



United States Department of the Interior

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



IN REPLY REFER TO:
DESCRM
MC-208

AUG 18 2010

MEMORANDUM

TO: Superintendent, Fort Berthold Agency

FROM: ^{Acting} Regional Director, Great Plains Region

SUBJECT: Environmental Assessment and Finding of No Significant Impact

In compliance with the regulations of the National Environmental Policy Act (NEPA) of 1969, as amended, for one proposed exploratory oil/gas well pad by XTO Energy, named Smith 11X-20 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: Marcus Levings, Chairman, Three Affiliated Tribes (with attachment)
Perry "No Tears" Brady, Tribal Historic Preservation Officer (with attachment)
Roy Swalling, Bureau of Land Management (with attachment)
Jonathon Shelman, Corps of Engineers (with attachment)
Dawn Charging, One Stop Shop, Fort Berthold Agency

Finding of No Significant Impact

Smith 11X-10 Exploratory Well Site

Fort Berthold Indian Reservation, Dunn County, North Dakota

The U.S. Bureau of Indian Affairs (BIA) received a proposal for one oil/gas well pad with up to six oil wells on it, an access road, and related infrastructure on the Fort Berthold Indian Reservation to be located in the NW¼NW¼ of Section 10 in Township 149 North and Range 92 West within Dunn County, North Dakota. Associated federal actions by BIA include determinations of effect regarding cultural resources, approvals of leases, rights-of-way and easements, and a positive recommendation to the Bureau of Land Management regarding the Application for Permit to Drill.

Potential of the proposed action 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.
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

8/18/10
Date

**FINAL
ENVIRONMENTAL ASSESSMENT**

United States Bureau of Indian Affairs

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



XTO Energy, Inc.

Smith 11X-10 Exploratory Well

Fort Berthold Indian Reservation

August 2010

For information contact:
Bureau of Indian Affairs, Great Plains Regional Office
Division of Environment, Safety and Cultural Resources Management
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ACRONYMS AND ABBREVIATIONS

AAQM	Ambient Air Quality Monitoring
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
H₂S	Hydrogen Sulfide
HPRCC	High Plains Regional Climate Center
HUC	Hydrologic Unit Code
in	Inches
i.e.	that is or 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
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
NDGFD	North Dakota Game and Fish Department
NHPA	National Historic Preservation Act
NO₂	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

ACRONYMS AND ABBREVIATIONS

O₃	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
SO₂	Sulfur Dioxide
SYN	Synonym
T	Township
TCP	Traditional and Cultural Property
TE	Threatened and Endangered Species
THPO	Tribal Historic Preservation Officer
µg/m³	Micrograms per cubic meter
µmhos/cm	Microsiemens 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 6) on a single well pad on the Fort Berthold Indian Reservation (FBIR, Reservation) on the proposed project site (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 include a new existing access road.

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 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. 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*; and 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.

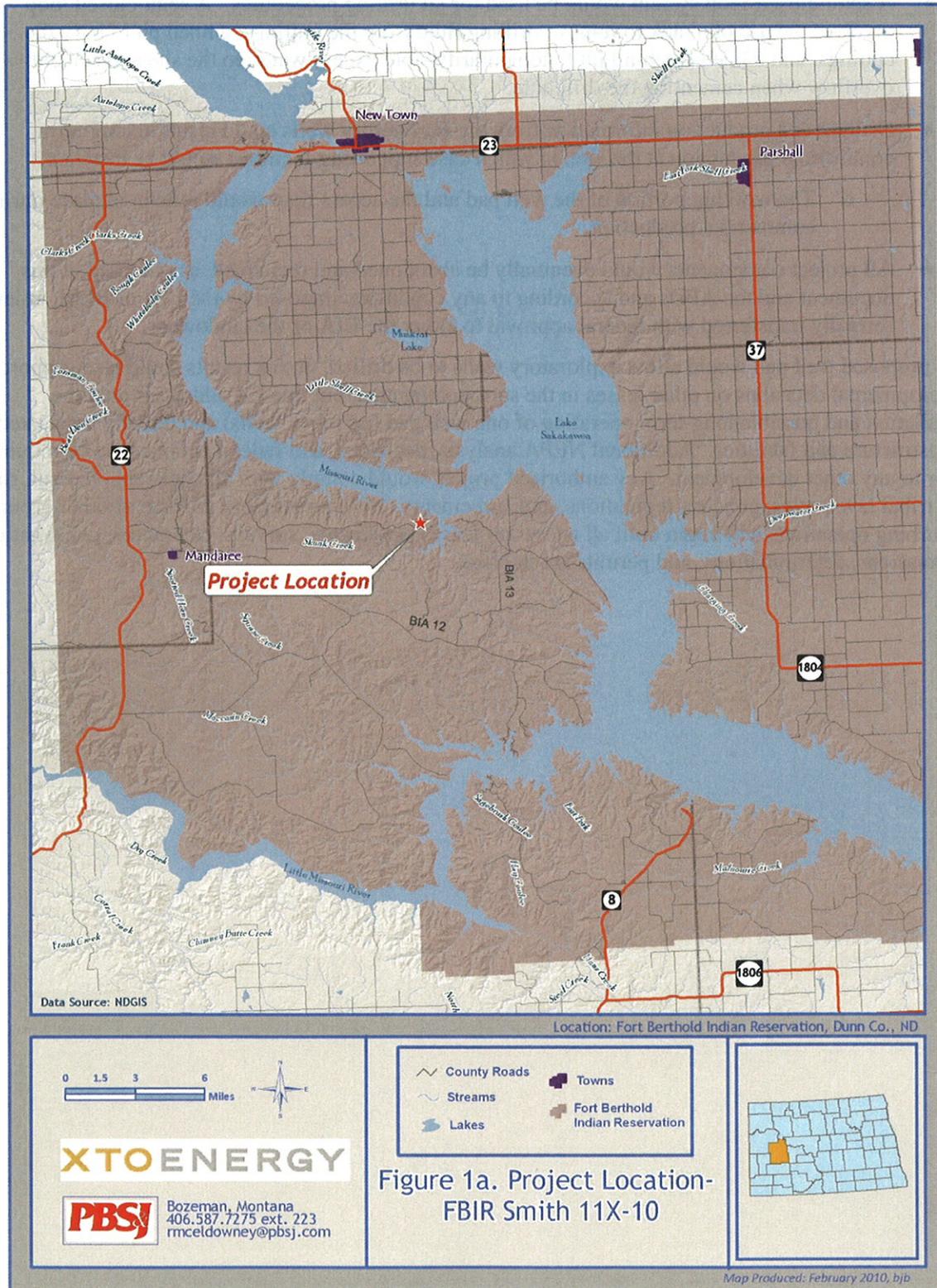
The APDs submitted to the BLM by XTO are included with this document; they describe developmental, operational, and reclamation procedures and practices that contribute to the technical basis of this Environmental Assessment (EA). The procedures and practices described in the application are critical 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.

