the nesting season in order to discourage nesting my migratory birds.
- The USFWS recommends that a buffer of at least one-half mile be placed around any known Bald or Golden Eagle nest (USFWS 2009e). If a Bald or Golden Eagle nest is observed within a half-mile of the proposed project, the USFWS would be consulted.
- A semi-closed loop system will be used for all drilling activities.
- The cuttings pit and catch-all pit would be covered with a net to prevent birds from entering them.
- Utility lines leading to the well pad (e.g., spur lines) would be installed below ground.
- The entire well pad would be fenced to prevent livestock and wildlife access to the site.
- Pits would be fenced on all four sides in order to protect wildlife, livestock, and personnel from falling into the pit if the entire site has not already been protected within a fence.
- As recommended by the USFWS, drip buckets and barrels located under valves and spigots would be covered with wire mesh to prevent wildlife from entering and becoming entrapped.

3.8 Soils

This section describes existing conditions, potential impacts from the Proposed Action, and suggested mitigation measures for soil resources in the project area.

The proposed GuyBlackHawk 24X-27 and Lawrence 24X-26 project sites are located near the center of the Williston Basin at the boundary of the Missouri Plateau and the Missouri Trench, about four miles south of Lake Sakakawea. The project sites are found on hills and glaciated uplands characterized by a landscape of summits, ridges, backslopes, toeslopes, swales, and drainages. Erosional processes by water reveal a well defined dendritic pattern of drainages which terminate at Lake Sakakawea to the north and east.

The Sentinel Butte Formation consisting of poorly lithified sandstone, siltstone, and mudstone is found at the surface to depths of several hundred feet. In this area soft sandstone bedrock controls surface structure. Where not removed by erosional processes, remnant thin glacial till deposits occur randomly across the landscape. Few glacial erratics (large stones and boulders) are found scattered over the area from multiple glacial events. Pedogenic processes reveal a preponderance of coarse-textured, sandy soils developed in residuum and alluvium from soft sandstone bedrock with scattered areas of fine-textured, loamy soils developed in residuum and alluvium from glacial till. Slopes range from nearly level to moderately steep.

3.8.1 Soil Investigation

A total of 21sites were examined during an on-site soil and vegetative inventory conducting during July 16-17 and August 22 of 2010 for Guy BlackHawk and Lawrence, respectively. Reference soil maps and soil data tables for the project areas were obtained prior to conducting field work (Natural Resources Conservation Service [NRCS] 2010). An investigation of the variability in landscapes was conducted at the proposed project areas in order to describe and document found soils, establish taxonomic class/soil series, verify NRCS map units, and key ecological sites (Figure 3.8, Appendix D). Representative NRCS soil survey map units (SMUs) listed in Tables 3.8a and 3.8b are those that best fit the on-site investigations and do not necessarily match those found on the broader 1:24,000 scale NRCS Order 2 level mapping.

Table 3.8a: ***Soils observed at the proposed GuyBlackHawk 24X-27 project site.***

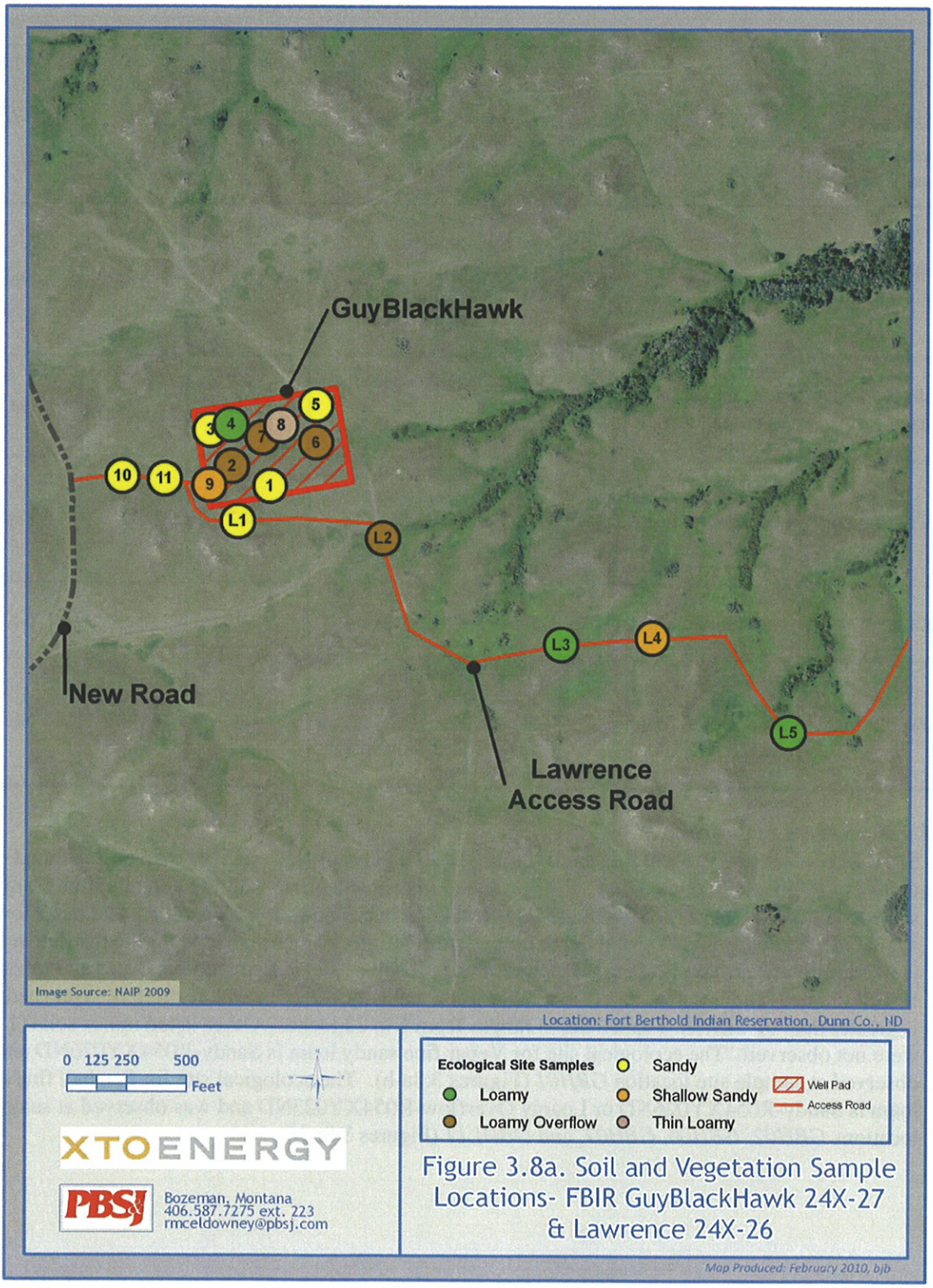
Soil Series Component	**Textural Family and Taxonomic Classification**	**Representative NRCS Soil Map Unit(s)** (assigned)	**Percent Slope** (observed)	**Presence in Access Road**	**Presence in Well Pad**
Parshall fine sandy loam	Coarse-loamy, mixed, superactive, frigid Pachic Haplustolls	81B Vebar-Parshall fine sandy loams, 0 to 6 percent slopes; 81C Vebar-Parshall fine sandy loams, 6 to 9 percent slopes	4-8	Yes	Yes
Vebar fine sandy loam	Coarse-loamy, mixed, superactive, frigid Typic Haplustolls	81B Vebar-Parshall fine sandy loams, 0 to 6 percent slopes; 81C Vebar-Parshall fine sandy loams, 6 to 9 percent slopes; 81D Vebar fine sandy loam, 9 to 15 percent slopes	3-11	Yes	Yes
Cohagen fine sandy loam	Loamy, mixed, superactive, calcareous, frigid, shallow, Typic Ustorthents	30E Cohagen-Vebar fine sandy loams, 9 to 25 percent slopes	10-15	Yes	No
Williams loam	Fine loamy, mixed, superactive, frigid Typic Argiustolls	93C Williams-Zahl loams, 6 to 9 percent slopes	5-7	No	Yes
Zahl loam	Fine-loamy, mixed superactive, frigid Typic Calciustolls	93C Williams-Zahl loams, 6 to 9 percent slopeS.	5-7	No	Yes

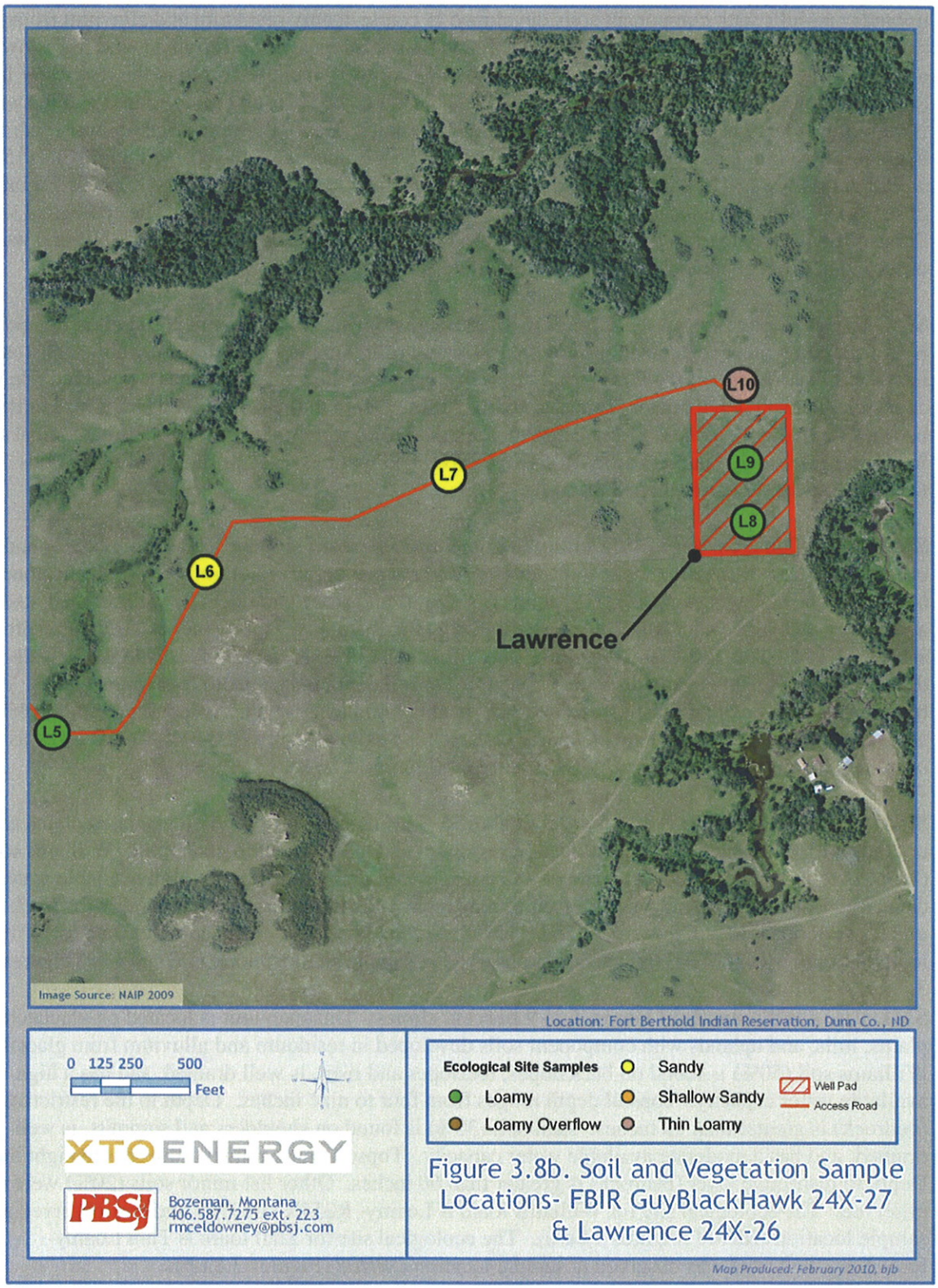
Table 3.8b: ***Soils observed at the proposed Lawrence 24X-26 project site.***

Soil Series Component	Textural Family and Taxonomic Classification	Representative NRCS Soil Map Unit(s) (assigned)	Percent Slope (observed)	Presence in Access Road	Presence in Well Pad
Parshall fine sandy loam	Coarse-loamy, mixed, superactive, frigid Pachic Haplustolls	81C Vebar-Parshall fine sandy loams, 6 to 9 percent slopes	8-9	Yes	No
Vebar fine sandy loam	Coarse-loamy, mixed, superactive, frigid Typic Haplustolls	81C Vebar-Parshall fine sandy loams, 6 to 9 percent slopes 81D Vebar fine sandy loam, 9 to 15 percent slopes	3-11	Yes	No
Cohagen fine sandy loam	Loamy, mixed, superactive, calcareous, frigid, shallow, Typic Ustorthents	30E Cohagen-Vebar fine sandy loams, 9 to 25 percent slopes	12-15	Yes	No
Williams loam	Fine loamy, mixed, superactive, frigid Typic Argiustolls	88B Williams loam, 3 to 6 percent slopes; 93D Zahl-Williams loams, 9 to 15 percent slopes	2-17	Yes	Yes
Zahl loam	Fine-loamy, mixed superactive, frigid Typic Calciustolls	93D Zahl-Williams loams loams, 9 to15 percent slopes	12-15	Yes	No
Bowbells loam	Fine loamy, mixed, superactive, frigid, Pachic Argiustolls	93D Zahl-Williams loams, 9 to 15 percent slopes; Bowbells is an inclusion in this unit	4-7	Yes	No

Soil map units are summarized below:

- **SMU 81B - Vebar-Parshall fine sandy loams, 0 to 6 percent slopes:** This map unit is found on uplands and hills with component soils developed in coarse-loamy residuum and alluvium from soft sandstone bedrock. The Vebar soil (45%) is found on backslopes, is well-drained, and has a low available water capacity. Topsoil depth ranges from four to 10 inches. Depth to the restrictive layer (soft sandstone bedrock) is about 40 inches. Parshall soil (40%) is found on toeslopes and in swales, is well drained, and has a moderate available water capacity. Depth to the restrictive layer (bedrock) is greater than 60 inches. Topsoil depth ranges from 6 to 22 inches. Other listed minor soils (15%) were not observed. The ecological site for Vebar fine sandy loam is Sandy-R054XY026ND and was observed at sample site location *GBH01* (Figures 3.8a-b). The ecological site for Parshall fine sandy loam is Sandy-R054XY026ND or Loamy Overflow-R054XY023ND and was observed at sample site locations *GBH02, GBH06, GBH07,* and *GBHL11* (Figures 3.8a-b).


GuyBlackHawk
New Road
Lawrence
Access Road
1
2
3
4
5
6
7
8
9
10
11
L1
L2
L3
L4
L5
Image Source: NAIP 2009
Location: Fort Berthold Indian Reservation, Dunn Co., ND
0 125 250 500
Feet
XTOENERGY
PBSJ
Bozeman, Montana
406.587.7275 ext. 223
rmceldowney@pbsj.com
Ecological Site Samples
Loamy
Loamy Overflow
Sandy
Shallow Sandy
Thin Loamy
Well Pad
Access Road
Figure 3.8a. Soil and Vegetation Sample Locations- FBIR GuyBlackHawk 24X-27 & Lawrence 24X-26
Map Produced: February 2010, bjb


L10
L9
L8
L7
L6
L5
Lawrence
Image Source: NAIP 2009
Location: Fort Berthold Indian Reservation, Dunn Co., ND
0 125 250 500
Feet
XTOENERGY
PBSJ
Bozeman, Montana
406.587.7275 ext. 223
rmceldowney@pbsj.com
Ecological Site Samples
Loamy
Loamy Overflow
Sandy
Shallow Sandy
Thin Loamy
Well Pad
Access Road
Figure 3.8b. Soil and Vegetation Sample Locations- FBIR GuyBlackHawk 24X-27 & Lawrence 24X-26
Map Produced: February 2010, bjb

- **SMU 81C - Vebar-Parshall fine sandy loams, 6 to 9 percent slopes:** This map unit is found on uplands and hills with component soils developed in coarse-loamy residuum and alluvium from soft sandstone bedrock. The Vebar soil (45%) is found on backslopes, is well-drained, and has a low available water capacity. Topsoil depth ranges from four to 10 inches. Depth to the restrictive layer (soft sandstone bedrock) is about 40 inches. Parshall soil (40%) is found on toeslopes and in swales, is well drained and has a moderate available water capacity. Depth to the restrictive layer (bedrock) is greater than 60 inches. Topsoil depth ranges from 6 to 22 inches. Other listed minor soils (15%) were not observed. The ecological site for Vebar fine sandy loam is Sandy-R054XY026ND and was observed at sample site locations *GBH05, L07*, and *GBHL10* (Figures 3.8a-b). The ecological site for Parshall fine sandy loam is Sandy-R054XY026ND or Loamy Overflow-R054XY023ND and was observed at sample site location *GBH11* (Figures 3.8a-b).

- **SMU 81D – Vebar fine sandy loam, 9 to 15 percent slopes:** This map unit is found on uplands and hills with component soils developed in coarse-loamy residuum and alluvium from soft sandstone bedrock. The Vebar soil (80%) is found on backslopes, is well-drained, and has a low available water capacity. Topsoil depth ranges from four to 10 inches. Depth to the restrictive layer (soft sandstone bedrock) is about 40 inches. Other listed minor soils (20%) were not observed. The ecological site for Vebar fine sandy loam is Sandy-R054XY026ND and was observed at sample site locations *GBH03, L01*, and *L06* (Figures 3.8a-b).

- **SMU 30E - Cohagen-Vebar fine sandy loams, 9 to 25 percent slopes:** This map unit is found on uplands and hills with component soils developed in coarse-loamy residuum from soft sandstone bedrock. The Cohagen soil (45%) is found on summits and slope shoulders, is well-drained, and has a very low available water capacity. Topsoil depth ranges from two to six inches. Depth to soft sandstone bedrock is less than 20 inches. The Vebar soil (39%) is found on backslopes, is well-drained, and has a low available water capacity. Topsoil depth ranges from four to ten inches. Depth to the restrictive layer (soft sandstone bedrock) is about 40 inches. Other listed minor soils (16%) were not observed. The ecological site for Cohagen is Shallow Sandy-R054043XYND and was observed at sample site locations *GBH09* and *L04* (Figures 3.8a-b).

- **SMU 88B - Williams loam 3 to 6 percent slopes:** This map unit is found on glaciated plains and uplands with component soils developed in residuum and alluvium from glacial till. Williams soil (85%) is found on backslopes, toeslopes and rises, is well drained, and has a high available water capacity. Topsoil depth ranges from four to nine inches. Depth to the restrictive layer (bedrock) is greater than 60 inches. Other minor soils (15%) were not observed. The ecological site for Williams loam is Loamy-R054XY031ND and was observed at sample site locations *L08* and *L09* (Figures 3.8a-b).
- **SMU 93C - Williams-Zahl loams, 6 to 9 percent slopes:** This map unit is located on glaciated plains, hills, and uplands with component soils developed in residuum and alluvium from glacial till. Williams soil (50%) is found on backslopes, toeslopes and rises, is well drained, and has a high available water capacity. Topsoil depth ranges from four to nine inches. Depth to the restrictive layer (bedrock) is greater than 60 inches. Zahl soil (30%) is found on shoulders and summits, is well drained, and has a moderate available water capacity. Topsoil depth ranges from four to eight inches. Depth to restrictive layer (bedrock) is greater than 60 inches. Other list minor soils (20%) were not observed. The ecological site for Williams loam is Loamy- R054XY031ND and was observed at sample location *GBH04* (Figures 3.8a-b). The ecological site for Zahl loam is Thin Loamy-R054XY038ND and was observed at sample location *GBH08* (Figures 3.8a-b).

- **SMU 93D - Zahl-Williams loams, 9 to 15 percent slopes:** This map unit is located on glaciated plains, hills, and uplands with component soils developed in residuum and alluvium from glacial till. Zahl soil (40%) is found on shoulders and summits, is well drained, and has a moderate available water capacity. Topsoil depth ranges from four to eight inches. Depth to the restrictive layer (bedrock) is greater than 60 inches. Williams soil (40%) is found on backslopes, toeslopes, and rises, is well drained, and has a high available water capacity. Topsoil depth ranges from four to nine inches. Depth to the restrictive layer (bedrock) is greater than 60 inches. Bowbells soil (8%) is found in depressions and swales, is moderately well drained, and has a high available water capacity. Topsoil depth ranges from five to 15 inches. Depth to the restrictive layer (bedrock) is greater than 60 inches. Other listed minor soils (12%) were not observed. The ecological site for Zahl loam is Thin Loamy-R054XY038ND and was observed at sample location *L10* (Figures 3.8a-b). The ecological site for Williams loam is Loamy- R054XY031ND and was observed at sample locations *L03* and *L05* (Figures 3.8a-b). The ecological site for Bowbells loam is Loamy Overflow-R054XY023ND and was observed at sample site location *L02* (Figures 3.8a-b).

The soil investigation estimated the quantity of SMUs disturbed by the proposed GuyBlackHawk and Lawrence project sites. These estimates were based on line-transect and area hits, NRCS soil map unit composition values, aerial photograph examination, and geomorphic proportions of specific landscape types.

The proposed GuyBlackHawk 24X-27 access road would transect areas of coarse-loamy soils developed in residuum and alluvium from soft sandstone bedrock (Figure 3.8). The access road would traverse approximately 500 feet (2.5 acres) of SMU 81C and approximately 60 feet (0.1 acre) of SMU 30E (Table 3.8c). Soils in these SMUs have a medium to high run-off potential and a moderate hazard of erosion by water and wind. When disturbed, these soils have a high hazard of erosion by water and wind (Table 3.8e).

The proposed GuyBlackHawk 24X-27 well pad consists of a preponderance of coarse-loamy sandy soils developed in residuum from soft sandstone bedrock with small areas of fine-loamy soils developed in residuum from glacial till (Figure 3.8a). The well pad would occupy approximately 2.8 acres of SMU 81B, 1.3 acres of SMU 93C, and 0.7 acre of both SMUs 81C and 81D (Table 3.8c). Soil map units 81B, 81C, and 81D have a medium run-off potential and a moderate hazard of erosion by water and wind. When disturbed, these soils have a high hazard of erosion by water and wind (Table 3.8e).

Table 3.8c: ***Estimates of soil map units found at the proposed GuyBlackHawk 24X-27 project site.***

Soil Map Unit	Access Road[1]		Well Pad Acreage	Total Acreage	Percent of Total Acreage
	Length (feet)	Area (acres)			
81B Vebar-Parshall fine sandy loams, 0 to 6 percent slopes	0	0	2.8	2.8	34.5
81C Vebar-Parshall fine sandy loams, 6 to 9 percent slopes	500	2.5	0.7	3.2	39.5
81D Vebar fine sandy loam, 9 to 15 percent slopes	0	0	0.7	0.7	9.0
30E Cohagen-Vebar fine sandy loams, 9 to 25 percent slopes	60	0.1	0.0	0.1	1.0
93C Williams-Zahl loams, 6 to 9 percent slopes	0	0	1.3	1.3	16.0
Total	**560**	**2.6**	**5.5**	**8.1**	**100.0**

[1] Based on a ROW buffer of 100 feet from centerline.

The proposed Lawrence 24X-26 access road would transect areas of coarse-loamy soils developed in residuum and alluvium from soft sandstone bedrock with intermittent areas of fine-loamy soils developed in residuum and alluvium from glacial till (Figures 3.8a-b). The access road would traverse 2,470 ft (11.3 acres) of SMU 93D, 1,850 ft (8.5 acres) of SMU 81C, 1,235 ft (5.7 acres) of SMU 81D, and 620 ft (2.8 acres) of SMU30E (Table 3.8d). Soils in map unit 93D have medium runoff potential and low to moderate hazard of erosion by water. When disturbed, these soils have a moderate hazard of erosion by water and wind. Soils in SMUs 81C and 30E have a medium to high run-off potential and a moderate hazard of erosion by water. When disturbed, these soils have a high hazard of erosion by water and wind (Table 3.8e).

Table 3.8d: ***Estimates of soil map units found for the proposed Lawrence 24X-26 project site.***

Soil Map Unit	Access Road[1]		Well Pad Acreage	Total Acreage	Percent of Total Acreage
	Length (feet)	Area (acres)			
81C Vebar-Parshall fine sandy loams, 6 to 9 percent slopes	1,850	8.5	0.0	8.5	25.1
81D Vebar fine sandy loam, 9 to 15 percent slopes	1,235	5.7	0.0	5.7	16.9
30E Cohagen-Vebar fine sandy loams, 9 to 25 percent slopes	620	2.8	0.0	2.8	8.3
88B Williams loam, 3 to 6 percent slopes	0	0.0	5.5	5.5	16.3
93D Zahl-Williams loams, 9 to 15 percent slopes	2,470	11.3	0.0	11.3	33.4
Total	**6,175**	**28.3**	**5.5**	**33.8**	**100.0**

[1] Based on a 100 foot from proposed road centerline (200 feet total width).

Table 3.8e: ***Soil attributes for the proposed Guy BlackHawk 24X-27 and Lawrence24X-26 sites.***[1]

Soil Series	Soil Map Unit (s)	In Access Roads	In Well Pads	Surface Layer Composition			Erosion Factor[2]		Hydrologic Soil Group[5]
				% sand	% silt	% clay	Kf[3]	T[4]	
Parshall	81B,C	Yes	Yes	69.6	16.4	14.0	0.20	5	B
Vebar	81B,C,D 30E	Yes	Yes	69.6	16.4	14.0	0.20	3	B
Cohagen	30E	Yes	No	69.6	16.4	14.0	0.24	2	D
Williams	88B,93C,D	Yes	Yes	41.1	36.9	22.0	0.28	5	B
Zahl	93C,D	Yes	Yes	41.1	36.9	22.0	0.32	5	B
Bowbells	93D	Yes	No	41.1	36.9	22.0	0.24	5	B

[1] Source: NRCS (2010).
[2] Erosion Factors indicate susceptibility of a soil to sheet and rill erosion by water.
[3] 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.
[4] T estimates maximum average annual rates of erosion by wind and water that will not affect crop productivity. Tons/acre/year range from 1for shallow soils to 5 for very deep soils. Higher T soils can tolerate higher rates of erosion without loss of productivity.
[5] Hydrologic Soil Groups are based on estimates of runoff potential under the following conditions: thoroughly wet soils unprotected by vegetation receive precipitation from long-duration storms. The rate of infiltration decreases from Group A (high infiltration, low runoff) to D (low infiltration, high runoff).

The proposed Lawrence 24X-26 well pad site consists of a preponderance of fine-loamy soils developed in residuum and alluvium from glacial till (Figure 3.8c). The well pad would occupy approximately 5.5 acres of SMU 88B (Table 3.8d). Soils in SMU 88B have a medium runoff potential and a moderate hazard of erosion by water. When disturbed, these soils have a moderate hazard of erosion by water and wind (Table 3.8e).

3.8.2 Soil Impacts

The preponderance of soils at both the GuyBlackHawk and Lawrence sites are moderately deep to deep (30 to greater than 60 inches) sandy and loamy soils and are well suited to construction and restoration. Depth of topsoil varies, from about four to 13 inches on slope shoulders and backslopes to about six to 22 inches on toeslopes and in swales. Topsoil is very friable with good organic matter and nutrient content and has moderate to high available water capacity. The shallow (10 to 20 inches) Cohagen fine sandy loam occurs in minor areas on slope shoulders and summits near sandstone outcrops. Depth of topsoil is about two to six inches. The shallow depth to bedrock is a limitation to excavations and road construction.

Soils are described and classified to about 60 inches or to the limiting layer. Subsoils on both the access roads and well pads for GuyBlackHawk and Lawrence have a moderate to high subsurface calcium carbonate equivalent (up to 15% calcium carbonate by volume) with soil reaction ranging from 7.8 to 8.8 pH. Subsoils on glacial till (Williams and Zahl soils) have a higher calcium carbonate equivalent than subsoils on sandstone (Parshall, Vebar, and Cohagen soils). Careful removal of the topsoil is needed to prevent it from mixing with the calcareous subsoil materials as mixing would adversely affect successful re-vegetation of disturbed areas. Random electrical conductivity (EC) tests revealed very low to low soluble salt content (0 to less than 2 mmhos/cm) and pose little risk to vegetation from salt toxicity. Subsoil material in all soil map units pose a moderate to high risk of corrosion to untreated steel.

Substratum characteristics (greater than 60 inches) where the glacial till mantle is thin forming a discontinuity could yield materials alien to the soil series described in this document. However, it is not expected that the proposed GuyBlackHawk 24X-27 or Lawrence 24X-26 access road and well pad site would yield materials having substratum textures other than those described for the soil series. Reference Unified Classification (particle size) properties for subsoils are provided in Table 3.8f.

Table 3.8f: ***Unified Classification of subsoil materials for the proposed GuyBlackHawk 24X-27 and Lawrence 24X-26 project areas.***

Soil Series	Depth Range (inches)	Unified Classification Symbol
Parshall	48 to 60	CL,CL-ML,ML,SC,SC-SM,SM
Vebar	5 to 32	CL,CL,ML,SC,SC-SM
Vebar (greater than 40 in. deep)	32 to 60	CL,CL-ML,SC,SC-SM,SM
Cohagen	3 to 17	CL,CL-ML,SC,SC-SM
Williams	6 to 60	CL
Zahl	5 to 60	CL

[1] See Figure D1 in Appendix D for definitions of the Unified Classification symbol.

3.8.3 Soil Mitigation

Approximately six to twelve inches of topsoil would be stripped from areas of new construction and stockpiled for use during reclamation. Toxic subsoil layers would be stockpiled in separate areas. Areas stripped of vegetation during initial construction would be reseeded once construction is complete. Implementation of proven best management practices for stabilization and reclamation would be expected to reduce soil erosion to negligible levels. Best management practices (USDA-USDI 2007) applicable to the proposed Guy BlackHawk 24X-27 and Lawrence 24X-26 projects include, but are not limited to:

- Limit ground disturbance to the area that is necessary for the project.
- Minimize the area from which topsoil would be removed.
- Topsoil will be salvaged for use in reclamation.
- Reduce the time that topsoil is stockpiled and seed with native plant species in order to retain viable soil nutrients.
- Topsoil would be stored in at least two piles at each pad to facilitate interim reclamation.
- Minimize the time that barren areas are exposed to reduce soil erosion and colonization by weeds.
- Employ dust control measures as needed.
- Apply soil stabilizers or soil binders as needed.
- Erosion control matting and hydroseeding would be completed on all cut and fill slopes and silt fences would be used downgradient from fill slopes, as necessary.
- Berms will be installed around the well pad perimeter.

3.9 Vegetation and Invasive Species

This section describes existing conditions, potential impacts from the Proposed Action, and suggested mitigation measures for vegetation and invasive species in the GuyBlackHawk 24X-27 and Lawrence 24X-26 project areas.

3.9.1 Ecological Sites

The ecological site methodology was used to analyze native vegetation and invasive species. An ecological site is the product of all the environmental factors responsible for its development, and has a set of defining characteristics (NRCS 2004). Ecological sites have characteristic soils that have developed over time through the soil development process. The factors which affect soil development are parent material, climate, living organisms, topography or landscape position, and time. An ecological site has a characteristic hydrology, particularly infiltration and runoff, which has developed over time. The hydrologic development is influenced by the development of the soil and plant community. The opposite is also true. Ecological sites evolve into characteristic plant communities. The plant community on an ecological site is typified by an association of plant species that differs from that of other ecological sites in the kind and/or proportion of species or in primary production (NRCS 2004).

At the proposed GuyBlackHawk 24X-27 project site, 11 vegetative site inventories were conducted on July 16-17, 2010 (Figure 3.8a). Five distinct ecological sites were identified on the project area: Sandy, Loamy Overflow, Thin Loamy, Loamy, and Shallow Sandy. The most common ecological site type was Sandy (5 sites), followed by Loamy Overflow (3 sites), and Thin Loamy, Shallow Sandy, and Loamy (1 site each) (Table 3.9a) (Figure 3.8, Table 3.9a).

At the proposed Lawrence 24X-26 project site, 12 vegetative site inventories were conducted on August 22, 2010 (Figures 3.8b-c, Table 3.9b). Five distinct ecological sites were identified within the project area: Sandy, Loamy Overflow, Shallow Sandy and Thin Loamy. The most common ecological site type was Sandy (5 locations), followed by Loamy (4 locations), and Loamy Overflow, Shallow Sandy and Thin Loamy (1 location each).

Table 3.9a: ***Summary of vegetation sample sites at the proposed GuyBlackHawk 24X-27 project area.***

Vegetation Sample Sites	Ecological Soil Type (reference ID)	Location	Approx. Elevation (feet)	Aspect	Percent Slope	Dominant Plant Species[1] Photo Numbers in App. B[2]
Site #1	Sandy R054XY026ND	Pad Site	2,259	NE	3	green needlegrass, needleand-thread, blue grama, cudweed sagewort, western snowberry. **Photo 3**, page B-1.
Site #2	Loamy Overflow R054XY031ND	Pad Site	2,241	West	6	green needlegrass, big bluestem, cudweed sagewort, western snowberry. **Photo 11**, page B-1.
Site #3	Sandy R054XY026ND	Pad Site	2,245	SW	11	needleandthread, little bluestem, kentucky bluegrass, cudweed sagewort, western snowberry. **Photo 12**, page B-2.
Site #4	Loamy R054XY031ND	Pad Site	2,251	SW	4	green needlegrass, kentucky bluegrass, cudweed sagewort, poison ivy, silver buffaloberry. **Photo 13**, page B-3.
Site #5	Sandy R054XY026ND	Pad Site	2,241	SE	6	needleandthread, green needlegrass, blue grama, cudweed sagewort, fringed sagewort. **Photo 14**, page B-3.
Site #6	Loamy Overflow R054XY023ND	Pad Site	2,232	SE	5	green needlegrass, western wheatgrass, green sagewort, western snowberry. **Photo 15-16**, page B-3.
Site #7	Loamy Overflow R054XY023ND	Pad Site	2,228	SE	5	needleandthread, green needlegrass, cudweed sagewort, poision ivy, western snowberry. **Photo 17**, page B-3.
Site #8	Thin Loamy R054XY038ND	Pad Site	2,246	South	5	needleandthread, western wheatgrass, cudweed sagewort, prairie rose, green sagewort. **Photo 18**, page B-3.
Access #1	Sandy R054XY026ND	Access Road	2,217	North	9	needleandthread, little bluestem, western wheatgrass, cudweed sagewort, western snowberry. **Photo 22**, page B-4.
Access #2	Sandy R054XY026ND	Access Road	2,231	N	8	needleandthread, green needlegrass, kentucky bluegrass, cudweed sagewort. **Photo 23**, page B-4.
Access #3	Shallow Sandy R054XY043ND	Access Road	2,247	NW	11	needleandthread, green needlegrass, little bluestem, cudweed sagewort, western snowberry. **Photo24**, page B-4.

[1]See Tables 3.9c-d for more details and scientific names.
[2]Photographs at each Ecological Site can be found on pages B-1 through B-4 in Appendix B.

Table 3.9b: ***Summary of vegetation sample sites at the proposed Lawrence 24X-26 project area.***

Vegetation Sample Site	**Ecological Soil Type** (reference ID)	**Location**	**Approx. Elevation** (feet)	**Aspect**	**Percent Slope**	**Dominant Plant Species[1] Photo Numbers in App. B[2]**
Access #1 (shared)	Sandy R054XY026ND	Shared Road	2,216	North	9	green needlegrass, little bluestem, cudweed sagewort, perennial forbs. **Photo 25**, page B-5.
Access #2 (shared)	Sandy R054XY026ND	Shared Road	2,231	North	8	green needlegrass, little bluestem, perennial forbs, western snowberry. **Photo 26**, page B-6.
Access #1	Sandy R054XY026ND	Access Road	2,260	North	15	needleandthread, cudweed sagewort, goldenrod, western snowberry. **Photos 27-28**, page B-5
Access #2	Loamy Overflow R054XY023ND	Access Road	2,209	East	4	green needlegrass, Kentucky bluegrass, cudweed sagewort, western snowberry. **Photos 29-30**, page B-5.
Access #3	Loamy R054XY031ND	Access Road	2,235	North	17	blue grama, needleandthread, western wheatgrass, cudweed sagewort. **Photos 31-32**, page B-6.
Access #4	Shallow Sandy R054XY043ND	Access Road	2,232	North	2	needleandthread, blue grama, cudweed, sagewort, silverleaf scurfpea, western snowberry. **Photos 33-32**, page B-6.
Access #5	Loamy R054XY031ND	Access Road	2,228	NE	14	needleandthread, blue grama, cudweed sagewort, western snowberry. **Photos 35-36**, page B-6.
Access #6	Sandy R054XY026ND	Access Road	2,165	North	15	needleandthread, cudweed sagewort, blue grama, perennial forbs. **Photos 37-38**, page B-7.
Access #7	Sandy R054XY026ND	Access Road	2,147	NE	2	needleandthread, cudweed sagewort, blue grama, perennial forbs. **Photos 39-40**, page B-7.
Site #8	Loamy R054XY031ND	Pad Site	2,104	North	4	little bluestem, green needlegrass, blue grama. **Photo 41**, page B-7.
Site #9	Loamy R054XY031ND	Pad Site	2,099	NE	2	green needlegrass, cudweed sagewort, goldenrod. **Photo 42**, page B-7.
Access #10	Thin Loamy R054XY038ND	Access Road	2,114	South	15	blue grama, needleandthread, little bluestem, cudweed sagewort. **Photos 43-44**, page B-8.

[1]See Tables 3.9e-f for more details and scientific names.
[2]Photographs at each Ecological Site can be found on pages B-5 through B-8 in Appendix B.

The following are brief descriptions (NRCS 2004) of the five types of ecological sites found in both the GuyBlackHawk 24X-27 and Lawrence 24X-26 project areas. Photographs of each ecological site at the GuyBlackHawk and Lawrence project areas were taken (Appendix C).

Sandy Ecological Site
Sandy ecological sites occur on gently undulating to rolling sedimentary uplands, alluvial fans, and hillsides. These sites are moderately well to well drained; vegetative production is limited by water availability. The historical climax plant community (HCPC) for the sandy ecological site is the prairie sandreed/bluestem community type. The potential vegetative composition for the sandy ecological site is estimated at roughly 85% graminoids, 10% forbs, and 5% shrubs. Although dependent upon site specific conditions, annual vegetative productivity can be expected to range from 1,500 to 3,300 pounds per acre, with approximately 83% of the annual plant growth occurring in May, June, and July (NRCS 2004). Sandy ecological sites were found on the pad and access road.

Loamy Ecological Site
Loamy ecological sites occur on gently undulating to rolling sedimentary uplands such as alluvial fans, alluvial flats, on hillsides and rangeland throughout the project area. These sites are well drained and water is the limiting factor to vegetative production. Typically the HCPC for loamy ecological site types is western wheatgrass/green needlegrass community type. The potential vegetative composition for this community type is estimated at roughly 85% graminoids, 10% forbs, and 5% shrubs. Although dependent upon site specific conditions, annual vegetative productivity can be expected to range from 1,400 to 3,400 pounds per acre, with approximately 80% of plant growth occurring in May, June, and July (NRCS 2004).

Loamy Overflow Ecological Site
Loamy overflow sites were found on rangeland, primarily in draws and swales. The HCPC for this ecological site usually has a plant community consisting primarily of western snowberry, Kentucky bluegrass, needlegrasses, and blue grama. This is a more productive site primarily because of the periodic nature of collecting additional moisture. Poison ivy is common on this site and commonly found forbs are cudweed sagewort, goldenrod, purple prairie clover, western yarrow, silverleaf scurfpea, and black Samson. Extended periods of non-grazing use or fire would result in a plant community having high litter levels, which favors the increase in Kentucky bluegrass. In time, shrubs such as western snowberry and chokecherry would likely increase to dominate the site. The HCPC composition is 85% graminoids, 10% forbs and 5% shrub. Although dependent upon site specific conditions, annual vegetative productivity can be expected to range from 2,400 to 4,000 pounds per acre, with approximately 80% of the growth occurring from May, June, and July (NRCS 2004).