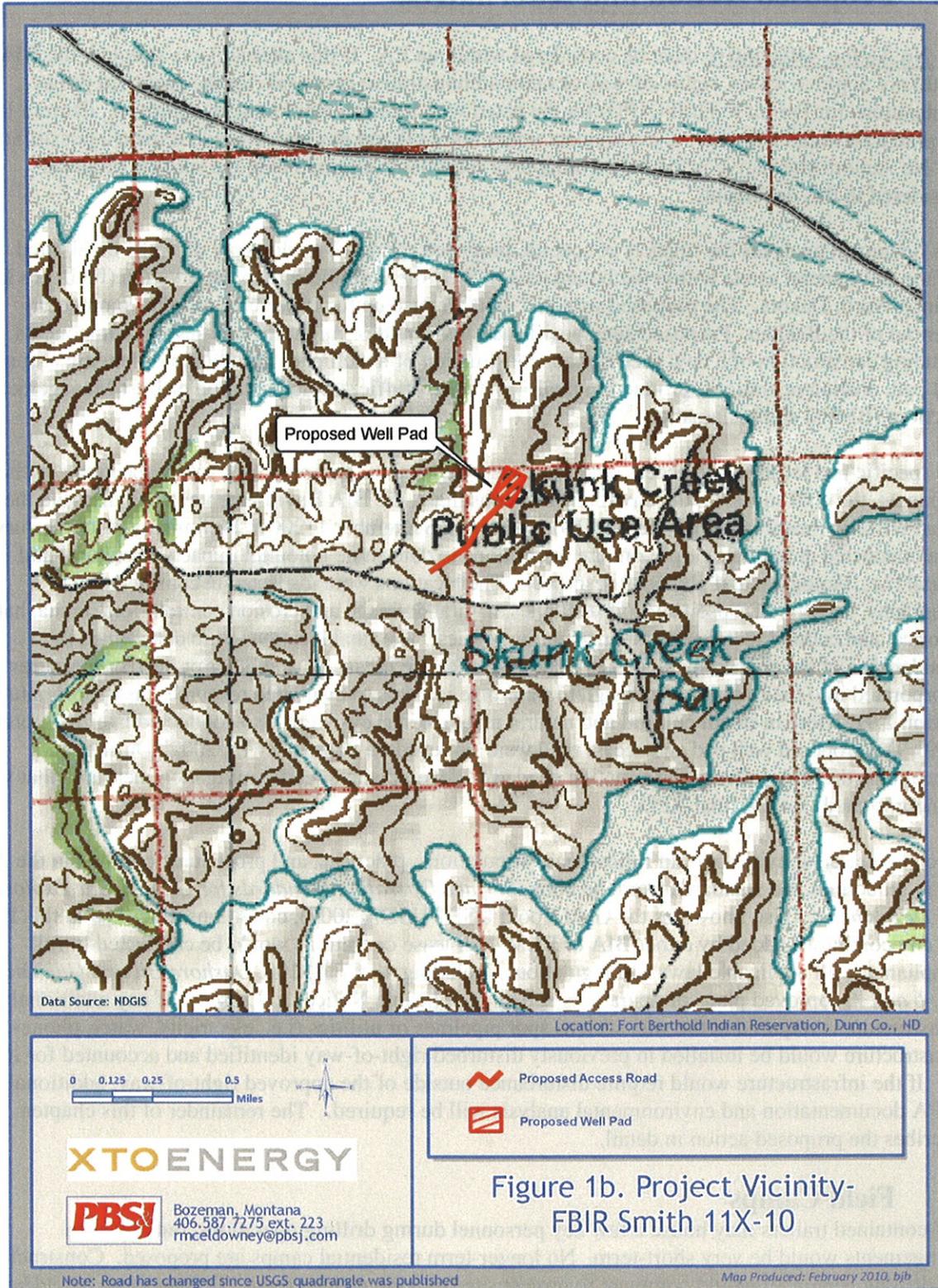
There are several components to the proposed action.

- Construction of a new access road would be needed.
- A well pad would be constructed to accommodate drilling operations.

- A semi-closed-loop system would be used for all drilling procedures. 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 from the exploratory wells could result in long-term commercial production at the site, in which case supporting facilities would be installed.
 - The working portion of the well pad and the 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 one well pad (up to six wells) and directly associated infrastructure and facilities. Additional NEPA analysis, decisions, and federal actions may 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 will begin until all necessary leases, easements, surveys, clearances, consultations, permissions, determinations, and permits are in place.





2.0 Proposed Action and Alternatives

The **No Action Alternative** must be considered within an EA. If this alternative is selected, the BIA would not approve leases, rights-of-way or other administrative proposals for the proposed project. Applications for Permit to Drill (APD) for the listed well location would not be approved. Current land use practices would continue. Development under other oil and gas leases would remain a possibility. The No Action Alternative 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 (FBIR) in Dunn County, North Dakota. The proposed well pad would house up to six wells to test the commercial potential of the Bakken. Proposed site-specific actions would or might include several components, including construction of a new access road, construction of a well pad, 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 September 1, 2009. 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. 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 September 2009. The proposed well pad and access road were surveyed on September 15, 2009. During the inspections, the BIA gathered information needed to develop site-specific mitigation measures that would be incorporated into the final APD.

All construction activities would follow lease stipulations, practices, and procedures outlined in the APD 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 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, 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 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

Approximately 1,683 feet of new access road would be constructed between BIA10 and the proposed well pad site. The 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 a FONSI and APDs. A maximum disturbed ROW width of 60 feet (30 feet either side of centerline) would result in roughly 2.32 acres of surface disturbance.

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 corridor, with the stockpiled topsoil redistributed on the outslope areas of borrow ditches following road construction. These borrow ditch areas would be reseeded as soon as practical with a native seed mixture determined by the BIA. If commercial production is established from a 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 APD (Appendix A).



Figure 2.2: View is northeast at the proposed access road for the proposed Smith 11X-10 well pad.

2.3 Well Pad

The proposed well pad 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 area would be cleared of vegetation, stripped of topsoil, and graded to specifications in the approved APD (Appendix A). Topsoil would be stockpiled and stabilized until disturbed areas were reclaimed and re-vegetated. 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 well pad site are shown in Figure 2.3.

The level area of the well pad required for drilling and completion operations would be approximately 350 feet x 550 feet (4.42 acres). Cut and fill slopes on the edge of the pad and soil stockpiles would result in approximately 1.0 acre of additional surface disturbance resulting in a total surface disturbance at the pad of approximately 5.4 acres. Details of pad construction and reclamation are diagrammed in the APD (Appendix A).



Figure 2.3: View is looking northwest from the middle of the east side toward the center of the proposed Smith 11X-10 well pad.

2.4 Drilling

After securing leases for mineral estates, XTO submitted APDs to BLM on June 23, 2010, 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 will 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. Minimum setbacks from section borders 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.

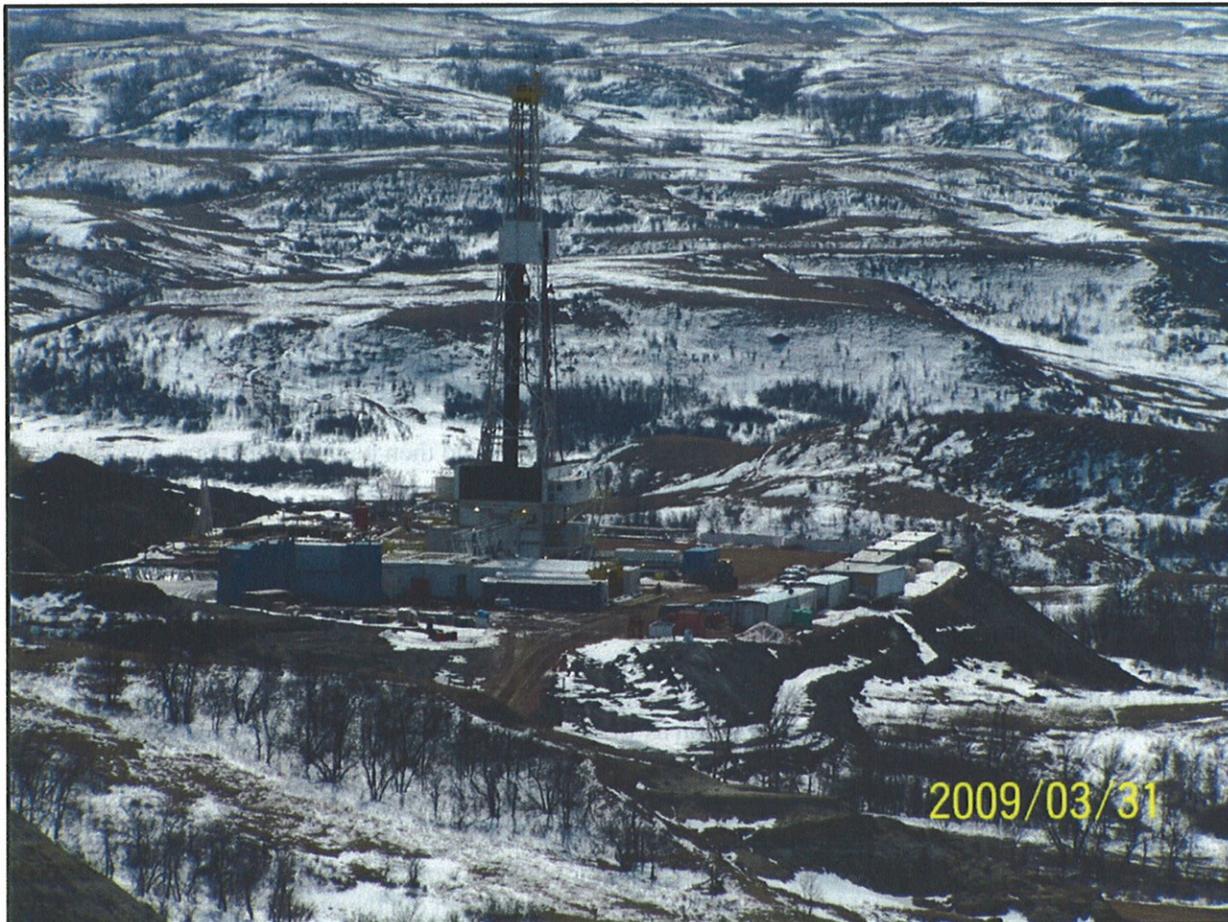


Figure 2.4: A typical drilling rig and well pad. Source: BIA.

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 percent diesel fuel and 20 percent 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 toxic fluids would be contained in steel tanks placed on plastic/vinyl liners and within secondary containment berms. Toxic 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. Toxic 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 will 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 will 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 (e.g. fly ash) 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 oil field. After fracturing, the well is typically flowed back to the surface to recover

fracture fluids and remove excess sand. Fluids used in the completion procedure would be captured 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 would be constructed from compacted subsoil, 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. 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 would be installed.

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 will be 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 may 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. Interim reclamation measures to be accomplished within the first year include reduction of the cut and fill slopes, redistribution of stockpiled topsoil, and reseeded of disturbed areas. Figures 2.8a and 2.8b shows how a well pad and access road could be reclaimed. If commercial production equipment were to be installed, the pad would be reduced in size to about 300 feet x 550 feet, with the rest of the original pad reclaimed. Reclamation would include leveling, re-contouring, treating, backfilling, and reseeded. Erosion control measures would be installed. 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 1.08 acres in size.

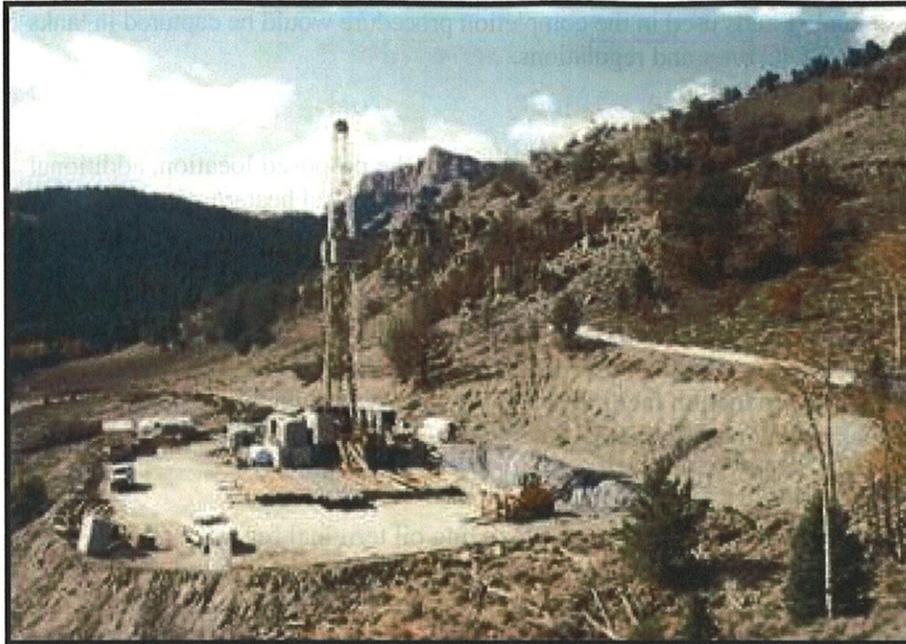


Figure 2.8a: Construction of the well pad and access road are minimized to the size necessary to perform drilling and complete operations in a safe manner (USDI-USDA 2007).

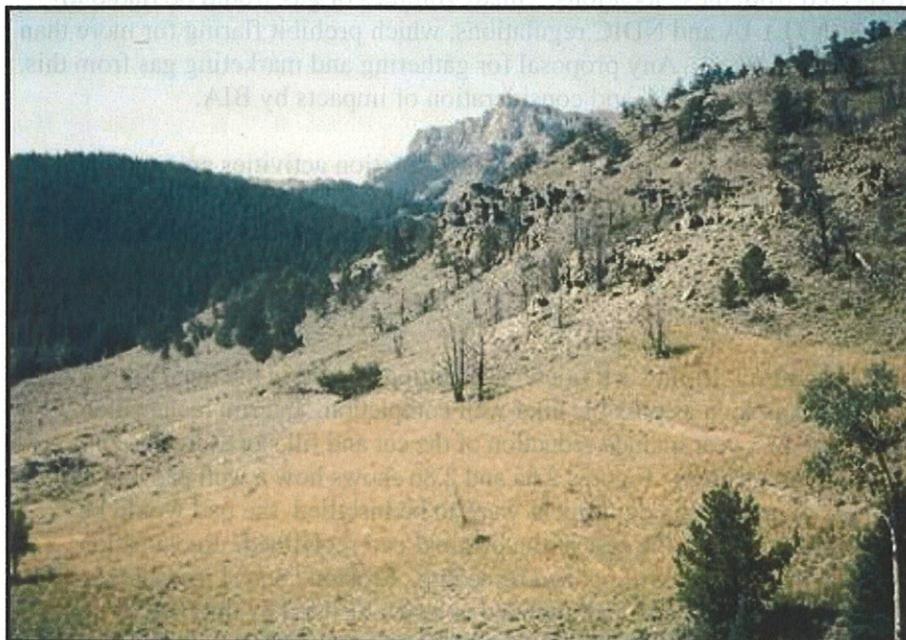


Figure 2.8b: The well pad and access road were reclaimed by returning the land to its original contours, spreading the topsoil, and revegetating the site (USDI-USDA 2007).

If there is no commercial production from the proposed six wells, 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 reseeded. 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.

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 Smith 11X-10 well pad would initiate exploration activities with the drilling of one well. Depending on the success of the initial well and subsequent wells, up to six wells may be drilled on the single well pad. The first well would be named Smith 11X-10, additional wells would be named in succession FBIR Smith 11X-10B, 11X-10C, 11X-10D, 11X-10E, and 11X-10F. The intent would be to drill the five additional wells over a period of several years.