Shallow Sandy Ecological Site
Extended periods of non-use by grazing animals and/or the absence of fire would result in a plant community having high litter levels causing decadence, mortality, and an increase of Kentucky bluegrass, smooth brome, and club moss. The HCPC for this ecological site consists of prairie sandreed, little bluestem, needleandthread, sedge, blanketflower, dotted gayfeather, hood phlox, purple coneflower, western yarrow, ground plum milkvetch, fringed sagewort, prairie rose, and winterfat. The HCPC for this site is 85% gramanoids, 10% forbs, and 5% shrubs. Although dependent upon site specific conditions, annual vegetative productivity can be expected to range from 900 to 1,900 pounds per acre, with approximately 85% of the annual growth occurring from May to July (NRCS 2004).

Thin Loamy Ecological Site
This plant community is relatively stable and its competitive ability prevents other species from establishing within it. This site is less productive than other ecological sites and is more prone to accelerated runoff and soil erosion. Soil erosion can be critical and mitigation or conservation measures

are necessary. The HCPC for this ecological site is composed of needlegrass, little bluestem, western wheatgrass, cudweed sagewort, needleleaf sedge, fringed sagewort, western yarrow, and silverleaf scurfpea. The HCPC for this site is 85% graminoids, 10% forbs, and 5% shrubs. Although dependent upon site specific conditions, annual vegetative productivity can be expected to range from 700 to 2,400 pounds per acre, with approximately 85% of the annual growth occurring from May to July (NRCS 2004).

3.9.2 Vegetative Species

The proposed GuyBlackHawk 24X-27 well pad occurs on rangeland. The most commonly encountered plant species found at these sample locations included green needlegrass, little bluestem, Kentucky bluegrass, western wheatgrass, needleandthread, cudweed sagewort, prairie coneflower, black samson, dotted gayfeather, blanket flower, western yarrow, western snowberry, and prairie rose. A comprehensive plant list for the GuyBlackHawk pad (Table 3.9c) and access road (Table 3.9d) were compiled. No State sensitive plant species were found on the GuyBlackHawk project site during the July 16-17, 2010 site visits (Tables 3.9c-d).

Table 3.9c: ***Plant species observed at each Ecological Site and perimeter for the proposed GuyBlackHawk 24X-27 well pad.***

SCIENTIFIC NAME	COMMON NAME	SITE #1	SITE #2	SITE #3	SITE #4	SITE #5	SITE #6	SITE #7	SITE #8	PERIMETER			
										SW	SE	NE	NW
GRASSES/GRASS-LIKES													
Agropyron cristatum	crested wheatgrass										X		
Aristida longiseta	red threeawn										X		
Andropogon gerardii	big bluestem		X				X	X					
Bouteloua gracilis	blue grama			X						X	X	X	X
Bouteloua curtipendula	Sideoats grama												X
Bromus inermis	Smooth brome									X			X
Calamagrostis montanensis	plains reedgrass	X							X	X	X		
Calamovilfa longifolia	prairie sandreed	X							X				
Carex pensylvanica	pen sedge										X		
Carex inops	sun sedge				X					X		X	
Elymus canadensis	Canada wildrye			X							X		X
Elymus caninus	bearded wheatgrass	X		X	X	X		X	X				
Elymus lanceolatus	thickspike wheatgrass	X							X	X	X	X	X
Hesperostipa comata	needleandthread grass	X	X	X	X	X	X	X	X	X	X	X	X
Hesperostipa spartea	porcupine grass			X				X					X
Koleria macrantha	prairie junegrass	X		X		X		X	X				
Muhlenbergia cuspidata	plains muhly			X				X		X		X	
Nasella viridula	green needlegrass	X	X				X		X	X	X	X	X
Panicum virgatum	switchgrass			X						X			
Pascopyrum smithii	western wheatgrass		X		X		X			X	X	X	X
Poa secunda	Sandberg bluegrass		X			X	X	X		X	X	X	X
Schizachyrium scoparium	little bluestem	X		X		X			X	X	X	X	X
Sporobolus heterolepsis	prairie dropseed	X	X		X	X	X	X	X	X			X
FORBS													
Achillea millefolium	common yarrow	X		X					X	X	X	X	X
Agoseris gluaca	false dandelion		X				X	X					
Agrimonia striata	roadside agrimonia									X			
Allium ascalonicum	wild onion	X							X		X	X	
Anemone canadensis	meadow anemone		X				X	X				X	
Antennaria rosea	rose pussytoes								X				
Arabis spp.	rock cress	X		X						X	X		
Artemisia dranunculus	green sagewort	X	X			X	X	X	X		X	X	X
Artemisia ludoviciana	cudweed sagewort	X	X	X	X	X	X	X	X	X	X	X	X
Asclepias spp.	milkweed										X		X

Table 3.9c (continued): ***Plant species observed at each Ecological Site and perimeter for the proposed GuyBlackHawk 24X-27 well pad.***

SCIENTIFIC NAME	COMMON NAME	SITE #1	SITE #2	SITE #3	SITE #4	SITE #5	SITE #6	SITE #7	SITE #8	PERIMETER			
										SW	SE	NE	NW
FORBS (continued)													
Aster falcatus	white prairie aster	X	X				X	X	X				
Astragalus crassicarpus	groundplum milkvetch	X		X		X			X		X	X	X
Astragalus spp.	milkvetch	X	X	X		X	X	X	X		X	X	X
Balsamorhiza macrophylla	cutleaf balsamroot					X							
Balsamorhiza spp.	balsamroot	X	X				X	X	X		X		X
Campanula rotundiflora	harebell	X								X			
Cirsium flodmanii	Flodman's thistle				X						X		
Cirsium undulatum	wavy-leaf thistle	X							X	X	X		
Cleome serulata	beeplant				X		X						
Dalea purpurea	purple prairie clover	X		X		X			X				
Echinacea angustifolia	black samson	X	X	X		X	X	X	X	X	X	X	X
Eriogonum spp.	buckwheat	X	X		X		X	X	X	X	X	X	X
Erodium cicutarium	redstem filaree	X			X					X	X		
Galium boreale	northern bedstraw	X							X	X		X	
Geranium richardsonii	Richardson's geranium	X								X			
Geum triflorum	prairie smoke	X	X	X		X		X	X	X	X	X	X
Glaux spp.	milkwort		X			X	X	X		X			
Glycyrrhiza lepidota	American licorice		X				X	X			X		X
Grindelia squarrosa	curlycup gumweed			X			X			X	X	X	
Hedysarium alpinum	hedysarium		X			X	X	X		X	X	X	X
Helianthus spp.	sunflower	X			X	X			X	X	X	X	
Heterotheca villosa	hairy goldenaster	X		X		X			X	X	X	X	X
Lappula occidentalis	western sticktight								X	X	X	X	
Lesquerella arenosa	sand bladderpod	X							X		X	X	X
Liatris punctata	dotted gayfeather	X	X	X		X	X	X	X	X	X	X	X
Lillium philadelphicum	western red lily	X	X	X	X	X	X	X	X				
Lomatium spp.	biscuitroot	X	X				X	X	X	X	X	X	X
Lupinus argenteus	silver lupine		X				X	X		X	X	X	X
Lygodesmia juncea	rush skeletonweed	X											
Mentha spp.	mint	X	X		X		X	X	X	X	X	X	X
Penstemon spp.	penstemon	X	X				X	X	X				
Phlox hoodii	hood phlox	X			X				X				
Plantago patagonica	woolly indianwheat	X	X			X	X	X	X				
Psoralea argophylla	silverleaf scurfpea	X	X	X	X	X	X	X	X				

Table 3.9c (continued): ***Plant species observed at each Ecological Site and perimeter for the proposed GuyBlackHawk 24X-27 well pad.***

SCIENTIFIC NAME	COMMON NAME	SITE #1	SITE #2	SITE #3	SITE #4	SITE #5	SITE #6	SITE #7	SITE #8	PERIMETER SW	PERIMETER SE	PERIMETER NE	PERIMETER NW
FORBS (continued)													
Ranunculus rhombodieus	prairie buttercup		X		X		X	X	X				
Ratibida columnifera	prairie coneflower	X	X	X	X	X	X	X	X				
Rudbeckia hirta	blackeyed susan	X	X			X			X		X		
Senecio vulgaris	common groundsel					X			X				
Solidago spp.	goldenrod	X	X	X	X	X	X	X	X				
Sphaeralcea coccinea	scarlet globemallow	X		X	X				X				
Trifolium spp.	clover		X				X	X			X	X	
Urtica dioica	stinging nettle					X			X		X		
Vicia americana	American vetch		X	X			X	X			X		
Wyethia spp.	mulesear			X								X	
Zydagenis elegans	death camas					X							
FUNGI													
Agaricus spp.	mushroom										X		
INVASIVES FORBS & GRASSES													
Brassica spp.	mustard		X				X	X		X	X		X
Bromus inermis	smooth brome	X							X		X		X
Bromus japonicus	Japanese brome	X							X	X			
Bromus tectorum	cheatgrass	X							X				
Camelina crantz	false flax	X								X	X		
Chenopodium album	lambsquarter											X	
Cirsium vulgare	bull thistle	X		X					X	X	X		
Descurainia sophia	flixweed										X		
Lactuca serriola	prickly lettuce	X							X	X	X		
Lepidium spp.	pepperweed	X							X		X		
Melilotus officinalis	Yellow sweetclover												
Onobrychis spp.	sainfoin										X		
Poa pratensis	Kentucky bluegrass	X	X		X	X	X	X	X				
Sisymbrium altissimum	tall tumblemustard	X		X					X				
Taraxacum officinale	common dandelion	X				X			X				
Thlaspi arvense	fanweed	X							X				
Tragopogon dubius	western salsify	X	X	X		X	X	X	X				
Xanthium spp.	cocklebur										X	X	

Table 3.9c (continued): ***Plant species observed at each Ecological Site and perimeter for the proposed GuyBlackHawk 24X-27 well pad.***

SCIENTIFIC NAME	COMMON NAME	SITE #1	SITE #2	SITE #3	SITE #4	SITE #5	SITE #6	SITE #7	SITE #8	PERIMETER			
										SW	SE	NE	NW
SHRUBS/TREES													
Artemisia frigida	fringed sagewort	X		X		X			X	X	X	X	X
Gutierrezia sarothrae	broom snakeweed												X
Juniperus horizontalis	creeping juniper	X							X	X			
Potentilla fruticosa	shrubby cinquefoil	X		X					X	X	X		
Rosa arkansana	prairie rose	X							X	X	X	X	X
Rosa woodsii	Woods' rose								X	X	X	X	X
Shepherdia argentea	silver buffaloberry			X	X					X			X
Symphoricarpos occidentalis	western snowberry	X	X	X			X	X	X	X	X	X	X
Toxicodendron rydbergii	poison ivy	X		X					X	X	X	X	X
Yucca glauca	small soapweed												X

Table 3.9d: ***Plant species observed in each Ecological Site for the proposed GuyBlackHawk 24X-27 access road.***

SCIENTIFIC NAME	COMMON NAME	Access Road Site #1	Access Road Site #2	Access Road Site #3
GRASSES/GRASS-LIKES				
Calamagrostis montanensis	plains reedgrass	X	X	X
Calamovilfa longifolia	prairie sandreed	X	X	X
Carex pensylvanica	pen sedge			X
Elymus caninus	bearded wheatgrass	X	X	X
Elymus lanceolatus	thickspike wheatgrass	X	X	X
Hesperostipa comata	needleandthread grass	X	X	X
Koleria macrantha	prairie junegrass	X	X	X
Nasella viridula	green needlegrass	X	X	X
Poa secunda	Sandberg bluegrass	X		
Schizachyrium scoparium	little bluestem	X	X	X
Sporobolus heterolepsis	prairie dropseed	X	X	X
FORBS				
Achillea millefolium	common yarrow	X	X	X
Agrimonia striata	roadside agrimonia		X	
Allium ascalonicum	wild onion	X	X	X
Arabis spp.	rock cress	X	X	
Artemisia dranunculus	green sagewort	X	X	X
Artemisia ludoviciana	cudweed sagewort	X	X	X
Astragalus crassicarpus	groundplum milkvetch	X	X	X
Astragalus spp.	milkvetch	X	X	X
Balsamorhiza spp.	balsamroot	X	X	X
Cirsium undulatum	wavyleaf thistle	X	X	X
Dalea purpurea	purple prairie clover	X	X	X
Echinacea angustifolia	black samson	X	X	X
Eriogonum spp.	buckwheat	X	X	X
Galium boreale	northern bedstraw	X	X	X
Geum triflorum	prairie smoke	X	X	X
Helianthus spp.	sunflower	X	X	X
Heterotheca villosa	hairy goldenaster	X	X	X
Liatris punctata	dotted gayfeather	X	X	X
Lomatium spp.	biscuitroot	X	X	X
Lesquerella arenosa	sand bladderpod	X	X	X
Mentha spp.	mint	X	X	X
Penstemon spp.	penstemon	X	X	X
Phlox hoodii	hood phlox	X	X	X
Plantago patagonica	woolly indianwheat	X	X	X
Psoralea argophylla	silverleaf scurfpea	X	X	X
Ratibida columnifera	prairie coneflower	X	X	X
Ranunculus rhombodieus	prairie buttercup	X	X	X
Rudbeckia hirta	blackeyed susan	X	X	X
Solidago spp.	goldenrod	X	X	X
Sphaeralcea coccinea	scarlet globemallow	X	X	X
Trifolium spp.	clover	X	X	
Wyethia spp.	mulesear		X	
Lillium philadelphicum	western red lily	X	X	X

Table 3.9d (continued): ***Plant species observed in each Ecological Site for the proposed GuyBlackHawk 24X-27 access road.***

SCIENTIFIC NAME	COMMON NAME	Access Road Site #1	Access Road Site #2	Access Road Site #3
INVASIVES FORBS & GRASSES				
Bromus japonicus	Japanese brome	X	X	X
Bromus tectorum	cheatgrass	X	X	X
Camelina crantz	false flax	X	X	X
Cirsium vulgare	bull thistle	X	X	X
Lactuca serriola	prickly lettuce	X	X	X
Lepidium spp.	pepperweed	X	X	X
Poa pratensis	Kentucky bluegrass	X	X	X
Sisymbrium altissimum	tall tumblemustard	X	X	X
Taraxacum officinale	common dandelion	X	X	X
Thlaspi arvense	fanweed	X	X	X
Tragopogon dubius	western salsify	X	X	X
SHRUBS/TREES				
Artemisia frigida	fringed sagewort	X	X	X
Juniperus horizontalis	creeping juniper	X	X	X
Prunus virginiana	chokecherry			X
Rosa arkansana	prairie rose	X	X	X
Rosa woodsii	Woods rose	X	X	X
Symphoricarpos occidentalis	western snowberry	X	X	X
Toxicodendron rydbergii	poison ivy	X	X	X
Potentilla fruticosa	shrubby cinquefoil	X	X	X

The proposed Lawrence 24X-26 project site occurs on rangeland. The most commonly encountered plant species found at these sample locations included Little bluestem, blue grama, western wheatgrass, Kentucky bluegrass, needle-and-thread, bearded wheatgrass, cudweed sagewort, green sagewort, fringed sagewort, western yarrow, black samson, purple prairie clover, dotted gayfeather, western red lilly, blanket flower, goldenrod, mint, silverleaf scurfpea, western snowberry, silver buffaloberry and poison Ivy. A comprehensive plant list for the proposed Lawrence well pad (Table 3.9e) and access road (Table 3.9f) were compiled. No State sensitive plant species were found on Lawrence 24X-26 during the August 22, 2010 site visit (Table 3.9e-f).

Table 3.9e: ***Plant species observed in each Ecological Site and perimeter for the proposed Lawrence 24X-26 well pad.***

SCIENTIFIC NAME	COMMON NAME	SITE #8	SITE #9	PERIMETER			
				SW	SE	NE	NW
GRASSES/GRASS-LIKES							
Aristida longiseta	red threeawn	X	X				
Andropogon gerardii	big bluestem			X		X	X
Bouteloua gracilis	blue grama	X		X	X	X	X
Bouteloua dactyloides	buffalograss			X			
Bouteloua curtipendula	sideoats grama			X	X		
Calamagrostis montanensis	plains reedgrass			X	X		
Carex pensylvanica	pen sedge	X	X	X	X	X	X
Carex inops	sun sedge			X	X		
Elymus caninus	bearded wheatgrass	X		X	X	X	X
Hesperostipa comata	needleandthread grass	X	X	X	X	X	X
Koleria macrantha	prairie junegrass	X	X	X	X		
Muhlenbergia cuspidata	plains muhly	X		X	X		
Nasella viridula	green needlegrass	X		X	X		
Panicum virgatum	switchgrass	X		X	X		
Pascopyrum smithii	western wheatgrass	X	X	X	X	X	X
Poa secunda	Sandberg bluegrass			X	X	X	X
Schizachyrium scoparium	little bluestem	X		X	X	X	X
Sporobolus heterolepsis	prairie dropseed			X		X	
FORBS							
Achillea millefolium	common yarrow	X	X	X	X	X	X
Agoseris gluaca	false dandelion					X	X
Allium ascalonicum	wild onion				X	X	
Antennaria rosea	rose pussytoes	X	X	X	X		
Artemisia dranunculus	green sagewort	X		X	X	X	X
Artemisia ludoviciana	cudweed sagewort	X	X	X	X	X	X
Aster falcatus	white prairie aster	X		X	X	X	X
Astragalus crassicarpus	groundplum milkvetch	X		X	X	X	X
Balsamorhiza macrophylla	cutleaf balsamroot	X		X	X		
Brassica spp.	mustard		X			X	X
Camelina crantz	false flax						X
Campanula rotundiflora	harebell	X				X	
Cirsium flodmanii	Flodman's thistle	X					
Cirsium undulatum	wavyleaf thistle			X		X	X
Cleome serulata	beeplant			X			X
Dalea purpurea	purple prairie clover	X	X	X	X	X	X
Descurainia sophia	flixweed	X					X
Echinacea angustifolia	black samson	X		X	X	X	X
Eriogonum spp.	buckwheat	X		X	X	X	X

Table 3.9e: ***Plant species observed in each Ecological Site and perimeter for the proposed Lawrence 24X-26 well pad.***

SCIENTIFIC NAME	COMMON NAME	SITE #8	SITE #9	PERIMETER			
				SW	SE	NE	NW
FORBS (continued)							
Geranium richardsonii	Richardson's geranium			X			
Geum triflorum	prairie smoke	X		X			
Glaux spp.	milkwort	X		X	X	X	
Grindelia squarrosa	curlycup gumweed	X	X	X	X		X
Helianthus spp.	sunflower	X				X	
Heterotheca villosa	hairy goldenaster	X	X	X	X	X	X
Lesquerella arenosa	sand bladderpod	X					
Liatris punctata	dotted gayfeather	X		X	X		
Lillium philadelphicum	western red lily	X		X	X	X	X
Mentha spp.	mint	X		X	X		
Phlox hoodii	hood phlox		X		X	X	
Plantago patagonica	woolly indianwheat	X	X	X	X		
Psoralea argophylla	silverleaf scurfpea	X	X	X	X	X	
Ranunculus rhombodieus	prairie buttercup		X				
Ratibida columnifera	prairie coneflower	X		X	X	X	X
Rudbeckia hirta	blackeyed susan	X	X	X	X	X	X
Senecio vulgaris	common groundsel	X	X	X	X	X	X
Solidago spp.	goldenrod	X	X	X	X	X	X
Sphaeralcea coccinea	scarlet globemallow			X			
Urtica dioica	stinging nettle				X		
Vicia americana	American vetch	X					
Zydagenis elegans	death camas	X				X	
INVASIVE FORBS							
Lepidium spp.	pepperweed	X					
Onopordum acanthium	scotch thistle	X	X			X	
Poa pratensis	Kentucky bluegrass	X	X	X	X	X	X
Taraxacum officinale	common dandelion	X	X		X	X	X
Tragopogon dubius	western salsify					X	X
Trifolium spp.	clover					X	
SHRUBS/TREES							
Artemisia frigida	fringed sagewort	X	X		X		
Crataegus spp.	hawthorn			X		X	X
Fraxinus pennsylvanica	green ash				X		X
Gutierrezia sarothrae	broom snakeweed			X			
Opuntia polyacantha	plains pricklypear			X			
Potentilla spp.	cinquefoil			X			
Prunus virginiana	chokecherry					X	X
Ribes aureum	golden currant			X			
Ribes spp.	gooseberry					X	
Rosa arkansana	prairie rose	X	X	X	X	X	
Rosa woodsii	Woods' rose	X		X	X		
Shepherdia argentea	silver buffaloberry			X	X	X	X
Symphoricarpos albus	common snowberry			X	X		
Symphoricarpos occidentalis	western snowberry	X	X	X		X	X
Toxicodendron rydbergii	poison ivy			X	X		X
Yucca glauca	small soapweed			X			X

Table 3.9f: ***Plant species observed in each Ecological Site for the proposed Lawrence 24X-26 access road.***

SCIENTIFIC NAME	COMMON NAME	Access Road Site #1	Access Road Site #2	Access Road Site #3	Access Road Site #4	Access Road Site #5	Access Road Site #6	Access Road Site #7	Access Road Site #10
GRASSES/GRASS-LIKES									
Andropogon gerardii	big bluestem	X	X	X		X			
Bouteloua curtipendula	sideoats grama	X		X	X	X	X	X	
Bouteloua dactyloides	buffalograss	X							
Bouteloua gracilis	blue grama	X			X		X	X	X
Calamagrostis montanensis	plains reedgrass							X	
Carex filifolia	threadleaf sedge	X		X		X			
Carex inops	sun sedge							X	X
Carex pensylvanica	pen sedge	X			X			X	
Elymus caninus	bearded wheatgrass	X	X	X		X			X
Hesperostipa comata	needleandthread grass	X	X		X		X	X	X
Hesperostipa spartea	porcupine grass							X	
Koleria macrantha	prairie junegrass		X					X	X
Nasella viridula	green needlegrass	X			X		X		
Panicum virgatum	switchgrass	X		X		X			X
Pascopyrum smithii	western wheatgrass		X		X			X	X
Poa secunda	Sandberg bluegrass	X	X				X	X	
Schizachyrium scoparium	little bluestem	X			X		X	X	
Sporobolus heterolepis	Prairie dropseed		X						
FORBS									
Achillea millefolium	common yarrow		X	X	X			X	X
Agoseris gluaca	false dandelion	X							
Allium ascalonicum	wild onion				X			X	
Antennaria rosea	rose pussytoes								X
Artemisia dranunculus	green sagewort	X			X		X	X	X
Artemisia ludoviciana	cudweed sagewort	X		X	X		X	X	
Aster falcatus	white prairie aster	X	X	X		X			X
Astragalus crassicarpus	groundplum milkvetch	X			X			X	X
Campanula rotundiflora	harebell				X			X	
Cirsium flodmanii	Flodman's thistle	X	X	X		X		X	X
Cirsium undulatum	wavyleaf thistle								X
Cleome serulata	beeplant					X			
Dalea purpurea	purple prairie clover	X	X	X	X		X	X	X

Table 3.9f (continued): ***Plant species observed at each Ecological Site for the proposed Lawrence 24X-26 access road.***

SCIENTIFIC NAME	COMMON NAME	Access Road Site #1	Access Road Site #2	Access Road Site #3	Access Road Site #4	Access Road Site #5	Access Road Site #6	Access Road Site #7	Access Road Site #10
Echinacea angustifolia	black samson	X	X	X	X		X	X	X
Geranium richardsonii	Richardson's geranium	X					X		
Geum triflorum	prairie smoke	X		X		X	X	X	
Glaux spp.	milkwort				X				
Glycyrrhiza lepidota	American licorice		X						X
Grindelia squarrosa	curlycup gumweed	X		X	X	X	X	X	X
Helianthus spp.	sunflower	X		X	X		X	X	X
Heterotheca villosa	hairy goldenaster	X	X	X	X	X	X	X	X
Liatris punctata	dotted gayfeather		X	X	X	X			X
Lillium philadelphicum	western red lily	X	X	X	X	X	X	X	X
Lomatium spp.	biscuitroot					X			X
Lygodesmia juncea	rush skeletonweed				X				X
Mentha spp.	mint				X	X			X
Penstemon spp.	penstemon		X	X					X
Phlox hoodii	hood phlox	X		X					
Plantago patagonica	woolly indianwheat	X							X
Psoralea argophylla	silverleaf scurfpea	X	X	X	X	X			X
Ranunculus rhombodieus	prairie buttercup							X	
Ratibida columnifera	prairie coneflower	X	X	X	X	X		X	X
Rudbeckia hirta	blackeyed susan	X	X	X	X	X		X	X
Senecio vulgaris	common groundsel	X		X	X	X		X	
Solidago spp.	goldenrod	X	X	X		X		X	X
Sphaeralcea coccinea	scarlet globemallow	X		X					
Trifolium spp.	clover		X			X			
Vicia americana	American vetch	X		X		X			
Zydagenis elegans	death camas		X			X			X
FUNGI									
Agaricus spp.	mushroom								X
SELAGINELLA (LESSER CLUB-MOSS)									
Selaginella densa	dense clubmoss				X				

Table 3.9f (continued): ***Plant species observed at each Ecological Site for the proposed Lawrence 24X-26 access road.***

SCIENTIFIC NAME	COMMON NAME	Access Road Site #1	Access Road Site #2	Access Road Site #3	Access Road Site #4	Access Road Site #5	Access Road Site #6	Access Road Site #7	Access Road Site #10
INVASIVE FORBS & GRASSES									
Brassica spp.	mustard							X	X
Bromus japonicus	Japanese brome				X			X	
Camelina crantz	false flax				X			X	X
Cirsium vulgare	bull thistle	X	X	X			X	X	
Descurainia sophia	flixweed							X	
Lactuca serriola	prickly lettuce		X		X			X	
Onopordum acanthium	scotch thistle			X					X
Poa pratensis	Kentucky bluegrass	X	X	X	X	X		X	X
SHRUBS/TREES									
Artemisia frigida	fringed sagewort	X			X		X	X	X
Potentilla spp.	cinquefoil						X		
Rosa arkansana	prairie rose	X					X		X
Rosa woodsii	Woods' rose	X		X		X			
Symphoricarpos albus	common snowberry		X		X				
Symphoricarpos occidentalis	western snowberry		X		X			X	X
Taraxacum officinale	common dandelion	X		X		X	X	X	X
Toxicodendron rydbergii	poison ivy		X		X				
Tragopogon dubius	western salsify		X		X				X
Urtica dioica	stinging nettle		X			X			
Xanthium spp.	cocklebur		X			X			

3.9.3 Invasive Species

As defined by Executive Order 13112, an "invasive species" is that which is 1) a non-native (or alien) to the ecosystem under consideration and 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health (North Dakota Department of Agriculture [NDDA] 2009). Within the proposed GuyBlackHawk and Lawrence project areas sites up to 19 exotic and invasive plants are present: smooth brome (*Bromus inermis*), Japanese brome (*Bromus japonicus*), cheatgrass (*Bromus tectorum*), false flax (*Camelina crantz*), bull thistle (*Cirsium vulgare*), lamb's-quarter (*Chenopodium album*), tall tumblemustard (*Sisymbrium altissimum*), common dandelion (*Taraxacum officinale*), tumble mustard (*Brassica* spp.), flixweed (*Descuraninia sophia*), prickly lettuce (*Lactuca serriola*), pepperweed (*Lepidium* spp.), yellow sweetclover (*Melilotus officinalis*), scotch thistle (*Onopordum acanthium*), Kentucky bluegrass (*Poa pratensis*), fanweed (*Thlaspi arvense*), western salsify (*Tragopogon dubius*), possibly clover (*Trifolium* spp.), and possibly cocklebur (*Xanthium* spp.) (Tables 3.9c-f).

3.9.4 Noxious Weeds

The State of North Dakota defines a "Noxious weed" as any plant propagated by either seed or vegetative parts which is determined by the commissioner after consulting with the North Dakota State University Extension Service county agent or the county weed board to determine if the plant is harmful to public health, crops, livestock, land, or other property (ND Century Code 63-01.1-02) (NDDA 2009). Noxious weeds can spread easily to the detriment of public health, indigenous plant communities, crops, livestock, and recreational areas, and to the detriment of natural or agricultural systems management. In North Dakota, twelve species have been declared noxious under the North Dakota Century Code (Chapter 63-01.1) (Table 3.9g). However, only five noxious weeds are known to occur in Dunn County (Table 3.9g). Within the project boundaries, no noxious weeds were found (Table 3.9g).

Table 3.9g: ***North Dakota noxious Weeds present in Dunn County and in vicinity of the proposed GuyBlackHawk and Lawrence project areas.***

Scientific Name	Common Name	Present in Dunn County?	Present in vicinity of project site?
Artemisia absinthium	absinth wormwood	Yes	No
Carduus nutans	musk thistle	No	No
Centaurea diffusa	diffuse knapweed	No	No
Centaurea maculosa	spotted knapweed	No	No
Centaurea repens	Russian knapweed	No	No
Centaurea solstitialis	yellow starthistle	No	No
Cirsium arvense	Canada thistle	Yes	No
Convolvulus arvensis	field bindweed	Yes	No
Euphorbia esula	leafy spurge	Yes	No
Linaria dalmatica	Dalmation toadflax	Yes	No
Lythrum salicaria	purple loosestrife	No	No
Tamarix spp. [complex]	saltcedar	Yes	No

3.9.5 Vegetation Impacts

Construction of the proposed GuyBlackHawk 24X-27 and Lawrence 24X-26 well pads and access roads would impact all five types of ecological sites. The total temporary or permanent disturbance area of 7.5 acres for GuyBlackHawk and 16.9 acres for Lawrence would reduce available forage for livestock and wildlife in the area by approximately 1,200 pounds per acre each year (NRCS 2004). Actual forage reductions would depend on the timing and amount of precipitation the site receives each year.

Soil compaction by heavy equipment could hinder the re-growth of vegetation and the revegetation efforts because it reduces the ability of water to percolate through the soil and reduces air spaces for water to occupy (Goodwin and Sheley 2003). Broadcast seeding on top of compacted soil could cause more seeds to blow away, be eaten by predators, or be eroded away by precipitation (Goodwin and Sheley 2003). Seeding by drilling is recommended (Table 3.9h).

Within the proposed GuyBlackHawk and Lawrence well pads and access roads there are currently no noxious weeds. However, there are at least 17 invasive species within these project areas. The potential disturbance of almost 25 acres could allow invasive plants to spread or noxious weeds to invade the site. Invasive and noxious weeds often out-compete native plants because they grow in the absence of population controls. Their populations reduce the quality and quantity of forage for game/livestock and crop production, reduces species diversity in the landscape, and generally does not provide habitat for native fauna (NDDA 2009).

3.9.6 Vegetative Mitigation

The following mitigation measure would be implemented to avoid, minimize and mitigate for impacts to vegetative resources in the project area.

- To maintain plant biodiversity, ground disturbance would be minimized to the extent that is necessary for the project. Equipment would work within the confines of the approved ROW and well pad area boundary.
- Topsoil that is removed would be stock-piled, and used in reclamation efforts.
- Severely compacted soil would be scarified or plowed to roughen the soil and increase germination rates (Goodwin and Sheley 2003). Soil scarification would be conducted by raking the soil with a ripper shank that is pulled behind a tractor, grader, or bulldozer.
- Areas stripped of topsoil would be reseeded with desirable native plant species and be reclaimed at the earliest practicable opportunity.
- Certified weed-free straw and seed would be used for all construction, seeding, and reclamation efforts.
- The APDs would require the operator to control all noxious weeds within the project area (Appendix A), though none were observed during the site visits. In the event noxious weeds invade the site prior to development, control efforts would be implemented for a growing season prior to ground-disturbing activities and after ground-disturbing activities occur. Control measures could include usingrecommended herbicides, hand-pulling, applying bio-control, seeding, and/or planting of desirable native vegetation. Herbicides would be applied at the appropriate time(s) of year, in the appropriate weather condition, with the appropriate chemical, and at the appropriate rate.
- All woody material would be mulched, stored with the topsoil, and scattered on the disturbed surfaces during reclamation.

North Dakota Parks and Recreation recommends that impacted areas be revegetated with species native to the project area (NDPR 2009) (Appendix F). Further, the USFWS recommends that a diverse mixture of native cool and warm season grasses and forbs be planted (USFWS 2009d). Seed mixes containing a diversity of plant habits and species have a greater chance of resisting invasion by non-native plants and eventually become more ecologically beneficial (USFWS 2009d). The appropriate seed mix should be designed to meet the objective of the revegetation effort. The objective for the proposed project would be to restore the plant community to its prior status with minimal erosion and weed invasion. This would be accomplished by using a quick establishing cover crop of oats or barley at a rate of 10 lbs/acre combined with a native seed mixture at a rate of 5.4 lbs of pure live seed per acre. The recommended seed mix, developed by Darryl Turcotte of the BIA, is comprised of native grasses to the area (Table 3.9d). A native forb component is generally encouraged in order to restore the plant community to its prior status.

Dependent upon commercial availability, potential native forbs that could be added to the grassland seed mix include, but are not limited to: black samson (*Echinacea angustifolia*), purple prairie clover (*Dalea purpurea*), dotted gayfeather (*Liatris punctata*), and candle anemone (*Anemone cylindrica*). If forbs are included in the seed mix they should be in addition to the seeding rate of 5.4 pls/acre specified in Table 3.9h.

Table 3.9h: ***Native seed mix to be used in reclamation of the proposed Guy Black Hawk 24X-27 and Lawrence 24X-26 project sites.***

Plant Species	Pounds[1]	Composition
Western wheatgrass	2.4pls	30%
Green needlegrass	1.2pls	20%
Blue grama	0.2pls	10%
Sideoats grama	0.6pls	10%
Little bluestem	0.4pls	10%
Slender wheatgrass	0.5pls	10%
Prairie junegrass	0.1pls	10%
Total	**5.4pls**	**100%**

[1] pls = pure live seed.

3.10 Cultural Resources

This section describes existing conditions, potential impacts from the Proposed Action, and suggested mitigation measures for cultural resources in the project area.

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

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

Whatever the nature of the cultural resource addressed by a particular statute or tradition, implementing procedures invariably include consultation requirements at various stages of a federal undertaking. The MHA Nation has designated a Tribal Historic Preservation Officer (THPO) by Tribal Council resolution, whose office and functions are certified by the National Park Service. The THPO operates with the same authority exercised in most of the rest of North Dakota by the State Historic Preservation Officer (SHPO).

Thus, BIA consults and corresponds with the THPO regarding cultural resources on all projects proposed within the exterior boundaries of the Fort Berthold Reservation.

Cultural resource inventories of these well pads and access roads were conducted by personnel of Kadrmas, Lee & Jackson, Inc., using an intensive pedestrian methodology. For the FBIR Guy Black Hawk 24x-27 project approximately 15.3 acres were inventoried on June 30, 2010 (Klinner 2010a). For the FBIR Lawrence 24x-26 project approximately 45.9 acres were inventoried on July 1, 2010 (Klinner 2010b). Five archaeological sites were located that may possess the quality of integrity and meet at least one of the criteria (36 CFR 60.6) for inclusion on the National Register. As the lead federal agency, and as provided for in 36 CFR 800.5, on the basis of the information provided, BIA reached a determination of **no historic properties affected** for these undertakings, as the archaeological sites can be and will be avoided. This determination was communicated to the THPO on December 27, 2010; however, the THPO did not respond within the allotted 30 day comment period.

Cultural Resource Mitigation

The following mitigation measure would be implemented to avoid and mitigate for impacts to cultural resources in the project area.

- If cultural resources are discovered during construction or operation, XTO Energy, Inc. would immediately stop work, secure the affected site, and notify the BIA and THPO.
- Unexpected or inadvertent discoveries of cultural resources or human remains trigger mandatory federal procedures that include work stoppage and BIA consultation with all appropriate parties.
- Following any such discovery, XTO Energy, Inc. would not resume construction or operations until written authorization to proceed was received from the BIA.
- **Project personnel are prohibited from collecting any artifacts or disturbing cultural resources in the area under any circumstances.**
- A cultural resource expert would be required to be onsite during construction.

3.11 Socio-Economics

This section describes existing conditions, potential impacts from the Proposed Action, and suggested mitigation measures for social-economic resources in the project area. The Proposed Action would occur on the FBIR; however, to provide a broad perspective for the region, the overlapping counties of Dunn, McKenzie, and McLean will also be evaluated. The State of North Dakota is provided for comparison purposes.

The level of employment for a given area can be used to draw conclusions on the health and stability of the local economy. The U.S. Census Bureau and BIA Indian Labor Force Reports were used for employment and income data. In 2000, people on the FBIR had a lower median household income ($26,274) and a higher unemployment rate (6.4%) in comparison to the overlapping counties and the state (Table 3.11a). Fort Berthold Reservation had a higher percentage (28%) of people living below the poverty level, when compared to the overlapping counties and state. At the same time, populations on or near the FBIR that are enrolled in the Three Affiliated Tribes had 47% of their population living below poverty with 51% being unemployed. The higher unemployment rate can be attributable to the lower employment-to-population ratio for American Indians.

The latest American Indian Population and Labor Force Report (BIA 2005) indicated that within the Three Affiliated Tribes, approximately 4,381 persons were available for work and 430 were not available for work. Of those available for work, 1,287 were employed and 3,094 were not employed. Between 2000 and 2005, the unemployment rate increased from 51% to 71% and the percentage of persons living

below poverty increased from 47% to 55%. Meanwhile, in 2005 a decrease in the unemployment rate occurred in Dunn (-3.4%) and McKenzie (-3.7%) counties and an increase was experienced in McLean (+5%) and Mountrail (+6%) counties and the State of North Dakota (+3.4%) (BLS 2005).

Table 3.11a: ***2000 employment and income data.***

Unit of Analysis	Per Capita Income	Median Household Income	Unemployment Rate	Persons Below Poverty Level
MHA Nation members[1]	No Data	No Data	51 %	47 %
Fort Berthold Reservation[2]	$ 10,291	$ 26,274	6.4 %	28.1 %
Dunn County[2]	$ 14,624	$ 30,015	4.0 %	17.5 %
McKenzie County[2]	$ 14,732	$ 29,342	4.1 %	17.2 %
McLean County[2]	$ 16,220	$ 32,337	3.2 %	13.5 %
Mountrail County[2]	$ 13,422	$ 27,098	3.4 %	19.3 %
North Dakota State[2]	$ 17,769	$ 34,604	3.0 %	11.9 %

[1] Source: BIA (2005).
[2] Source: USCB (2000).

The 2000 census and subsequent mathematical projections indicated that per capita income for residents of the FBIR is $10,291 or about 58% of the North Dakota per capita income of $17,769. Similarly, the median household income on the Fort Berthold reservation was $26,274 in 2000, or about 76% of the North Dakota median household income.

The number of people in North Dakota decreased slightly between 2000 and 2008 (Table 3.11b). The four counties surrounding the project area exhibited greater estimated decreases in population than exhibited at the state level in 2008 (Table 3.11b). Between the 1990 and 2000 censuses the population on the Fort Berthold Reservation increased by almost 10%. American Indians are the dominant group on the reservation and the dominant minority in Dunn, McKenzie, McLean, and Mountrail Counties, and at the State level (Table 3.11b).

Table 3.11b: ***North Dakota population trends at the Reservation, County, and State levels.***

Reservation, County, & State	Estimated 2008 Population	% of 2008 State Population	% Change, April 2000 – July 2008	Predominant Ethnic Group (2008)	Predominant Minority (2008)
Fort Berthold Reservation[1]	5,915 (in 2000)	0.92 (in 2000)	+ 9.8 (1990 to 2000)	American Indian (in 2000)	White (26.9%) (in 2000)
Dunn[2]	3,318	0.52	- 7.8	White	American Indian (14.1%)
McKenzie[2]	5,674	0.88	- 1.1	White	American Indian (22%)
McLean[2]	8,337	1.29	- 10.5	White	American Indian (7.0%)
Mountrail[2]	6,511	1.01	- 1.8	White	American Indian (34.9%)
Statewide[2]	641,481	100	- 0.1	White	American Indian (5.5%)

[1] Source: USCB (2000).
[2] Source: USCB (2008).

The proposed project would not be expected to have measurable impacts on demographic distributions. The proposed project would likely have substantial and widespread beneficial economic impacts by slightly easing unemployment and increasing income through short-term construction employment and

long-term commercial development. Consequently, no mitigation measures are proposed for socio-economic resources in the area.

3.12 Environmental Justice

This section describes existing conditions, potential impacts from the Proposed Action, and suggested mitigation measures for environmental justice in the project area.

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

The EPA headed the interagency workgroup established by the 1994 Order and is responsible for related legal action. Working criteria for designation of targeted populations are provided in *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses* (EPA 1998). This guidance uses a statistical approach to consider various geographic areas and scales of analysis to define a particular population's status under the Order. Environmental justice is an evolving concept with potential for disagreement over the scope of analysis and the implications for federal responsiveness.

Within the overlapping counties the predominant race is White ranging from approximately 65% in Mountrail County to approximately 92% in McLean County (Table 3.12). Within the FBIR, the predominant race is American Indian (65%) followed by White (26%), and other or mixed races (5%) (Table 3.12).

Table 3.12: ***Study area race and ethnicity.***

Reservation, County, & State	Total Population	% White	% Black or African American	% American Indian or Alaska Native	% Hispanic	% Other
Fort Berthold Reservation	5,915	26.7	0.1	65.3	2.6	5.3
Dunn County	3,600	86.1	>0.1	12.3	0.8	0.8
McKenzie County	5,737	77.0	0.1	20.8	1.0	1.1
McLean County	9,311	92.3	>0.1	5.5	0.9	1.4
Mountrail County	6,631	65.7	0.1	29.2	1.3	3.7
North Dakota	642,200	91.7	0.6	4.8	1.2	1.7

Source: USCB (2000).

Tribal members on the Great Plains would qualify for special EJ consideration as both a minority and a low-income population. The population of North Dakota is predominantly White. Tribal members comprise almost 6% of North Dakota residents and about 14% of the population in Dunn County (Table 3.11b). Even in a state with relatively low per capita and household income, Indian individuals and households are distinctly disadvantaged. There are, however, some unusual EJ considerations when proposed federal actions are meant to benefit tribal members. Determination of fair treatment necessarily addresses the existence and distribution of both benefits and negative impacts, due to variation in the interests of various tribal groups and individuals. There is also potential for major differences in impacts to resident tribal members and those enrolled or living elsewhere.

A general benefit to tribal government and infrastructure has already resulted from tribal leasing, fees, and taxes. Oil and gas leasing has also already brought much-needed income to MHA Nation members who hold mineral interests, some of whom might eventually benefit further from royalties on commercial production. Profitable production rates at proposed locations might lead to exploration and development on additional tracts owned by currently non-benefitting allottees. The absence of lease and royalty income does not, moreover, necessarily preclude other benefits. Exploration and development would provide many relatively high-paying jobs, with oversight from the Tribal Employment Rights Office (TERO).

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

Potential impacts to tribes and tribal members include disturbance of cultural resources, impacts to biological resources, and loss of rangeland forage. The potential impacts to cultural resources are significantly reduced following the onsite surveys of the well pads and access roads and determination by the BIA that there would be no effect to historic properties or traditional and cultural properties (TCPs). There is potential for disproportionate impacts, especially if the impacted tribes and members do not reside within the reservation and therefore do not share in direct or indirect benefits. Nothing is known to be present, furthermore, that qualifies as a traditional or cultural property or for protection under the *American Indian Religious Freedom Act* (AIRFA). The potential for disproportionate impacts is further mitigated by requirements for immediate work stoppage following an unexpected discovery of cultural resources of any type. Mandatory consultation would take place during any such work stoppage, affording an opportunity for all affected parties to assert their interests and contribute to an appropriate resolution, regardless of their home location or tribal affiliation.

The proposed project has not been found to pose significant impacts to any other critical element – air, public health and safety, water, wetlands, wildlife, soils, or vegetation – within the human environment. Avoiding or minimizing such impacts also makes unlikely disproportionate impacts to low-income or minority populations. The Proposed Action offers many positive consequences for tribal members, while recognizing Environmental Justice concerns. Procedures summarized in this document and in the APDs are binding and sufficient. No laws, regulations or other requirements have been waived; no compensatory mitigation measures are required.

3.13 Mitigation and Monitoring

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

- All construction activities would follow lease stipulations, practices, and procedures outlined in the APD and in the guidelines and standards in the book, *Surface Operating Standards for Oil and Gas Exploration and Development* (USDI-USDA 2007).

- North Dakota One Call will be contacted (call #811) so that all existing utilities will be located prior to earthmoving activities and avoided as much as practicable. In situations where they cannot be completely avoided, the owner of the utility will be consulted prior to construction.

- A semi-closed loop system would be used for drilling activities.

- Fresh water would be used to drill the well bore to a depth of 1,500 to 2,500 feet.
- Surface casing would be cemented in place to a depth of about 1,500 to 2,500 feet.
- Water produced from drilling would be captured into tanks and periodically hauled to an approved disposal site.
- Evidence of groundwater contamination related to the project would result in a stop work order until all appropriate measures were identified and implemented.
- Dust control measures would be employed, as necessary or as required by the BIA during construction and production, to suppress road dust.
- XTO would take the necessary steps to reduce and control air emissions and would obtain all necessary permits required by the State or Federal agencies.
- If initial site construction occurs within the nesting season (February 1st - July 15th) the project site would be surveyed as close to the actual construction start as is reasonably possible by a qualified biologist to determine if and where active nests occur in relation to the proposed construction activities. If active nests are found, construction may be delayed or suspended or buffers established to ensure no adverse impacts would occur until nesting has been completed.
- If site construction occurs during the nesting season (February 1st-July 15th) then the project site may be mowed outside of the nesting season in order to discourage nesting my migratory birds.
- Power and utility spur lines leading to the well pad would be installed below ground.
- Drip buckets and barrels placed under valves and spigots would be covered with wire mesh to prevent wildlife species from entering and becoming entrapped.
- The cuttings pit and catch-all pit would be covered with a net to prevent birds from entering them.
- If used, open pits that may contain oil would be cleaned up immediately to prevent wildlife mortality.
- Any sighting of a protected species within one-mile of the project area would be immediately reported to the USFWS, NDGFD, Tribe, and BIA.
- The well pad would be fenced to prevent access by livestock and wildlife.
- Pits would be fenced on all four sides to prevent personnel, livestock, and wildlife from accidentally falling into the pit if the entire site has not already been protected within a fence.
- If a Bald Eagle or Golden Eagle nest is observed within one-half mile of the project area, a no disturbance buffer of one-half mile radius would be placed around the nest, and the USFWS would be notified.
- Ground disturbance would be minimized to that which is necessary to implement the project.

- Ground disturbing activities and vehicular traffic would only occur within the approved right-of-way and well pad area boundary.

- All noxious weeds would be controlled prior to and after ground-disturbing activities.

- If used, appropriate herbicides would be applied during the proper time(s) of the year, during the proper weather conditions, and at the appropriate rate. A spot-treatment herbicide application is recommended.

- An approved weed-free seed mix would be used, such as the seed mix and cover crop identified in *Section 3.9.5* and Table C1 of Appendix C.

- Certified weed-free mulch (e.g., straw) would be used as needed in reclamation efforts.

- To maintain some habitat integrity, disturbed ground would be reclaimed using native plants from approved plant lists as identified by the Tribe and BIA. As required by the NDIC, costs would be covered by issuance of a bond.

- Topsoil will be salvaged and stored in two piles at each pad to facilitate interim reclamation. Topsoil piles will be seeded with native plant species to help keep it viable.

- Topsoil removal would be limited to areas necessary to implement the project. Topsoil that is removed would be stockpiled and used to reclaim disturbed ground in the project area. The time that topsoil is stockpiled would be minimized, as is practicable, in order to retain its viability.

- The time that barren areas are exposed would be minimized, as is practicable, in order to reduce soil erosion and decrease the possibility of weed colonization.

- BMPs would be applied to reduce soil erosion. Sediment controls would be emplaced around swales, topsoil stockpiles, and staging areas, to prevent or reduce soil erosion, especially during precipitation events. Erosion control measures would be needed along deep cuts and fills to prevent deposition into swales and drainages.

- Erosion control matting and hydroseeding would be completed on all cut and fill slopes, as directed.

- Silt fences would be used downgradient from fill slopes, as needed.

- Soil stabilizers or soil binders could be applied, as needed.

- Berms would be installed around the well pad perimeter.

- Monitoring of any identified cultural resource impacts by qualified personnel would be required at both well pads during all ground-disturbing activities.

- Project personnel would be prohibited from collecting any artifacts or disturbing cultural resources in the area under any circumstances.

3.14 Cumulative Impacts

Environmental impacts may accumulate slowly over time or hasten when in combination with similar activities in the area. Unrelated activities may also have negative impacts on critical elements, thereby contributing to cumulative degradation of the environment. Reasonably foreseeable future impacts must also be considered.

Earlier oil and gas exploration did not result in commercial production. Current land uses would be expected to continue with little change since virtually all available acreage is already organized into range units that facilitates using surface resources for economic benefit. Undivided interests in the land surface, range permits, and agricultural leases are often held by different tribal members than those holding the mineral rights; oil and gas development could have a small effect on current land use patterns.

Prairie habitat is increasingly being lost or fragmented in North Dakota. To prevent or limit habitat fragmentation XTO has proposed to install multiple wells (up to six) at each well pad location, accessed by one road. This reduces the number of well pad footprints and access roads required for the project. To reduce fragmentation further, disturbed ground would be reclaimed with native prairie plants. Existing roads are being used to the maximum extent practicable, and where possible new roads are being shared by oil companies with the intent that this would reduce habitat fragmentation across the landscape. The spacing units (1,280 acres) of many of the oil leases also helps to minimize habitat fragmentation.

XTO has proposed that additional well pads might eventually be drilled from other sections within the Fort Berthold Reservation. Associated surface disturbance would be relatively minimal and other impacts mostly temporary. Impacts to air quality by emissions from individual well pads have not been an issue in the 'far-field' as indicated, in part, by SO_2, NO_2, O_3, PM_x, CO, and Pb levels occurring within State and Federal standards (see *Section 3.2-Air Quality*). However, cumulative impacts to air quality in the 'near-field' of a Class II airshed has not been addressed by the EPA and remains unknown.

As of October 2010, 312 active wells occurred within 20 miles of the proposed GuyBlackHawk project area (Table 3.14a; Figure 3.14) (NDIC 2010). The closest well is 1.1 miles to the east and another 24 occur within a five mile radius of this proposed site (Table 3.14a).

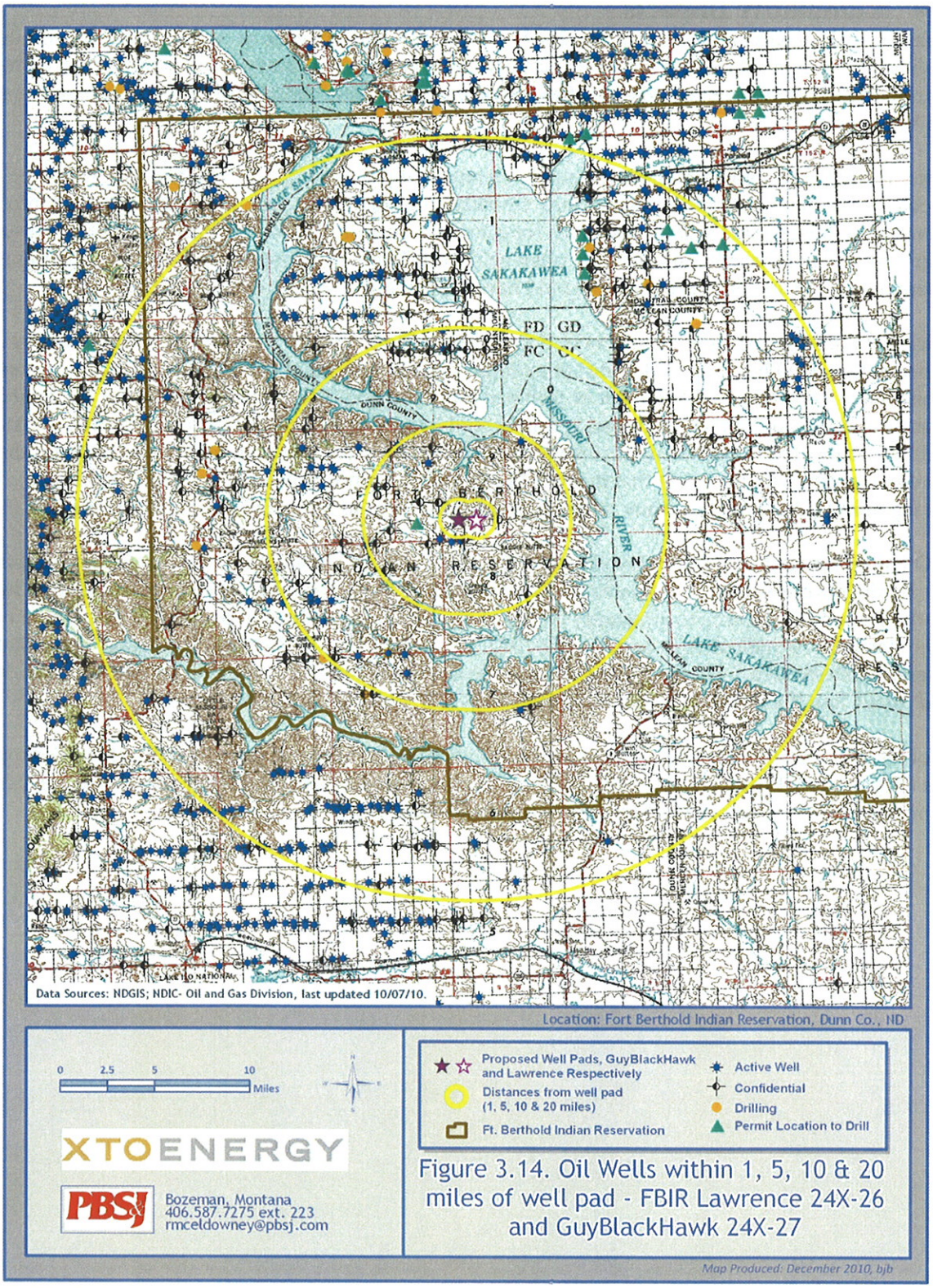

LAKE SAKAKAWEA
FD GD
FC CC
DUNN COUNTY
MISSOURI
RIVER
FORT BERTHOLD
INDIAN RESERVATION
LAKE SAKAKAWEA
MOUNTRAIL COUNTY
MCLEAN COUNTY
Data Sources: NDGIS; NDIC- Oil and Gas Division, last updated 10/07/10.
Location: Fort Berthold Indian Reservation, Dunn Co., ND
0 2.5 5 10
Miles
XTOENERGY
PBSJ
Bozeman, Montana
406.587.7275 ext. 223
rmceldowney@pbsj.com
Proposed Well Pads, GuyBlackHawk and Lawrence Respectively
Distances from well pad (1, 5, 10 & 20 miles)
Ft. Berthold Indian Reservation
Active Well
Confidential
Drilling
Permit Location to Drill
Figure 3.14. Oil Wells within 1, 5, 10 & 20 miles of well pad - FBIR Lawrence 24X-26 and GuyBlackHawk 24X-27
Map Produced: December 2010, bjb

Table 3.14a: ***Number of oil wells and their proximity to the proposed GuyBlackHawk 24X-27 project area.***[1]

Distance[2] (mile)	Number and Type of Oil Wells				
	Active	Confidential	Drilling	Permit Location to Drill	Total
0 to 1	0	0	0	0	0
1 to 5	7	17	0		25
5 to 10	28	16	1	0	45
10 to 20	157	135	15	5	312
Fort Berthold	195	163	18	11	387

[1] Source: NDIC 2010.
[2] Oil wells that occur 0 to 20 miles from the project site may occur on reservation and non-reservation lands. Fort Berthold well numbers only include oil wells occurring within the Reservation.

Table 3.14b: ***Number of oil wells and their proximity to the proposed Lawrence 24X-26 project area.***[1]

Distance[2] (mile)	Number and Type of Oil Wells				
	Active	Confidential	Drilling	Permit Location to Drill	Total
0 to 1	0	0	0	0	0
1 to 5	8	13	0	1	22
5 to 10	27	16	1	0	44
10 to 20	154	132	13	6	305
Fort Berthold	195	163	18	11	387

[1] Source: NDIC 2010.
[2] Oil wells that occur 0 to 20 miles from the project site may occur on reservation and non-reservation lands. Fort Berthold well numbers only include oil wells occurring within the Reservation.

As of October 2010, 305 active wells occurred within 20 miles of the proposed Lawrence project area (Table 3.14b; Figure 3.14) (NDIC 2010). The closest well is 1.2 miles to the east and another 21 occur within a five mile radius of this proposed site (Table 3.14b).

The proposed projects would share in the use of a new road that stems from BIA 12 and that was built to access other existing oil/gas pads. The GuyBlackHawk and Lawrence sites would share the same access road for about 500 feet before splitting to access their respective pads. Vehicular traffic would increase slightly on the rural road system. Visual changes would be noticeable and accumulate over the landscape from physical development of the well pad and access road and from possible increased lighting of the pad.

Commercial success at any new well might result in additional oil/gas exploration proposals, but such developments are speculative at this time, as no other APDs have been submitted to the BLM or BIA. Approved oil/gas leases carry an implied right to conduct exploration and development activity, but additional cumulative impact analysis and BIA approvals are required before the surface is disturbed at any other location. Cumulative impacts that are reasonably foreseen from existing and proposed activities include negative impacts from habitat fragmentation and positive impacts from an improved economy for the reservation.

3.15 Irreversible and Irretrievable Commitment of Resources

Removal and consumption of oil or gas from the Bakken 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 losses during earthmoving or in collisions with vehicles, and energy expended during construction and operation.

3.16 Short-Term Use of the Environment Versus Long-Term Productivity

Short-term activities would not detract significantly from long-term productivity of the project area. The small area dedicated to the access road and well pad would be unavailable for livestock grazing, wildlife habitat, and other uses. Allottees with surface rights would be compensated for loss of productive acreage and project footprints would shrink once wells were drilled and non-working areas were reclaimed and reseeded. Successful and ongoing reclamation of the landscape would soon support wildlife and livestock grazing and stabilize the soil to reduce erosion and sedimentation. The major long-term resource that would be lost corresponds with the project's purpose of extracting hydrocarbons from the Bakken.

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5.0 List of Preparers

An interdisciplinary team contributed to this document, following guidance in Part 1502.6 of CEQ regulations. Post, Buckley, Schuh, and Jernigan prepared this EA under contract to XTO Energy, Inc. and in cooperation with the Bureau of Indian Affairs, Great Plains Regional Office, Division of Environment, Safety and Cultural Resources. Preparers, reviewers, consultants, and federal officials include the following:

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  Sections 1 and 2; Document QA/QC
- Richard McEldowney — Senior Scientist, PBS&J
  Affected Environment; Water Resources; Cumulative Effects
- Andrea Pipp — Senior Scientist, PBS&J
  Air Quality; Public Health and Safety; Water Resources; Cultural Resources; Fisheries and Wildlife; Environmental Justice; and Socio-Economics; Document preparation.
- Lynn Bacon — Biologist, PBS&J
  Threatened and Endangered Species
- Bridget Belliveau — GIS Specialist, PBS&J
  Maps; Figures
- Dennis Phillippi — Principal / Range Scientist, Natural Resource Options, Inc.
  Vegetation and Invasive Species; Document QA/QC
- Doug Harrison — Soil Scientist, Natural Resource Options, Inc.
  Soils
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  Cultural Investigation
- Donny Worthington — XTO Energy, Inc.
  Document QA/QC
- Marilyn Bercier — BIA - Regional Environmental Scientist. Division of Environmental, Safety and Cultural Resources.
  Reviewer of draft EA and provides recommends to BIA Regional Director regarding FONSI or EIS.

6.0 Consultation and Coordination

6.1 GuyBlackHawk 24X-27 Scoping Letter and Comments

The GuyBlackHawk 24X-27 project scoping letter reproduced below was mailed on October 26, 2010 and posted at the BIA Fort Berthold Agency. Direct mail recipients include those listed in Table 6.0a. Six comment letters were received within the 30-day scoping period.

Dear Interested Party:

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

- Guy Blackhawk 24X-27 Site (well pad and access road):
  SE ¼ SW ¼ of Section 27 in Township 149N and Range 92W;
  SW ¼ SE ¼ of Section 27 in Township 149N and Range 92W

Development of the project would consist of the mechanical excavation and preparation of a single well pad that serves up to six wells and the construction of one new access road. The well pad is roughly 5.5 acres in size. The proposed access road for the Guy Blackhawk 24X-27 site is roughly 564 feet long. The six wells would be located within a 1280-acre spacing unit and positioned to use the same access road. The drilling of these well sites is proposed to begin as early as the summer of 2010.

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

Chris Miller, Project Manager
PBS&J
115 North 28th Street, Suite 202
Billings, Montana 59101-2045
406-259-7979 (phone)
406-259-2033 (fax)
lcmiller@pbsj.com

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

Thank you for your attention and input.

Sincerely,

Chris Miller
Project Director

6.2 Lawrence 24X-26 Scoping Letter and Comments

The Lawrence 24X-26 project scoping letter reproduced below was mailed on October 19, 2010 and posted at the BIA Fort Berthold Agency. Direct mail recipients include those listed in Table 6.0b. Nine comment letters were received within the 30-day scoping period.

Dear Interested Party:

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

- Lawrence 24X-26 Site (well pad and access road):
  SE ¼, SW ¼, Section 26, Township 149N, Range 92W

Development of the project would consist of the mechanical excavation and preparation of a single well pad that serves up to six wells and the construction of one new access road. The well pad is roughly 5.5 acres in size. The proposed access road for the Lawrence 24X-26 site is roughly 7,022 feet long. The six wells would be located within a 1280-acre spacing unit and positioned to use the same access road. The drilling of these well sites is proposed to begin as early as the summer of 2011.

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

Chris Miller, Project Manager
PBS&J
115 North 28th Street, Suite 202
Billings, Montana 59101-2045
406-259-7979 (phone)
406-259-2033 (fax)
lcmiller@pbsj.com

If we do not hear from you by **November 19, 2010** we will assume that you have no comment on this project. Questions can be directed to Chris Miller using the contact information above or to Rich McEldowney at (406) 587-7275 (extension 223).

Thank you for your attention and input.

Sincerely,

Chris Miller
Project Director

Table 6.0a: Responses by direct mail by recipients of the GuyBlackHawk scoping letter sent on October 26, 2010.

ENTITY	CONTACT	RESPONSE*
MHA Nation		
Chairman	Marcus Wells Jr.	No comments received
Four Bears Representative	V. Judy Brugh	No comments received
Mandaree Representative	Nathan Hale	No comments received
New Town Representative	Malcom Wolf	No comments received
Parshall/Lucky Mound Representative	Mervin Packineau	No comments received
Twin Buttes Representative	Barry Benson	No comments received
THPO	Perry Brady Director	Tribal Historic Preservation Office and the Tribal Historical Preservation Officer representing the Mandan Hidatsa Arikara Nation concur with the development of the project.
	Fred Fox	No comments received
Director of Game and Fish	Fred Poitra	No comments received
	Damon Williams	No comments received
	NAGPRA Office	No comments received
Natural Resource Dept.	Barry Benson	No comments received
Sisston-Wahpeton Sioux Tribe	Mike Selvage	No comments received
Spirit Lake Sioux Tribe	Myra Pearson	No comments received
Standing Rock Tribe	Charles W. Murphy	No comments received
Turtle Mountain Band of Chippewa	Richard Marcellais	No comments received
U.S. Department of Agriculture		
Natural Resource Conservation Service	Jerome Schaar State Soil Scientist/MO Leader	The proposed project is not supported by federal funding or action, therefore, the Farmland Protection Policy Act (FPPA) does not apply and no further action is needed. The Wetland Conservation Provisions of the 1985 Food Security Act, as amended, provides 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. Guidelines for the installation of permanent structures where wetlands occur are provided and if followed, participants would continue to receive USDA benefits. NRCS recommends that impacts to wetlands be avoided.
Little Missouri National Grassland-McKenzie		No comments received
U.S. Department of Defense		
Minot Air Force Base		No comments received

Table 6.0a (continued): Responses by direct mail by recipients of the GuyBlackHawk scoping letter sent on October 26, 2010.

ENTITY	CONTACT	RESPONSE*
U.S. Army Corps of Engineers	Brad Thompson, Chief Omaha	No comments received
U.S. Army Corps of Engineers	Daniel E. Cimarosti Bismarck District	Section 10 of the Rivers and harbor Act regulates work in or affecting navigable waters including work over, through, or under Section 10 water. These waters include the Missouri River, Lake Sakakawea and Lake Oahe. Section 404 regulates the discharge of dredge or fill material (temporarily or permanently) in waters of the U.S. For any proposed well where the well line and/or bottom hole is under or crosses under Lake Sakakawea, regardless of depth, a DA permit application (ENG 4345) s required. Fact sheets for Nationwide Permits 12 and 14 (Utility Line Activities and Linear Transportation, respectively) are provided. EPA has denied 401 Water Quality Certification for activities in perennial drainages and wetlands, with conditions on activities in ephemeral and intermittent drainages. EPA 401 Conditions for Nationwide Permits is also provided.
U.S. Army Corps of Engineers	Charles Sorensen Garrison Project Office Riverdale, ND	No comments received
U.S. Department of Energy		
Western Area Power Administration		No comments received
U.S. Department of Homeland Security		
Federal Emergency Management Agency Region VIII	David A. Kyner NFIP Program Specialist	FEMA's major concern is if the property is located within a mapped special flood hazard area. Recommend contacting Cliff Whitman (701-627-4805) for drilling guidelines related to regulations and policies of the National Flood Insurance Program. *In November six phone messages were left for Mr. Whitman to discuss drilling guidelines. No reply.*
U.S. Department of the Interior		
Bureau of Indian Affairs	Marilyn Bercier	No comments received
Bureau of Indian Affairs Fort Berthold Agency	Darryl Turcotte	No comments received

Table 6.0a (continued): Responses by direct mail by recipients of the GuyBlackHawk scoping letter sent on October 26, 2010.

ENTITY	CONTACT	RESPONSE*
Bureau of Indian Affairs Fort Berthold Agency	Marietta Shortbull	No comments received
Bureau of Indian Affairs Fort Berthold Agency	Jeff Desjarlais	No comments received
Bureau of Land Management	Billings, MT Office	No comments received
Bureau of Land Management	Dickinson, ND Office	No comments received
Bureau of Reclamation	Kelly B. McPhillips Environmental Specialist Bismarck, ND	Proposed oil and gas wells could potentially affect rural water pipelines since well access roads, service utilities and other developments are not specifically identified. A map depicting water pipeline alignments in the vicinity of the proposed well site and surrounding area is provided to identify potential adverse effects in crossing federal facilities. A pipeline crossing specification sheet is enclosed if needed. Any work planned should be coordinated with Mr. Lester Crows Heart, Fort Berthold Rural Water Director, Three Affiliated Tribes, New Town.
U.S. Fish and Wildlife Service	Jeffrey Towner	No comments received
National Park Service	Midwest Regional Office	No comments received
U.S. Environmental Protection Agency		
Region 8 NEPA Program	Larry Svoboda	No comments received
Region 8 Water Quality Program	David Moon	No comments received
U.S. Department of Transportation		
Federal Aviation Administration	Patricia L. Dressler Environmental Protection Specialist Bismarck, ND	No comments received
North Dakota State Government		
Department of Health	L. David Glatt Chief Environmental Health Section	No comments received
Department of Transportation	Ronald J. Henke Director Office of Project Development	Proposed project will have no adverse effect on the highways unless working in highway ROW's then appropriate permits and risk management documents need to be completed.
Game and Fish Department	Paul Schadewald Chief Conservation and Communication Division	No comments received
Indian Affairs Commission	Scott Davis	No comments received
Parks and Recreation Planning and Natural Resources Div.	Jesse Hanson Manager	No comments received

Table 6.0a (continued): Responses by direct mail by recipients of the GuyBlackHawk scoping letter sent on October 26, 2010.

ENTITY	CONTACT	RESPONSE*
State Water Commission	Larry Knudtson Research Analyst	No comments received
State Historical Society of North Dakota/SHPO	Merlan E. Paaverud, Jr. Director	No comments received
North Dakota State Land Department	Energy Development Impact Office	No comments received
North Dakota Industrial Commission	Oil & Gas Division	No comments received
County Government		
Dunn County, Treasurer	Reinhard Hauck	No comments received
Dunn County, Commissioner	Ray Kadrmas	No comments received
Dunn County, Commissioner Chair	Cliff Ferebee	No comments received
McKenzie County, Commissioner	Richard Cayko	No comments received
McKenzie County, Auditor	Frances Olson	No comments received
Municipal Government		
New Town Municipal Airport, Manager	Harley Johnson	No comments received
Parshall-Hankins Field Airport, Manager	John Kuehn	No comments received
Utility Companies		
McKenzie Electric Cooperative		No comments received
McLean Electric Cooperative, Inc.		No comments received
Mid-Continent Cable Company		No comments received
Montana-Dakota Utilities		No comments received
NoDak Electric Co-op, Inc.		No comments received
Northern Border Pipeline Company		No comments received
Reservation Telephone Cooperative		No comments received
Southwest Water Authority		No comments received
West Plains Electric Cooperative, Inc.		No comments received

*See Appendix F for full comments from the agencies/organizations.

Table 6.0b: Responses by direct mail by recipients of the Lawrence scoping letter sent on October 19, 2010.

ENTITY	CONTACT	RESPONSE*
MHA Nation		
Chairman	Marcus Wells Jr.	No comments received
Four Bears Representative	V. Judy Brugh	No comments received
Mandaree Representative	Nathan Hale	No comments received
New Town Representative	Malcom Wolf	No comments received
Parshall/Lucky Mound Representative	Mervin Packineau	No comments received
Twin Buttes Representative	Barry Benson	No comments received
THPO	Perry Brady Director	Tribal Historic Preservation Office and the Tribal Historical Preservation Officer representing the Mandan Hidatsa Arikara Nation concur with the development of the project.
	Fred Fox	No comments received
Director of Game and Fish	Fred Poitra	No comments received
	Damon Williams	No comments received
	NAGPRA Office	No comments received
Natural Resource Dept.	Barry Benson	No comments received
Sisston-Wahpeton Sioux Tribe	Mike Selvage	No comments received
Spirit Lake Sioux Tribe	Myra Pearson	No comments received
Standing Rock Tribe	Charles W. Murphy	No comments received
Turtle Mountain Band of Chippewa	Richard Marcellais	No comments received
U.S. Department of Agriculture		
Natural Resource Conservation Service	Jerome Schaar State Soil Scientist/MO Leader	The proposed project is not supported by federal funding or action, therefore, the Farmland Protection Policy Act (FPPA) does not apply and no further action is needed. The Wetland Conservation Provisions of the 1985 Food Security Act, as amended, provides 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. Guidelines for the installation of permanent structures where wetlands occur are provided and if followed, participants would continue to receive USDA benefits. NRCS recommends that impacts to wetlands be avoided.
Little Missouri National Grassland-McKenzie		No comments received
U.S. Department of Defense		
Minot Air Force Base		No comments received
U.S. Army Corps of Engineers	Brad Thompson, Chief Omaha	No comments received

Table 6.0b (continued): Responses by direct mail by recipients of the Lawrence scoping letter sent on October 19, 2010.

ENTITY	CONTACT	RESPONSE*
U.S. Army Corps of Engineers	Daniel E. Cimarosti Bismarck District	Section 10 of the Rivers and harbor Act regulates work in or affecting navigable waters including work over, through, or under Section 10 water. These waters include the Missouri River, Lake Sakakawea and Lake Oahe. Section 404 regulates the discharge of dredge or fill material (temporarily or permanently) in waters of the U.S. For any proposed well where the well line and/or bottom hole is under or crosses under Lake Sakakawea, regardless of depth, a DA permit application (ENG 4345) s required. Fact sheets for Nationwide Permits 12 and 14 (Utility Line Activities and Linear Transportation, respectively) are provided. EPA has denied 401 Water Quality Certification for activities in perennial drainages and wetlands, with conditions on activities in ephemeral and intermittent drainages. EPA 401 Conditions for Nationwide Permits is also provided.
U.S. Army Corps of Engineers	Charles Sorensen Garrison Project Office Riverdale, ND	USACE has requested several management practices for consideration during the exploration phase of the wells. Items include catch trench, closed loop drilling method, sewage collection systems, fill material certified free of noxious weeds, equipment clean of noxious weeds, ½ mile buffer for TES, specified dates for construction and issues to consider in the cumulative impacts section of the EA. See letter for specific details.
U.S. Department of Energy		
Western Area Power Administration		No comments received
U.S. Department of Homeland Security		
Federal Emergency Management Agency Region VIII	David A. Kyner NFIP Program Specialist	No comments received
U.S. Department of the Interior		
Bureau of Indian Affairs	Marilyn Bercier	No comments received

Table 6.0b (continued): Responses by direct mail by recipients of the Lawrence scoping letter sent on October 19, 2010.

ENTITY	CONTACT	RESPONSE*
Bureau of Indian Affairs Fort Berthold Agency	Darryl Turcotte	No comments received
Bureau of Indian Affairs Fort Berthold Agency	Marietta Shortbull	No comments received
Bureau of Indian Affairs Fort Berthold Agency	Jeff DeSarley	No comments received
Bureau of Land Management	Billings, MT Office	No comments received
Bureau of Land Management	Dickinson, ND Office	No comments received
Bureau of Reclamation	Kelly B. McPhillips Environmental Specialist Bismarck, ND	Proposed oil and gas wells could potentially affect rural water pipelines since well access roads, service utilities and other developments are not specifically identified. A map depicting water pipeline alignments in the vicinity of the proposed well site and surrounding area is provided to identify potential adverse effects in crossing federal facilities. A pipeline crossing specification sheet is enclosed if needed. Any work planned should be coordinated with Mr. Lester Crows Heart, Fort Berthold Rural Water Director, Three Affiliated Tribes, New Town.
U.S. Fish and Wildlife Service	Jeffrey Towner	No comments received
National Park Service	Midwest Regional Office	No comments received
U.S. Environmental Protection Agency		
Region 8 NEPA Program	Larry Svoboda	No comments received
Region 8 Water Quality Program	David Moon	No comments received
U.S. Department of Transportation		
Federal Aviation Administration	Patricia L. Dressler Environmental Protection Specialist Bismarck, ND	No comments received
North Dakota State Government		
Department of Health	L. David Glatt Chief Environmental Health Section	No comments received
Department of Transportation	Ronald J. Henke Director Office of Project Development	Proposed project will have no adverse effect on the highways unless working in highway ROW's then appropriate permits and risk management documents need to be completed.

Table 6.0b (continued): Responses by direct mail by recipients of the Lawrence scoping letter sent on October 19, 2010.

ENTITY	CONTACT	RESPONSE*
Game and Fish Department	Paul Schadewald Chief Conservation and Communication Division	Primary concern is fragmentation and loss of wildlife habitat associated with well pads and access roads. Recommend avoiding, to the extent possible, native prairie, wooded draws, riparian corridors and wetlands. Suggest botanical surveys be completed during the appropriate season and aerial surveys be conducted for raptor nests prior to construction.
Indian Affairs Commission	Scott Davis	No comments received
Parks and Recreation Planning and Natural Resources Div.	Jesse Hanson Manager	No comments received
State Water Commission	Larry Knudtson Research Analyst	The proposed project is not located in an identified floodplain nor will it affect an identified floodplain. It is responsibility of the project sponsor to ensure state, federal and local agencies are contacted for permits, approvals and easements. All waste material must be properly disposed - not in floodways. No sole-source aquifers have been designated.
State Historical Society of North Dakota/SHPO	Merlan E. Paaverud, Jr. Director	Request that a copy of cultural resource site forms and reports be sent to this office to keep records current.
North Dakota State Land Department	Energy Development Impact Office	No comments received
North Dakota Industrial Commission	Oil & Gas Division	
County Government		
Dunn County, Treasurer	Reinhard Hauck	No comments received
Dunn County, Commissioner	Ray Kadrmas	No comments received
Dunn County, Commissioner Chair	Cliff Ferebee	No comments received
McKenzie County, Commissioner	Richard Cayko	No comments received
McKenzie County, Auditor	Frances Olson	No comments received
Municipal Government		
New Town Municipal Airport, Manager	Harley Johnson	No comments received
Parshall-Hankins Field Airport, Manager	John Kuehn	No comments received
Utility Companies		
McKenzie Electric Cooperative		No comments received
McLean Electric Cooperative, Inc.		No comments received
Mid-Continent Cable Company		No comments received
Montana-Dakota Utilities		No comments received
NoDak Electric Co-op, Inc.		No comments received
Northern Border Pipeline Company		No comments received
Reservation Telephone Cooperative		No comments received
Southwest Water Authority		No comments received
West Plains Electric Cooperative, Inc.		No comments received

*See Appendix F for full comments from the agencies/organizations.

Appendix A

Application for Permit to Drill

GuyBlackHawk 24X-27 Well Pad and Access Road Environmental Assessment
Lawrence 24X-26 Well Pad and Access Road Environmental Assessment

XTO Energy, Inc.

Insert GuyBlackHawk APD

Insert Lawrence APD

Appendix B

Ecological Site Photographs

GuyBlackHawk 24X-27 Well Pad and Access Road Environmental Assessment
Lawrence 24X-26 Well Pad and Access Road Environmental Assessment

XTO Energy, Inc.

2010 FBIR GuyBlackHawk 24X-27 Photographs

Photo 1: Corner #1 looking east.

Photo 2: Northwest corner #2 looking west.

Photo 3: Soil pit #1; Sandy Ecological Site.
UTM Coordinates: N5285003, E692124.

Photo 4: Corner #3 looking south.

Photo 5: Northeast corner #4 looking south.

Photo 6: Corner #5 looking south.
Section 27, T149N, R92W.

2010 FBIR GuyBlackHawk 24X-27 Photographs

Photo 7: Corner #6 looking west.

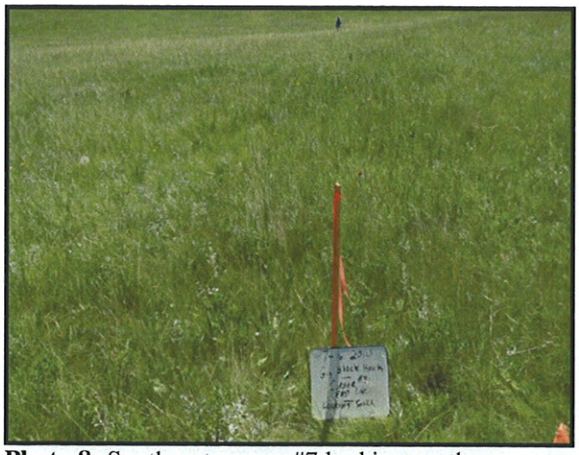

Photo 8: Southeast corner #7 looking south.

Photo 9: Corner #8 looking south.

Photo 10: Southwest corner #9 looking west.

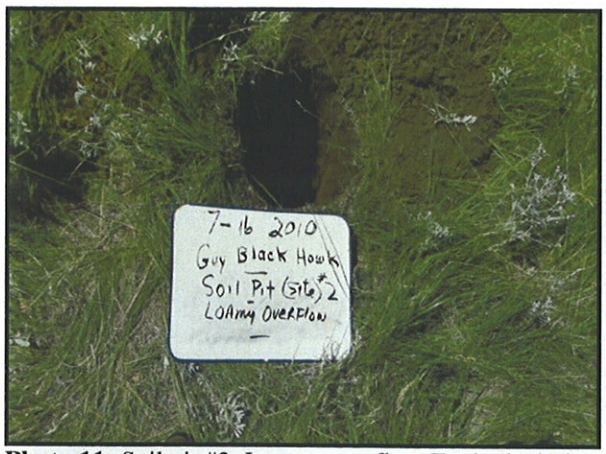

Photo 11: Soil pit #2; Loamy overflow Ecological Site.
Section 27, T149N, R92W.
UTM Coordinates: N5285028, E692075.