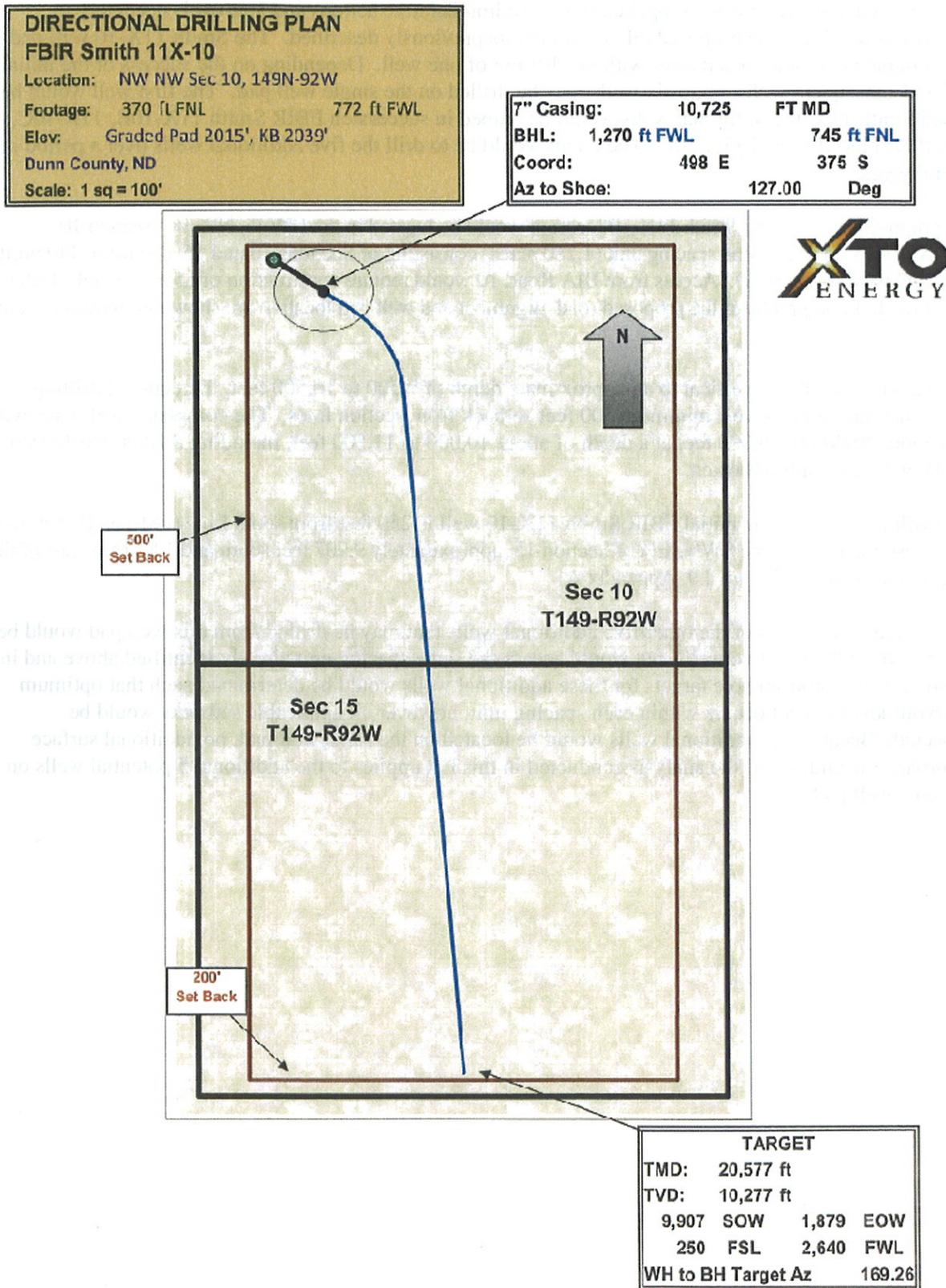
The proposed wells on the Smith 11X-10 location would be located in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 10, T149N, R92W to access one spacing unit (1,280 acres) consisting of Sections 10 and 15 Township 149 north, Range 92 west (Figure 2.9). Access from BIA Road 10 would require construction of approximately 1,683 feet of road. Photographs of the proposed road alignment and well pad location are shown in Figures 2.2 and 2.3.

Initial drilling would be vertical to an approximate depth of 9,500 to 10,500 feet. Directional drilling would maintain or achieve a minimum 500 feet setback from section lines. The completed wellbores will total about 20,000 to 25,000 feet at a depth of about 10,000 to 11,500 feet, including a 10,000 to 15,000 feet lateral reach in the Bakken.

The drilling target for the initial FBIR Smith 11X-10 well is 250 feet from south Line (FSL) and 2,640 feet from west line FWL in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 15, approximately 9,907 feet south and 1,879 feet east of the surface hole location (Figure 2.9, Appendix A).

The bottom hole targets of the other five additional wells that may be drilled from this well pad would be different from the first two wells, but would access the same spacing unit already identified above and in Figure 2.9. 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 pad, no additional surface disturbance would occur; the analysis conducted in this EA applies to the additional 5 potential wells on the same well pad.

Figure 2.9. Spacing unit (1,280 acres) and bottom hole location for FBIR Smith 11X-10.



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 is owned in fee simple title, sometimes by the MHA Nation or individual tribal members, but usually by non-Indians. 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 1953, much of the land 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 pad, associated wells, and access road would be situated geologically 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 project. Earlier oil/gas exploration activity within the FBIR, 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 and 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). Land within the proposed spacing unit occurs at an elevation of approximately 2,010 feet above mean sea level and is primarily grass- and shrublands dissected by woody riparian areas currently used for livestock grazing. The proposed site for the well pad is situated on a bluff that is elevated (100 to 200 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 are analyzed for both the No Action and Proposed Action Alternatives. Impacts may be beneficial or harmful, direct or indirect, and short- 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 potential 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 2009). 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 2009). The Dunn Center monitoring station is the closest to the proposed Smith 11X-10 project site, and is located roughly 28.8 miles 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 (SO₂), nitrogen dioxide (NO₂), ozone (O₃), inhalable particulate matter (PM₁₀), 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 2008 (Table 3.2). In fact, in 2008 North Dakota was one of thirteen states that met standards for all criteria pollutants. The state also met standards for fine particulates and the eight hour ozone standards established by the U.S. Environmental Protection Agency (EPA) (NDDH 2009).

Table 3.2: Comparison of 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	20.9	19.2	72.7	66
	24-Hour	99	4.0	5.0	13.0	9
	Annual Arithmetic Mean	23	0.4	0.5	1.1	1.6
NO ₂ (ppb)	Annual Arithmetic Mean	53	1.8	1.1	1.5	2.7
O ₃ (ppb)	One exceedance per year (1-Hour)	120	69	68	64	68
PM _{fine} (µg/m ³)	24-Hour	35 (NAAQS)	35.7	22.2	24.5	35.7
	Annual Mean	15 (NAAQS)	3.7	3.3	3.6	3.8
PM ₁₀ (µg/m ³)	24-Hour	150	94	108	32	58
	Annual Mean	50	14.2	10.2	9.8	15.7
CO (ppm)	1-Hour	9	--	--	--	--
	8-Hour	35	--	--	--	--
Pb (µg/m ³)	3-Month	1.5	--	--	--	--

¹ Source: NDDH (2009).

² ppb = Parts per billion; ppm = parts per million; µg/m³ = micrograms per cubic meter

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 approximately 39 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.

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” are not anticipated. No detectable or long-term impacts on air quality or visibility are 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.

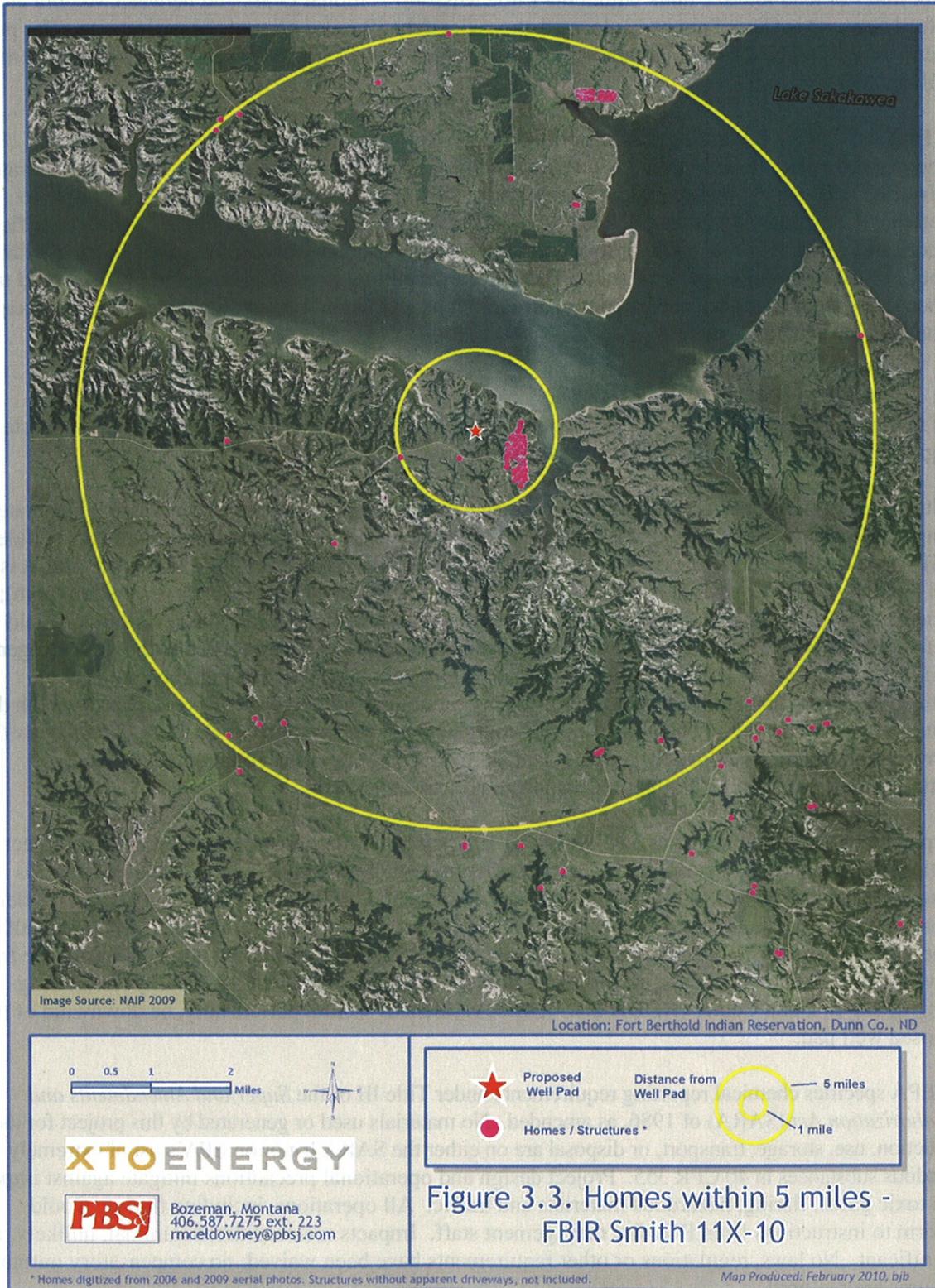
3.3 Public Health and Safety

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 103 homes within one mile of the proposed project location and an additional 91 residences within a five-mile radius (Figure 3.3). The closest home is located approximately 0.41 miles south-southwest of the proposed well pad. Three additional residences are located near one another and are roughly 0.45 miles east of the proposed well pad. Within a half mile of the well site, mostly to the east, 15 more houses reside. Since the prevailing wind directions are from the west, northwest, or southeast, according to 2008 data from the Ambient Air Quality Monitoring (AAQM) site in Dunn Center (NDDH 2009), these residences would, periodically, be downwind of the proposed well pad.

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 the 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 would 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, more activity could be expected at the site during each successive drilling operation (up to 5 additional wells) at the well pad 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

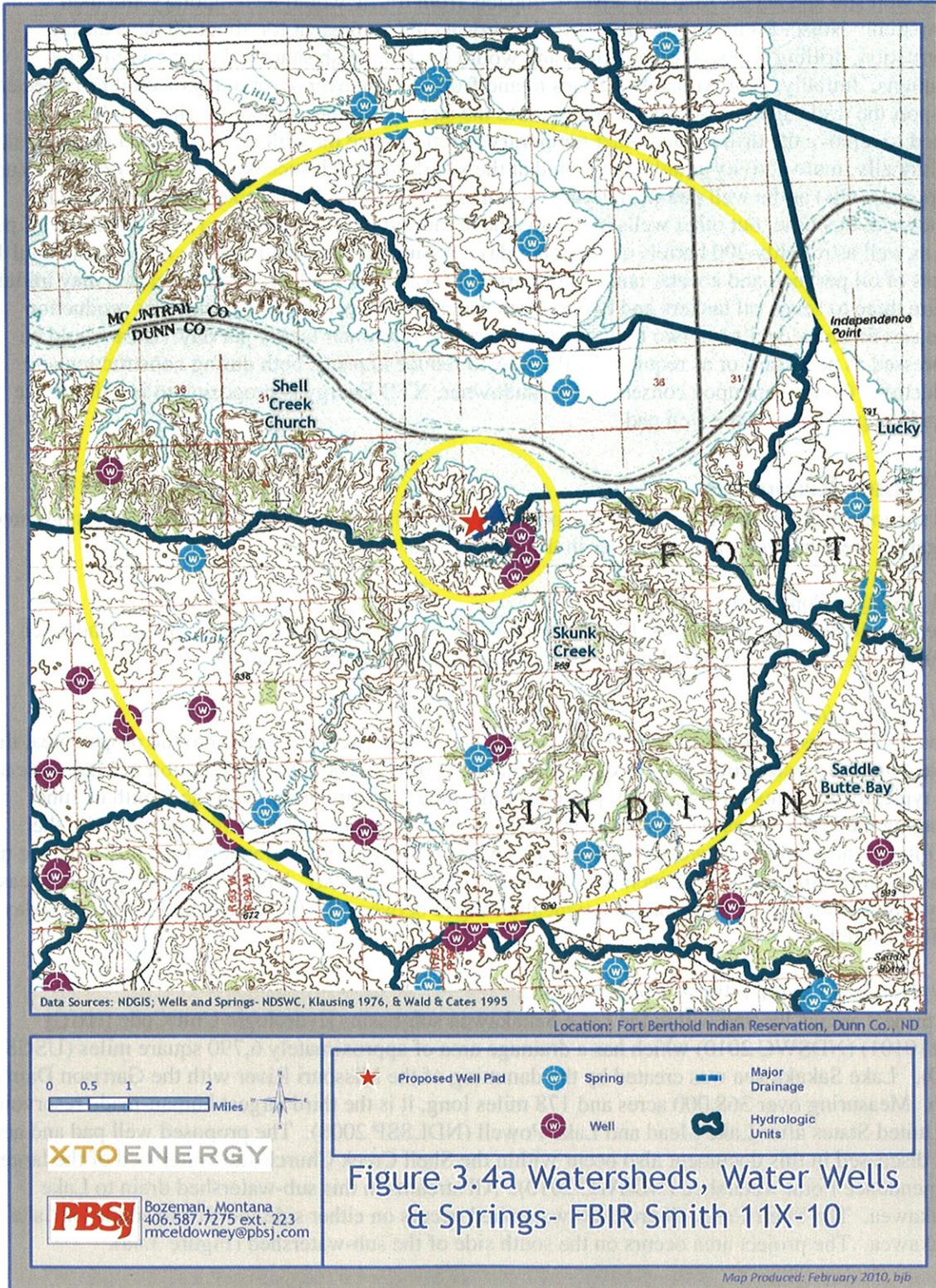
Water resources in the Smith 11X-10 project area are comprised of surface water and groundwater resources. Precipitation is the ultimate source for all water in the project area.