Photo 12: Soil pit #3; Sandy Ecological Site.
UTM Coordinates: N5285074, E692048.

2010 FBIR GuyBlackHawk 24X-27 Photographs

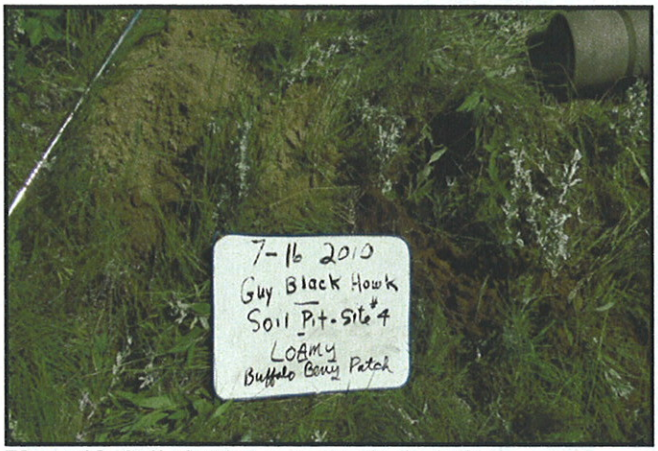

Photo 13: Soil pit #4; Loamy Ecological Site.
UTM Coordinates: N5285081, E 692074.

Photo 14: Soil pit #5; Sandy Ecological Site.
Section 27, T149N, R92W.
UTM Coordinates: N5285106, E692183.

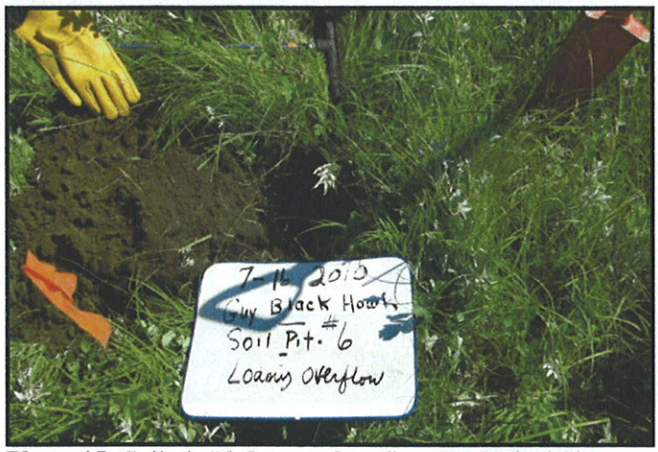

Photo 15: Soil pit #6; Loamy Overflow Ecological Site.
UTM Coordinates: N5285058, E692183

Photo 16: Ecological Site #6 – Loamy overflow.
General appearance on pad site.

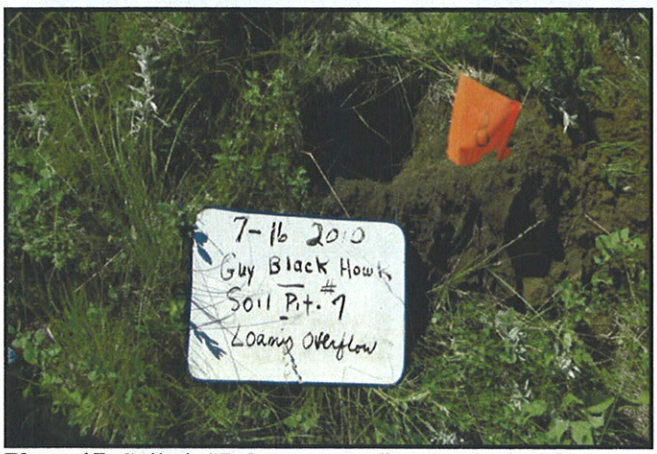

Photo 17: Soil pit #7; Loamy overflow Ecological Site.
Section 27, T149N, R92W.
UTM Coordinates: N5285065, E692114.

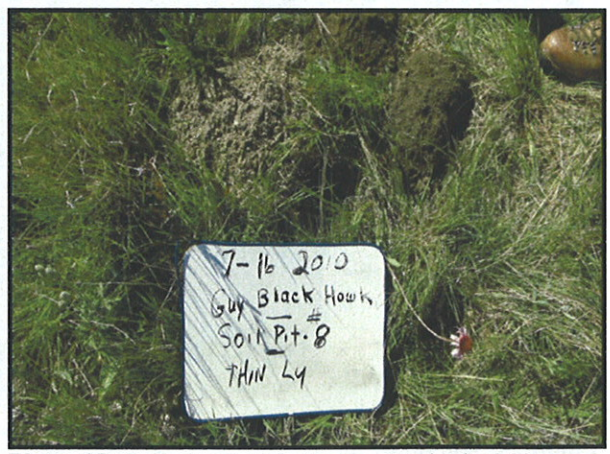

Photo 18: Soil pit #8; Thin Loamy Ecological Site.
UTM Coordinates: N5285080, E692138.

2010 FBIR GuyBlackHawk 24X-27 Photographs

Photo 19: General appearance of access road looking west.

Photo 20: General appearance of access road looking northeast.

Photo 21: General appearance of pad site looking southwest.

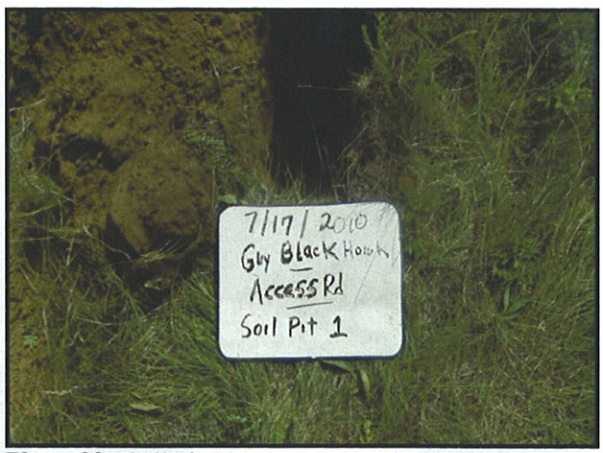

Photo 22: Soil pit #1 on access road; Sandy Ecological Site.
UTM Coordinates: N5285015, E691936

Photo 23: Soil pit #2 on access road; Sandy Ecological Site. UTM Coordinates: N5285012, E691990

Photo 24: Soil pit #3 on access road; Sandy Ecological Site.
UTM Coordinates: N5285004, E692047.

2010 FBIR Lawrence 24X-26 Photographs

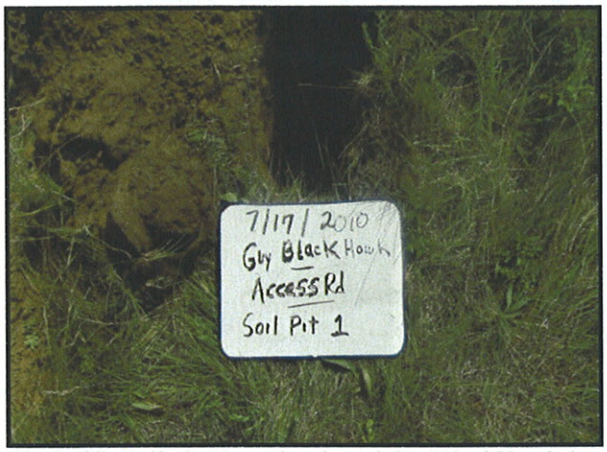

Photo 25: Soil pit #1 on the shared GuyBlackHawk / Lawrence Access Road; Sandy Ecological Site. UTM Coordinates: N5285015, E691936.

Photo 26: Soil pit #2 on the shared GuyBlackHawk / Lawrence Access Road; Sandy Ecological Site. UTM Coordinates: N5282012, E691990.

Photo 27: Soil pit #1; Sandy Ecological Site Access Road. UTM Coordinates: N5284958, E692083.

Photo 28: Soil pit #1 looking east.

Photo 29: Soil pit #2; Sandy Ecological Site Access Road. UTM Coordinates: N5284937, E692269.

Photo 30: Soil pit #2 looking south

Photo 31: Soil pit #3; Loamy Ecological Site Access Road. UTM Coordinates: N52844802, E692494.

Photo 32: Soil pit #3 looking north.

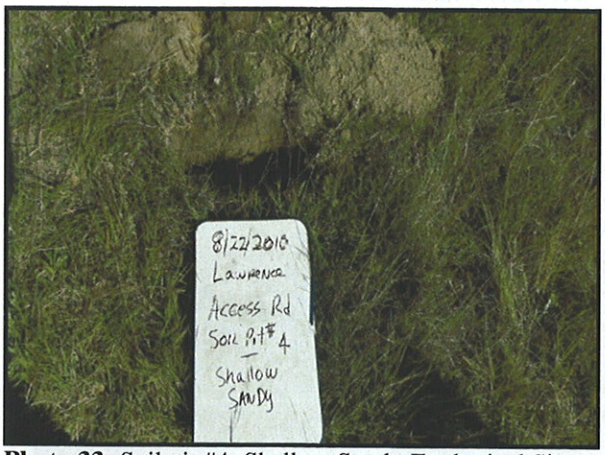

Photo 33: Soil pit #4; Shallow Sandy Ecological Site Access Road. UTM Coordinates: N5284811, E692612.

Photo 34: Soil pit #4 looking north.

Photo 35: Soil pit #5; Loamy Ecological Site Access Road. UTM Coordinates: N5284691, E692787.

Photo 36: Soil pit #5 looking east.

Photo 37: Soil pit #6; Sandy Ecological Site Access Road. UTM Coordinates: N5284895, E692983.

Photo 38: Soil pit #6 looking north.

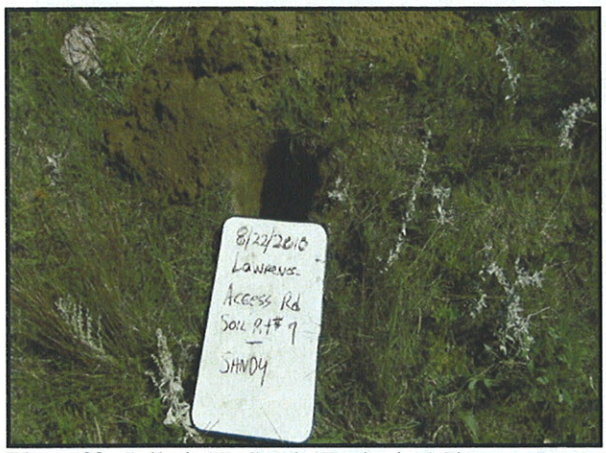

Photo 39: Soil pit #7; Sandy Ecological Site. UTM Coordinates: N5285081, E693292.

Photo 40: Soil pit #7 looking east.

Photo 41: Soil pit #8 Pad Site. Loamy Ecological Site. UTM Coordinates: N5284959, E693672.

Photo 42: Soil pit #9 Pad Site. Loamy Ecological Site. UTM Coordinates: N5285034, E693669.

Photo 43: Soil pit #10; Thin loamy Ecological Site Access Road. UTM Coordinates: N5285133, E693663.

Photo 44: Soil pit #10 looking west.

Photo 45: Pad center looking west.

Photo 46: Corner #1 Looking north.

Photo 47: Corner #2 looking north.

Photo 48: Corner #3 looking west.

Photo 49: Corner #4 looking east.

Photo 50: Corner #4 looking north.

Photo 51: Corner #6 looking west.

Photo 52: Corner #7 looking west.

Photo 53: Corner #8 looking west.

Photo 54: Corner #9 looking west.

Appendix C

Ecological Worksheets
Characteristics of Native Seed Mix

GuyBlackHawk 24X-27 Well Pad and Access Road Environmental Assessment
Lawrence 24X-26 Well Pad and Access Road Environmental Assessment

XTO Energy, Inc.

Ecological Worksheets

Resource Area: Guy Blackhawk 24X-27
Date: July 16-17, 2010 Slope: 3 Percent Aspect: Northeast
Legal Description: SE1/4SW1/4 Section 27 – 149N 92W; UTM Coordinates: N5285003 E692124
Ecological Site: Sandy; Site #1 – Pad Site
Community Type: Green needlegrass, Needleandthread, Blue grama, Cudweed sagewort, Western snowberry

PLANT COMPOSITION			
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
GRASSES		**FORBS/LEGUMES (cont.)**	
Plains reedgrass	*Calamagrostis montanensis*	Woolly indianwheat	*Plantago patagonica*
Prairie sandreed	*Calamovilfa longifolia*	Silverleaf scurfpea	*Psoralea argophylla*
Bearded wheatgrass	*Elymus caninus*	Prairie coneflower	*Ratibida columnifera*
Thickspike wheatgrass	*Elymus lanceolatus*	Blackeyed susan	*Rudbeckia hirta*
Needleandthread grass	*Hesperostipa comata*	Goldenrod	*Solidago* spp.
Prairie junegrass	*Koleria macrantha*	Scarlet globemallow	*Sphaeralcea coccinea*
Green needlegrass	*Nasella viridula*	White prairie aster	*Aster falcatus*
Little bluestem	*Schizachyrium scoparium*	Western red lily	*Lillium philadelphicum*
Prairie dropseed	*Sporobolus heterolepsis*	**INVASIVES/WEEDS**	
FORBS/LEGUMES		Bull thistle	*Cirsium vulgare*
Common yarrow	*Achillea millefolium*	Smooth brome	*Bromus inermis*
Wild onion	*Allium ascalonicum*	Japanese brome	*Bromus japonicus*
Rock cress	*Arabis* spp.	Cheatgrass	*Bromus tectorum*
Green sagewort	*Artemisia dranunculus*	False flax	*Camelina crantz*
Cudweed sagewort	*Artemisia ludoviciana*	Wavyleaf thistle	*Cirsium undulatum*
Groundplum milkvetch	*Astragalus crassicarpus*	Prickly lettuce	*Lactuca serriola*
Milkvetch	*Astragalus* spp.	Pepperweed	*Lepidium* spp.
Balsamroot	*Balsamorhiza* spp.	Kentucky bluegrass	*Poa pratensis*
Purple prairie clover	*Dalea purpurea*	Tall tumblemustard	*Sisymbrium altissimum*
Black samson	*Echinacea angustifolia*	Common dandelion	*Taraxacum officinale*
Buckwheat	*Eriogonum* spp.	Fanweed	*Thlaspi arvense*
Redstem filaree	*Erodium cicutarium*	Western salsify	*Tragopogon dubius*
Northern bedstraw	*Galium boreale*	**SHRUBS/TREES**	
Richardson's geranium	*Geranium richardsonii*	Fringed sagewort	*Artemisia frigida*
Prairie smoke	*Geum triflorum*	Creeping juniper	*Juniperus horizontalis*
Harebell	*Campanula rotundiflora*	Prairie rose	*Rosa arkansana*
Sunflower	*Helianthus* spp.	Western snowberry	*Symphoricarpos occidentalis*
Hairy goldenaster	*Heterotheca villosa*	Poison ivy	*Toxicodendron rydbergii*
Dotted gayfeather	*Liatris punctata*	Cinquefoil	*Potentilla* spp.
Biscuitroot	*Lomatium* spp.		
Sand bladderpod	*Lesquerella arenosa*		
Rush skeletonweed	*Lygodesmia juncea*		
Mint	*Mentha* spp.		
Penstemon	*Penstemon* spp.		
Hood phlox	*Phlox hoodii*		

Ecological Worksheets

Resource Area: Guy Blackhawk 24X-27
Date: July 16-17, 2010 Slope: 6 Percent Aspect: West
Legal Description: SE1/4SW1/4 Section 27 – 149N 92W; UTM Coordinates: N528028 E692075
Ecological Site: Loamy Overflow; Site #2 – Pad Site
Community Type: Green needlegrass, Big bluestem, Cudweed sagewort, Western snowberry

PLANT COMPOSITION				
Common Name	**Scientific Name**		**Common Name**	**Scientific Name**
GRASSES			**SHRUBS/TREES**	
Big bluestem	*Andropogon gerardii*		Western snowberry	*Symphoricarpos occidentalis*
Needleandthread grass	*Hesperostipa comata*			
Green needlegrass	*Nasella viridula*			
Western wheatgrass	*Pascopyrum smithii*			
Sandberg bluegrass	*Poa secunda*			
Prairie dropseed	*Sporobolus heterolepsis*			
FORBS/LEGUMES				
Meadow anemone	*Anemone canadensis*			
Green sagewort	*Artemisia dranunculus*			
Cudweed sagewort	*Artemisia ludoviciana*			
Milkvetch	*Astragalus* spp.			
Balsamroot	*Balsamorhiza* spp.			
Black samson	*Echinacea angustifolia*			
Buckwheat	*Eriogonum* spp.			
Prairie smoke	*Geum triflorum*			
Milkwort	*Glaux* spp.			
American licorice	*Glycyrrhiza lepidota*			
Dotted gayfeather	*Liatris punctata*			
Biscuitroot	*Lomatium* spp.			
Mint	*Mentha* spp.			
Penstemon	*Penstemon* spp.			
Woolly indianwheat	*Plantago patagonica*			
Silverleaf scurfpea	*Psoralea argophylla*			
Prairie coneflower	*Ratibida columnifera*			
Prairie buttercup	*Ranunculus rhombodieus*			
Blackeyed susan	*Rudbeckia hirta*			
Goldenrod	*Solidago* spp.			
White prairie aster	*Aster falcatus*			
Clover	*Trifolium* spp.			
American vetch	*Vicia americana*			
False dandelion	*Agoseris gluaca*			
Western red lily	*Lillium philadelphicum*			
Silver lupine	*Lupinus argenteus*			
Hedysarium	*Hedysarium alpinum*			
INVASIVES/WEEDS				
Mustard	*Brassica* spp.			
Kentucky bluegrass	*Poa pratensis*			
Western salsify	*Tragopogon dubius*			

Ecological Worksheets

Resource Area: Guy Blackhawk 24X-27
Date: July 16-17, 2010 Slope: 11 Percent Aspect: Southwest
Legal Description: SE1/4SW1/4 Section 27 – 149N 92W; UTM Coordinates: N5285074 E692048
Ecological Site: Sandy; Site #3 – Pad Site
Community Type: Needleandthread, Little bluestem, Kentucky bluegrass, Cudweed sagewort, Western snowberry

PLANT COMPOSITION	
Common Name	**Scientific Name**
GRASSES	
Blue grama	*Bouteloua gracilis*
Canada wildrye	*Elymus canadensis*
Bearded wheatgrass	*Elymus caninus*
Needleandthread grass	*Hesperostipa comata*
Porcupine grass	*Hesperostipa spartea*
Prairie junegrass	*Koleria macrantha*
Plains muhly	*Muhlenbergia cuspidata*
Switchgrass	*Panicum virgatum*
Little bluestem	*Schizachyrium scoparium*
Prairie cordgrass	*Spartina pectinata*
FORBS/LEGUMES	
Common yarrow	*Achillea millefolium*
Rock cress	*Arabis* spp.
Cudweed sagewort	*Artemisia ludoviciana*
Groundplum milkvetch	*Astragalus crassicarpus*
Milkvetch	*Astragalus* spp.
Purple prairie clover	*Dalea purpurea*
Black samson	*Echinacea angustifolia*
Prairie smoke	*Geum triflorum*
Curlycup gumweed	*Grindelia squarrosa*
Hairy goldenaster	*Heterotheca villosa*
Dotted gayfeather	*Liatris punctata*
Silverleaf scurfpea	*Psoralea argophylla*
Prairie coneflower	*Ratibida columnifera*
Goldenrod	*Solidago* spp.
Scarlet globemallow	*Sphaeralcea coccinea*
American vetch	*Vicia americana*
Mulesear	*Wyethia* spp.
Western red lily	*Lillium philadelphicum*
INVASIVES/WEEDS	
Bull thistle	*Cirsium vulgare*
Tall tumblemustard	*Sisymbrium altissimum*
Western salsify	*Tragopogon dubius*
SHRUBS/TREES	
Fringed sagewort	*Artemisia frigida*
Silver buffaloberry	*Shepherdia argentea*
Western snowberry	*Symphoricarpos occidentalis*
Cinquefoil	*Potentilla* spp.
Poison ivy	*Toxicodendron rydbergii*

Ecological Worksheets

Resource Area: Guy Blackhawk 24X-27
Date: July 16-17, 2010 Slope: 4 Percent Aspect: Southwest
Legal Description: SE1/4SW1/4 Section 27 – 149N 92W; UTM Coordinates: N5285081 E692074
Ecological Site: Loamy; Site #4 – Pad Site
Community Type: Green needlegrass, Kentucky bluegrass, Cudweed sagewort, Poison ivy, Silver buffaloberry

PLANT COMPOSITION	
Common Name	**Scientific Name**
GRASSES	
Sun sedge	*Carex inops*
Bearded wheatgrass	*Elymus caninus*
Needleandthread grass	*Hesperostipa comata*
Western wheatgrass	*Pascopyrum smithii*
Prairie dropseed	*Sporobolus heterolepsis*
FORBS/LEGUMES	
Cudweed sagewort	*Artemisia ludoviciana*
Buckwheat	*Eriogonum* spp.
Redstem filaree	*Erodium cicutarium*
Beeplant	*Cleome serulata*
Sunflower	*Helianthus* spp.
Mint	*Mentha* spp.
Hood phlox	*Phlox hoodii*
Silverleaf scurfpea	*Psoralea argophylla*
Prairie coneflower	*Ratibida columnifera*
Prairie buttercup	*Ranunculus rhombodieus*
Goldenrod	*Solidago* spp.
Scarlet globemallow	*Sphaeralcea coccinea*
Western red lily	*Lillium philadelphicum*
INVASIVES/WEEDS	
Bull thistle	*Cirsium vulgare*
Flodman's thistle	*Cirsium flodmanii*
Kentucky bluegrass	*Poa pratensis*
SHRUBS/TREES	
Silver buffaloberry	*Shepherdia argentea*

Ecological Worksheets

Resource Area: Guy Blackhawk 24X-27
Date: July 16-17, 2010 Slope: 6 Percent Aspect: Southeast
Legal Description: SE1/4SW1/4 Section 27 – 149N 92W; UTM Coordinates: N5285106 E692183
Ecological Site: Sandy; Site #5 – Pad Site
Community Type: Needleandthread, Green needlegrass, Blue grama, Cudweed sagewort, Fringed sagewort

PLANT COMPOSITION	
Common Name	**Scientific Name**
GRASSES	
Bearded wheatgrass	*Elymus caninus*
Needleandthread grass	*Hesperostipa comata*
Prairie junegrass	*Koleria macrantha*
Sandberg bluegrass	*Poa secunda*
Little bluestem	*Schizachyrium scoparium*
Prairie dropseed	*Sporobolus heterolepsis*
FORBS/LEGUMES	
Green sagewort	*Artemisia dranunculus*
Cudweed sagewort	*Artemisia ludoviciana*
Groundplum milkvetch	*Astragalus crassicarpus*
Milkvetch	*Astragalus* spp.
Cutleaf balsamroot	*Balsamorhiza macrophylla*
Purple prairie clover	*Dalea purpurea*
Black samson	*Echinacea angustifolia*
Prairie smoke	*Geum triflorum*
Common groundsel	*Senecio vulgaris*
Milkwort	*Glaux* spp.
Sunflower	*Helianthus* spp.
Hairy goldenaster	*Heterotheca villosa*
Dotted gayfeather	*Liatris punctata*
Woolly indianwheat	*Plantago patagonica*
Silverleaf scurfpea	*Psoralea argophylla*
Prairie coneflower	*Ratibida columnifera*
Blackeyed susan	*Rudbeckia hirta*
Goldenrod	*Solidago* spp.
White prairie aster	*Symphyotrichum faculatum*
Death camas	*Zydagenis elegans*
Western red lily	*Lillium philadelphicum*
Hedysarium	*Hedysarium alpinum*
INVASIVES/WEEDS	
Kentucky bluegrass	*Poa pratensis*
Common dandelion	*Taraxacum officinale*
Western salsify	*Tragopogon dubius*
Stinging nettle	*Urtica dioica*
SHRUBS/TREES	
Fringed sagewort	*Artemisia frigida*

Ecological Worksheets

Resource Area: Guy Blackhawk 24X-27
Date: July 16-17, 2010 Slope: 5 Percent Aspect: Southeast
Legal Description: SE1/4SW1/4 Section 27 – 149N 92W; UTM Coordinates: N52855058 E692183
Ecological Site: Loamy Overflow; Site #6 – Pad Site
Community Type: Green needlegrass, Western wheatgrass, Green sagewort, Western snowberry

PLANT COMPOSITION	
Common Name	**Scientific Name**
GRASSES	
Big bluestem	*Andropogon gerardii*
Needleandthread grass	*Hesperostipa comata*
Green needlegrass	*Nasella viridula*
Western wheatgrass	*Pascopyrum smithii*
Sandberg bluegrass	*Poa secunda*
Prairie dropseed	*Sporobolus heterolepsis*
FORBS/LEGUMES	
Meadow anemone	*Anemone canadensis*
Green sagewort	*Artemisia dranunculus*
Cudweed sagewort	*Artemisia ludoviciana*
Milkvetch	*Astragalus* spp.
Balsamroot	*Balsamorhiza* spp.
Black samson	*Echinacea angustifolia*
Buckwheat	*Eriogonum* spp.
Beeplant	*Cleome serulata*
Milkwort	*Glaux* spp.
American licorice	*Glycyrrhiza lepidota*
Curlycup gumweed	*Grindelia squarrosa*
Dotted gayfeather	*Liatris punctata*
Biscuitroot	*Lomatium* spp.
Mint	*Mentha* spp.
Penstemon	*Penstemon* spp.
Woolly indianwheat	*Plantago patagonica*
Silverleaf scurfpea	*Psoralea argophylla*
Prairie coneflower	*Ratibida columnifera*
Prairie buttercup	*Ranunculus rhombodieus*
Goldenrod	*Solidago* spp.
White prairie aster	*Aster falcatus*
Clover	*Trifolium* spp.
American vetch	*Vicia americana*
False dandelion	*Agoseris gluaca*
Western red lily	*Lillium philadelphicum*
Silver lupine	*Lupinus argenteus*
Hedysarium	*Hedysarium alpinum*
INVASIVES/WEEDS	
Mustard	*Brassica* spp.
Kentucky bluegrass	*Poa pratensis*
Western salsify	*Tragopogon dubius*
SHRUBS/TREES	
Western snowberry	*Symphoricarpos occidentalis*

Ecological Worksheets

Resource Area: Guy Blackhawk 24X-27
Date: July 16-17, 2010 Slope: 5 Percent Aspect: Southeast
Legal Description: SE1/4SW1/4 Section 27 – 149N 92W; UTM Coordinates: N52855058 E692183
Ecological Site: Loamy Overflow; Site #7 – Pad Site
Community Type: Needleandthread, Green needlegrass, Cudweed sagewort, Poison ivy, Western snowberry

PLANT COMPOSITION	
Common Name	**Scientific Name**
GRASSES	
Big bluestem	*Andropogon gerardii*
Bearded wheatgrass	*Elymus caninus*
Needleandthread grass	*Hesperostipa comata*
Porcupine grass	*Hesperostipa spartea*
Prairie junegrass	*Koleria macrantha*
Plains muhly	*Muhlenbergia cuspidata*
Sandberg bluegrass	*Poa secunda*
Prairie dropseed	*Sporobolus heterolepsis*
FORBS/LEGUMES	
Meadow anemone	*Anemone canadensis*
Green sagewort	*Artemisia dranunculus*
Cudweed sagewort	*Artemisia ludoviciana*
Milkvetch	*Astragalus* spp.
Balsamroot	*Balsamorhiza* spp.
Black samson	*Echinacea angustifolia*
Buckwheat	*Eriogonum* spp.
Milkwort	*Glaux* spp.
American licorice	*Glycyrrhiza lepidota*
Dotted gayfeather	*Liatris punctata*
Biscuitroot	*Lomatium* spp.
Mint	*Mentha* spp.
Penstemon	*Penstemon* spp.
Woolly indianwheat	*Plantago patagonica*
Silverleaf scurfpea	*Psoralea argophylla*
Prairie coneflower	*Ratibida columnifera*
Prairie buttercup	*Ranunculus rhombodieus*
Goldenrod	*Solidago* spp.
White prairie aster	*Aster falcatus*
Clover	*Trifolium* spp.
American vetch	*Vicia americana*
False dandelion	*Agoseris gluaca*
Western red lily	*Lillium philadelphicum*
Silver lupine	*Lupinus argenteus*
Hedysarium	*Hedysarium alpinum*
INVASIVES/WEEDS	
Mustard	*Brassica* spp.
Kentucky bluegrass	*Poa pratensis*
Western salsify	*Tragopogon dubius*
SHRUBS/TREES	
Western snowberry	*Symphoricarpos occidentalis*

Ecological Worksheets

Resource Area: Guy Blackhawk 24X-27
Date: July 16-17, 2010 Slope: 5 Percent Aspect: South
Legal Description: SE1/4SW1/4 Section 27 – 149N 92W; UTM Coordinates: N52855080 E692183
Ecological Site: Thin Loamy; Site #8 – Pad Site
Community Type: Needleandthread, Western wheatgrass, Cudweed sagewort, Prairie rose, Green sagewort

PLANT COMPOSITION			
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
GRASSES		**FORBS/LEGUMES (cont.)**	
Plains reedgrass	*Calamagrostis montanensis*	Scarlet globemallow	*Sphaeralcea coccinea*
Prairie sandreed	*Calamovilfa longifolia*	White prairie aster	*Aster falcatus*
Bearded wheatgrass	*Elymus caninus*	Western red lily	*Lillium philadelphicum*
Thickspike wheatgrass	*Elymus lanceolatus*	**INVASIVES/WEEDS**	
Needleandthread grass	*Hesperostipa comata*	Bull thistle	*Cirsium vulgare*
Prairie junegrass	*Koleria macrantha*	Smooth brome	*Bromus inermis*
Green needlegrass	*Nasella viridula*	Japanese brome	*Bromus japonicus*
Little bluestem	*Schizachyrium scoparium*	Cheatgrass	*Bromus tectorum*
Prairie dropseed	*Sporobolus heterolepsis*	Wavyleaf thistle	*Cirsium undulatum*
FORBS/LEGUMES		Prickly lettuce	*Lactuca serriola*
Common yarrow	*Achillea millefolium*	Western sticktight	*Lappula occidentalis*
Wild onion	*Allium ascalonicum*	Pepperweed	*Lepidium* spp.
Rose pussytoes	*Antennaria rosea*	Kentucky bluegrass	*Poa pratensis*
Green sagewort	*Artemisia dranunculus*	Tall tumblemustard	*Sisymbrium altissimum*
Cudweed sagewort	*Artemisia ludoviciana*	Common dandelion	*Taraxacum officinale*
Groundplum milkvetch	*Astragalus crassicarpus*	Fanweed	*Thlaspi arvense*
Milkvetch	*Astragalus* spp.	Western salsify	*Tragopogon dubius*
Balsamroot	*Balsamorhiza* spp.	Stinging nettle	*Urtica dioica*
Purple prairie clover	*Dalea purpurea*	**SHRUBS/TREES**	
Black samson	*Echinacea angustifolia*	Fringed sagewort	*Artemisia frigida*
Buckwheat	*Eriogonum* spp.	Creeping juniper	*Juniperus horizontalis*
Northern bedstraw	*Galium boreale*	Prairie rose	*Rosa arkansana*
Prairie smoke	*Geum triflorum*	Woods' rose	*Rosa woodsii*
Common groundsel	*Senecio vulgaris*	Western snowberry	*Symphoricarpos occidentalis*
Sunflower	*Helianthus* spp.	Poison ivy	*Toxicodendron rydbergii*
Hairy goldenaster	*Heterotheca villosa*	Cinquefoil	*Potentilla* spp.
Dotted gayfeather	*Liatris punctata*		
Biscuitroot	*Lomatium* spp.		
Mint	*Mentha* spp.		
Hood phlox	*Phlox hoodii*		
Penstemon	*Penstemon* spp.		
Woolly indianwheat	*Plantago patagonica*		
Silverleaf scurfpea	*Psoralea argophylla*		
Prairie coneflower	*Ratibida columnifera*		
Prairie buttercup	*Ranunculus rhombodieus*		
Blackeyed susan	*Rudbeckia hirta*		
Goldenrod	*Solidago* spp.		

Ecological Worksheets

Resource Area: Guy Blackhawk 24X-27
Date: July 16-17, 2010 Slope: 9 Percent Aspect: North
Legal Description: SE1/4SW1/4 Section 27 – 149N 92W; UTM Coordinates: N52855015 E691936
Ecological Site: Sandy; Site #1 – Access Road Site
Community Type: Needleandthread, Little bluestem, Western wheatgrass, Cudweed sagewort, Western snowberry

PLANT COMPOSITION				
Common Name	**Scientific Name**		**Common Name**	**Scientific Name**
GRASSES			**FORBS/LEGUMES (cont.)**	
Plains reedgrass	*Calamagrostis montanensis*		Goldenrod	*Solidago* spp.
Prairie sandreed	*Calamovilfa longifolia*		Scarlet globemallow	*Sphaeralcea coccinea*
Bearded wheatgrass	*Elymus caninus*		Clover	*Trifolium* spp.
Thickspike wheatgrass	*Elymus lanceolatus*		**INVASIVES/WEEDS**	
Needleandthread grass	*Hesperostipa comata*		Bull thistle	*Cirsium vulgare*
Prairie junegrass	*Koleria macrantha*		Japanese brome	*Bromus japonicus*
Green needlegrass	*Nasella viridula*		Cheatgrass	*Bromus tectorum*
Sandberg bluegrass	*Poa secunda*		False flax	*Camelina crantz*
Little bluestem	*Schizachyrium scoparium*		Wavyleaf thistle	*Cirsium undulatum*
Prairie dropseed	*Sporobolus heterolepsis*		Prickly lettuce	*Lactuca serriola*
FORBS/LEGUMES			Pepperweed	*Lepidium* spp.
Common yarrow	*Achillea millefolium*		Kentucky bluegrass	*Poa pratensis*
Wild onion	*Allium ascalonicum*		Tall tumblemustard	*Sisymbrium altissimum*
Rock cress	*Arabis* spp.		Common dandelion	*Taraxacum officinale*
Green sagewort	*Artemisia dranunculus*		Fanweed	*Thlaspi arvense*
Cudweed sagewort	*Artemisia ludoviciana*		Western salsify	*Tragopogon dubius*
Groundplum milkvetch	*Astragalus crassicarpus*		**SHRUBS/TREES**	
Milkvetch	*Astragalus* spp.		Fringed sagewort	*Artemisia frigida*
Balsamroot	*Balsamorhiza* spp.		Creeping juniper	*Juniperus horizontalis*
Purple prairie clover	*Dalea purpurea*		Prairie rose	*Rosa arkansana*
Black samson	*Echinacea angustifolia*		Western snowberry	*Symphoricarpos occidentalis*
Buckwheat	*Eriogonum* spp.		Poison ivy	*Toxicodendron rydbergii*
Northern bedstraw	*Galium boreale*		Cinquefoil	*Potentilla* spp.
Prairie smoke	*Geum triflorum*			
Sunflower	*Helianthus* spp.			
Hairy goldenaster	*Heterotheca villosa*			
Sand bladderpod	*Lesquerella arenosa*			
Dotted gayfeather	*Liatris punctata*			
Western red lily	*Lillium philadelphicum*			
Biscuitroot	*Lomatium* spp.			
Mint	*Mentha* spp.			
Penstemon	*Penstemon* spp.			
Hood phlox	*Phlox hoodii*			
Woolly indianwheat	*Plantago patagonica*			
Silverleaf scurfpea	*Psoralea argophylla*			
Prairie coneflower	*Ratibida columnifera*			
Prairie buttercup	*Ranunculus rhombodieus*			
Blackeyed susan	*Rudbeckia hirta*			

Ecological Worksheets

Resource Area: Guy Blackhawk 24X-27
Date: July 16-17, 2010 Slope: 8 Percent Aspect: North
Legal Description: SE1/4SW1/4 Section 27 – 149N 92W; UTM Coordinates: N52855012 E691990
Ecological Site: Sandy; Site #2 – Access Road Site
Community Type: Needleandthread, Green needlegrass, Kentucky bluegrass, Cudweed sagewort

PLANT COMPOSITION			
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
GRASSES		**FORBS/LEGUMES (cont.)**	
Plains reedgrass	*Calamagrostis montanensis*	Clover	*Trifolium* spp.
Prairie sandreed	*Calamovilfa longifolia*	Mulesear	*Wyethia* spp.
Bearded wheatgrass	*Elymus caninus*	Western red lily	*Lillium philadelphicum*
Thickspike wheatgrass	*Elymus lanceolatus*	**INVASIVES/WEEDS**	
Needleandthread grass	*Hesperostipa comata*	Bull thistle	*Cirsium vulgare*
Prairie junegrass	*Koleria macrantha*	Japanese brome	*Bromus japonicus*
Green needlegrass	*Nasella viridula*	Cheatgrass	*Bromus tectorum*
Little bluestem	*Schizachyrium scoparium*	False flax	*Camelina crantz*
Prairie dropseed	*Sporobolus heterolepsis*	Wavyleaf thistle	*Cirsium undulatum*
FORBS/LEGUMES		Prickly lettuce	*Lactuca serriola*
Common yarrow	*Achillea millefolium*	Pepperweed	*Lepidium* spp.
Roadside agrimonia	*Agrimonia striata*	Kentucky bluegrass	*Poa pratensis*
Wild onion	*Allium ascalonicum*	Tall tumblemustard	*Sisymbrium altissimum*
Rock cress	*Arabis* spp.	Common dandelion	*Taraxacum officinale*
Green sagewort	*Artemisia dranunculus*	Fanweed	*Thlaspi arvense*
Cudweed sagewort	*Artemisia ludoviciana*	Western salsify	*Tragopogon dubius*
Groundplum milkvetch	*Astragalus crassicarpus*	**SHRUBS/TREES**	
Milkvetch	*Astragalus* spp.	Fringed sagewort	*Artemisia frigida*
Balsamroot	*Balsamorhiza* spp.	Creeping juniper	*Juniperus horizontalis*
Purple prairie clover	*Dalea purpurea*	Prairie rose	*Rosa arkansana*
Black samson	*Echinacea angustifolia*	Western snowberry	*Symphoricarpos occidentalis*
Buckwheat	*Eriogonum* spp.	Poison ivy	*Toxicodendron rydbergii*
Northern bedstraw	*Galium boreale*	Cinquefoil	*Potentilla* spp.
Prairie smoke	*Geum triflorum*		
Sunflower	*Helianthus* spp.		
Hairy goldenaster	*Heterotheca villosa*		
Dotted gayfeather	*Liatris punctata*		
Biscuitroot	*Lomatium* spp.		
Sand bladderpod	*Lesquerella arenosa*		
Mint	*Mentha* spp.		
Penstemon	*Penstemon* spp.		
Hood phlox	*Phlox hoodii*		
Woolly indianwheat	*Plantago patagonica*		
Silverleaf scurfpea	*Psoralea argophylla*		
Prairie coneflower	*Ratibida columnifera*		
Prairie buttercup	*Ranunculus rhombodieus*		
Blackeyed susan	*Rudbeckia hirta*		
Goldenrod	*Solidago* spp.		
Scarlet globemallow	*Sphaeralcea coccinea*		

Ecological Worksheets

Resource Area: Guy Blackhawk 24X-27
Date: July 16-17, 2010 Slope: 11 Percent Aspect: Northwest
Legal Description: SE1/4SW1/4 Section 27 – 149N 92W; UTM Coordinates: N52855004 E692047
Ecological Site: Shallow Sandy; Site #3 – Access Road Site
Community Type: Needleandthread, Green needlegrass, Little bluestem, Cudweed sagewort, Western snowberry