3.4.1.1 Precipitation

Based on 57 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 15.6 inches (HPRCC 2009a). Precipitation in May, June and July typically accounts for roughly 50 percent of the annual precipitation, with the month of June averaging the highest precipitation (3.31 inches). Annual snowfall averages 34.6 inches, with the majority of snow falling between November and March. December and January typically have the most snowfall, averaging 6.2 and 7.2 inches, respectively (HPRCC 2009a). During the 2009 growing season (May – September), evapotranspiration typically ranged between 0.1 inches/day and 0.42 inches/day (HPRCC 2009b).

3.4.1.2 General Surface Water Considerations

The project area is located within the Lake Sakakawea sub-basin (Hydrologic Unit Code [HUC] #10110101) (NDSWC 2010) 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 human-made reservoir in the United States after Lake Mead and Lake Powell (NDLSSP 2008). The proposed well pad and access road discussed in this document also occur within the Shell Creek Church sub-watershed of the larger Independence Point watershed (NDSWC 2010). All streams in this sub-watershed drain to Lake Sakakawea. The Shell Creek Church sub-watershed occurs on either side (north and south) of Lake Sakakawea. The project area occurs on the south side of the sub-watershed (Figure 3.4a).



All seven streams within the south side of the Shell Creek Church sub-watershed are unnamed and considered to be intermittent by the U.S. Geological Survey (USGS). None of these intermittent streams occur near the project area. Though no intermittent streams occur, several drainages occur in the vicinity of the project area. The closest perennial waterbody down gradient of the proposed well pad is Lake Sakakawea, which is roughly 0.27 stream miles (1,470 feet), or 0.19 air miles east-northeast of the proposed well pad.

Vegetated swales dominated by snowberry (*Symphoricarpos sp.*) 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. Similarly, no defined bed and bank features were identified in any of the drainages in the vicinity of the project area. 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 runoff does occur, it is likely to be as sheet-flow.

There is one documented spring on the north side of Lake Sakakawea (in Montrail County) that is located within two miles of the proposed well pad, and a total of 10 documented springs located within a five mile radius of the proposed well pad (Table 3.4a, Figure 3.4a) (Armstrong 1969, Klausing 1976, Wald and Cates 1995, NDSWC 2010). At the time of their sampling, all of these springs in Dunn County were considered perennial and are 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 degrees Fahrenheit (Klausing 1976). The closest documented spring (150-092-35BDC) to the project area occurs roughly 10,225 feet northeast of the proposed well pad.

3.4.1.3 Existing Onsite Drainage

As mentioned previously, the proposed well site ultimately drains to the east-northeast into Lake Sakakawea. Drainage from the proposed access road generally drains eastward and then northward into Lake Sakakawea (Figure 3.4b). Surface water from the majority of the proposed well pad area currently drains in a northeasterly direction into two drainages that occur on the east side of the proposed well pad. The northwest corner of the proposed well pad currently drains northward into a drainage on the north side of the pad (Figure 3.4b).

3.4.1.4 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 overly the Sentinel Butte aquifer. While smaller glacial drift aquifers may occur in the project vicinity, the only large, mapped aquifer in the area and on the south side of the lake is located roughly 9.9 miles west-southwest of the project area (NDSWC 2010). The Goodman Creek Aquifer is located approximately 16.5 miles south of the project area (Klausing 1979). Two other mapped aquifers occur closer to the project area than the other two mentioned, but are on the far (north) side of the lake from the project area (NDSWC 2010).

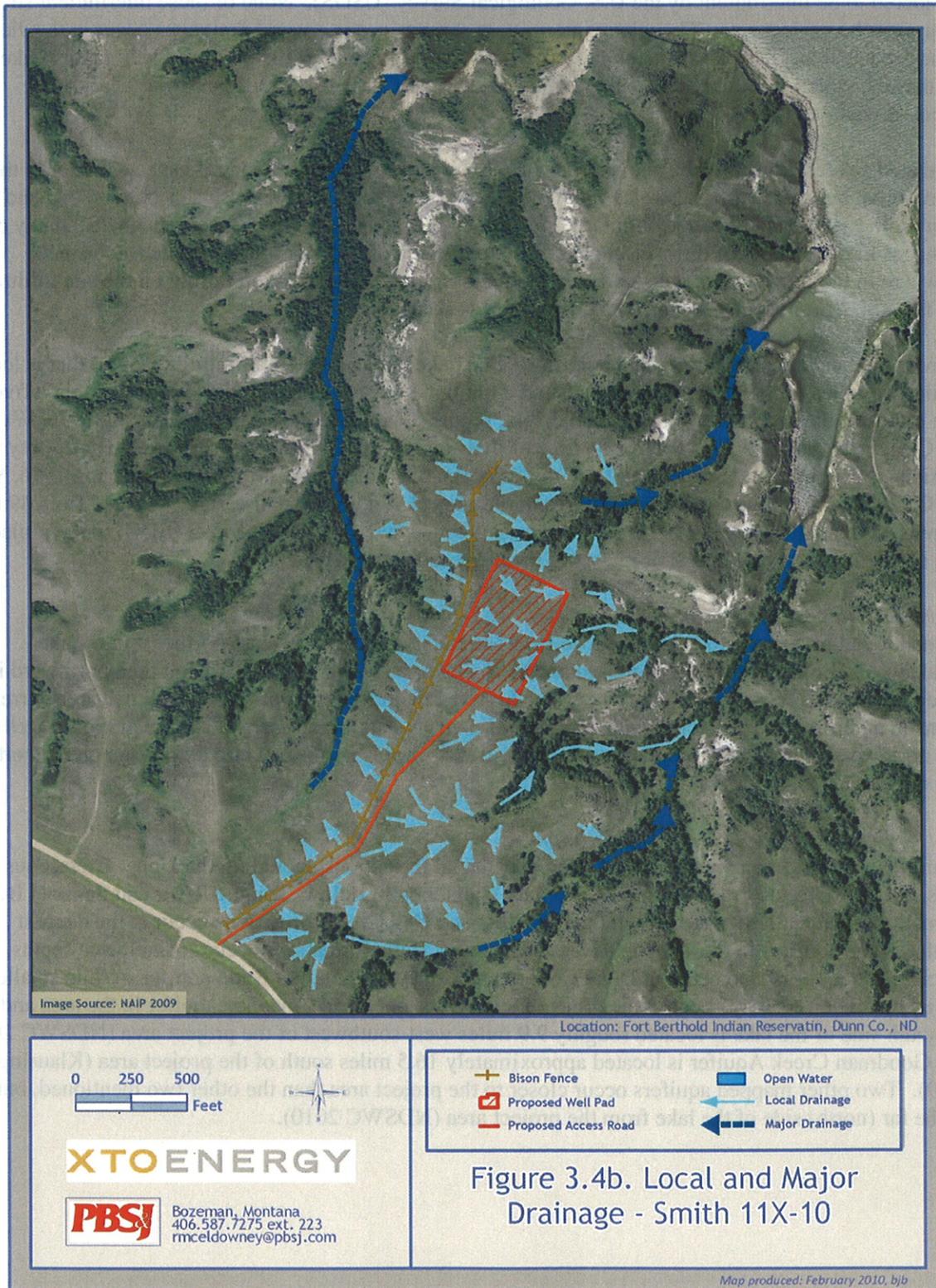


Table 3.4a. Summary information for documented springs located within a 5-mile radius of the proposed Smith 11X-10 well site.