PLANT COMPOSITION			
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
GRASSES		**INVASIVES/WEEDS**	
Plains reedgrass	*Calamagrostis montanensis*	Bull thistle	*Cirsium vulgare*
Prairie sandreed	*Calamovilfa longifolia*	Japanese brome	*Bromus japonicus*
Pen sedge	*Carex pensylvanica*	Cheatgrass	*Bromus tectorum*
Bearded wheatgrass	*Elymus caninus*	False flax	*Camelina crantz*
Thickspike wheatgrass	*Elymus lanceolatus*	Wavyleaf thistle	*Cirsium undulatum*
Needleandthread grass	*Hesperostipa comata*	Prickly lettuce	*Lactuca serriola*
Prairie junegrass	*Koleria macrantha*	Pepperweed	*Lepidium* spp.
Green needlegrass	*Nasella viridula*	Kentucky bluegrass	*Poa pratensis*
Little bluestem	*Schizachyrium scoparium*	Tall tumblemustard	*Sisymbrium altissimum*
Prairie dropseed	*Sporobolus heterolepsis*	Common dandelion	*Taraxacum officinale*
FORBS/LEGUMES		Fanweed	*Thlaspi arvense*
Common yarrow	*Achillea millefolium*	Western salsify	*Tragopogon dubius*
Wild onion	*Allium ascalonicum*	**SHRUBS/TREES**	
Green sagewort	*Artemisia dranunculus*	Fringed sagewort	*Artemisia frigida*
Cudweed sagewort	*Artemisia ludoviciana*	Creeping juniper	*Juniperus horizontalis*
Groundplum milkvetch	*Astragalus crassicarpus*	Chokecherry	*Prunus virginiana*
Milkvetch	*Astragalus* spp.	Prairie rose	*Rosa arkansana*
Balsamroot	*Balsamorhiza* spp.	Western snowberry	*Symphoricarpos occidentalis*
Purple prairie clover	*Dalea purpurea*	Poison ivy	*Toxicodendron rydbergii*
Black samson	*Echinacea angustifolia*	Cinquefoil	*Potentilla* spp.
Buckwheat	*Eriogonum* spp.		
Northern bedstraw	*Galium boreale*		
Prairie smoke	*Geum triflorum*		
Sunflower	*Helianthus* spp.		
Hairy goldenaster	*Heterotheca villosa*		
Dotted gayfeather	*Liatris punctata*		
Biscuitroot	*Lomatium* spp.		
Sand bladderpod	*Lesquerella arenosa*		
Mint	*Mentha* spp.		
Penstemon	*Penstemon* spp.		
Hood phlox	*Phlox hoodii*		
Woolly indianwheat	*Plantago patagonica*		
Silverleaf scurfpea	*Psoralea argophylla*		
Prairie coneflower	*Ratibida columnifera*		
Prairie buttercup	*Ranunculus rhombodieus*		
Blackeyed susan	*Rudbeckia hirta*		
Goldenrod	*Solidago* spp.		
Scarlet globemallow	*Sphaeralcea coccinea*		
Western red lily	*Lillium philadelphicum*		

Ecological Worksheets

Resource Area: Lawrence 24X-26
Date: August 22, 2010 Slope: 15 Percent Aspect: North
Legal Description: SE1/4SW1/4 Section 27 – 149N 92W; UTM Coordinates: N5284958 E692083
Ecological Site: Sandy; Site #1 – Access Road Site
Community Type: Needleandthread, Cudweed sagewort, Western snowberry

PLANT COMPOSITION				
Common Name	**Scientific Name**		**Common Name**	**Scientific Name**
GRASSES			**SHRUBS/TREES**	
Big bluestem	*Andropogon gerardii*		Fringed sagewort	*Artemisia frigida*
Blue grama	*Bouteloua gracilis*		Prairie rose	*Rosa arkansana*
Sideoats grama	*Bouteloua curtipendula*		Wood's rose	*Rosa woodsii*
Buffalograss	*Bouteloua dactyloides*			
Pen sedge	*Carex pensylvanica*			
Threadleaf sedge	*Carex filifolia*			
Bearded wheatgrass	*Elymus caninus*			
Needleandthread grass	*Hesperostipa comata*			
Green needlegrass	*Nasella viridula*			
Switchgrass	*Panicum virgatum*			
Sandberg bluegrass	*Poa secunda*			
Little bluestem	*Schizachyrium scoparium*			
FORBS/LEGUMES				
False dandelion	*Agoseris gluaca*			
Green sagewort	*Artemisia dranunculus*			
Cudweed sagewort	*Artemisia ludoviciana*			
White prairie aster	*Aster falcatus*			
Groundplum milkvetch	*Astragalus crassicarpus*			
Purple prairie clover	*Dalea purpurea*			
Black Samson	*Echinacea angustifolia*			
Richardson's geranium	*Geranium richardsonii*			
Prairie smoke	*Geum triflorum*			
Curlycup gumweed	*Grindelia squarrosa*			
Sunflower	*Helianthus spp.*			
Hairy goldenaster	*Heterotheca villosa*			
Western red lily	*Lillium philadelphicum*			
Hood phlox	*Phlox hoodii*			
Woolly Indianwheat	*Plantago patagonica*			
Silverleaf scurfpea	*Psoralea argophylla*			
Prairie coneflower	*Ratibida columnifera*			
Blackeyed susan	*Rudbeckia hirta*			
Common groundsel	*Senecio vulgaris*			
Goldenrod	*Solidago* spp.			
Scarlet globemallow	*Sphaeralcea coccinea*			
American vetch	*Vicia americana*			
INVASIVES/WEEDS				
Bull thistle	*Cirsium vulgare*			
Flodman's thistle	*Cirsium flodmanii*			
Kentucky bluegrass	*Poa pratensis*			
Common dandelion	*Taraxacum officinale*			

Ecological Worksheets

Resource Area: Lawrence 24X-26
Date: August 22, 2010 Slope: 4 Percent Aspect: East
Legal Description: SW1/4NE1/4 Section 34 – 149N 92W; UTM Coordinates: N5284937 E692269
Ecological Site: Loamy Overflow; Site #2 – Access Road Site
Community Type: Green needlegrass, Kentucky bluegrass, Cudweed sagewort, Western snowberry

PLANT COMPOSITION	
Common Name	**Scientific Name**
GRASSES	
Big bluestem	*Andropogon gerardii*
Bearded wheatgrass	*Elymus caninus*
Needleandthread grass	*Hesperostipa comata*
Prairie junegrass	*Koleria macrantha*
Western wheatgrass	*Pascopyrum smithii*
Sandberg bluegrass	*Poa secunda*
Prairie dropseed	*Sporobolus heterolepis*
FORBS/LEGUMES	
Common yarrow	*Achillea millefolium*
White prairie aster	*Aster falcatus*
Purple prairie clover	*Dalea purpurea*
Black Samson	*Echinacea angustifolia*
American licorice	*Glycyrrhiza lepidota*
Hairy goldenaster	*Heterotheca villosa*
Dotted gayfeather	*Liatris punctata*
Western red lily	*Lillium philadelphicum*
Penstemon	*Penstemon* spp.
Silverleaf scurfpea	*Psoralea argophylla*
Prairie coneflower	*Ratibida columnifera*
Blackeyed susan	*Rudbeckia hirta*
Goldenrod	*Solidago* spp.
Clover	*Trifolium* spp.
Death camas	*Zygadenus elegans*
INVASIVES/WEEDS	
Bull thistle	*Cirsium vulgare*
Flodman's thistle	*Cirsium flodmanii*
Prickly lettuce	*Lactuca serriola*
Kentucky bluegrass	*Poa pratensis*
Western salsify	*Tragopogon dubius*
Stinging nettle	*Urtica dioica*
Cocklebur	*Xanthium* spp.
SHRUBS/TREES	
Common snowberry	*Symphoricarpos albus*
Western snowberry	*Symphoricarpos occidentalis*
Poison ivy	*Toxicodendron rydbergii*

Ecological Worksheets

Resource Area: Lawrence 24X-26
Date: August 22, 2010 Slope: 17 Percent Aspect: North
Legal Description: NW1/4NE1/4 Section 34 – 149N 92W; UTM Coordinates: N5284802 E692494
Ecological Site: Loamy; Site #3 – Access Road Site
Community Type: Blue grama, Needleandthread, Western wheatgrass, Cudweed sagewort

PLANT COMPOSITION	
Common Name	**Scientific Name**
GRASSES	
Big bluestem	*Andropogon gerardii*
Sideoats grama	*Bouteloua curtipendula*
Threadleaf sedge	*Carex filifolia*
Bearded wheatgrass	*Elymus caninus*
Switchgrass	*Panicum virgatum*
FORBS/LEGUMES	
Common yarrow	*Achillea millefolium*
Cudweed sagewort	*Artemisia ludoviciana*
White prairie aster	*Aster falcatus*
Purple prairie clover	*Dalea purpurea*
Black samson	*Echinacea angustifolia*
Prairie smoke	*Geum triflorum*
Curlycup gumweed	*Grindelia squarrosa*
Sunflower	*Helianthus spp.*
Hairy goldenaster	*Heterotheca villosa*
Dotted gayfeather	*Liatris punctata*
Western red lily	*Lillium philadelphicum*
Penstemon	*Penstemon spp.*
Hood phlox	*Phlox hoodii*
Silverleaf scurfpea	*Psoralea argophylla*
Prairie coneflower	*Ratibida columnifera*
Blackeyed susan	*Rudbeckia hirta*
Common groundsel	*Senecio vulgaris*
Goldenrod	*Solidago spp.*
Scarlet globemallow	*Sphaeralcea coccinea*
American vetch	*Vicia americana*
INVASIVES/WEEDS	
Bull thistle	*Cirsium vulgare*
Flodman's thistle	*Cirsium flodmanii*
Scotch thistle	*Onopordum acanthium*
Kentucky bluegrass	*Poa pratensis*
Common dandelion	*Taraxacum officinale*
SHRUBS/TREES	
Woods' rose	*Rosa woodsii*

Ecological Worksheets

Resource Area: Lawrence 24X-26
Date: August 22, 2010 Slope: 2 Percent Aspect: North
Legal Description: NW1/4NE1/4 Section 34 – 149N 92W; UTM Coordinates: N5284811 E692612
Ecological Site: Shallow Sandy; Site #4 – Access Road Site
Community Type: Needleandthread, Blue grama, Cudweed sagewort, Silverleaf scurfpea, Western snowberry

PLANT COMPOSITION			PLANT COMPOSITION	
Common Name	**Scientific Name**		**Common Name**	**Scientific Name**
GRASSES			**SHRUBS/TREES**	*Artemisia frigida*
Blue grama	*Bouteloua gracilis*		Fringed sagewort	*Symphoricarpos albus*
Sideoats grama	*Bouteloua curtipendula*		Common snowberry	*Symphoricarpos occidentalis*
Pen sedge	*Carex pensylvanica*		Western snowberry	*Toxicodendron rydbergii*
Needleandthread grass	*Hesperostipa comata*		Poison ivy	
Green needlegrass	*Nasella viridula*			
Western wheatgrass	*Pascopyrum smithii*			
Little bluestem	*Schizachyrium scoparium*			
FORBS/LEGUMES				
Common yarrow	*Achillea millefolium*			
Wild onion	*Allium ascalonicum*			
Green sagewort	*Artemisia dranunculus*			
Cudweed sagewort	*Artemisia ludoviciana*			
Groundplum milkvetch	*Astragalus crassicarpus*			
Harebell	*Campanula rotundiflora*			
Purple prairie clover	*Dalea purpurea*			
Black samson	*Echinacea angustifolia*			
Milkwort	*Glaux spp.*			
Curlycup gumweed	*Grindelia squarrosa*			
Sunflower	*Helianthus spp.*			
Hairy goldenaster	*Heterotheca villosa*			
Dotted gayfeather	*Liatris punctata*			
Western red lily	*Lillium philadelphicum*			
Rush skeletonweed	*Lygodesmia juncea*			
Mint	*Mentha spp.*			
Silverleaf scurfpea	*Psoralea argophylla*			
Prairie coneflower	*Ratibida columnifera*			
Blackeyed susan	*Rudbeckia hirta*			
Common groundsel	*Senecio vulgaris*			
SELAGINELLA (LESSER CLUB-MOSS)				
Dense clubmoss	*Selaginella densa*			
INVASIVES/WEEDS				
Japanese brome	*Bromus japonicus*			
False flax	*Camelina crantz*			
Prickly lettuce	*Lactuca serriola*			
Kentucky bluegrass	*Poa pratensis*			
Western salsify	*Tragopogon dubius*			

Ecological Worksheets

Resource Area: Lawrence 24X-26
Date: August 22, 2010 Slope: 14 Percent Aspect: Northeast
Legal Description: NE1/4NE1/4 Section 34 – 149N 92W; UTM Coordinates: N5284691 E692787
Ecological Site: Loamy; Site #5 – Access Road Site
Community Type: Needleandthread, Blue grama, Cudweed sagewort, Western snowberry

PLANT COMPOSITION	
Common Name	**Scientific Name**
GRASSES	
Big bluestem	*Andropogon gerardii*
Sideoats grama	*Bouteloua curtipendula*
Threadleaf sedge	*Carex filifolia*
Bearded wheatgrass	*Elymus caninus*
Switchgrass	*Panicum virgatum*
FORBS/LEGUMES	
Beeplant	*Cleome serulata*
Prairie smoke	*Geum triflorum*
Curlycup gumweed	*Grindelia squarrosa*
Hairy goldenaster	*Heterotheca villosa*
Dotted gayfeather	*Liatris punctata*
Western red lily	*Lillium philadelphicum*
Biscuitroot	*Lomatium* spp.
Mint	*Mentha* spp.
Silverleaf scurfpea	*Psoralea argophylla*
Prairie coneflower	*Ratibida columnifera*
Blackeyed susan	*Rudbeckia hirta*
Common groundsel	*Senecio vulgaris*
Goldenrod	*Solidago* spp.
White prairie aster	*Aster falcatus*
Clover	*Trifolium* spp.
American vetch	*Vicia americana*
Deathcamas	*Zygadenus elegans*
INVASIVES/WEEDS	
Flodman's thistle	*Cirsium flodmanii*
Kentucky bluegrass	*Poa pratensis*
Common dandelion	*Taraxacum officinale*
Stinging nettle	*Urtica dioica*
Cocklebur	*Xanthium* spp.
SHRUBS/TREES	
Woods' rose	*Rosa woodsii*

Ecological Worksheets

Resource Area: Lawrence 24X-26
Date: August 22, 2010 Slope: 14 Percent Aspect: Northeast
Legal Description: NE1/4NE1/4 Section 34 – 149N 92W; UTM Coordinates: N52854691 E692787
Ecological Site: Loamy ; Site #6 – Access Road Site
Community Type: Needleandthread, Blue grama, Cudweed sagewort

PLANT COMPOSITION	
Common Name	**Scientific Name**
GRASSES	
Blue grama	*Bouteloua gracilis*
Sideoats grama	*Bouteloua curtipendula*
Needleandthread grass	*Hesperostipa comata*
Green needlegrass	*Nasella viridula*
Sandberg bluegrass	*Poa secunda*
Little bluestem	*Schizachyrium scoparium*
FORBS/LEGUMES	
Green sagewort	*Artemisia dranunculus*
Cudweed sagewort	*Artemisia ludoviciana*
Purple prairie clover	*Dalea purpurea*
Black samson	*Echinacea angustifolia*
Richardson's geranium	*Geranium richardsonii*
Prairie smoke	*Geum triflorum*
Curlycup gumweed	*Grindelia squarrosa*
Sunflower	*Helianthus* spp.
Hairy goldenaster	*Heterotheca villosa*
Western red lily	*Lillium philadelphicum*
INVASIVES/WEEDS	
Bull thistle	*Cirsium vulgare*
Common dandelion	*Taraxacum officinale*
SHRUBS/TREES	
Fringed sagewort	*Artemisia frigida*
Cinquefoil	*Potentilla* spp.
Prairie rose	*Rosa arkansana*

Ecological Worksheets

Resource Area: Lawrence 24X-26
Date: August 22, 201 Slope: 2 Percent Aspect: Northeast
Legal Description: SW1/4SW1/4 Section 26 – 149N 92W; UTM Coordinates: N52855018 E693292
Ecological Site: Sandy; Site #7 – Access Road Site
Community Type: Needleandthread, Blue grama, Cudweed sagewort

PLANT COMPOSITION			PLANT COMPOSITION	
Common Name	**Scientific Name**		**Common Name**	**Scientific Name**
GRASSES			**SHRUBS/TREES**	
Blue grama	*Bouteloua gracilis*		Fringed sagewort	*Artemisia frigida*
Sideoats grama	*Bouteloua curtipendula*		Western snowberry	*Symphoricarpos occidentalis*
Plains reedgrass	*Calamagrostis montanensis*			
Sun sedge	*Carex inops*			
Pen sedge	*Carex pensylvanica*			
Needleandthread grass	*Hesperostipa comata*			
Porcupine grass	*Hesperostipa spartea*			
Prairie junegrass	*Koleria macrantha*			
Sandberg bluegrass	*Poa secunda*			
Western wheatgrass	*Pascopyrum smithii*			
Little bluestem	*Schizachyrium scoparium*			
FORBS/LEGUMES				
Common yarrow	*Achillea millefolium*			
Wild onion	*Allium ascalonicum*			
Green sagewort	*Artemisia dranunculus*			
Cudweed sagewort	*Artemisia ludoviciana*			
Groundplum milkvetch	*Astragalus crassicarpus*			
Harebell	*Campanula rotundiflora*			
Purple prairie clover	*Dalea purpurea*			
Black samson	*Echinacea angustifolia*			
Prairie smoke	*Geum triflorum*			
Curlycup gumweed	*Grindelia squarrosa*			
Sunflower	*Helianthus* spp.			
Hairy goldenaster	*Heterotheca villosa*			
Western red lily	*Lillium philadelphicum*			
Prairie coneflower	*Ratibida columnifera*			
Prairie buttercup	*Ranunculus rhombodieus*			
Blackeyed susan	*Rudbeckia hirta*			
Common groundsel	*Senecio vulgaris*			
Goldenrod	*Solidago* spp.			
INVASIVES/WEEDS				
Bull thistle	*Cirsium vulgare*			
Mustard	*Brassica* spp.			
Japanese brome	*Bromus japonicus*			
False flax	*Camelina crantz*			
Flodman's thistle	*Cirsium flodmanii*			
Flixweed	*Descurainia sophia*			
Prickly lettuce	*Lactuca serriola*			
Kentucky bluegrass	*Poa pratensis*			
Common dandelion	*Taraxacum officinale*			

Ecological Worksheets

Resource Area: Lawrence 24X-26
Date: August 22, 2010 Slope: 15 Percent Aspect: South
Legal Description: SE1/4SW1/4 Section 26 – 149N 92W; UTM Coordinates: N52855133 E693663
Ecological Site: Thin Loamy; Site #10 – Access Road Site
Community Type: Needleandthread, Blue grama, Little bluestem, Cudweed sagewort, Prairie rose

PLANT COMPOSITION			PLANT COMPOSITION	
Common Name	**Scientific Name**		**Common Name**	**Scientific Name**
GRASSES			**INVASIVES/WEEDS (continued)**	
Blue grama	*Bouteloua gracilis*		Kentucky bluegrass	*Poa pratensis*
Sun sedge	*Carex inops*		Common dandelion	*Taraxacum officinale*
Bearded wheatgrass	*Elymus caninus*		Western salsify	*Tragopogon dubius*
Needleandthread grass	*Hesperostipa comata*		**SHRUBS/TREES**	
Prairie junegrass	*Koleria macrantha*		Fringed sagewort	*Artemisia frigida*
Switchgrass	*Panicum virgatum*		Prairie rose	*Rosa arkansana*
Western wheatgrass	*Pascopyrum smithii*		Western snowberry	*Symphoricarpos occidentalis*
FORBS/LEGUMES				
Common yarrow	*Achillea millefolium*			
Rose pussytoes	*Antennaria rosea*			
Green sagewort	*Artemisia dranunculus*			
Groundplum milkvetch	*Astragalus crassicarpus*			
Purple prairie clover	*Dalea purpurea*			
Black samson	*Echinacea angustifolia*			
American licorice	*Glycyrrhiza lepidota*			
Curlycup gumweed	*Grindelia squarrosa*			
Sunflower	*Helianthus spp.*			
Hairy goldenaster	*Heterotheca villosa*			
Dotted gayfeather	*Liatris punctata*			
Western red lily	*Lillium philadelphicum*			
Biscuitroot	*Lomatium spp.*			
Rush skeletonweed	*Lygodesmia juncea*			
Mint	*Mentha spp.*			
Penstemon	*Penstemon spp.*			
Woolly indianwheat	*Plantago patagonica*			
Silverleaf scurfpea	*Psoralea argophylla*			
Prairie coneflower	*Ratibida columnifera*			
Blackeyed susan	*Rudbeckia hirta*			
Goldenrod	*Solidago spp.*			
White prairie aster	*Aster falcatus*			
Deathcamas	*Zygadenus elegans*			
FUNGI				
Mushroom	*Agaricus spp.*			
INVASIVES/WEEDS				
Mustard	*Brassica spp.*			
False flax	*Camelina crantz*			
Flodman's thistle	*Cirsium flodmanii*			
Wavyleaf thistle	*Cirsium undulatum*			
Scotch thistle	*Onopordum acanthium*			

Ecological Worksheets

Resource Area: Lawrence 24X-26
Date: July 16-17, 2010 Slope: 9 Percent Aspect: North
Legal Description: SE1/4SW1/4 Section 27 – 149N 92W; UTM Coordinates: N52855015 E691936
Ecological Site: Sandy; Site #1 – Access Road Site Shared Site
Community Type: Needleandthread, Little bluestem, Western wheatgrass, Cudweed sagewort, Western snowberry

PLANT COMPOSITION	
Common Name	**Scientific Name**
GRASSES	
Plains reedgrass	*Calamagrostis montanensis*
Prairie sandreed	*Calamovilfa longifolia*
Bearded wheatgrass	*Elymus caninus*
Thickspike wheatgrass	*Elymus lanceolatus*
Needleandthread grass	*Hesperostipa comata*
Prairie junegrass	*Koleria macrantha*
Green needlegrass	*Nasella viridula*
Sandberg bluegrass	*Poa secunda*
Little bluestem	*Schizachyrium scoparium*
Prairie dropseed	*Sporobolus heterolepsis*
FORBS/LEGUMES	
Common yarrow	*Achillea millefolium*
Wild onion	*Allium ascalonicum*
Rock cress	*Arabis* spp.
Green sagewort	*Artemisia dranunculus*
Cudweed sagewort	*Artemisia ludoviciana*
Groundplum milkvetch	*Astragalus crassicarpus*
Milkvetch	*Astragalus* spp.
Balsamroot	*Balsamorhiza* spp.
Purple prairie clover	*Dalea purpurea*
Black samson	*Echinacea angustifolia*
Buckwheat	*Eriogonum* spp.
Northern bedstraw	*Galium boreale*
Prairie smoke	*Geum triflorum*
Sunflower	*Helianthus spp.*
Hairy goldenaster	*Heterotheca villosa*
Dotted gayfeather	*Liatris punctata*
Biscuitroot	*Lomatium* spp.
Sand bladderpod	*Lesquerella arenosa*
Mint	*Mentha* spp.
Penstemon	*Penstemon* spp.
Hood phlox	*Phlox hoodii*
Woolly indianwheat	*Plantago patagonica*
Silverleaf scurfpea	*Psoralea argophylla*
Prairie coneflower	*Ratibida columnifera*
Prairie buttercup	*Ranunculus rhombodieus*
Blackeyed susan	*Rudbeckia hirta*

PLANT COMPOSITION	
Common Name	**Scientific Name**
FORBS/LEGUMES (continued)	
Goldenrod	*Solidago* spp.
Scarlet globemallow	*Sphaeralcea coccinea*
Scentless may weed	*Triplearospermum perforata*
Clover	*Trifolium* spp.
Western red lily	*Lillium philadelphicum*
INVASIVES/WEEDS	
Bull thistle	*Cirsium vulgare*
Japanese brome	*Bromus japonicus*
Cheatgrass	*Bromus tectorum*
False flax	*Camelina crantz*
Wavyleaf thistle	*Cirsium undulatum*
Prickly lettuce	*Lactuca serriola*
Pepperweed	*Lepidium* spp.
Kentucky bluegrass	*Poa pratensis*
Tall tumblemustard	*Sisymbrium altissimum*
Common dandelion	*Taraxacum officinale*
Fanweed	*Thlaspi arvense*
Western salsify	*Tragopogon dubius*
SHRUBS/TREES	
Fringed sagewort	*Artemisia frigida*
Creeping juniper	*Juniperus horizontalis*
Prairie rose	*Rosa arkansana*
Western snowberry	*Symphoricarpos occidentalis*
Poison ivy	*Toxicodendron rydbergii*
Cinquefoil	*Potentilla* spp.

Ecological Worksheets

Resource Area: Lawrence 24X-26
Date: July 16-17, 2010 Slope: 8 Percent Aspect: North
Legal Description: SE1/4SW1/4 Section 27 – 149N 92W; UTM Coordinates: N52855012 E691990
Ecological Site: Sandy; Site #2 – Access Road Site Shared Site
Community Type: Needleandthread, Green needlegrass, Kentucky bluegrass, Cudweed sagewort

PLANT COMPOSITION			PLANT COMPOSITION	
Common Name	**Scientific Name**		**Common Name**	**Scientific Name**
GRASSES			**FORBS/LEGUMES (continued)**	
Plains reedgrass	*Calamagrostis montanensis*		Scentless may weed	*Triplearospermum perforata*
Prairie sandreed	*Calamovilfa longifolia*		Clover	*Trifolium* spp.
Bearded wheatgrass	*Elymus caninus*		Mulesear	*Wyethia* spp.
Thickspike wheatgrass	*Elymus lanceolatus*		Western red lily	*Lillium philadelphicum*
Needleandthread grass	*Hesperostipa comata*		**INVASIVES/WEEDS**	
Prairie junegrass	*Koleria macrantha*		Bull thistle	*Cirsium vulgare*
Green needlegrass	*Nasella viridula*		Japanese brome	*Bromus japonicus*
Little bluestem	*Schizachyrium scoparium*		Cheatgrass	*Bromus tectorum*
Prairie dropseed	*Sporobolus heterolepsis*		False flax	*Camelina crantz*
FORBS/LEGUMES			Wavyleaf thistle	*Cirsium undulatum*
Common yarrow	*Achillea millefolium*		Prickly lettuce	*Lactuca serriola*
Roadside agrimonia	*Agrimonia striata*		Pepperweed	*Lepidium* spp.
Wild onion	*Allium ascalonicum*		Kentucky bluegrass	*Poa pratensis*
Rock cress	*Arabis* spp.		Tall tumblemustard	*Sisymbrium altissimum*
Green sagewort	*Artemisia dranunculus*		Common dandelion	*Taraxacum officinale*
Cudweed sagewort	*Artemisia ludoviciana*		Fanweed	*Thlaspi arvense*
Groundplum milkvetch	*Astragalus crassicarpus*		Western salsify	*Tragopogon dubius*
Milkvetch	*Astragalus* spp.		**SHRUBS/TREES**	
Balsamroot	*Balsamorhiza* spp.		Fringed sagewort	*Artemisia frigida*
Purple prairie clover	*Dalea purpurea*		Creeping juniper	*Juniperus horizontalis*
Black samson	*Echinacea angustifolia*		Prairie rose	*Rosa arkansana*
Buckwheat	*Eriogonum* spp.		Western snowberry	*Symphoricarpos occidentalis*
Northern bedstraw	*Galium boreale*		Poison ivy	*Toxicodendron rydbergii*
Prairie smoke	*Geum triflorum*		Cinquefoil	*Potentilla* spp.
Sunflower	*Helianthus* spp.			
Hairy goldenaster	*Heterotheca villosa*			
Dotted gayfeather	*Liatris punctata*			
Biscuitroot	*Lomatium* spp.			
Sand bladderpod	*Lesquerella arenosa*			
Mint	*Mentha* spp.			
Penstemon	*Penstemon* spp.			
Hood phlox	*Phlox hoodii*			
Woolly indianwheat	*Plantago patagonica*			
Silverleaf scurfpea	*Psoralea argophylla*			
Prairie coneflower	*Ratibida columnifera*			
Prairie buttercup	*Ranunculus rhombodieus*			
Blackeyed susan	*Rudbeckia hirta*			
Goldenrod	*Solidago* spp.			
Scarlet globemallow	*Sphaeralcea coccinea*			

Ecological Worksheets

Resource Area: Lawrence 24X-26
Date: August 22, 2010 Slope: 4 Percent Aspect: North
Legal Description: SE1/4SW1/4 Section 26 – 149N 92W; UTM Coordinates: N52854959 E693672
Ecological Site: Loamy; Site #8 – Pad Site
Community Type: Green needlegrass, Little bluestem, Blue grama, Prairie rose

PLANT COMPOSITION			PLANT COMPOSITION	
Common Name	**Scientific Name**		**Common Name**	**Scientific Name**
GRASSES			**INVASIVES/WEEDS**	
Red threeawn	*Aristida longiseta*		Flodman's thistle	*Cirsium flodmanii*
Blue grama	*Bouteloua gracilis*		Flixweed	*Descurainia sophia*
Pen sedge	*Carex pensylvanica*		Pepperweed	*Lepidium spp.*
Bearded wheatgrass	*Elymus caninus*		Scotch thistle	*Onopordum acanthium*
Needleandthread grass	*Hesperostipa comata*		Kentucky bluegrass	*Poa pratensis*
Prairie junegrass	*Koleria macrantha*		Common dandelion	*Taraxacum officinale*
Plains muhly	*Muhlenbergia cuspidata*		**SHRUBS/TREES**	
Green needlegrass	*Nasella viridula*		Fringed sagewort	*Artemisia frigida*
Switchgrass	*Panicum virgatum*		Prairie rose	*Rosa arkansana*
Western wheatgrass	*Pascopyrum smithii*		Woods' rose	*Rosa woodsii*
Little bluestem	*Schizachyrium scoparium*		Western snowberry	*Symphoricarpos occidentalis*
FORBS/LEGUMES				
Common yarrow	*Achillea millefolium*			
Rose pussytoes	*Antennaria rosea*			
Green sagewort	*Artemisia dranunculus*			
Cudweed sagewort	*Artemisia ludoviciana*			
Groundplum milkvetch	*Astragalus crassicarpus*			
Cutleaf balsamroot	*Balsamorhiza macrophylla*			
Purple prairie clover	*Dalea purpurea*			
Black samson	*Echinacea angustifolia*			
Buckwheat	*Eriogonum spp.*			
Prairie smoke	*Geum triflorum*			
Harebell	*Campanula rotundiflora*			
Milkwort	*Glaux spp.*			
Curlycup gumweed	*Grindelia squarrosa*			
Sunflower	*Helianthus spp.*			
Hairy goldenaster	*Heterotheca villosa*			
Dotted gayfeather	*Liatris punctata*			
Sand bladderpod	*Lesquerella arenosa*			
Mint	*Mentha spp.*			
Woolly indianwheat	*Plantago patagonica*			
Silverleaf scurfpea	*Psoralea argophylla*			
Prairie coneflower	*Ratibida columnifera*			
Blackeyed susan	*Rudbeckia hirta*			
Common groundsel	*Senecio vulgaris*			
Goldenrod	*Solidago spp.*			
White prairie aster	*Aster falcatus*			
American vetch	*Vicia americana*			
Deathcamas	*Zydadenus elegans*			
Western red lily	*Lillium philadelphicum*			

Ecological Worksheets

Resource Area: Lawrence 24X-26
Date: August 22, 2010 Slope: 2 Percent Aspect: Northeast
Legal Description: SE1/4SW1/4 Section 26 – 149N 92W; UTM Coordinates: N52855034 E693669
Ecological Site: Loamy; Site #9 – Pad Site
Community Type: Green needlegrass, Cudweed sagewort, Goldenrod

PLANT COMPOSITION	
Common Name	**Scientific Name**
GRASSES	
Red threeawn	*Aristida longiseta*
Pen sedge	*Carex pensylvanica*
Needleandthread grass	*Hesperostipa comata*
Prairie junegrass	*Koleria macrantha*
Western wheatgrass	*Pascopyrum smithii*
FORBS/LEGUMES	
Common yarrow	*Achillea millefolium*
Rose pussytoes	*Antennaria rosea*
Cudweed sagewort	*Artemisia ludoviciana*
Purple prairie clover	*Dalea purpurea*
Curlycup gumweed	*Grindelia squarrosa*
Hairy goldenaster	*Heterotheca villosa*
Hood phlox	*Phlox hoodii*
Woolly indianwheat	*Plantago patagonica*
Silverleaf scurfpea	*Psoralea argophylla*
Prairie buttercup	*Ranunculus rhombodieus*
Blackeyed susan	*Rudbeckia hirta*
Common groundsel	*Senecio vulgaris*
Goldenrod	*Solidago* spp.
INVASIVES/WEEDS	
Mustard	*Brassica* spp.
Scotch thistle	*Onopordum acanthium*
Kentucky bluegrass	*Poa pratensis*
Common dandelion	*Taraxacum officinale*
SHRUBS/TREES	
Prairie rose	*Rosa arkansana*
Western snowberry	*Symphoricarpos occidentalis*
Fringed sagewort	*Artemisia frigida*

Table C1. ***Characteristics of native seed mix recommended for reclamation of the proposed GuyBlackHawk 24X-27 and Lawrence 24X-26 project sites.***

Common Name	Plant Species	Suggested Variety[1]	Pounds (PLS)[2]	Seeds per Pound	Composition	Preferred soil type	Notes[1,3]
Cool Season Grasses							
Slender wheatgrass	*Elymus trachycaulus* ssp. *trachycaulus*	Primer	0.5	135,000	10%	Sandy to clayey	Moderate drought tolerance. Rapid establishment, short-live. Saline-tolerant and adapted to a wide range of sites. Useful where quick, native, non-aggressive perennial cover is desired.
Western wheatgrass	*Pascopyrum smithii*	Mandan 456	2.4	115,000	30%	Silty-loamy to clay	Drought tolerant. Fairly easy to moderate establishment, long-lived. Useful for slightly saline, erosive soils where long-lived hardy vegetation is desired and rapid establishment is not.
Prairie junegrass	*Koeleria macrantha*	NA	0.1	2,315,000	10%	Sandy	Drought tolerant. Easy establishment. Useful where early season forage is desired and erosion is not a severe problem. Not tolerant of heavy early season grazing.
Green needlegrass	*Nassella viridula*	Lodorm	1.2	167,840	20%	Wide-range	Drought tolerant. Establishes on a wide variety of sites, long-lived, fibrous deep root system. Moderately palatable to livestock and wildlife year-round.
Warm season grasses							
Blue grama	*Bouteloua gracilis*	Bad River	0.2	724,400	10%	Fine-textured rolling uplands	Drought resistant. Easy establishment. Saline tolerant. Sod-forming with seedling vigor and leafiness.
Sideoats grama	*Bouteloua curtipendula*	Killdeer	0.6	159,200	10%	Fine to coarse textured	Moderately drought tolerant. Excellent winter hardiness. Saline tolerant. High palatability during spring and summer.
Little bluestem	*Andropogon scoparius*	Aldous, Blaze, Camper	0.4	240,670	10%	Wide-range	Moderately drought tolerant. Long-lived bunchgrass with deep fibrous root system. Intolerant of saline or wetland conditions.
		Total	**5.4**		**100%**		

[1] USGS 2006
[2] pounds of pure live seed
[3] Goodwin and Sheley 2003

Appendix D

Soil Data Summary

GuyBlackHawk 24X-27 Well Pad and Access Road Environmental Assessment
Lawrence 24X-26 Well Pad and Access Road Environmental Assessment

XTO Energy, Inc.

Table D1: *A summary of soil attributes for ecological sites at the proposed GuyBlackHawk 24X-27 well pad and access road.*

Soil Pit Number	UTM Location*	SMU	Soil Series Component	Texture Family / Taxonomic Class	% Slope	Aspect	Landform	Depth (inch)	Parent Material	Ecological Site
Well Pad										
1	N5285003 E692124	81B	Vebar fine sandy loam	Co-lo,m,SA,f,Typic Haplustolls	3	NE	Hills/Backslope	>40	Residuum/Sandstone	Sandy
2	N5285028 E692075	81B	Parshall fine sandy loam	Co-lo,m,SA,f,Pachic Haplustolls	6	W	Hills/Swale	>60	Alluvium/Sandstone	Loamy Overflow
3	N5285074 E692048	81D	Vebar fine sandy loam	Co-lo,m,SA,f,Typic Haplustolls	11	SW	Hills/Backslope	>40	Residuum/Sandstone	Sandy
4	N5285081 E692074	93C	Williams loam	Fn-lo,m,SA,f,Typic Argiustolls	4	SW	Hills/Backslope	>60	Residuum/Glacial till	Loamy
5	N5285106 E692183	81C	Vebar fine sandy loam	Co-lo,m,SA,f,Typic Haplustolls	6	SE	Hills/Backslope	>40	Residuum/Sandstone	Sandy
6	N5285058 E692183	81B	Parshall fine sandy loam	Co-lo,m,SA,f,Pachic Haplustolls	5	SE	Hills/Swale	>60	Alluvium/Sandstone	Loamy Overflow
7	N5285065 E692114	81B	Parshall fine sandy loam	Co-lo,m,SA,f,Pachic Haplustolls	5	SE	Hills/Swale	>60	Alluvium/Sandstone	Loamy Overflow
8	N5285080 E692138	93C	Zahl loam	Co-lo,m,SA,f Typic Calciustolls	6	S	Hills/Summit	>40	Residuum/Glacial till	Thin Loamy
Access Road										
10	N5285015 E691936	81C	Vebar fine sandy loam	Co-lo,m,SA,f,Typic Haplustolls	9	N	Hills/Toeslope	>40	Residuum/Sandstone	Sandy
11	N5285012 E691990	81C	Parshall fine sandy loam	Co-lo,m,SA,f,Pachic Haplustolls	8	N	Hills/Toeslope	>60	Residuum/Sandstone	Sandy
9	N5285004 E692047	30E	Cohagen fine sandy loam	Lo,m,SA,cal,f,shal Typic Ustorthents	11	NW	Hills/Summit	10-20	Residuum/Sandstone	Shallow Sandy

* Differentially Corrected; UTM Zone is 13T.

Table D2: ***A summary of soil attributes for ecological sites at the proposed Lawrence 24X-26 well pad and access road.***

Soil Pit Number	UTM Location*	SMU	Soil Series Component	Texture Family / Taxonomic Class	% Slope	Aspect	Landform	Depth (inch)	Parent Material	Ecological Site
Well Pad										
L8	N5284959 E693672	88B	Williams loam	Fn-lo,m,SA,f,Typic Argiustolls	4	N	Hills/Toeslope	>60	Residuum/Glacial till	Loamy
L9	N5285034 E693669	88B	Williams loam	Fn-lo,m,SA,f,Typic Argiustolls	2	NE	Hills/Toeslope	>60	Residuum/Glacial till	Loamy
Access Road										
GBH-10	N5285015 E691936	81C	Vebar fine sandy loam	Co-lo,m,SA,f,Typic Haplustolls	9	N	Hills/Toeslope	>40	Residuum/Sandstone	Sandy
GBH-11	N5285012 E691990	81C	Parshall fine sandy loam	Co-lo,m,SA,f,Pachic Haplustolls	8	N	Hills/Toeslope	>60	Alluvium/Sandstone	Sandy
L1	N5284958 E692083	81D	Vebar fine sandy loam	Co-lo,m,SA,f,Typic Haplustolls	15	N	Hills/Backslope	>40	Residuum/Sandstone	Sandy
L2	N5284937 E692269	93D	Bowbells loam	Fn-lo,m,SA,f,Pachic Argiustolls	4	e	Hills/Swale	>60	Alluvium/Mixed	Loamy Overflow
L3	N5284802 E692494	93D	Williams loam	Fn-lo,m,SA,f,Typic Argiustolls	17	N	Hills/Backslope	>60	Residuum/Glacial till	Loamy
L4	N5284811 E692612	30E	Cohagen fine sandy loam	Lo,m,SA,cal,f,shal,Typic Ustorthents	2	N	Hills/Summit	10-20	Residuum/Sandstone	Shallow Sandy
L5	N5284691 E692787	93D	Williams loam	Fn-lo,m,SA,f,Typic Argiustolls	14	NE	Hills/Backslope	>60	Residuum/Glacial till	Loamy
L6	N5284895 E692983	81D	Vebar fine sandy loam	Co-lo,m,SA,f,Typic Haplustolls	15	N	Hills/Backslope	>40	Alluvium/Sandstone	Sandy
L7	N5285018 E693292	81C	Vebar fine sandy loam	Co-lo,m,SA,f,Typic Haplustolls	2	NE	Hills/Summit	>40	Alluvium/Sandstone	Sandy
L10	N5285133 E693663	93D	Zahl loam	Fn-lo,m,SA,f Typic Calciustolls	15	S	Hills/Summit	>40	Residuum/Glacial till	Thin Loamy

* Differentially Corrected; UTM Zone is 13T.