Spring Identification	Date of Sample	Lithology	Flow Rate (gal/min)	Specific Conductance (µmhos/cm)	Temperature (deg. C)	Distance from Well Pad Center (miles)
149-091-08AAA	8/16/1972	--	6	1,880	9.5	4.77
149-092-25CDC	8/2/1972	--	8	700	--	4.43
149-092-27BBB	8/2/1972	Coal	50	553	10	2.99
149-092-30CAB	8/3/1972	Coal	15	1,690	8.5	4.50
149-092-35BDA	11/8/1950 and 8/2/1972	Coal	80	825 and 725, respectively	10	4.41
149-093-12ACC	8/17/1972	Coal	14	2,440	10	3.58
150-092-22DAD	--	Lignite	0.2	--	--	3.53
150-092-27BBD	--	Sand	0.1	--	--	2.96
150-092-34AAD	--	Lignite	0.8	--	--	2.08
150-092-35BDC	--	Sand	0.8	--	--	1.94

Source: Armstrong 1969; Klausung 1976; Wald and Cates 1995; NDSWC 2009.

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

Formation Name	Lithology	Maximum 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: Klausung 1979.

There are seven documented, producing water wells occurring within a 5-mile radius of the proposed well pad (Figure 3.4a, Table 3.4c). The closest documented well (149-092-10ACAA) is located approximately 3,125 feet east-southeast of the proposed well pad.

Table 3.4c: Information on locations of seven documented wells that occur within a 5-mile radius of the proposed Smith 11X-10 project area.¹

Well Identification	Distance to Well from Center of Well Pad (miles)	Distance to Well from Center of Well Pad (feet)
149-092-10ACAA	0.59	3,124
149-092-10DABC	0.80	4,201
149-092-10DCBB	0.86	4,529
149-092-22CDC	2.87	15,147
149-092-29DCC	4.15	21,893
149-093-02ACB	4.62	24,397
149-093-24AC	4.18	22,057

¹ Sources: Klausung 1976; Wald and Cates 1995; NDSWC 2009.

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 site has been sited to avoid direct/indirect impacts to surface water and minimizes the disruption of area drainages. Potential impacts to surface waters are unlikely primarily due to the distance that would need to be traversed (~1,470 feet) before a contaminant would enter a receiving water, the lack of defined channels in the project vicinity, as well as the onsite containment measures and spill prevention/clean-up protocols. Roadway engineering and erosion control measures would mitigate migration of sediment downhill or downstream. No measurable increase in runoff or impacts to surface waters is expected.

The water quality of local aquifers would be protected by cementing the casing across aquifer zones and therefore 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 would be drilled with water to a point below the base of the Fox Hills formation prior to setting casing to 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 from about 4,000 to 13,000 feet in depth to isolate potentially productive water and hydrocarbon bearing zones. 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 project site (USFWS 2009a). Physical inventories on September 18, 2009 confirmed that there are no wetland habitats within the immediate vicinity of the proposed Smith 11X-10 well pad and access road project boundaries. Riparian habitat occurs in the vicinity of the proposed project site, recessed within coulees. Roughly 52 sq. ft of riparian habitat would be unavoidably impacted by fill material on the east side of the pad. However, no wetland habitats would be negatively impacted by the proposed Smith 11X-10 well pad or its access road.

3.6 Threatened and Endangered Species, Candidate Species

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

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 (2009b) list of *Threatened, Endangered, Proposed, and Candidate Species for North Dakota Counties*, range/habitat descriptions found in technical literature, North Dakota Natural Heritage Program database searches for Dunn County, and an interview with the Fort Berthold Fish & Game Director, the following seven species were considered with respect to this project (Table 3.6):

Table 3.6: List of Candidate, Threatened, Endangered Species for Dunn County, North Dakota.

Common Name	Scientific Name	Federal Designation	Designated Critical Habitat for species?
Black-footed ferret	<i>Mustela nigripes</i>	Endangered	No
Gray wolf	<i>Canis lupus</i>	Threatened	No
Interior Least Tern	<i>Sterna antillarum</i>	Endangered	No
Piping Plover	<i>Charadrius melodus</i>	Threatened	Yes
Whooping Crane	<i>Grus Americana</i>	Endangered	No
Pallid Sturgeon	<i>Scaphirhynchus albus</i>	Endangered	No
Dakota skipper	<i>Hesperia dacotae</i>	Candidate	No

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 site (NDPR 2009). Based on this information, available reports, conversations with local biologists, and the absence of critical, essential, or designated habitat, the likelihood of listed species to occur in the project site range from unknown to unlikely to none.

Black-footed ferret (*Mustela nigripes*)

Black-footed ferrets primarily feed on prairie dogs (*Cynomys* spp.) and use prairie dog burrows for shelter (MTNHP 2008). Inventories within the project site conducted on September 18, 2009 identified no prairie dog colonies. Black-footed ferrets have not been documented on the FBIR

(Poitra 2010; NDPR 2009). Impacts to black-footed ferrets are not expected, given the lack of occurrence, food source, and habitat.

Gray wolf (*Canis lupus*)

The project site 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 2009). It is highly unlikely that wolves would colonize the project site, given its poor wolf habitat, unreliable food supplies, and the long distance from known populations in Minnesota, Canada, Montana, and Wyoming. No impacts are expected.

Interior Least Tern (*Sterna antillarum*)

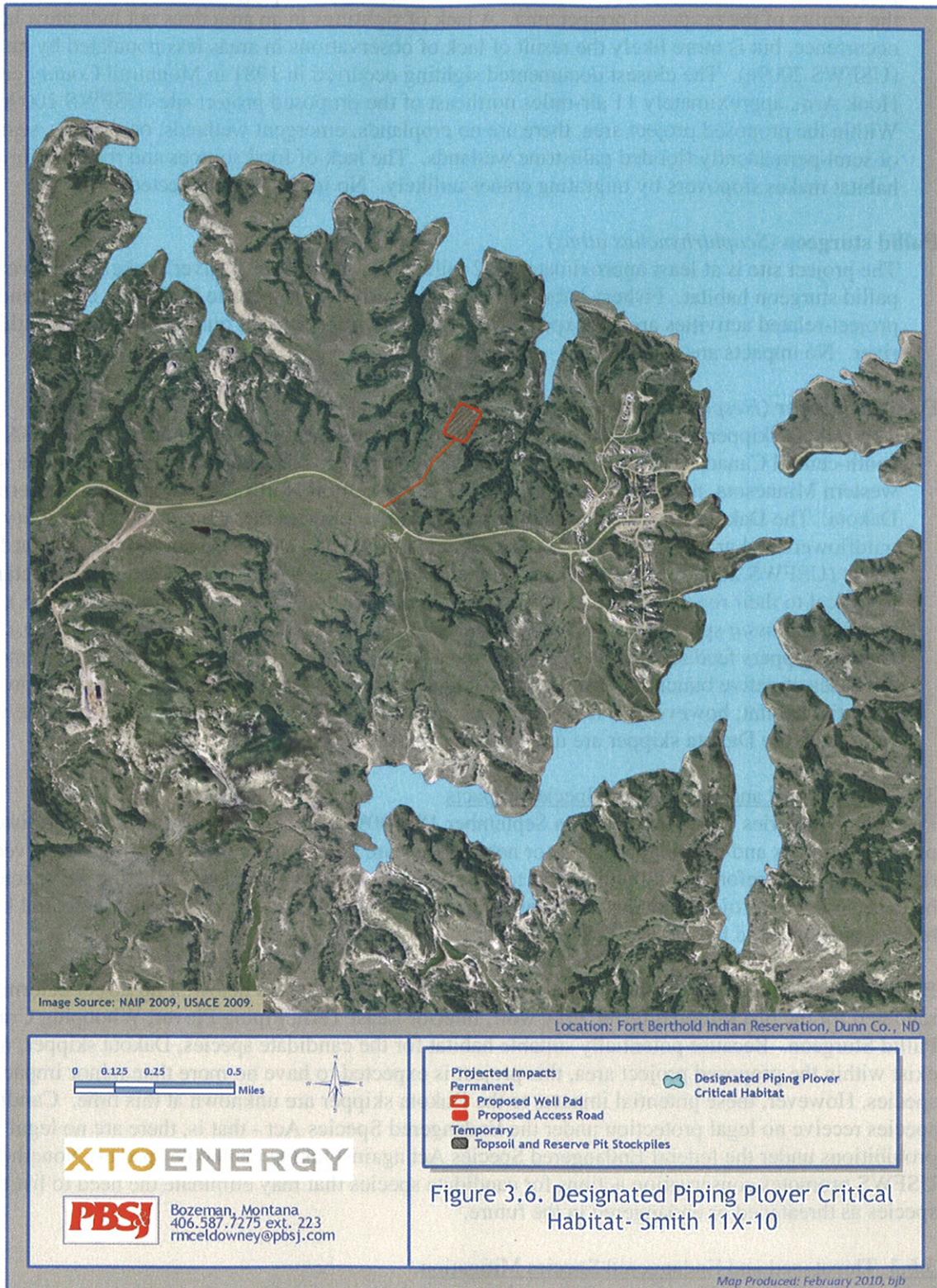
The Interior Least Tern is known to nest along midstream sandbars of the Missouri and Yellowstone Rivers (USFWS 2009d). Lake Sakakawea is not a major nesting area for Least Tern; however, tern nesting generally occurs in Douglas Creek Bay, Elbowwoods Bay, Deepwater Bay, Van Hook Arm, Hofflund Bay, and Tobacco Garden Bay (USACE 2007). The closest and most recent known historic Least Tern nest site was in 1995 on Independence Point, 5.8 air-miles east of the project area (USACE 2007, USACE 2010). There is no suitable nesting or foraging habitat located within the project area (Poitra 2010). No impacts are expected.