Figure D1: *Definitions of the Unified Soil Classification System*

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS (More than 50% of material is LARGER than No. 200 sieve size)	GRAVELS (More than 50% of coarse fraction is LARGER than the No. 4 sieve size)	CLEAN GRAVELS (Little or no fines)	GW	Well-graded gravels or gravel-sand mixtures, little or no fines.
			GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines.
		GRAVELS WITH FINES (Appreciable amt. of fines)	GM	Silty gravels, gravel-sand-silt mixtures.
			GC	Clayey gravels, gravel-sand-clay mixtures.
	SANDS (More than 50% of coarse fraction is SMALLER than the No. 4 sieve size)	CLEAN SANDS (Little or no fines)	SW	Well-graded sands or gravelly sands, little or no fines.
			SP	Poorly-graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES (Appreciable amt. of fines)	SM	Silty sands, sand-silt mixtures.
			SC	Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS (More than 50% of material is SMALLER than No. 200 sieve size)	SILTS AND CLAYS (Liquid limit LESS than 50)		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silt-clays of low plasticity.
	SILTS AND CLAYS (Liquid limit GREATER than 50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils.

BOUNDARY CLASSIFICATIONS: Soils possessing characteristics of two groups are designated by combinations of group symbols.

PARTICLE SIZE LIMITS

SILT OR CLAY	SAND			GRAVEL		COBBLES	BOULDERS
	Fine	Medium	Coarse	Fine	Coarse		

No. 200 No. 40 No. 10 No. 4 ¾ in. 3 in. 12 in.

U. S. STANDARD SIEVE SIZE

Reference: The Unified Soil Classification System, Corps of Engineers, U.S. Army Technical Memorandum No. 3-357, Vol. 1, March, 1953 (Revised April, 1960)

1969 A.M.C.

Figure G 160

Appendix E

Cultural Resources Documentation

GuyBlackHawk 24X-27 Well Pad and Access Road Environmental Assessment
Lawrence 24X-26 Well Pad and Access Road Environmental Assessment

XTO Energy, Inc.

United States Department of the Interior

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

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
DESCRM
MC-208

DEC 2 7 2010

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 four proposed oil well pads and access roads in Dunn County, North Dakota. Approximately 108.1 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the areas depicted in the enclosed reports. Seven archaeological sites (32DU1518, 32DU1519, 32DU1520, 32DU1521, 32DU1522, 32DU1523) were located that may possess the quality of integrity and meet at least one of the criteria (36 CFR 60.4) for inclusion on the National Register of Historic Places. No properties were located that appear to qualify for protection under the American Indian Religious Freedom Act (42 USC 1996).

As the surface management agency, and as provided for in 36 CFR 800.5, we have therefore reached a determination of **no historic properties affected** for these undertakings, as the archaeological sites will be avoided. Catalogued as **BIA Case Number AAO-1733/FB/10,** the proposed undertakings, locations, and project dimensions are described in the following reports:

Klinner, Duane
(2010) FBIR Goes Everywhere 31x-11 Well Pad and Access Road: A Class III Cultural Resource Inventory, Dunn County, North Dakota. KLJ Cultural Resources for XTO Energy, Fort Worth, TX.
(2010) FBIR Guy Black Hawk 24x-27 Well Pad and Access Road: A Class III Cultural Resource Inventory, Dunn County, North Dakota. KLJ Cultural Resources for XTO Energy, Fort Worth, TX.
(2010) FBIR Grinnell 41x-1 Well Pad and Access Road: A Class III Cultural Resource Inventory, Dunn County, North Dakota. KLJ Cultural Resources for XTO Energy, Fort Worth, TX.
(2010) FBIR Lawrence 24x-26 Well Pad and Access Road: A Class III Cultural Resource Inventory, Dunn County, North Dakota. KLJ Cultural Resources for XTO Energy, Fort Worth, TX.

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

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

Sincerely,

ACTING Regional Director

Enclosures

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

Appendix F

Agency Correspondence

GuyBlackHawk 24X-27 Well Pad and Access Road Environmental Assessment
Lawrence 24X-26 Well Pad and Access Road Environmental Assessment

XTO Energy, Inc.

Appendix F

Agency Correspondence

GuyBlackHawk24X-27 Well Pad and Access Road Environmental Assessment
Lawrence 24X-26 Well Pad and Access Road Environmental Assessment

XTO Energy, Inc.

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June 18, 2010

Kathy Duttenhefner
Planning & Natural Resources Division
North Dakota Parks & Recreation Department
1600 East Century Ave., Suite 3
Bismarck, ND 58503-0649

Dear Ms. Duttenhefner:

We are requesting known location information and any associated data for threatened, endangered, and rare animals and plants within a one-mile distance of our project area boundary (**Project Vicinity Map**). Our project is located on the Fort Berthold Indian Reservation, east of Mandaree, in Dunn County, North Dakota. The project sites occur within:

* Township 149N, Range 92W, Sections 2, 11, 14, 22, 23, 24, 25, 26, 27, 34, & 35;
* Township 149N, Range 91W, Sections 16, 21, 22, 27, 28, 29, 30, 31, 32, & 33;
* Township 148N, Range 92W, Sections 1, 2, 9, & 16;
* Township 148N, Range 91W, Sections 6, 7, 13, & 18.

I understand there is a fee for out-of-state information requests. Please let me know the total cost and we will gladly pay the fee. I can be contacted by phone at (406) 439-0284 or through e-mail at apipp@pbsj.com. Information can be mailed to me at the address on this letterhead or to my e-mail address.

Thank you very much for providing plant and animal information.

Sincerely,

Andrea Pipp

Andrea K. Pipp
Botanist

820 North Montana Avenue • Suite A • Helena, Montana 59601 • Telephone: 406.495.1377 • Fax: 406.495.1379 • www.pbsj.com

John Hoeven, Governor
Mark A. Zimmerman, Director

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

July 14, 2010

Andrea K. Pipp
PBS & J
820 North Montana Avenue, Suite A
Helena, MT 59601

Re: XTO Energy, Inc. Oil Exploration Project

Dear Ms. Pipp:

The North Dakota Parks and Recreation Department (NDPRD) has reviewed the above referenced project proposal to conduct oil exploration in areas located in Sections 2, 11, 14, 22-27, 34, and 35, T149N, R92W; Sections 16, 21, 22, and 27-33, T149N, R91W; Sections 1, 2, 9, 13, and 16, T148N, R92W; and Sections 6, 7, and 18, T148N, R91W, Dunn County.

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

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any current or historic plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, we do have records for the occurrence of *Charadrius melodus* (piping plover) in a section adjacent to the project area indicating that the habitat in the project area may be suited for this specie or other rare, threatened, sensitive or endangered species. Please see the attached spreadsheet and map for more information on these occurrences. We defer further comments regarding animal species to the North Dakota Game and Fish Department and the United States Fish and Wildlife Service.

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

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

It is our policy to charge out-of-state requests for data services including data retrieval, data analysis, manual and computer searches, packaging and collection of data. An invoice for services provided has been enclosed.

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

Sincerely,

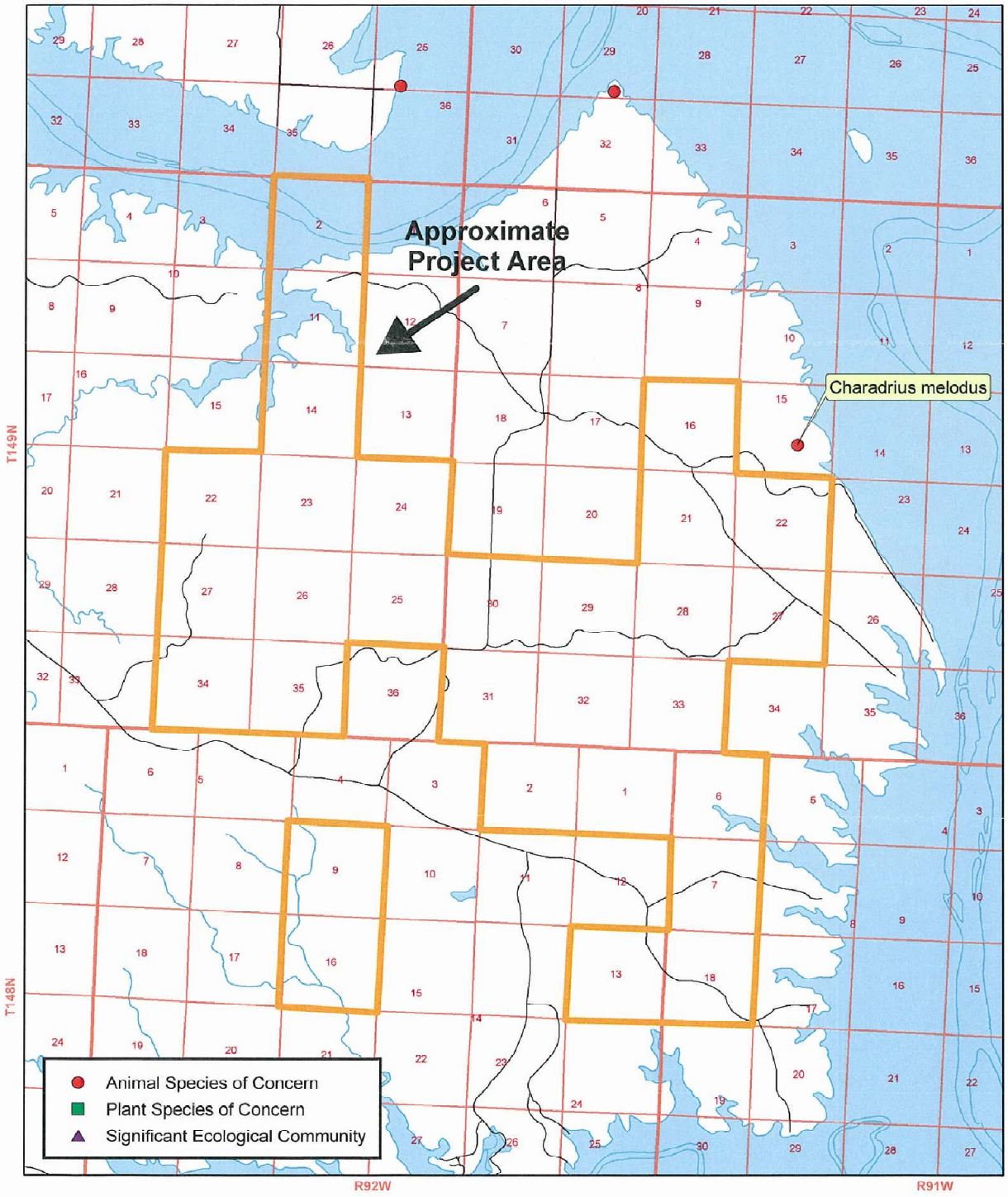
Jesse Hanson

Jesse Hanson, Manager
Planning and Natural Resources Division

R.USNDNHI*2010-194

Play in our backyard!

North Dakota Parks and Recreation Department
North Dakota Natural Heritage Inventory



July 2010

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

State Scientific Name	State Common Name	State Rank	Global Rank	Federal Status	Township Range Section	County	Last Observation	Estimated Representation Accuracy	Precision
Charadrius melodus	Piping Plover	S1S2	G3	LE, LT	149N091W - 15	Dunn	1996		S

F-4

North Dakota Natural Heritage Inventory Biological and Conservation Data Disclaimer

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

Estimated Representation Accuracy

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

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

Precision

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

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

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June 24, 2010

Fred Poitra
Three Affiliated Tribes
Game & Fish Director
404 Frontage Road
New Town, North Dakota 58763

Subject: XTO Energy Oil Exploration on the Fort Berthold Indian Reservation - 2010

Dear Director Poitra:

XTO Energy, Inc. (XTO) is proposing to conduct oil exploration activities at 12 new sites in Dunn County, east of Mandaree, North Dakota on the Fort Berthold Indian Reservation (FBIR) (**Project Vicinity & Well Pad and Access Road Locations maps**). The well sites fall under the jurisdiction of the U.S. Department of Interior's Bureau of Indian Affairs (BIA), necessitating the preparation of an environmental assessment (EA). XTO is preparing a draft EA for each site on behalf of the BIA. We would appreciate information on threatened & endangered plants and animals (i.e., black-footed ferret, Dakota skipper, gray wolf, Interior Least Tern, pallid sturgeon, Piping Plover, and Whooping Crane), concerns related to the proposed activities, known locations of Bald Eagle, Golden Eagle, and other raptor nests, information on big game winter/summer range, and information on general wildlife and plants. In addition please let us know if there are any Tribal revegetation guidelines and any Tribal management plans or agreements between the Tribe and the USFWS that contain conservation measures relevant to listed species and their habitats that we should address in the EAs.

The proposed action includes approvals by the BIA and BLM of the drilling and completion of multiple exploratory oil wells at 12 sites on the FBIR (**Approximate Well Pad & Access Road Location Map**). The general legal descriptions of the well pads and access roads are provided in **Table 1**. These well locations are preliminary and the final locations will be determined in consultation with the BIA and the Tribe. The development of these sites would require mechanical excavation and construction for the well pads and access roads. Well pads will range in size from four to five acres. Access roads vary in length, but will generally be a maximum of 66 feet wide and will be placed to maximize the use of the existing road system to the greatest extent possible.

820 North Montana Avenue • Suite A • Helena, Montana 59601 • Telephone: 406.495.1377 • Fax: 406.495.1379 • www.pbsj.com

Table 1. *2010 proposed XTO Energy oil well sites on the Fort Berthold Indian Reservation.*

Site Name	Township	Range	Section(s)	Unit Size (acre)
FBIR GoesEverywhere 31X-11	149N	92W	11, 14	1280
FBIR Lawrence 24X-26	149N	92W	23, 26	1280
FBIR Guy Blackhawk 24X-27	149N	92W	22, 27	1280
FBIR BlackMedicine 21X-16	149N	91W	16, 21	1280
FBIR YoungBear 31X-9	148N	92W	9, 16	1280
FBIR HuntsAlong 44X-31	149N	91W	31 (eastern half)	320
FBIR Headless Turtle 24X-32	149N	91W	29, 32	1280
FBIR Grinnell 34X-33	149N	91W	28, 33	1280
FBIR Grinnell 41X-1	148N	92W	1, 2	1280
FBIR George BlackHawk 31X-6	148N	91W	6, 7	1280
FBIR Nellie Old Mouse 43X-18	148N	91W	13, 18	1280
FBIR-name to be determined (NameTBD)	149N	91W	22, 27	1280

Our biologists will be conducting field work at these sites beginning July 12, 2010. Prior to our field visit I will contact you to discuss this project. If convenient, you can also contact me by cell phone (406-439-0284) or at the office (406-495-1377.

I have appreciated your assistance in providing biological information on previous proposed oil/gas well sites and look forward to discussing these new site locations with you. Thank you for your time.

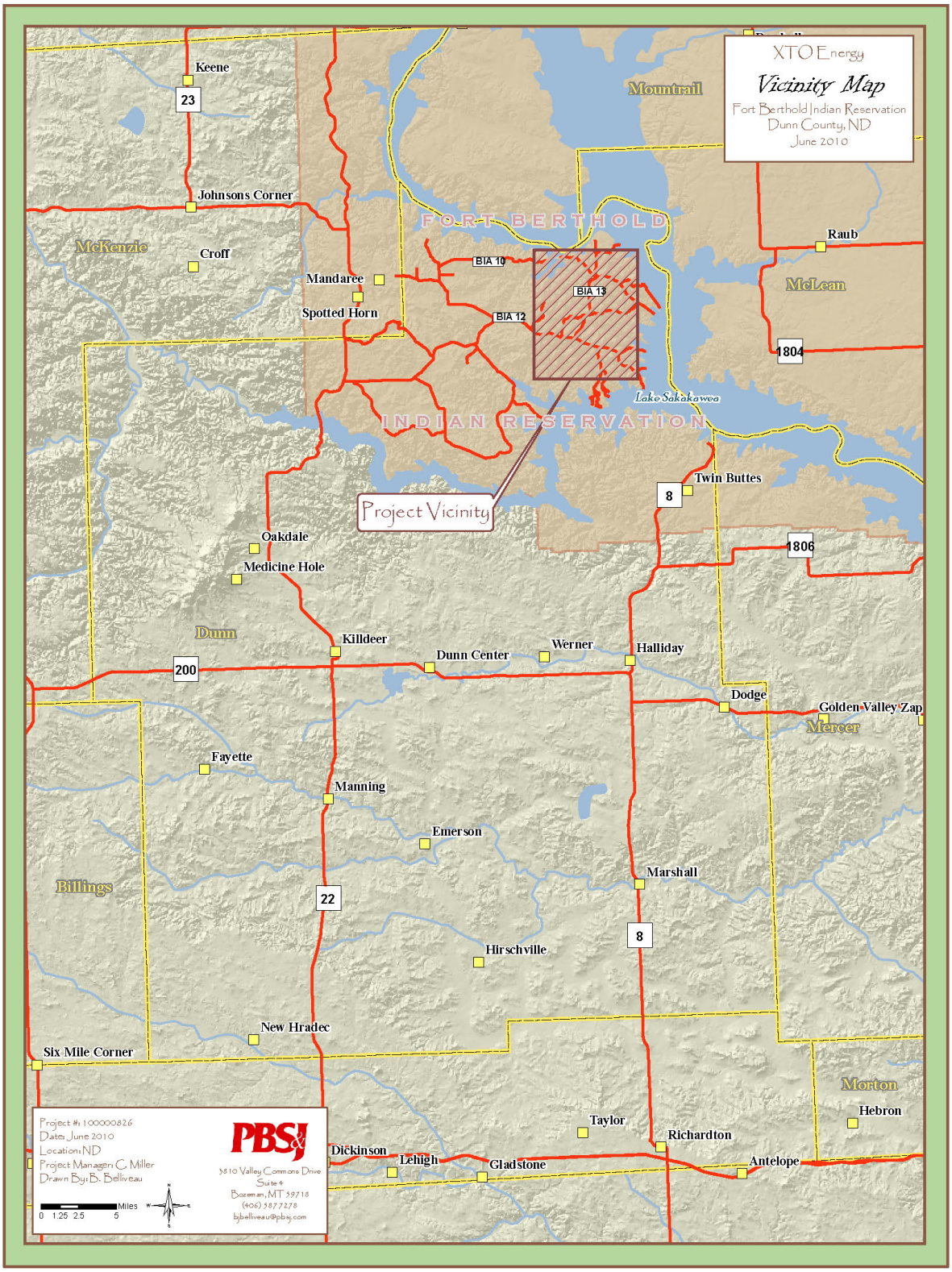
Sincerely,

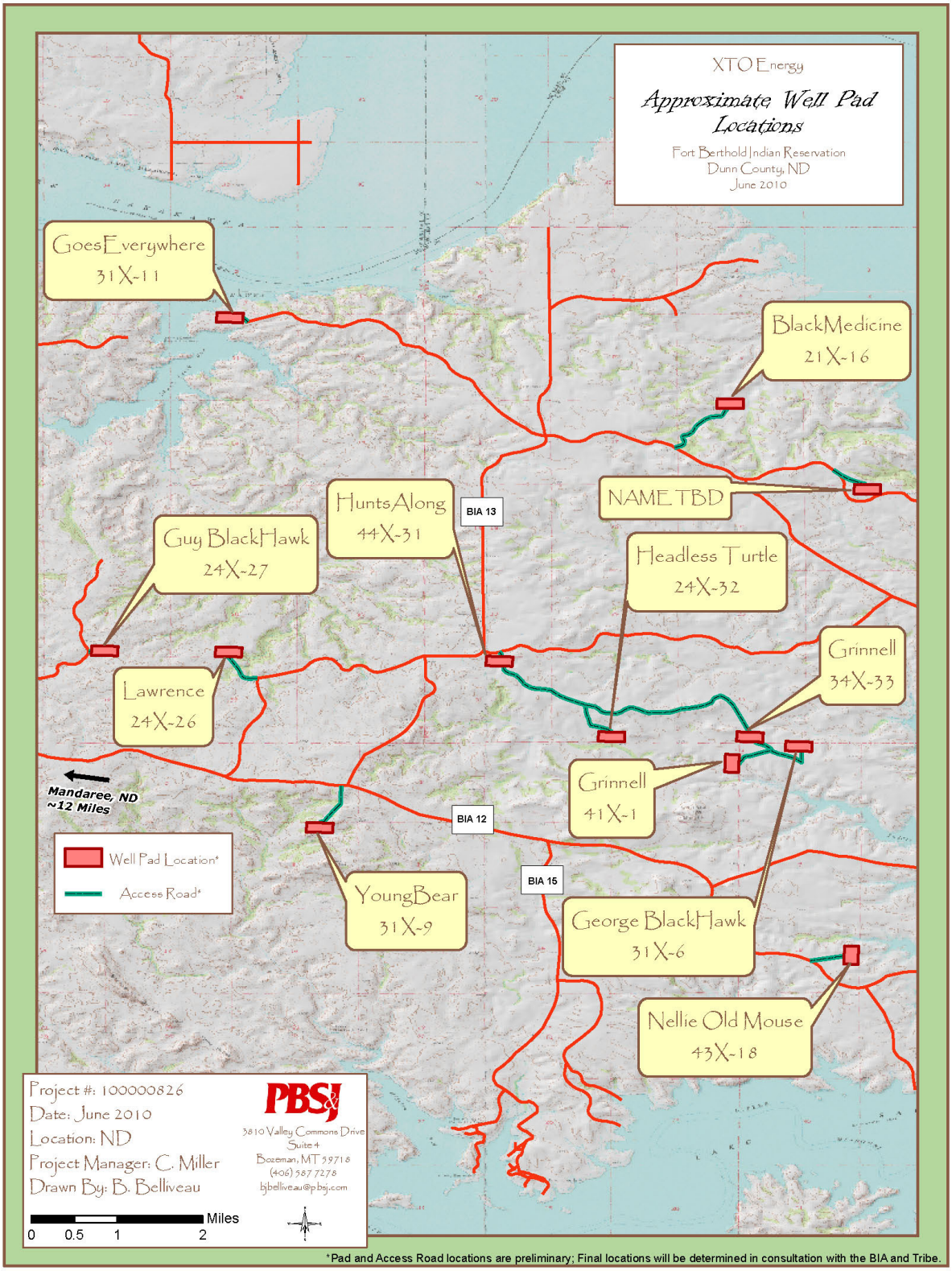
Andrea Pipp

Andrea K. Pipp
Botanist

Enclosures

Cc: C. Miller, PBS&J
R. McEldowney, PBS&J
D. Phillippi, NRO
D. Worthington, XTO Energy
M. Bercier, BIA


XTO Energy
Vicinity Map
Fort Berthold Indian Reservation
Dunn County, ND
June 2010
Keene
23
Johnsons Corner
McKenzie
Croff
Mandaree
Spotted Horn
FORT BERTHOLD
INDIAN RESERVATION
BIA 10
BIA 12
BIA 13
Mountrail
Raub
McLean
1804
Lake Sakakawea
Twin Buttes
8
Project Vicinity
Oakdale
Medicine Hole
1806
Dunn
Killdeer
Dunn Center
Werner
Halliday
200
Dodge
Golden Valley Zap
Mercer
Fayette
Manning
Emerson
Billings
22
Marshall
8
Hirschville
New Hradec
Six Mile Corner
Morton
Hebron
Taylor
Richardton
Dickinson
Lehigh
Gladstone
Antelope
Project #: 100000826
Dates: June 2010
Location: ND
Project Manager: C. Miller
Drawn By: B. Belliveau
0 1.25 2.5 5 Miles
PBS&J
3810 Valley Commons Drive
Suite 4
Bozeman, MT 59718
(406) 587 7278
bjbelliveau@pbsj.com


XTO Energy
Approximate Well Pad Locations
Fort Berthold Indian Reservation
Dunn County, ND
June 2010
GoesEverywhere 31X-11
BlackMedicine 21X-16
HuntsAlong 44X-31
BIA 13
NAME TBD
Guy BlackHawk 24X-27
Headless Turtle 24X-32
Grinnell 34X-33
Lawrence 24X-26
Grinnell 41X-1
Mandaree, ND ~12 Miles
BIA 12
BIA 15
Well Pad Location*
Access Road*
YoungBear 31X-9
George BlackHawk 31X-6
Nellie Old Mouse 43X-18
Project #: 100000826
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Miles
0 0.5 1 2
*Pad and Access Road locations are preliminary; Final locations will be determined in consultation with the BIA and Tribe.

PBS&J®

An employee-owned company

June 24, 2010

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

Subject: XTO Energy Oil Exploration on the Fort Berthold Indian Reservation - 2010

Dear Mr. Towner:

XTO Energy, Inc. (XTO) is proposing to conduct oil exploration activities at several new sites in Dunn County, east of Mandaree, North Dakota on the Fort Berthold Indian Reservation (FBIR) (**Project Vicinity Map**). The well sites fall under the jurisdiction of the U.S. Department of Interior's Bureau of Indian Affairs (BIA), necessitating the preparation of an environmental assessment (EA). XTO is preparing a draft EA for each site on behalf of the BIA. As outlined under Section 7 of the Endangered Species Act of 1973, as amended, XTO and their consultants, as the designated agent for the BIA for XTO projects, requests that the U.S. Fish and Wildlife Service provide a list of and any ancillary information for known occurrences of proposed, candidate, threatened, and endangered species, as well as, designated critical habitat areas that occur or potentially occur in the project area (**Project Vicinity Map**). We would also appreciate any additional guidance regarding migratory birds, wetlands, other related biological issues that your office regulates or has a specific interest in, and concerns related to proposed activities.

The proposed action includes approvals by the BIA and BLM of the drilling and completion of multiple exploratory oil wells at 12 sites on the FBIR (**Approximate Well Pad & Access Road Location Map**). The general legal descriptions of the well pads and access roads are provided in **Table 1**. These well locations are preliminary and the final locations will be determined in consultation with the BIA and the Tribe. The development of these sites would require mechanical excavation and construction for the well pads and access roads. Well pads will range in size from four to five acres. Access roads vary in length, but will generally be a maximum of 66 feet wide and will be placed to maximize the use of the existing road system to the greatest extent possible.

820 North Montana Avenue • Suite A • Helena, Montana 59601 • Telephone: 406.495.1377 • Fax: 406.495.1379 • www.pbsj.com

Table 1. *2010 proposed XTO Energy oil well sites on the Fort Berthold Indian Reservation.*

Site Name	Township	Range	Section(s)	Unit Size (acre)
FBIR GoesEverywhere 31X-11	149N	92W	11, 14	1280
FBIR Lawrence 24X-26	149N	92W	23, 26	1280
FBIR Guy Blackhawk 24X-27	149N	92W	22, 27	1280
FBIR BlackMedicine 21-16	149N	91W	16, 21	1280
FBIR YoungBear 31X-9	148N	92W	9, 16	1280
FBIR HuntsAlong 44X-31	149N	91W	31 (eastern half)	320
FBIR Headless Turtle 24X-32	149N	91W	29, 32	1280
FBIR Grinnell 34X-33	149N	91W	28, 33	1280
FBIR Grinnell 41X-1	148N	92W	1, 2	1280
FBIR George BlackHawk 31X-6	148N	91W	6, 7	1280
FBIR Nellie Old Mouse 43X-18	148N	91W	13, 18	1280
FBIR-name to be determined (NameTBD)	149N	91W	22, 27	1280

Our biologists will be conducting field work at these sites beginning July 12, 2010. If at all possible, we would greatly appreciate a response prior to our field work. I have appreciated your assistance in providing guidance on TE species for previous potential oil/gas well sites and look forward to discussing concerns related to these new site locations. I can be contacted by e-mail at apipp@pbsj.com or by cell phone at (406) 439-0284. Thank you for your time.

Sincerely,

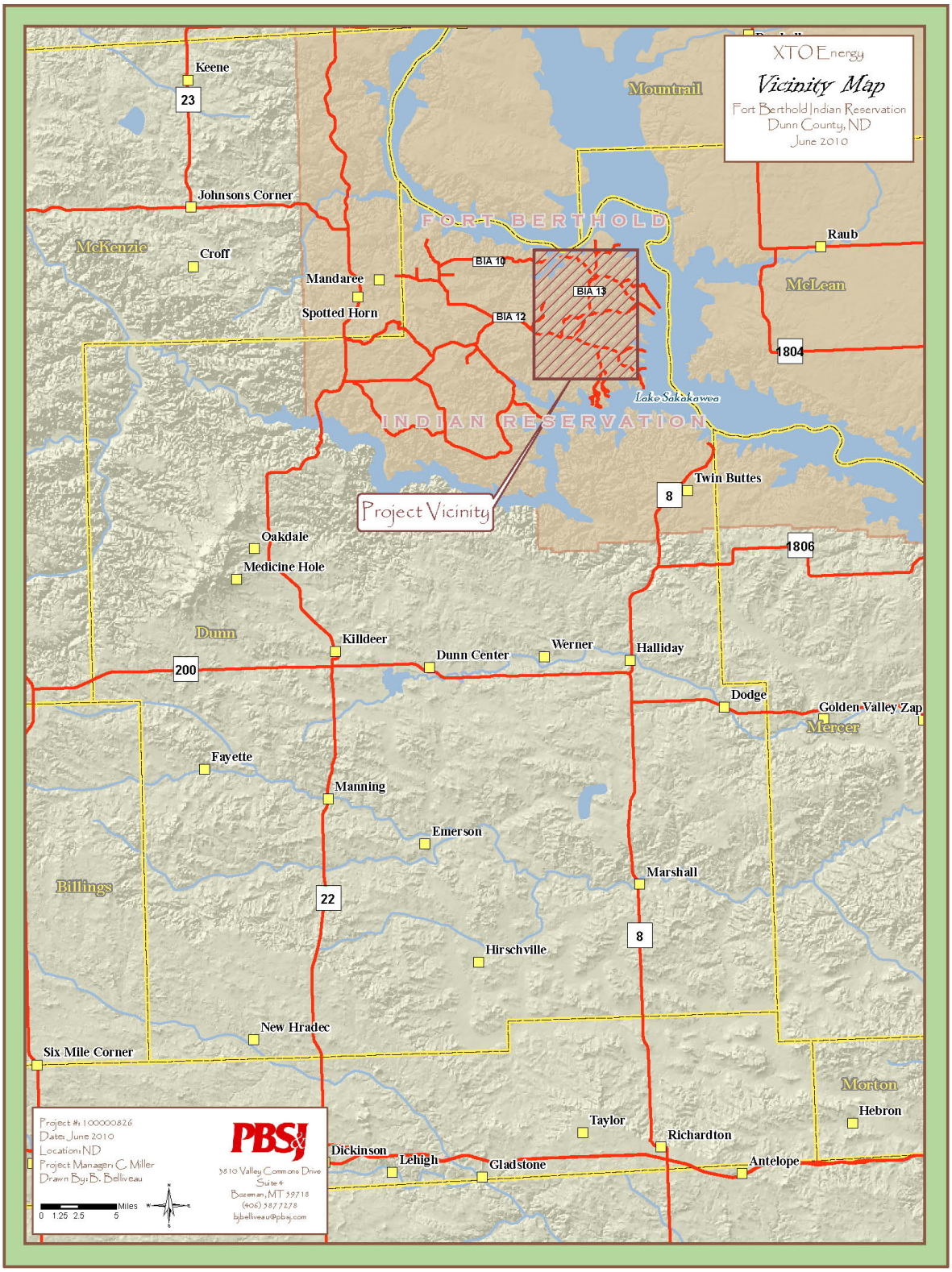
Andrea Pipp

Andrea K. Pipp
Botanist

Enclosures

Cc: C. Miller, PBS&J
R. McEldowney, PBS&J
D. Phillippi, NRO
D. Worthington, XTO Energy
M. Bercier, BIA

PBS&J


XTO Energy
Vicinity Map
Fort Berthold Indian Reservation
Dunn County, ND
June 2010
Keene
23
Johnsons Corner
McKenzie
Croff
Mandaree
Spotted Horn
FORT BERTHOLD
INDIAN RESERVATION
BIA 10
BIA 12
BIA 13
Mountrail
Raub
McLean
1804
Lake Sakakawea
Twin Buttes
8
Project Vicinity
Oakdale
Medicine Hole
1806
Dunn
Killdeer
Dunn Center
Werner
Halliday
200
Dodge
Golden Valley Zap
Mercer
Fayette
Manning
Emerson
Billings
22
Marshall
8
Hirschville
New Hradec
Six Mile Corner
Morton
Hebron
Taylor
Richardton
Dickinson
Lehigh
Gladstone
Antelope
Project #: 100000826
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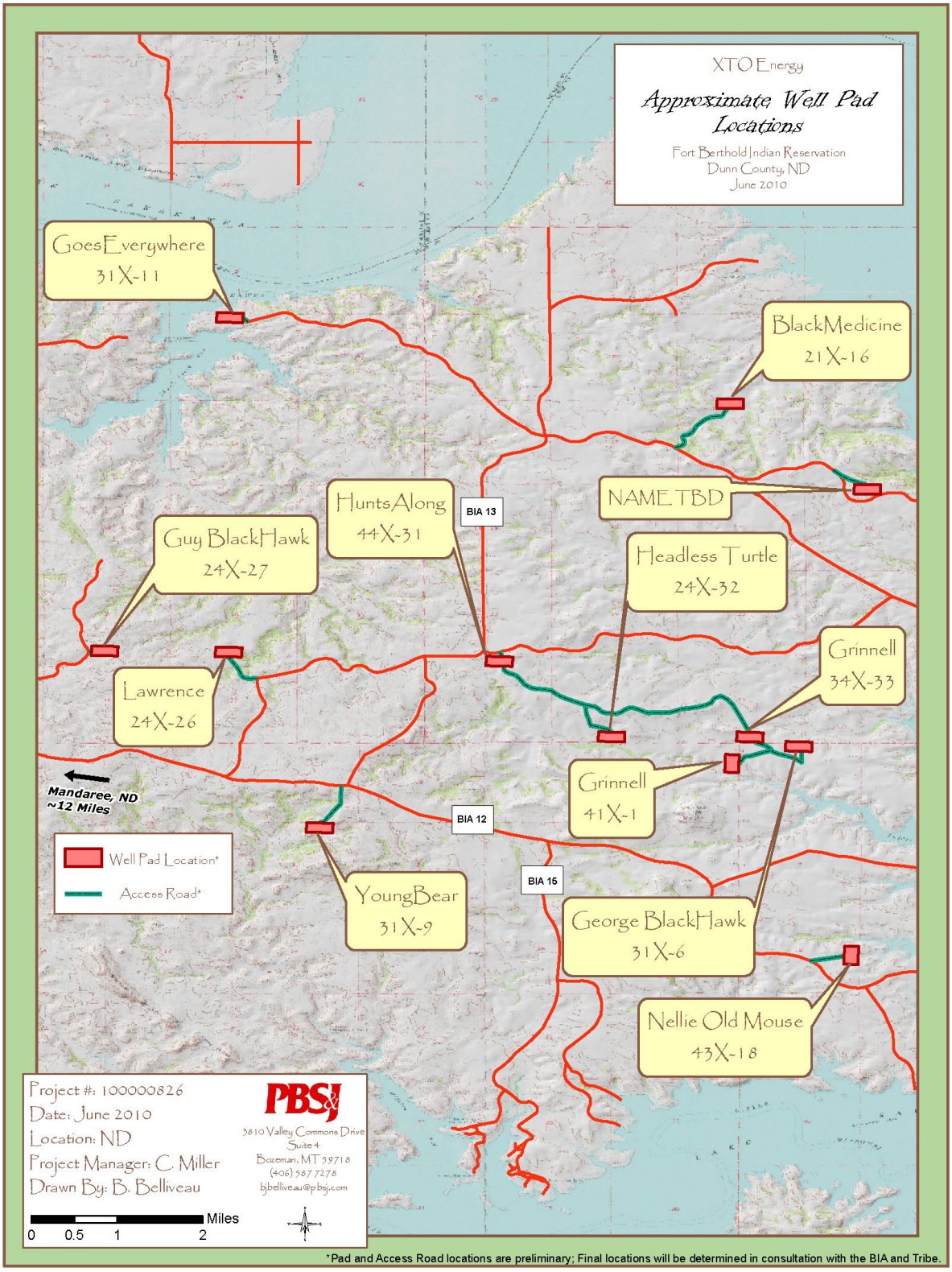
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Miles
0 0.5 1 2
*Pad and Access Road locations are preliminary; Final locations will be determined in consultation with the BIA and Tribe.

Guy Blackhawk 24X-27
Agency Response Letters

United States Department of the Interior
BUREAU OF RECLAMATION
Dakotas Area Office
P.O. Box 1017
Bismarck, North Dakota 58502

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
DK-5000
ENV-6.00

NOV 3 2010

Mr. Chris Miller
Project Manager
PBS&J
115 N. 28th Street, Suite 202
Billings, MT 59101-2045

Subject: Solicitation for an Environmental Assessment for the Proposed Construction, Drilling, Completion, and Production of Up to Six Exploratory Oil and Gas Wells On One 5.5 Acre Well Pad and One Access Road by XTO Energy On the Fort Berthold Reservation in Dunn County, North Dakota

Dear Mr. Miller:

This letter is written to inform you that we received your letters of October 26, 2010, and the information and maps have been reviewed by Bureau of Reclamation staff.

The proposed oil well sites located in Dunn County could potentially affect Reclamation facilities in the form of the rural water pipelines of the Fort Berthold Rural Water System since the well access roads, service utilities, and other developments are not specifically identified.

Guy Blackhawk 24X-27 Site: SE¼ SW¼ of section 27, T149N, R92W Dunn County, ND – SW¼ SE¼ of section 27, T149N, R92W Dunn County, ND well pad and access road

Note that blue and orange lines represent Reclamation water

We are providing an index map depicting water pipeline alignments in the vicinity of section 27, the proposed well site and surrounding area, to aid you in identification of potential for adverse effect to or crossings of federal facilities. Also, should you have need to cross a Fort Berthold Rural Water System pipeline, please refer to the enclosed sheet for pipeline crossing specifications and contact our engineer Ryan Waters, as 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, Ryan Waters, General Engineer, at 701-221-1262.

Sincerely,

Kelly B. McPhillips
Environmental Specialist

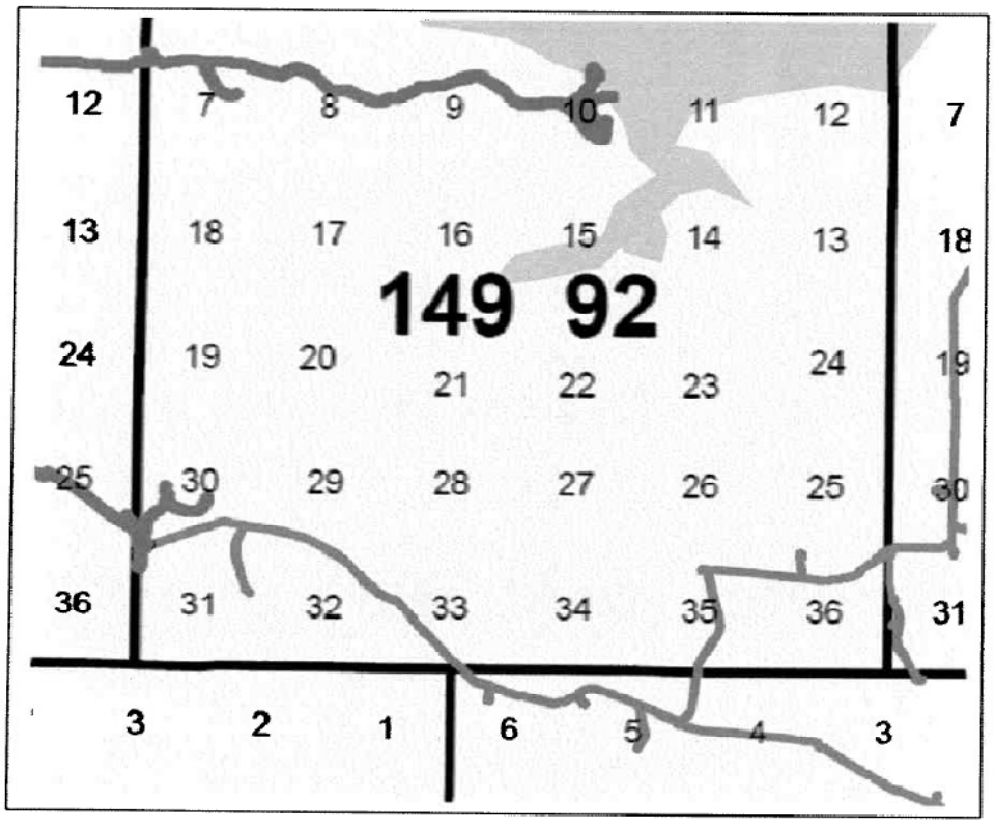
Enclosures - 2

cc: Bureau of Indian Affairs
Great Plains Regional Office
Attention: Ms. Marilyn Bercier
Regional Environmental Scientist
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)

Guy Blackhawk 24X-27 Site: SE¼ SW¼ of section 27, T149N, R92W Dunn County, ND – SW¼ SE¼ of section 27, T149N, R92W Dunn County, ND well pad and access road

Note that blue and orange lines represent Reclamation water



NOTES

1. Drawing is not to scale.
2. Clearances shown are minimum for all conditions.
3. Any additional permits required/needed for construction shall be provided by the Contractor.
4. Overhead conductor clearances shown are for 120 degrees F and final unloaded sag.
5. Erosion control measures, including re-vegetation, shall be implemented after completing construction activities.
6. The applicant shall submit a project description, and detailed construction plans showing plan views, profiles and sections, and grading plans of proposed work within Reclamation's Right-of-Way (ROW).
7. The applicant shall submit procedures, excavation plans, and schedules for crossing the Reclamation pipeline.
8. At the completion of construction activities the applicant shall submit AS-BUILT drawings that indicate the horizontal and vertical alignments of all utilities in areas disturbed during construction within Reclamation ROW.
9. Pipelines carrying hazardous materials or pollutants (e.g., oils, gasoline, natural gas, contaminated water and nonpotable water, etc.) should be designed for a reduced risk of failure in the portion within Reclamation's ROW. The design shall require either:
   - 9.1. Designing the crossing pipeline with an additional 50 percent working pressure factor, or
   - 9.2. Use secondary containment (pipe casing) for all hazardous material pipelines.
10. All work within 12 inches of the facility shall be done using hand-held tools only. The excavation and backfill shall be made in the presence of Reclamation personnel or authorized representative.
11. The applicant and or his/her contractor shall be liable for all damages to Reclamation facilities and appurtenances as a result of construction and for any other damages or losses suffered by Reclamation, including power, municipal and industrial water supply and communication losses.
12. For crossings of all Reclamation facilities, Reclamation personnel familiar with the facilities will obtain and provide copies of existing files showing information about existing buried facilities (center of pipeline, approximate depth of cover, size of pipe, class of pipe, etc.) to the applicant.
13. Typical Reclamation potable and raw water pipelines are PVC. If metallic pipelines or those containing metallic reinforcement (e.g., reinforced concrete) are encountered in the crossing a suitable bonded dielectric coating and cathodic protection may be required.

DETECTABLE WARNING TAPE

A. For potable water lines, the warning tape shall be a 3-inch-wide blue, detectable tape imprinted with "CAUTION BURIED POTABLE WATER LINE".

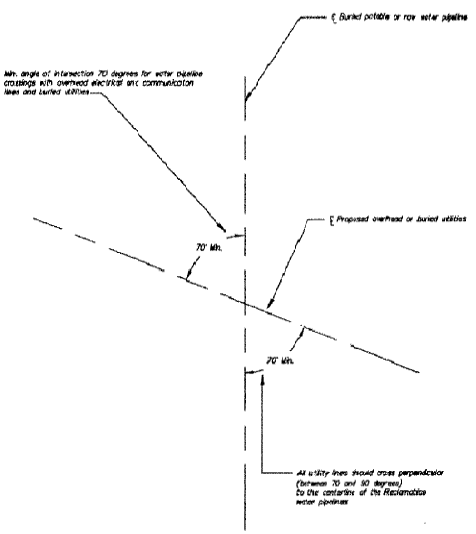
B. For nonpotable water lines, the warning tape shall be a 3-inch-wide purple, detectable tape imprinted with "CAUTION BURIED NONPOTABLE WATER LINE".

C. For gas, oil, and steam chemical lines, the warning tape shall be a 3-inch-wide yellow, detectable tape imprinted with "CAUTION BURIED (type) LINE".

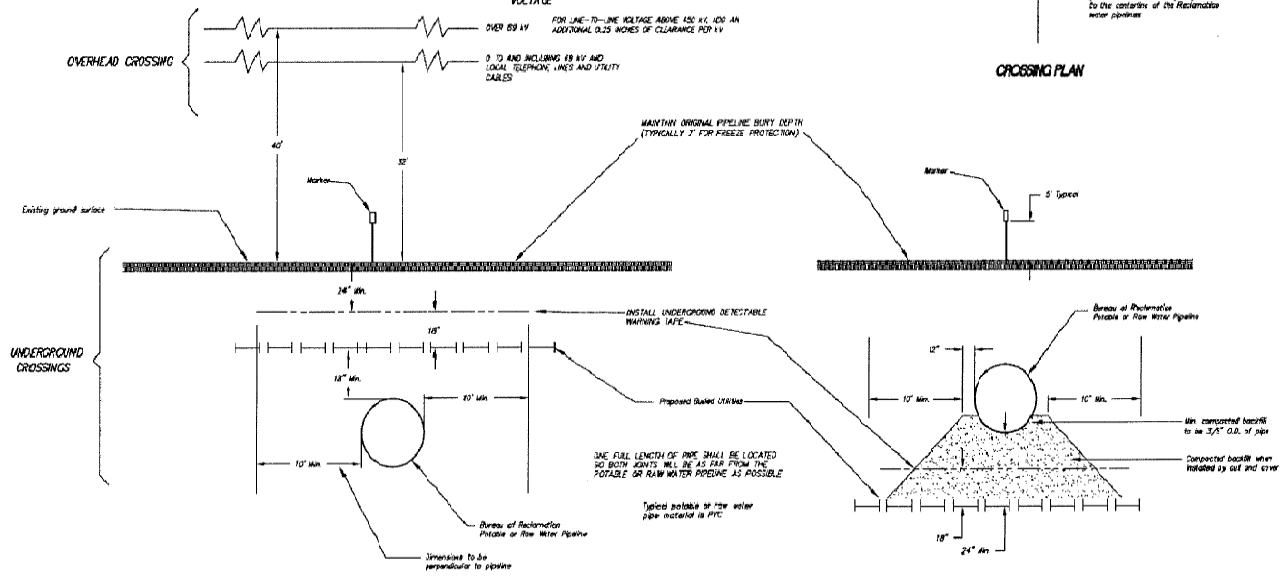
D. For telecommunications, telephone, television conduit(s), the warning tape shall be a 3-inch-wide orange, detectable tape imprinted with "CAUTION BURIED (type) LINE".

E. For electrical conduit(s), the warning tape shall be a 3-inch-wide red, detectable tape imprinted with "CAUTION BURIED ELECTRICAL LINE".

F. A marker sign shall be provided that shows the clearance and electrical line voltage. The warning sign should face oncoming traffic and state "DANGER, HIGH VOLTAGE OVERHEAD".



CROSSING PLAN



TYPICAL SECTION
POTABLE OR RAW WATER PIPELINE CROSSING

RECLAMATION
Managing Water in the West

ALWAYS THINK SAFETY

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

DAKOTAS AREA OFFICE, WATER SUPPLY PROGRAM
DAKOTAS, EASTERN MONTANA, NORTHERN WYOMING, AND NORTHWEST IOWA

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

DESIGNED - E. Bowers
DRAWN - E. Bowers
CHECKED - S. Dirks
TECH. APPR. - Dan Kemp, P.E. - TRC Alliance
APPROVED - Mark J. Bauman, P.E. - Dir. Dakotas
BISMARCK, NORTH DAKOTA 07-30-2010

769-603-25480

SHEET 1 OF 1

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

REPLY TO
ATTENTION OF

November 02, 2010

North Dakota Regulatory Office

PBS&J
Attn: Chris Miller, Project Manager
115 North 28th Street, Suite 202
Billings, Montana 59101-2045

Dear Mr. Miller:

This is in response to your solicitation letter on behalf of **XTO Energy**, received on October 28, 2010 requesting Department of the Army (DA), United States Army Corps of Engineers (Corps) comments for six proposed oil and gas exploratory wells from a single pad within the Fort Berthold Indian Reservation. The proposed wells include; **Guy Blackhawk 24X-27, Section 27, Township 149 North, Range 92 West, Dunn County, North Dakota.]**

Corps Regulatory Offices administer Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Section 10 of the Rivers and Harbors Act regulates work in or affecting navigable waters. This would include work over, through, or under Section 10 water. Section 10 waters in North Dakota are the Missouri River (including Lake Sakakawea and Lake Oahe), Yellowstone River, James River south of Jamestown, North Dakota, Bois de Sioux River, Red River of the North, and the Upper Des Lacs Lake. Section 404 of the Clean Water Act regulates the discharge of dredge or fill material (temporarily or permanently) in waters of the United States. Waters of the United States may include, but are not limited to, rivers, streams, ditches, coulees, lakes, ponds, and their adjacent wetlands. Fill material includes, but is not limited to, rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mines or other excavation activities and materials used to create any structure or infrastructure in waters of the United States.

For any proposed well where the well line and/or bottom hole is under or crosses under Lake Sakakawea, regardless of depth, we require that project proponent provide a DA permit application (ENG Form 4345) to the Corps.

Enclosed for your information is the fact sheet for Nationwide Permit 12, Utility Line Activities. Pipeline projects are already authorized by Nationwide Permit 12 **provided the utility line can be placed without any change to pre-construction contours and all other proposed construction activities and facilities are in compliance with the Nationwide's permit conditions and 401 Water Quality Certification is obtained.** Please note the pre-construction notification requirements on page 2 of the fact sheet. **If a project involves any one of the seven notification requirements, the project proponent must submit a DA application.** Furthermore, a project must also be in compliance with the "Regional Conditions for Nationwide Permits within the State of North Dakota", found on pages 12 and 13 of the fact sheet. [The following info is for activities on a reservation] Please be advised that the United States Environmental Protection Agency (EPA), Region 8 has denied 401 Water Quality Certification for activities in perennial drainages and wetlands. Furthermore, EPA has placed conditions on activities in ephemeral and intermittent drainages. It is recommended you contact the U.S. Environmental Protection Agency, Region 8, Attn: Brent Truskowski, 1595 Wynkoop Street, Denver, Colorado 80202-1129 to review the conditions pursuant to Section 401 of the Clean Water Act prior to any construction.

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Also enclosed for your information is the fact sheet for Nationwide Permit 14, Linear Transportation Projects. Road crossings are already authorized by Nationwide Permit 14 **provided the discharge does not cause the loss of greater than ½ acre of waters of the United States per crossing and all other proposed construction activities are in compliance with the Nationwide's permit conditions.** Please note the pre-construction notification requirements on the front page of the fact sheet. **If a project involves (1) the loss of waters of the United States exceeding 1/10 acre per crossing; or (2) there is a discharge in a special aquatic site, including wetlands, the project proponent must submit a DA application prior to the start of construction.** Please reference General Condition 27, Pre Construction Notification on page 8 of the fact sheet. Furthermore, a project must also be in compliance with the "Regional Conditions for Nationwide Permits within the State of North Dakota", found on pages 11 and 12 of the fact sheet. [The following is included for activities on a reservation] Enclosed is a copy of the United States Environmental Protection Agency, Region 8's; General Conditions for all Nationwide Permits and specific conditions for Nationwide Permit 14.

In the event your project requires approval from the U.S. Army Corps of Engineers and cannot be authorized by Nationwide Permit(s), a Standard or Individual Permit will be required. A project that requires a Standard or Individual Permit is intensely reviewed and will require the issuance of a public notice. A Standard or Individual Permit generally requires a minimum of 120 days for processing but based on the project impacts and comments received through the public notice may extend beyond 120 days.

This correspondence letter is neither authorization for the proposed construction nor confirmation that the proposed project complies with the Nationwide Permit(s).

If any of these projects require a Section 10 and/or Section 404 permit, please complete and submit the enclosed Department of the Army permit application (ENG Form 4345) to the U.S. Army Corps of Engineers, North Dakota Regulatory Office, 1513 South 12th Street, Bismarck, North Dakota 58504. If you are unsure if a permit is required, you may submit an application; include a project location map, description of work, and construction methodology.

If we can be of further assistance or should you have any questions regarding our program, please do not hesitate to contact this office by letter of phone at (701) 255-0015.

Sincerely,

Daniel E. Cimarosti

Daniel E. Cimarosti
Regulatory Program Manager
North Dakota

Enclosure
ENG Form 4345
Fact Sheet NWP 12 and 14

CF w/o encl
EPA Denver (Brent Truskowski)

FACT SHEET
NATIONWIDE PERMIT 12
(2007)

UTILITY LINE ACTIVITIES. Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2 acre of waters of the United States.

Utility lines: This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

Utility line substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2 acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead utility line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the total discharge from a single and complete project does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR Part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or

under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met: (1) the activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to a stream bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials. (Sections 10 and 404)

Note 1: Where the proposed utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters), copies of the pre-construction notification and NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

Note 2: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, accordance with the requirements for temporary fills.

Note 3: Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).

General Conditions: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer.

1. **Navigation.** (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. **Adverse Effects From Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. **Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. **Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. **Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. **Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. **Removal of Temporary Fills.** Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. **Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

15. **Wild and Scenic Rivers.** No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

16. **Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

17. **Endangered Species.** (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical

habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at http://www.fws.gov/ and http://www.noaa.gov/fisheries.html respectively.

18. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

19. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

20. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address

documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

21. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality. *Specifically in North Dakota, the North Dakota Department of Health has denied certification for projects under this Nationwide Permit proposed to cross* ***all classified rivers, tributaries and lakes****; individual certification for project in these waterways must be obtained by the project proponent prior to authorization under this Nationwide Permit. For utility line crossings of all other waters, the Department of Health has issued water quality certification provided the attached Construction and Environmental Disturbance Requirements are followed.*

22. Coastal Zone Management. *Not Applicable.*

23. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

24. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

25. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:
"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

26. Compliance Certification. Each permittee who received a NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;

(b) A statement that any required mitigation was completed in accordance with the permit conditions; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

27. Pre-Construction Notification. *See attached pages.*

28. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

General Condition 27. Pre-Construction Notification.

(a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) Forty five calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);

(4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

(5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

(e) District Engineer's Decision: In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

2007 NATIONWIDE PERMITS
REGIONAL CONDITIONS
STATE OF NORTH DAKOTA
OMAHA DISTRICT – CORPS OF ENGINEERS

The U.S. Army Corps of Engineers has adopted the following regional conditions for activities authorized by nationwide permits within the State of North Dakota. However, the pre-construction notification requirements defined below are not applicable to Nationwide Permit 47.

1. Wetlands Classified as Fens

All Nationwide Permits, with the exception of 3, 5, 20, 32, 38, 45, and 47, are revoked for use in fens in North Dakota. For nationwide permits 3, 5, 20, 32, 38, and 45 permittees must notify the Corps in accordance with General Condition 27 (Notification) prior to initiating any regulated activity impacting fens in North Dakota.

Fens are wetlands that develop where a relatively constant supply of ground water to the plant rooting zone maintains saturated conditions most of the time. The water chemistry of fens reflects the mineralogy of the surrounding and underlying soils and geological materials. The substrate is carbon-accumulating, ranging from muck to peat to carbonates. These wetlands may be acidic to alkaline, have pH ranging from 3.5 to 8.4 and support a range of vegetation types. Fens may occur on slopes, in depressions, or on flats (i.e., in different hydrogeomorphic classes; after: Brinson 1993).

2. Waters Adjacent to Natural Springs

For all Nationwide Permits permittees must notify the Corps in accordance with General Condition No. 27 (Notification) for regulated activities located within 100 feet of the water source in natural spring areas in North Dakota. For purposes of this condition, a spring source is defined as any location where there is artesian flow emanating from a distinct point at any time during the growing season. Springs do not include seeps and other groundwater discharge areas where there is no distinct point source.

3. Missouri River, including Lake Sakakawea and Lake Oahe within the State of North Dakota

For all Nationwide Permits permittees must notify the Corps in accordance with General Condition No. 27 (Notification) prior to initiating any regulated activity in the Missouri River, including Lake Sakakawea and Lake Oahe, within the State of North Dakota.

4. Historic Properties

That the permittee and/or the permittee's contractor, or any of the employees, subcontractors or other persons working in the performance of a contract(s) to complete the work authorized herein, shall cease work and report the discovery of any previously unknown historic or archeological remains to the North Dakota Regulatory Office. Notification shall be by telephone or fax within 24 hours of the discovery and in writing within 48 hours. Work shall not resume until the permittee is notified by the North Dakota Regulatory Office.

5. Spawning Condition

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

Additional Information

Permittees are reminded that General Condition No. 6 prohibits the use of unsuitable material. In addition, organic debris, some building waste, and materials excessive in fines are not suitable material.

Specific verbiage on prohibited materials and the 1978 Stream Evaluation Map for the State of North Dakota can be accessed on the North Dakota Regulatory Office's website at: https://www.nwo.usace.army.mil/html/od-rnd/ndhome.htm

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.

FACT SHEET
NATIONWIDE PERMIT 14
(2007)

LINEAR TRANSPORTATION PROJECTS. Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10 acre; or (2) there is a discharge in a special aquatic site, including wetlands. (Sections 10 and 404)

Note: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4).

General Conditions: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. **Adverse Effects From Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. **Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. **Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. **Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. **Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

15. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

16. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

17. Endangered Species. (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical

habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at http://www.fws.gov/ and http://www.noaa.gov/fisheries.html respectively.

18. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

19. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

20. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address

documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

21. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.
Specifically for North Dakota, the North Dakota Department of Health has issued water quality certification for projects under this Nationwide Permit provided the attached Construction and Environmental Disturbance Requirements are followed.

22. Coastal Zone Management. *Not Applicable.*

23. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

24. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

25. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:
"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____
(Transferee)

(Date)

26. Compliance Certification. Each permittee who received a NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;

(b) A statement that any required mitigation was completed in accordance with the permit conditions; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

27. Pre-Construction Notification. *See attached pages.*

28. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

General Condition 27. Pre-Construction Notification.

(a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) Forty five calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);

(4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

(5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

(e) District Engineer's Decision: In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

2007 NATIONWIDE PERMITS
REGIONAL CONDITIONS
STATE OF NORTH DAKOTA
OMAHA DISTRICT – CORPS OF ENGINEERS

The U.S. Army Corps of Engineers has adopted the following regional conditions for activities authorized by nationwide permits within the State of North Dakota. However, the pre-construction notification requirements defined below are not applicable to Nationwide Permit 47.

1. Wetlands Classified as Fens

All Nationwide Permits, with the exception of 3, 5, 20, 32, 38, 45, and 47, are revoked for use in fens in North Dakota. For nationwide permits 3, 5, 20, 32, 38, and 45 permittees must notify the Corps in accordance with General Condition 27 (Notification) prior to initiating any regulated activity impacting fens in North Dakota.

Fens are wetlands that develop where a relatively constant supply of ground water to the plant rooting zone maintains saturated conditions most of the time. The water chemistry of fens reflects the mineralogy of the surrounding and underlying soils and geological materials. The substrate is carbon-accumulating, ranging from muck to peat to carbonates. These wetlands may be acidic to alkaline, have pH ranging from 3.5 to 8.4 and support a range of vegetation types. Fens may occur on slopes, in depressions, or on flats (i.e., in different hydrogeomorphic classes; after: Brinson 1993).

2. Waters Adjacent to Natural Springs

For all Nationwide Permits permittees must notify the Corps in accordance with General Condition No. 27 (Notification) for regulated activities located within 100 feet of the water source in natural spring areas in North Dakota. For purposes of this condition, a spring source is defined as any location where there is artesian flow emanating from a distinct point at any time during the growing season. Springs do not include seeps and other groundwater discharge areas where there is no distinct point source.

3. Missouri River, including Lake Sakakawea and Lake Oahe within the State of North Dakota

For all Nationwide Permits permittees must notify the Corps in accordance with General Condition No. 27 (Notification) prior to initiating any regulated activity in the Missouri River, including Lake Sakakawea and Lake Oahe, within the State of North Dakota.

4. Historic Properties

That the permittee and/or the permittee's contractor, or any of the employees, subcontractors or other persons working in the performance of a contract(s) to complete the work authorized herein, shall cease work and report the discovery of any previously unknown historic or archeological remains to the North Dakota Regulatory Office. Notification shall be by telephone or fax within 24 hours of the discovery and in writing within 48 hours. Work shall not resume until the permittee is notified by the North Dakota Regulatory Office.

5. Spawning Condition

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

Additional Information

Permittees are reminded that General Condition No. 6 prohibits the use of unsuitable material. In addition, organic debris, some building waste, and materials excessive in fines are not suitable material.

Specific verbiage on prohibited materials and the 1978 Stream Evaluation Map for the State of North Dakota can be accessed on the North Dakota Regulatory Office's website at: https://www.nwo.usace.army.mil/html/od-rnd/ndhome.htm

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.

Instructions for Preparing a
Department of the Army Permit Application

Blocks 1 through 4. To be completed by Corps of Engineers.

Block 5. Applicant's Name. Enter the name and the E-mail address of the responsible party or parties. If the responsible party is an agency, company, corporation, or other organization, indicate the name of the organization and responsible officer and title. If more than one party is associated with the application, please attach a sheet with the necessary information marked Block 5.

Block 6. Address of Applicant. Please provide the full address of the party or parties responsible for the application. If more space is needed, attach an extra sheet of paper marked Block 6.

Block 7. Applicant Telephone Number(s). Please provide the number where you can usually be reached during normal business hours.

Blocks 8 through 11. To be completed, if you choose to have an agent.

Block 8. Authorized Agent's Name and Title. Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer, or any other person or organization. Note: An agent is not required.

Blocks 9 and 10. Agent's Address and Telephone Number. Please provide the complete mailing address of the agent, along with the telephone number where he / she can be reached during normal business hours.

Block 11. Statement of Authorization. To be completed by applicant, if an agent is to be employed.

Block 12. Proposed Project Name or Title. Please provide name identifying the proposed project, e.g., Landmark Plaza, Burned Hills Subdivision, or Edsall Commercial Center.

Block 13. Name of Waterbody. Please provide the name of any stream, lake, marsh, or other waterway to be directly impacted by the activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

Block 14. Proposed Project Street Address. If the proposed project is located at a site having a street address (not a box number), please enter it here.

Block 15. Location of Proposed Project. Enter the latitude and longitude of where the proposed project is located. If more space is required, please attach a sheet with the necessary information marked Block 15.

Block 16. Other Location Descriptions. If available, provide the Tax Parcel Identification number of the site, Section, Township, and Range of the site (if known), and / or local Municipality that the site is located in.

Block 17. Directions to the Site. Provide directions to the site from a known location or landmark. Include highway and street numbers as well as names. Also provide distances from known locations and any other information that would assist in locating the site. You may also provide description of the proposed project location, such as lot numbers, tract numbers, or you may choose to locate the proposed project site from a known point (such as the right descending bank of Smith Creek, one mile downstream from the Highway 14 bridge). If a large river or stream, include the river mile of the proposed project site if known

Block 18. Nature of Activity. Describe the overall activity or project. Give appropriate dimensions of structures such as wing walls, dikes (identify the materials to be used in construction, as well as the methods by which the work is to be done), or excavations (length, width, and height). Indicate whether discharge of dredged or fill material is involved. Also, identify any structure to be constructed on a fill, piles, or float-supported platforms.

The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach an extra sheet of paper marked Block 18.

Block 19. Proposed Project Purpose. Describe the purpose and need for the proposed project. What will it be used for and why? Also include a brief description of any related activities to be developed as the result of the proposed project. Give the approximate dates you plan to both begin and complete all work.

Block 20. Reasons for Discharge. If the activity involves the discharge of dredged and/or fill material into a wetland or other waterbody, including the temporary placement of material, explain the specific purpose of the placement of the material (such as erosion control).

Block 21. Types of Material Being Discharged and the Amount of Each Type in Cubic Yards. Describe the material to be discharged and amount of each material to be discharged within Corps jurisdiction. Please be sure this description will agree with your illustrations. Discharge material includes: rock, sand, clay, concrete, etc.

Block 22. Surface Areas of Wetlands or Other Waters Filled. Describe the area to be filled at each location. Specifically identify the surface areas, or part thereof, to be filled. Also include the means by which the discharge is to be done (backhoe, dragline, etc.). If dredged material is to be discharged on an upland site, identify the site and the steps to be taken (if necessary) to prevent runoff from the dredged material back into a waterbody. If more space is needed, attach an extra sheet of paper marked Block 22.

Block 23. Description of Avoidance, Minimization, and Compensation. Provide a brief explanation describing how impacts to waters of the United States are being avoided and minimized on the project site. Also provide a brief description of how impacts to waters of the United States will be compensated for, or a brief statement explaining why compensatory mitigation should not be required for those impacts.

Block 24. Is Any Portion of the Work Already Complete? Provide any background on any part of the proposed project already completed. Describe the area already developed, structures completed, any dredged or fill material already discharged, the type of material, volume in cubic yards, acres filled, if a wetland or other waterbody (in acres or square feet). If the work was done under an existing Corps permit, identity the authorization, if possible.

Block 25. Names and Addresses of Adjoining Property Owners, Lessees, etc., Whose Property Adjoins the Project Site. List complete names and full mailing addresses of the adjacent property owners (public and private) lessees, etc., whose property adjoins the waterbody or aquatic site where the work is being proposed so that they may be notified of the proposed activity (usually by public notice). If more space is needed, attach an extra sheet of paper marked Block 24.

Information regarding adjacent landowners is usually available through the office of the tax assessor in the county or counties where the project is to be developed.

Block 26. Information about Approvals or Denials by Other Agencies. You may need the approval of other federal, state, or local agencies for your project. Identify any applications you have submitted and the status, if any (approved or denied) of each application. You need not have obtained all other permits before applying for a Corps permit.

Block 27. Signature of Applicant or Agent. The application must be signed by the owner or other authorized party (agent). This signature shall be an affirmation that the party applying for the permit possesses the requisite property rights to undertake the activity applied for (including compliance with special conditions, mitigation, etc.).

DRAWINGS AND ILLUSTRATIONS

General Information.

Three types of illustrations are needed to properly depict the work to be undertaken. These illustrations or drawings are identified as a Vicinity Map, a Plan View or a Typical Cross-Section Map. Identify each illustration with a figure or attachment number.

Please submit one original, or good quality copy, of all drawings on 8½ x11 inch plain white paper (electronic media may be substituted). Use the fewest number of sheets necessary for your drawings or illustrations.

Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view, or cross-section). **While illustrations need not be professional (many small, private project illustrations are prepared by hand), they should be clear, accurate, and contain all necessary information.**

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT *(33 CFR 325)*	OMB APPROVAL NO. 0710-0003 EXPIRES: 31 August 2012

Public reporting burden for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This Information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME:	8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required)
First - Middle - Last –	First - Middle - Last –
Company –	Company –
E-mail Address –	E-mail Address –
6. APPLICANT'S ADDRESS. Address -	9. AGENT'S ADDRESS Address -
City – State – Zip – Country –	City – State – Zip – Country –
7. APPLICANT'S PHONE NOs. W/AREA CODE	10. AGENT'S PHONE NOs. W/AREA CODE
a. Residence b. Business c. Fax	a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____

APPLICANT'S SIGNATURE DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
15. LOCATION OF PROJECT Latitude: °N Longitude: °W	Address City - State – Zip -

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)
State Tax Parcel ID Municipality
Section – Township – Range –

17. DIRECTIONS TO THE SITE

ENG FORM 4345, SEPT 2009 EDITION OF OCT 2004 IS OBSOLETE Proponent: CECW-OR

18. Nature of Activity (Description of project, include all features)

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres

Or

Liner Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

24. Is Any Portion of the Work Already Complete? Yes ☐ No ☐ IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list).

Address –

City – State – Zip –

26. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

ENG FORM 4345, SEPT 2009

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 1, 2010

Chris Miller, Project Manager
PBS&J
115 N. 28th Street, Suite 202
Billings, MT 59101-2045

Re: Up to Six Proposed Exploratory Oil and Gas Wells by XTO Energy
On the Guy Blackhawk 24X-27 Site on the Fort Berthold Reservation
Dunn County, North Dakota

Dear Mr. Miller:

This department has reviewed the information concerning the above-referenced project submitted under date of October 26, 2010, 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 or well pads 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.

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 within 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 Transportation

Francis G. Ziegler, P.E.
Director

John Hoeven
Governor

November 12, 2010

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

WELL PAD AND ACCESS ROAD PLANNED FOR GUY BLACKHAWK, FORT BERTHOLD RESERVATION, NORTH DAKOTA

We have reviewed your October 26, 2010, letter.

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

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

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

57:rjh:js

c: Walter A. Peterson, Williston District

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

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

FEMA

RECEIVED
NOV 10 2010

R8-Mitigation

PBS & J

November 3, 2010

Chris Miller, Project Director
PBS&J
3810 Valley Commons Drive, Suite 4
Bozeman, MT 59718

Dear Mr. Miller:

Thank you for your inquiry regarding the proposed exploratory wells on the Fort Berthold Reservation, project Guy Blackhawk 24X-27 Site. FEMA's major concern is if the property is located within a mapped Special Flood Hazard Area, as development in these areas requires further consideration.

We recommend that you contact the local Floodplain Manager, Cliff Whitman, DES Director for the Fort Berthold Reservation at 701-627-4805, to receive further guidelines regarding the impact that the drilling might have to the regulations and policies of the National Flood Insurance Program. Considering that floods are the most devastating of all natural disasters in this country, any efforts to reduce the impacts of that hazard is worthwhile.

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

Sincerely,

David A. Kyner
NFIP Program Specialist

"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

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

November 16, 2010

Chris Miller
Project Director
PBS&J
115 N 28th Street, Suite 202
Billings, MT 59101-2045

Dear Mr. Miller:

RE: Guy Blackhawk 24X-27

XTO Energy has proposed up to six exploratory oil and gas wells using one well pad and access road 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 well pads and access roads. We recommend that construction be avoided to the extent possible within native prairie, wooded draws, riparian corridors, and wetland areas.

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

Sincerely,

Paul Schadewald
Chief
Conservation & Communication Division

js

United States Department of Agriculture

NRCS

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

November 3, 2010

Chris Miller
PBS&J
115 North 28th Street, Suite 202
Billings, Montana 59101-2045

RE: Guy Blackhawk 24X-27 Site: SE ¼ SW ¼ of Section 27 in Township 149N and Range 92W SW ¼ SE ¼ of Section 27 in Township 149N and Range 92W (well pad and access road)
Fort Berthold Reservation

Dear Mr. Miller:

The Natural Resources Conservation Service (NRCS) has reviewed your letter dated October 26, 2010, regarding the drilling and completion of up to six exploratory oil and gas wells using one well pad and one access road on the Fort Berthold Indian Reservation by XTO Energy.

Important Farmlands - NRCS has a major responsibility with FPPA in documenting conversion of farmland (i.e., prime, statewide, and local importance) to non-agricultural use. It appears your proposed project is not supported by Federal funding or actions; therefore, no further action is required.

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 project requires passage through or disturbance of 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, at (701) 530-2019.

Sincerely,

Jerome Schaar

JEROME SCHAAR
State Soil Scientist/MO Leader

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

John Hoeven
Governor of North Dakota

North Dakota State Historical Board

Chester E. Nelson, Jr.
Bismarck - President

Gereld Gerntholz
Valley City - Vice President

Richard Kloubec
Fargo - Secretary

Albert I. Berger
Grand Forks

Calvin Grinnell
New Town

Diane K. Larson
Bismarck

A. Ruric Todd III
Jamestown

Sara Otte Coleman
Director
Tourism Division

Kelly Schmidt
State Treasurer

Alvin A. Jaeger
Secretary of State

Mark A. Zimmerman
Director
arks and Recreation Department

Francis Ziegler
Director
Department of Transportation

Merlan E. Paaverud, Jr.
Director

Accredited by the American Association of Museums since 1986

November 4, 2010

Mr. Chris Miller
Project Manager
PBS&J
115 North 28th Street, Suite 202
Billings MT 59101-2045

NDSHPO REF. 11-0142 BIA/Mandan Hidatsa Arikara Nation XTO Energy Well Pad and Access Guy Black Hawk 24x27 Site [T149N R92W Section 27 SE 1/4] Dunn County, North Dakota

Dear Mr. Miller,

We received your correspondence regarding NDSHPO REF. 11-0142 BIA/Mandan Hidatsa Arikara Nation XTO Energy Well Pad and Access Guy Black Hawk 24x27 Site [T149N R92W Section 27 SE ¼] Dunn County, North Dakota. We request that a copy of cultural resource site forms and reports be sent to this office so that the cultural resources archives can be kept current for researchers.

Thank you for your consideration. Consultation is with MHAN THPO. If you have any questions please contact Susan Quinnell, Review & Compliance Coordinator at (701)328-3576 or squinnell@nd.gov

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer (North Dakota)
and Director, State Historical Society of North Dakota

North Dakota Heritage Center • 612 East Boulevard Avenue, Bismarck, ND 58505-0830 • Phone 701-328-2666 • Fax: 701-328-3710
Email: histsoc@nd.gov • Web site: http://history.nd.gov• TTY: 1-800-366-6888

North Dakota State Water Commission

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

November 23, 2010

Chris Miller
PBS & J
115 North 28th Street, Suite 202
Billings, MT 59101-2045

Dear Mr. Miller:

This is in response to your request for review of environmental impacts associated with Guy Blackhawk 24X-27 Site: SE 1/4 SW ¼ of Section 27 in Township 149N and Range 92W, SW ¼ SE ¼ of Section 27 in Township 149N and Range 92W (well pad and access road).

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

- The property is not located in an identified floodplain and it is believed the project will not affect an identified floodplain.

- It is the responsibility of the project sponsor to ensure that local, state and federal agencies are contacted for any required approvals, permits, and easements.

- All waste material associated with the project must be disposed of properly and not placed in identified floodway areas.

- No sole-source aquifers have been designated in ND.

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

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

Sincerely,

Larry Knudtson
Research Analyst

LJK:dp/1570

JOHN HOEVEN, GOVERNOR
CHAIRMAN

TODD SANDO, P.E.
SECRETARY AND STATE ENGINEER

TRIBAL HISTORIC PRESERVATION
Mandan Hidatsa Arikara
Perry 'No Tears' Brady, Director.
404 Frontage Road,
New Town, North Dakota 58763
Ph/701-862-2474 fax/701-862-3401
pbrady@mhanation.com

November 4, 2010

Chris Miller, Project Manager
PBS&J
115 North 28th Street, Suite 202
Billings, Montana 59101-2045

Dear Mr. Miller

As Director of Tribal Historic Preservation and the Tribal Historical Preservation Officer representing the Mandan Hidatsa Arikara Nation. **I Concur with:**

Guy Blackhawk 24X-27 Site: SE1/4 SW1/4 of Section 27 in Township 149N and Ranger 92 W SW ¼ of Section 27 in Township 149ZZN and Range 92W (well pad and access road)

Since no historic properties will be affected the project should proceed as planned and if you have any questions please feel free to call the office at any time.

Sincerely,

Perry "No Tears" Brady
Director of THPO

Cc. file

LAWRENCE 24X-26
AGENCY RESPONSE LETTERS

United States Department of the Interior

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

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
DK-5000
ENV-6.00

OCT 26 2010

Mr. Chris Miller
Project Manager
PBS&J
115 N. 28th Street, Suite 202
Billings, MT 59101-2045

Subject: Solicitation for an Environmental Assessment for the Proposed Construction, Drilling, Completion, and Production of Up to Six Exploratory Oil and Gas Wells on One 5.5 Acre Well Pad and Access Road by XTO Energy on the Fort Berthold Reservation in Dunn County, North Dakota

Dear Mr. Miller:

This letter is written to inform you that we received your letters of October 21, 2010, and the information and maps have been reviewed by Bureau of Reclamation staff.

The proposed oil well sites located in Dunn County could potentially affect Reclamation facilities in the form of the rural water pipelines of the Fort Berthold Rural Water System since the well access roads, service utilities, and other developments are not specifically identified.

Lawrence 24X-26 Site: SE¼ SW¼ of section 26, T149N, R92W Dunn County, ND – well pad and access road

Note that blue and orange lines represent Reclamation water

We are providing an index map depicting water pipeline alignments in the vicinity of section 26, the proposed well site and surrounding area to aid you in identification of potential for adverse effect to or crossings of Federal facilities. In addition, should you have need to cross a Fort Berthold Rural Water System pipeline, please refer to the enclosed sheet for pipeline crossing specifications and contact our engineer Ryan Waters, as 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 Ryan Waters, General Engineer, at 701-221-1262.

Sincerely,

Kelly B. McPhillips
Environmental Specialist

Enclosures - 2

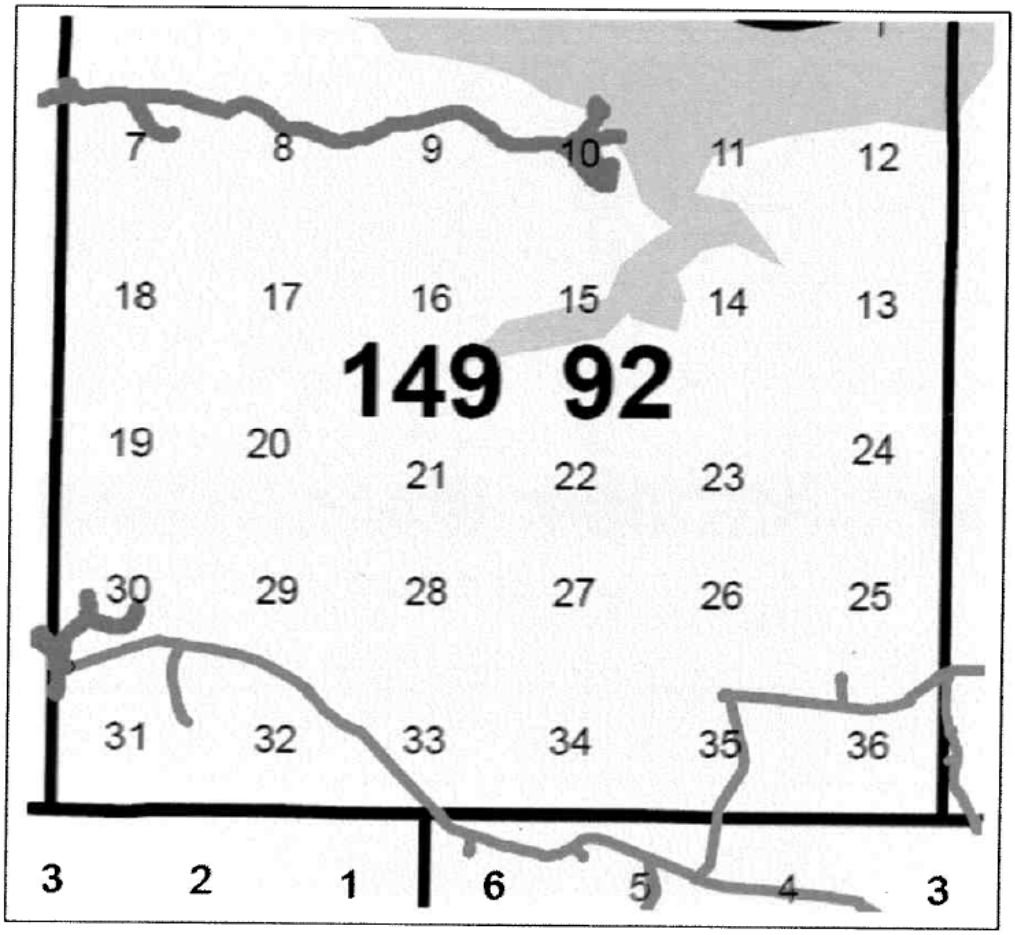
cc: Bureau of Indian Affairs
Great Plains Regional Office
Attention: Ms. Marilyn Bercier
Regional Environmental Scientist
115 Fourth Avenue S.E.
Aberdeen, SD 57401

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

Subject: Solicitation for an Environmental Assessment for the Proposed Construction, Drilling, Completion, and Production of Up to Six Exploratory Oil and Gas Wells On One 5.5 Acre Well Pad and Access Road by XTO Energy On the Fort Berthold Reservation in Dunn County, North Dakota

Lawrence 24X-26 Site: SE¼ SW¼ of section 26, T149N, R92W Dunn County, ND – well pad and access road

Note that blue and orange lines represent Reclamation water



NOTES

1. Drawing is not to scale.
2. Clearances shown are minimum for all conditions.
3. Any additional permits required/needed for construction shall be provided by the Contractor.
4. Overhead conductor clearances shown are for 120 degrees F and final unloaded sag.
5. Erosion control measures, including re-vegetation, shall be implemented after completing construction activities.
6. The applicant shall submit a project description, and detailed construction plans showing plan views, profiles and sections, and grading plans of proposed work within Reclamation's Right-of-Way (ROW).
7. The applicant shall submit procedures, excavation plans, and schedules for crossing the Reclamation pipeline.
8. At the completion of construction activities the applicant shall submit AS-BUILT drawings that indicate the horizontal and vertical alignments of all utilities in areas disturbed during construction within Reclamation ROW.
9. Pipelines carrying hazardous materials or pollutants (e.g., oils, gasoline, natural gas, contaminated water and nonpotable water, etc.) should be designed for a reduced risk of failure in the portion within Reclamation's ROW. The design shall require either:
   - 9.1. Designing the crossing pipeline with an additional 50 percent working pressure factor, or
   - 9.2. Use secondary containment (pipe casing) for all hazardous material pipelines.
10. All work within 12 inches of the facility shall be done using hand-held tools only. The excavation and backfill shall be made in the presence of Reclamation personnel or authorized representative.
11. The applicant and or his/her contractor shall be liable for all damages to Reclamation facilities and appurtenances as a result of construction and for any other damages or losses suffered by Reclamation, including power, municipal and industrial water supply and communication losses.
12. For crossings of all Reclamation facilities, Reclamation personnel familiar with the facilities will obtain and provide copies of existing files showing information about existing buried facilities (center of pipeline, approximate depth of cover, size of pipe, class of pipe, etc.) to the applicant.
13. Typical Reclamation potable and raw water pipelines are PVC. If metallic pipelines or those containing metallic reinforcement (e.g., reinforced concrete) are encountered in the crossing a suitable bonded dielectric coating and cathodic protection may be required.

DETECTABLE WARNING TAPE

A. For potable water lines, the warning tape shall be a 3-inch-wide blue, detectable tape imprinted with "CAUTION BURIED POTABLE WATER LINE".

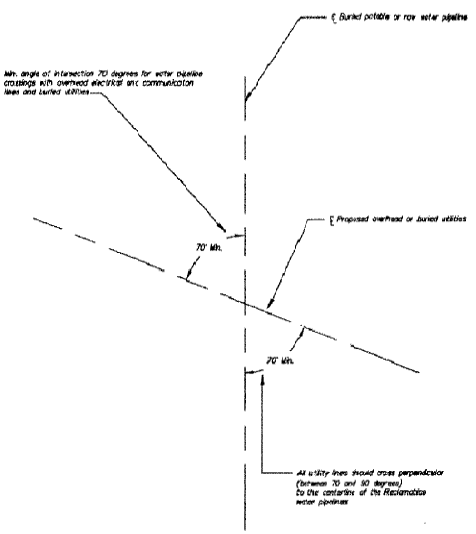
B. For nonpotable water lines, the warning tape shall be a 3-inch-wide purple detectable tape imprinted with "CAUTION BURIED NONPOTABLE WATER LINE".

C. For gas, oil, and steam chemical lines, the warning tape shall be a 3-inch-wide yellow detectable tape imprinted with "CAUTION BURIED (type) LINE".

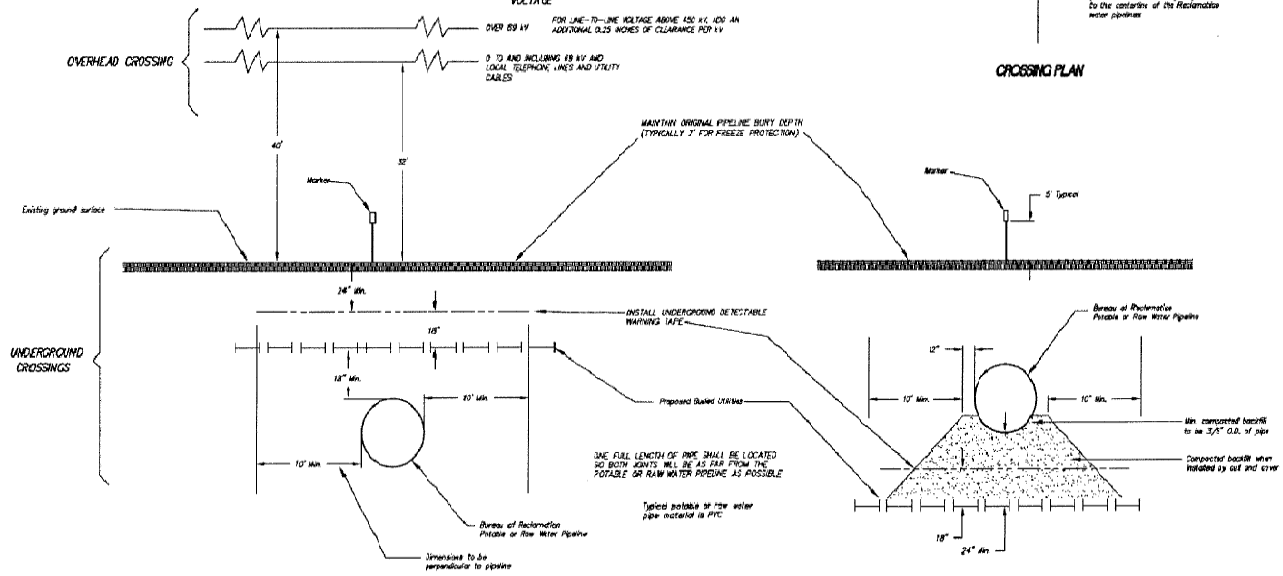
D. For telecommunications, telephone, television conduit(s), the warning tape shall be a 3-inch-wide orange detectable tape imprinted with "CAUTION BURIED (type) LINE".

E. For electrical conduit(s), the warning tape shall be a 3-inch-wide red detectable tape imprinted with "CAUTION BURIED ELECTRICAL LINE".

F. A marker sign shall be provided that shows the clearance and electrical line voltage. The warning sign should face incoming traffic and state "DANGER, HIGH VOLTAGE OVERHEAD".



CROSSING PLAN



TYPICAL SECTION
POTABLE OR RAW WATER PIPELINE CROSSING

RECLAMATION
Managing Water in the West

ALWAYS THINK SAFETY

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

DAKOTAS AREA OFFICE, DAKOTAS AREA PROGRAM
DAKOTAS, EASTERN & SOUTHERN EAST, MONTANA

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

DESIGNED - E. Bowers
DRAWN - E. Bowers
CHECKED - S. Dirks
SECH. APPR. - Dan Kemp, P.E. - DAO, Bismarck
APPROVED - Mark J. Bauman, P.E. - DA, Dickinson
BISMARCK, NORTH DAKOTA 12-30-2010

769-603-25480

SHEET 1 OF 1

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

REPLY TO
ATTENTION OF

October 26, 2010

North Dakota Regulatory Office

PBS&J
Attn: Chris Miller, Project Manager
115 North 28th Street, Suite 202
Billings, Montana 59101-2045

Dear Mr. Miller:

This is in response to your solicitation letter on behalf of **XTO Energy**, received on October 21, 2010 requesting Department of the Army (DA), United States Army Corps of Engineers (Corps) comments for six proposed oil and gas exploratory wells using one a well pad and one access road within the Fort Berthold Indian Reservation: **Lawrence 24x-26 Site: Section 26, Township 149 North, Range 92 West, Dunn County, North Dakota.**

Corps Regulatory Offices administer Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Section 10 of the Rivers and Harbors Act regulates work in or affecting navigable waters. This would include work over, through, or under Section 10 water. Section 10 waters in North Dakota are the Missouri River (including Lake Sakakawea and Lake Oahe), Yellowstone River, James River south of Jamestown, North Dakota, Bois de Sioux River, Red River of the North, and the Upper Des Lacs Lake. Section 404 of the Clean Water Act regulates the discharge of dredge or fill material (temporarily or permanently) in waters of the United States. Waters of the United States may include, but are not limited to, rivers, streams, ditches, coulees, lakes, ponds, and their adjacent wetlands. Fill material includes, but is not limited to, rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mines or other excavation activities and materials used to create any structure or infrastructure in waters of the United States.

For any proposed well where the well line and/or bottom hole is under or crosses under Lake Sakakawea, regardless of depth, we require that project proponent provide a DA permit application (ENG Form 4345) to the Corps.

Enclosed for your information is the fact sheet for Nationwide Permit 12, Utility Line Activities. Pipeline projects are already authorized by Nationwide Permit 12 **provided the utility line can be placed without any change to pre-construction contours and all other proposed construction activities and facilities are in compliance with the Nationwide's permit conditions and 401 Water Quality Certification is obtained.** Please note the pre-construction notification requirements on page 2 of the fact sheet. **If a project involves any one of the seven notification requirements, the project proponent must submit a DA application.** Furthermore, a project must also be in compliance with the "Regional Conditions for Nationwide Permits within the State of North Dakota", found on pages 12 and 13 of the fact sheet. [The following info is for activities on a reservation] Please be advised that the United States Environmental Protection Agency (EPA), Region 8 has denied 401 Water Quality Certification for activities in perennial drainages and wetlands. Furthermore, EPA has placed conditions on activities in ephemeral and intermittent drainages. It is recommended you contact the U.S. Environmental Protection Agency, Region 8, Attn: Brent Truskowski, 1595 Wynkoop Street, Denver, Colorado 80202-1129 to review the conditions pursuant to Section 401 of the Clean Water Act prior to any construction.

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Also enclosed for your information is the fact sheet for Nationwide Permit 14, Linear Transportation Projects. Road crossings are already authorized by Nationwide Permit 14 **provided the discharge does not cause the loss of greater than ½ acre of waters of the United States per crossing and all other proposed construction activities are in compliance with the Nationwide's permit conditions.** Please note the pre-construction notification requirements on the front page of the fact sheet. **If a project involves (1) the loss of waters of the United States exceeding 1/10 acre per crossing; or (2) there is a discharge in a special aquatic site, including wetlands, the project proponent must submit a DA application prior to the start of construction.** Please reference General Condition 27, Pre Construction Notification on page 8 of the fact sheet. Furthermore, a project must also be in compliance with the "Regional Conditions for Nationwide Permits within the State of North Dakota", found on pages 11 and 12 of the fact sheet. [The following is included for activities on a reservation] Enclosed is a copy of the United States Environmental Protection Agency, Region 8's; General Conditions for all Nationwide Permits and specific conditions for Nationwide Permit 14.

In the event your project requires approval from the U.S. Army Corps of Engineers and cannot be authorized by Nationwide Permit(s), a Standard or Individual Permit will be required. A project that requires a Standard or Individual Permit is intensely reviewed and will require the issuance of a public notice. A Standard or Individual Permit generally requires a minimum of 120 days for processing but based on the project impacts and comments received through the public notice may extend beyond 120 days.

This correspondence letter is neither authorization for the proposed construction nor confirmation that the proposed project complies with the Nationwide Permit(s).

If any of these projects require a Section 10 and/or Section 404 permit, please complete and submit the enclosed Department of the Army permit application (ENG Form 4345) to the U.S. Army Corps of Engineers, North Dakota Regulatory Office, 1513 South 12th Street, Bismarck, North Dakota 58504. If you are unsure if a permit is required, you may submit an application; include a project location map, description of work, and construction methodology.

If we can be of further assistance or should you have any questions regarding our program, please do not hesitate to contact this office by letter of phone at (701) 255-0015.

Sincerely,

Daniel E. Cimarosti

Daniel E. Cimarosti
Regulatory Program Manager
North Dakota

Enclosure
ENG Form 4345
Fact Sheet NWP 12 and 14

CF w/o encl
✓ EPA Denver (Brent Truskowski)

FACT SHEET
NATIONWIDE PERMIT 12
(2007)

UTILITY LINE ACTIVITIES. Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2 acre of waters of the United States.

Utility lines: This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

Utility line substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2 acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead utility line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the total discharge from a single and complete project does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2. below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR Part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or

under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met: (1) the activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to a stream bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials. (Sections 10 and 404)

Note 1: Where the proposed utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters), copies of the pre-construction notification and NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

Note 2: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, accordance with the requirements for temporary fills.

Note 3: Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).

General Conditions: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer.

1. **Navigation.** (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. **Adverse Effects From Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. **Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. **Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. **Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. **Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. **Removal of Temporary Fills.** Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. **Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

15. **Wild and Scenic Rivers.** No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

16. **Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

17. **Endangered Species.** (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical

habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at http://www.fws.gov/ and http://www.noaa.gov/fisheries.html respectively.

18. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

19. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

20. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address

documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

21. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality. *Specifically in North Dakota, the North Dakota Department of Health has denied certification for projects under this Nationwide Permit proposed to cross **all classified rivers, tributaries and lakes**; individual certification for project in these waterways must be obtained by the project proponent prior to authorization under this Nationwide Permit. For utility line crossings of all other waters, the Department of Health has issued water quality certification provided the attached Construction and Environmental Disturbance Requirements are followed.*

22. Coastal Zone Management. *Not Applicable.*

23. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

24. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

25. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:
"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

26. Compliance Certification. Each permittee who received a NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;

(b) A statement that any required mitigation was completed in accordance with the permit conditions; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

27. Pre-Construction Notification. *See attached pages.*

28. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

General Condition 27. Pre-Construction Notification.

(a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) Forty five calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);

(4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

(5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

(e) District Engineer's Decision: In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

2007 NATIONWIDE PERMITS
REGIONAL CONDITIONS
STATE OF NORTH DAKOTA
OMAHA DISTRICT – CORPS OF ENGINEERS

The U.S. Army Corps of Engineers has adopted the following regional conditions for activities authorized by nationwide permits within the State of North Dakota. However, the pre-construction notification requirements defined below are not applicable to Nationwide Permit 47.

1. Wetlands Classified as Fens

All Nationwide Permits, with the exception of 3, 5, 20, 32, 38, 45, and 47, are revoked for use in fens in North Dakota. For nationwide permits 3, 5, 20, 32, 38, and 45 permittees must notify the Corps in accordance with General Condition 27 (Notification) prior to initiating any regulated activity impacting fens in North Dakota.

Fens are wetlands that develop where a relatively constant supply of ground water to the plant rooting zone maintains saturated conditions most of the time. The water chemistry of fens reflects the mineralogy of the surrounding and underlying soils and geological materials. The substrate is carbon-accumulating, ranging from muck to peat to carbonates. These wetlands may be acidic to alkaline, have pH ranging from 3.5 to 8.4 and support a range of vegetation types. Fens may occur on slopes, in depressions, or on flats (i.e., in different hydrogeomorphic classes; after: Brinson 1993).

2. Waters Adjacent to Natural Springs

For all Nationwide Permits permittees must notify the Corps in accordance with General Condition No. 27 (Notification) for regulated activities located within 100 feet of the water source in natural spring areas in North Dakota. For purposes of this condition, a spring source is defined as any location where there is artesian flow emanating from a distinct point at any time during the growing season. Springs do not include seeps and other groundwater discharge areas where there is no distinct point source.

3. Missouri River, including Lake Sakakawea and Lake Oahe within the State of North Dakota

For all Nationwide Permits permittees must notify the Corps in accordance with General Condition No. 27 (Notification) prior to initiating any regulated activity in the Missouri River, including Lake Sakakawea and Lake Oahe, within the State of North Dakota.

4. Historic Properties

That the permittee and/or the permittee's contractor, or any of the employees, subcontractors or other persons working in the performance of a contract(s) to complete the work authorized herein, shall cease work and report the discovery of any previously unknown historic or archeological remains to the North Dakota Regulatory Office. Notification shall be by telephone or fax within 24 hours of the discovery and in writing within 48 hours. Work shall not resume until the permittee is notified by the North Dakota Regulatory Office.

5. Spawning Condition

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

Additional Information

Permittees are reminded that General Condition No. 6 prohibits the use of unsuitable material. In addition, organic debris, some building waste, and materials excessive in fines are not suitable material.

Specific verbiage on prohibited materials and the 1978 Stream Evaluation Map for the State of North Dakota can be accessed on the North Dakota Regulatory Office's website at: https://www.nwo.usace.army.mil/html/od-rmd/ndhome.htm

FACT SHEET
NATIONWIDE PERMIT 14
(2007)

LINEAR TRANSPORTATION PROJECTS. Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10 acre; or (2) there is a discharge in a special aquatic site, including wetlands. (Sections 10 and 404)

Note: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4).

General Conditions: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. **Adverse Effects From Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. **Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. **Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. **Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. **Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

15. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

16. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

17. Endangered Species. (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical

habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at http://www.fws.gov/ and http://www.noaa.gov/fisheries.html respectively.

18. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

19. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

20. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address

documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

21. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.
Specifically for North Dakota, the North Dakota Department of Health has issued water quality certification for projects under this Nationwide Permit provided the attached Construction and Environmental Disturbance Requirements are followed.

22. Coastal Zone Management. *Not Applicable.*

23. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

24. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

25. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:
"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____
(Transferee)

(Date)

26. Compliance Certification. Each permittee who received a NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;

(b) A statement that any required mitigation was completed in accordance with the permit conditions; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

27. Pre-Construction Notification. *See attached pages.*

28. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

General Condition 27. Pre-Construction Notification.

(a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) Forty five calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);

(4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

(5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

(e) District Engineer's Decision: In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

2007 NATIONWIDE PERMITS
REGIONAL CONDITIONS
STATE OF NORTH DAKOTA
OMAHA DISTRICT – CORPS OF ENGINEERS

The U.S. Army Corps of Engineers has adopted the following regional conditions for activities authorized by nationwide permits within the State of North Dakota. However, the pre-construction notification requirements defined below are not applicable to Nationwide Permit 47.

1. Wetlands Classified as Fens

All Nationwide Permits, with the exception of 3, 5, 20, 32, 38, 45, and 47, are revoked for use in fens in North Dakota. For nationwide permits 3, 5, 20, 32, 38, and 45 permittees must notify the Corps in accordance with General Condition 27 (Notification) prior to initiating any regulated activity impacting fens in North Dakota.

Fens are wetlands that develop where a relatively constant supply of ground water to the plant rooting zone maintains saturated conditions most of the time. The water chemistry of fens reflects the mineralogy of the surrounding and underlying soils and geological materials. The substrate is carbon-accumulating, ranging from muck to peat to carbonates. These wetlands may be acidic to alkaline, have pH ranging from 3.5 to 8.4 and support a range of vegetation types. Fens may occur on slopes, in depressions, or on flats (i.e., in different hydrogeomorphic classes; after: Brinson 1993).

2. Waters Adjacent to Natural Springs

For all Nationwide Permits permittees must notify the Corps in accordance with General Condition No. 27 (Notification) for regulated activities located within 100 feet of the water source in natural spring areas in North Dakota. For purposes of this condition, a spring source is defined as any location where there is artesian flow emanating from a distinct point at any time during the growing season. Springs do not include seeps and other groundwater discharge areas where there is no distinct point source.

3. Missouri River, including Lake Sakakawea and Lake Oahe within the State of North Dakota

For all Nationwide Permits permittees must notify the Corps in accordance with General Condition No. 27 (Notification) prior to initiating any regulated activity in the Missouri River, including Lake Sakakawea and Lake Oahe, within the State of North Dakota.

4. Historic Properties

That the permittee and/or the permittee's contractor, or any of the employees, subcontractors or other persons working in the performance of a contract(s) to complete the work authorized herein, shall cease work and report the discovery of any previously unknown historic or archeological remains to the North Dakota Regulatory Office. Notification shall be by telephone or fax within 24 hours of the discovery and in writing within 48 hours. Work shall not resume until the permittee is notified by the North Dakota Regulatory Office.

5. Spawning Condition

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

Additional Information

Permittees are reminded that General Condition No. 6 prohibits the use of unsuitable material. In addition, organic debris, some building waste, and materials excessive in fines are not suitable material.

Specific verbiage on prohibited materials and the 1978 Stream Evaluation Map for the State of North Dakota can be accessed on the North Dakota Regulatory Office's website at: https://www.nwo.usace.army.mil/html/od-rnd/ndhome.htm

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.

Instructions for Preparing a Department of the Army Permit Application

Blocks 1 through 4. To be completed by Corps of Engineers

Block 5. Applicant's Name. Enter the name and the E-mail address of the responsible party or parties. If the responsible party is an agency, company, corporation, or other organization, indicate the name of the organization and responsible officer and title. If more than one party is associated with the application, please attach a sheet with the necessary information marked Block 5.

Block 6. Address of Applicant. Please provide the full address of the party or parties responsible for the application. If more space is needed, attach an extra sheet of paper marked Block 6.

Block 7. Applicant Telephone Number(s). Please provide the number where you can usually be reached during normal business hours.

Blocks 8 through 11. To be completed, if you choose to have an agent.

Block 8. Authorized Agent's Name and Title. Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer, or any other person or organization. Note: An agent is not required.

Blocks 9 and 10. Agent's Address and Telephone Number. Please provide the complete mailing address of the agent, along with the telephone number where he / she can be reached during normal business hours.

Block 11. Statement of Authorization. To be completed by applicant, if an agent is to be employed.

Block 12. Proposed Project Name or Title. Please provide name identifying the proposed project, e.g. Landmark Plaza, Burned Hills Subdivision, or Edsall Commercial Center.

Block 13. Name of Waterbody. Please provide the name of any stream, lake, marsh, or other waterway to be directly impacted by the activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

Block 14. Proposed Project Street Address. If the proposed project is located at a site having a street address (not a box number), please enter it here.

Block 15. Location of Proposed Project. Enter the latitude and longitude of where the proposed project is located. If more space is required, please attach a sheet with the necessary information marked Block 15.

Block 16. Other Location Descriptions. If available, provide the Tax Parcel Identification number of the site, Section, Township, and Range of the site (if known), and / or local Municipality that the site is located in.

Block 17. Directions to the Site. Provice directions to the site from a known location or landmark. Include highway and street numbers as well as names. Also provide distances from known locations and any other information that would assist in locating the site. You may also provide description of the proposed project location, such as lot numbers, tract numbers or you may choose to locate the proposed project site from a known point (such as the right descending bank of Smith Creek, one mile downstream from the Highway 14 bridge). If a large river or stream, include the river mile of the proposed project site if known.

Block 18. Nature of Activity. Describe the overall activity or project. Give appropriate dimensions of structures such as wing walls, dikes (identify the materials to be used in construction, as well as the methods by which the work is to be done), or excavations (length, width, and height). Indicate whether discharge of dredged or fill material is involved. Also identify any structure to be constructed on a fill, piles, or float-supported platforms.

The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach an extra sheet of paper marked Block 18.

Block 19. Proposed Project Purpose. Describe the purpose and need for the proposed project. What will it be used for and why? Also include a brief description of any related activities to be developed as the result of the proposed project. Give the approximate dates you plan to both begin and complete all work.

Block 20. Reasons for Discharge. If the activity involves the discharge of dredged and/or fill material into a wetland or other waterbody, including the temporary placement of material, explain the specific purpose of the placement of the material (such as erosion control).

Block 21. Types of Material Being Discharged and the Amount of Each Type in Cubic Yards. Describe the material to be discharged and amount of each material to be discharged within Corps jurisdiction. Please be sure this description will agree with your illustrations. Discharge material includes: rock, sand, clay, concrete, etc.

Block 22. Surface Areas of Wetlands or Other Waters Filled. Describe the area to be filled at each location. Specifically identify the surface areas, or part thereof, to be filled. Also include the means by which the discharge is to be done (backhoe, dragline, etc.). If dredged material is to be discharged on an upland site, identify the site and the steps to be taken (if necessary) to prevent runoff from the dredged material back into a waterbody. If more space is needed, attach an extra sheet of paper marked Block 22.

Block 23. Description of Avoidance, Minimization, and Compensation. Provide a brief explanation describing how impacts to waters of the United States are being avoided and minimized on the project site. Also provide a brief description of how impacts to waters of the United States will be compensated for, or a brief statement explaining why compensatory mitigation should not be required for those impacts.

Block 24. Is Any Portion of the Work Already Complete? Provide any background on any part of the proposed project already completed. Describe the area already developed, structures completed, any dredged or fill material already discharged, the type of material, volume in cubic yards, acres filled, if a wetland or other waterbody (in acres or square feet). If the work was done under an existing Corps permit, identity the authorization, if possible.

Block 25. Names and Addresses of Adjoining Property Owners, Lessees, etc., Whose Property Adjoins the Project Site. List complete names and full mailing addresses of the adjacent property owners (public and private) lessees, etc., whose property adjoins the waterbody or aquatic site where the work is being proposed so that they may be notified of the proposed activity (usually by public notice). If more space is needed, attach an extra sheet of paper marked Block 24.

Information regarding adjacent landowners is usually available through the office of the tax assessor in the county or counties where the project is to be developed.

Block 26. Information about Approvals or Denials by Other Agencies. You may need the approval of other federal, state, or local agencies for your project. Identify any applications you have submitted and the status, if any (approved or denied) of each application. You need not have obtained all other permits before applying for a Corps permit.

Block 27. Signature of Applicant or Agent. The application must be signed by the owner or other authorized party (agent). This signature shall be an affirmation that the party applying for the permit possesses the requisite property rights to undertake the activity applied for (including compliance with special conditions, mitigation, etc.).

DRAWINGS AND ILLUSTRATIONS

General Information.

Three types of illustrations are needed to properly depict the work to be undertaken. These illustrations or drawings are identified as a Vicinity Map, a Plan View or a Typical Cross-Section Map. Identify each illustration with a figure or attachment number.

Please submit one original, or good quality copy, of all drawings on 8½ x11 inch plain white paper (electronic media may be substituted). Use the fewest number of sheets necessary for your drawings or illustrations.

Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view, or cross-section). **While illustrations need not be professional (many small, private project illustrations are prepared by hand), they should be clear, accurate, and contain all necessary information.**

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT *(33 CFR 325)*	OMB APPROVAL NO. 0710-0003 **EXPIRES: 31 August 2012**

Public reporting burden for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME:	8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required)
First - Middle - Last – Company – E-mail Address –	First - Middle - Last – Company – E-mail Address –
6. APPLICANT'S ADDRESS: Address - City – State – Zip – Country –	9. AGENT'S ADDRESS Address - City – State – Zip – Country –
7. APPLICANT'S PHONE NOs. W/AREA CODE a. Residence b. Business c. Fax	10. AGENT'S PHONE NOs. W/AREA CODE a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____
APPLICANT'S SIGNATURE DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable) Address
15. LOCATION OF PROJECT Latitude: °N Longitude: °W	City - State – Zip -

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)
State Tax Parcel ID Municipality
Section – Township – Range –

17. DIRECTIONS TO THE SITE

ENG FORM 4345, SEPT 2009 EDITION OF OCT 2004 IS OBSOLETE Proponent: CECW-OR

18. Nature of Activity (Description of project, include all features)

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres

Or

Liner Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

24. Is Any Portion of the Work Already Complete? Yes ☐ No ☐ IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list).

Address –

City – State – Zip –

26. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

ENG FORM 4345, SEPT 2009

From: Sorensen, Charles G NWO [mailto:Charles.G.Sorensen@usace.army.mil]
Sent: Monday, November 01, 2010 3:11 PM
To: Miller, Chris
Subject: Comments on the XTO Lawrence 24X-26 Well Location

Chris

Thank you for letting the U.S. Army Corps of Engineers Garrison Dam/Lake Sakakawea Project comment on XTO Energy Lawrence 24X-26 Well location.

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

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

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

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

That all additional fill material required for the construction of the well pad is obtained from a private supplier 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

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

REPLY TO
ATTENTION OF

November 17, 2010

Planning, Programs, and Project Management Division

Mr. Chris Miller
PBS&J
115 North 28th Street, Suite 202
Billings, Montana 59101

Dear Mr. Miller:

The U.S. Army Corps of Engineers, Omaha District (Corps) has reviewed your letter dated October 13, 2010, regarding the proposed drilling and completion of up to six exploratory oil and gas wells at one pad located on the Lawrence 24 X-26 site on the Fort Berthold Reservation in Dunn County, North Dakota. The Corps offers the following comments:

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
T-701-328-4898
F-701-328-3747

Your plans should be coordinated with the U.S. Environmental Protection Agency, which is currently involved in a program to protect groundwater resources. 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.

Printed on Recycled Paper

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 Corp's Regulatory website for permit applications and related information. Please review the information on the provided web site (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

If you have any questions, please contact Mr. John Shelman of my staff at (402) 995-2708 or by email at Johnathan.A.Shelman@usace.army.mil.

Sincerely,

for Brad Thompson
Chief, Environmental Resources and Missouri River
Recovery Program Plan Formulation Section

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

October 26, 2010

Chris Miller, Project Manager
PBS&J
115 N. 28th Street, Suite 202
Billings, MT 59101-2045

Re: Up to Six Proposed Exploratory Oil and Gas Wells by XTO Energy
At the Lawrence 24X-26 Site on the Fort Berthold Reservation
Dunn County, North Dakota

Dear Mr. Miller:

This department has reviewed the information concerning the above-referenced project submitted under date of October 19, 2010, 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 or well pads 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.

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 within 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.

North Dakota Department of Transportation

Francis G. Ziegler, P.E.
Director

John Hoeven
Governor

November 15, 2010

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

WELL PAD AND ACCESS ROAD PLANNED FOR LAWRENCE, FORT BERTHOLD RESERVATION, NORTH DAKOTA

We have reviewed your October 19, 2010, letter.

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

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

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

57:rjh:js

c: Walter A. Peterson, Williston District

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

"VARIETY IN HUNTING AND FISHING"
NORTH DAKOTA GAME AND FISH DEPARTMENT
100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

November 1, 2010

Chris Miller
Project Director
PBS&J
115 N 28th Street, Suite 202
Billings, MT 59101-2045

Dear Mr. Miller:

RE: George Black Hawk 31X-6
Lawrence 24X-26

XTO Energy has proposed up to 12 exploratory oil and gas wells using two well pads and access roads 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 well pads and access roads. We recommend that construction be avoided to the extent possible within native prairie, wooded draws, riparian corridors, and wetland areas.

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

Sincerely,

Paul Schadewald
Chief
Conservation & Communication Division

js

United States Department of Agriculture

NRCS

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

November 3, 2010

Chris Miller
PBS&J
115 North 28th Street, Suite 202
Billings, Montana 59101-2045

RE: Lawrence 24X-26 Site: SE ¼, Section 26, Township 149N, Range 92W (well pad and access road)
Fort Berthold Reservation

Dear Mr. Miller:

The Natural Resources Conservation Service (NRCS) has reviewed your letter dated October 19, 2010, regarding the drilling and completion of up to six exploratory oil and gas wells using one well pad and one access road on the Fort Berthold Indian Reservation by XTO Energy.

Important Farmlands - NRCS has a major responsibility with FPPA in documenting conversion of farmland (i.e., prime, statewide, and local importance) to non-agricultural use. It appears your proposed project is not supported by Federal funding or actions; therefore, no further action is required.

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 project requires passage through or disturbance of 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, at (701) 530-2019.

Sincerely,

JEROME SCHAAR
State Soil Scientist/MO Leader

STATE
HISTORICAL
SOCIETY
OF NORTH DAKOTA

John Hoeven
Governor of North Dakota

**North Dakota
State Historical Board**

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*Director
Parks and Recreation Department*

Francis Ziegler
*Director
Department of Transportation*

Merlan E. Paaverud, Jr.
Director

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October 22, 2010

Mr. Chris Miller
Project Manager
PBS&J
115 North 28th Street, Suite 202
Billings MT 59101-2045

NDSHPO REF. 11-0118 BIA/Mandan Hidatsa Arikara Nation XTO Energy Well Pad and Access Lawrence 24X-26 Site [T149N R92W Section 26, SE SW] Dunn County, North Dakota

Dear Mr. Miller,

We received your correspondence dated October 19, 2010 regarding NDSHPO REF. 11-0118 BIA/Mandan Hidatsa Arikara Nation XTO Energy Well Pad and Access Lawrence 24X-26 Site [T149N R92W Section 26, SE SW] Dunn County, North Dakota. We request that a copy of cultural resource site forms and reports be sent to this office so that the cultural resources archives can be kept current for researchers.

Thank you for your consideration. Consultation is with MHAN THPO. If you have any questions please contact Susan Quinnell, Review & Compliance Coordinator at (701)328-3576 or squinnell@nd.gov

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer (North Dakota)
and Director, State Historical Society of North Dakota

North Dakota State Water Commission

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

November 4, 2010

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

Dear Mr. Miller:

This is in response to your request for review of environmental impacts associated with the Lawrence 24X-26 Site: SE ¼, SW ¼, Section 36, Township 149N, Range 92 W (well pad and access road).

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

- The property is not located in an identified floodplain and it is believed the project will not affect an identified floodplain.

- It is the responsibility of the project sponsor to ensure that local, state and federal agencies are contacted for any required approvals, permits, and easements.

- All waste material associated with the project must be disposed of properly and not placed in identified floodway areas.

- No sole-source aquifers have been designated in ND.

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

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

Sincerely,

Larry Knudtson
Research Analyst

LJK:dp/1570

JOHN HOEVEN, GOVERNOR
CHAIRMAN

TODD SANDO, P.E.
SECRETARY AND STATE ENGINEER

TRIBAL HISTORIC PRESERVATION
Mandan Hidatsa Arikara
Perry 'No Tears' Brady, Director.
404 Frontage Road,
New Town, North Dakota 58763
Ph/701-862-2474 fax/701-862-2490
pbrady@mhanation.com

Three Affiliated Tribes
MANDAN * HIDATSA * ARIKARA

October 25, 2010

Chris Miller, Project Manager
PBS&J
115 North 28th Street, Suite 202
Billings, Montana 59101-2045

Dear Mr. Miller

RE Recommendation and Concurrence:

As Director of the Tribal Historic Preservation Office and the Tribal Historical Preservation Officer representing the Mandan Hidatsa Arikara Nation **I Concur with, Lawrence 24X-26 Site: SE ¼, SW1/4, Section 26, Township 149N, Range 92W (well pad and access road)**

THPO has no comments at this time and you may processed with the project and contact this office immediately if your applicant finds any remains unexpectedly during construction.

You can call or write at the address above and call at anytime Thank you for your information at this time.

Sincerely,

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

Cc. file
MC.

Notice of Availability and Appeal Rights

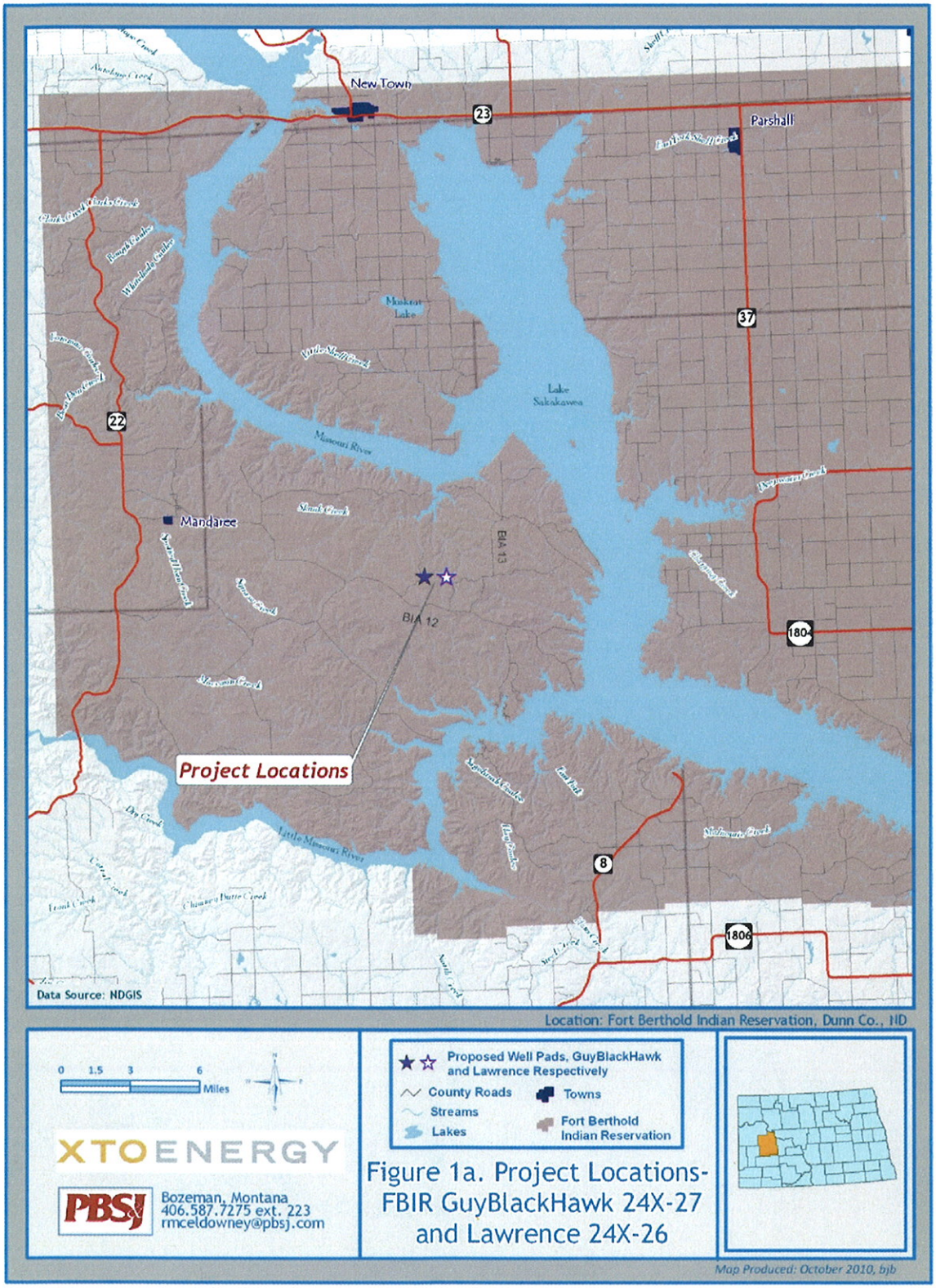
XTO Energy: GuyBlackHawk 24X-27 & Lawrence 24X-26

The Bureau of Indian Affairs (BIA) is planning to issue administrative approvals related to installation of two oil/gas well pads with up to six wells each and related infrastructure as shown on the attached map. Construction by XTO Energy is expected to begin in 2011.

An environmental assessment (EA) determined that proposed activities will not cause significant impacts to the human environment. An environmental impact statement is not required. Contact Howard Bemer, Superintendent at 701-627-4707 for more information and/or copies of the EA and the Finding of No Significant Impact (FONSI).

The FONSI is only a finding on environmental impacts – it is not a decision to proceed with an action and *cannot* be appealed. BIA's decision to proceed with administrative actions *can* be appealed until March 18, 2010 by contacting:

United States Department of the Interior
Office of Hearings and Appeals
Interior Board of Indian Appeals
801 N. Quincy Street, Suite 300, Arlington, Va 22203.

Procedural details are available from the BIA Fort Berthold Agency at 701-627-4707.

Project location.