Piping Plover (*Charadrius melodus*)

Piping Plover nest on midstream sandbars of the Missouri and Yellowstone Rivers and along shorelines of saline wetlands (USFWS 2009d). 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 shoreline, 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 habitat. The closest reach of Piping Plover critical habitat is Lake Sakakawea, approximately 0.2 air-mile northeast of the project area (USFWS 2008) (Figure 3.6). Though the proposed project site is within the 0.5 mile of the critical habitat buffer zone, it is located on a bluff approximately 165 feet higher than the lake high water line, and due to its elevation, existing topography, and vegetation occurring between the well pad and the lake, does not have line-of-site concerns. 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. The project area is 2.3 air-miles southwest of the closest historic Piping Plover nest location (located in 1995) on Pouch Point across Lake Sakakawea (USACE 2010). There is no suitable nesting or foraging habitat located within the immediate vicinity of the project area (Poitra 2010). No impacts are expected.

Whooping Crane (*Grus americana*).

Whooping Cranes breed in Alberta and Northwest Territories, Canada, and overwinter on the Texas coast (USFWS 2009d). They annually migrate through North Dakota during the spring and fall, making numerous stops to feed and roost before resuming migration. The proposed project site is located within the 75 percent confirmed sightings band of the North Dakota Whooping Crane migration corridor (USFWS 2009d). From the 1960s to 2008 several Whooping Crane sightings within Dunn County have been confirmed 26 to 37 air-miles south to southwest of the proposed



project site (USFWS 2009e); however, no occurrences of Whooping Cranes have been documented in the vicinity of the proposed project area. A lack of sightings in an area does not indicate a lack of occurrence, but is more likely the result of lack of observations in areas less populated by humans (USFWS 2009e). The closest documented sighting occurred in 1981 in Mountrail County east of Van Hook Arm, approximately 11 air-miles northeast of the proposed project site (USFWS 2009e). Within the proposed project area, there are no croplands, emergent wetlands, or shallow, seasonally or semi-permanently flooded palustrine wetlands. The lack of food sources and roosting/foraging habitat makes stopovers by migrating cranes unlikely. No impacts are expected.

Pallid sturgeon (*Scaphirhynchus albus*)

The project site is at least approximately 0.2 miles from the Missouri River (Lake Sakakawea) and pallid sturgeon habitat. Fishery habitat in the vicinity of the project site is absent. Direct and indirect project-related activities are not expected to negatively impact water quality or quantity within the river. No impacts are expected.

Dakota Skipper (*Hesperia dacotae*)

The Dakota skipper is a small butterfly that once occurred throughout the north-central USA and south-central Canada (USFWS 2009c). Known occurrences of Dakota skippers now reside in western Minnesota, northeastern South Dakota, north-central North Dakota, and southeastern North Dakota. The Dakota skipper lives in high quality native prairies that contain a high diversity of wildflowers and grasses (USFWS 2009c). Exotic grasses and shrubs do not provide habitat for this insect (USFWS 2009c). 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 (*Echinacea* spp.), and blanketflowers (*Gaillardia* spp.). Larval Dakota skippers feed on grasses in the fall and over-winter in shelters at or just below ground level at the bases of native bunchgrasses. It is possible that some portions of the project site may provide potential habitat; however, no Dakota skipper caterpillars were observed during the fall site visit. Impacts to the Dakota skipper are unknown.

3.6.2 Threatened and Endangered Species Impacts

Physical inventories were conducted on September 18, 2009; 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 visit. Therefore, no direct impacts to the six listed and one candidate for listing TE species would be expected. The project may disturb potential habitat for the Dakota skipper, though potential habitat has not been mapped by the USFWS.

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. Because potentially suitable habitat for the candidate species, Dakota skipper, might exist within the proposed project area, this project is expected to have no more than minor impacts on the species. However, these potential impacts to the Dakota skipper are unknown at this time. Candidate species receive no legal protection under the Endangered Species Act - that is, there are no legal prohibitions under the federal Endangered Species Act against taking candidate species. Nonetheless, the USFWS promotes conservation actions for candidate species that may eliminate the need to list the species as threatened or endangered in the future.

3.6.3 Threatened and Endangered Species Mitigation

Impacts to potential habitat for the Dakota skipper can 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 2009c and 2009d). 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 proposes to spot treat noxious weeds as needed.

To further reduce the potential for negative impacts to a threatened or endangered species and their habitat the following mitigation would be proposed for the Smith 11X-10 well pad and access road:

- Any sighting of a protected species within one-mile of the project area would be immediately reported to the USFWS, NDGFD, and the BIA.
- Biological monitors would be available between February 1st and July 15th to survey the project site for threatened or endangered species, and for avian nesting activity.
- 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 project area consists of grasslands, snowberry patches/swales, riparian areas, and shrubby thickets (Figure 3.7a). Wildlife in the project area use all four habitat types, though to varying degrees based on their life histories and species specific requirements. Within the Smith 11X-10 project area grasslands comprise approximately 13.8 acres (80 percent), snowberry patches/swales comprise approximately 2.8 acres (16 percent), and riparian areas and shrubby thickets comprise less than half of an acre (2 percent) each (Table 3.7a).



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

Grasslands dominate the well pad and access road and are comprised of a variety of graminoids, and to a lesser degree forbs (see Section 3.9 - Vegetation and Invasive Species) (Table 3.7a; Figure 3.7b). Common plant species found in project area grasslands include prairie junegrass (*Koeleria macrantha*), blue grama (*Bouteloua gracilis*), needleandthread grass (*Hesperostipa comata*), green needlegrass (*Nassella viridula*), Sandberg bluegrass (*Poa secunda*), Kentucky bluegrass (*Poa pratensis*), western

wheatgrass (*Pascopyrum smithii*), and little bluestem (*Schizachyrium scoparium*). Grasslands provide forage and habitat for livestock and a variety of local animals, such as wild ungulates, mid-sized predators, rodents, reptiles, and resident and migratory birds.

Table 3.7a. Summary of wildlife habitat types and projected impacts for the proposed Smith 11X-10 project area.

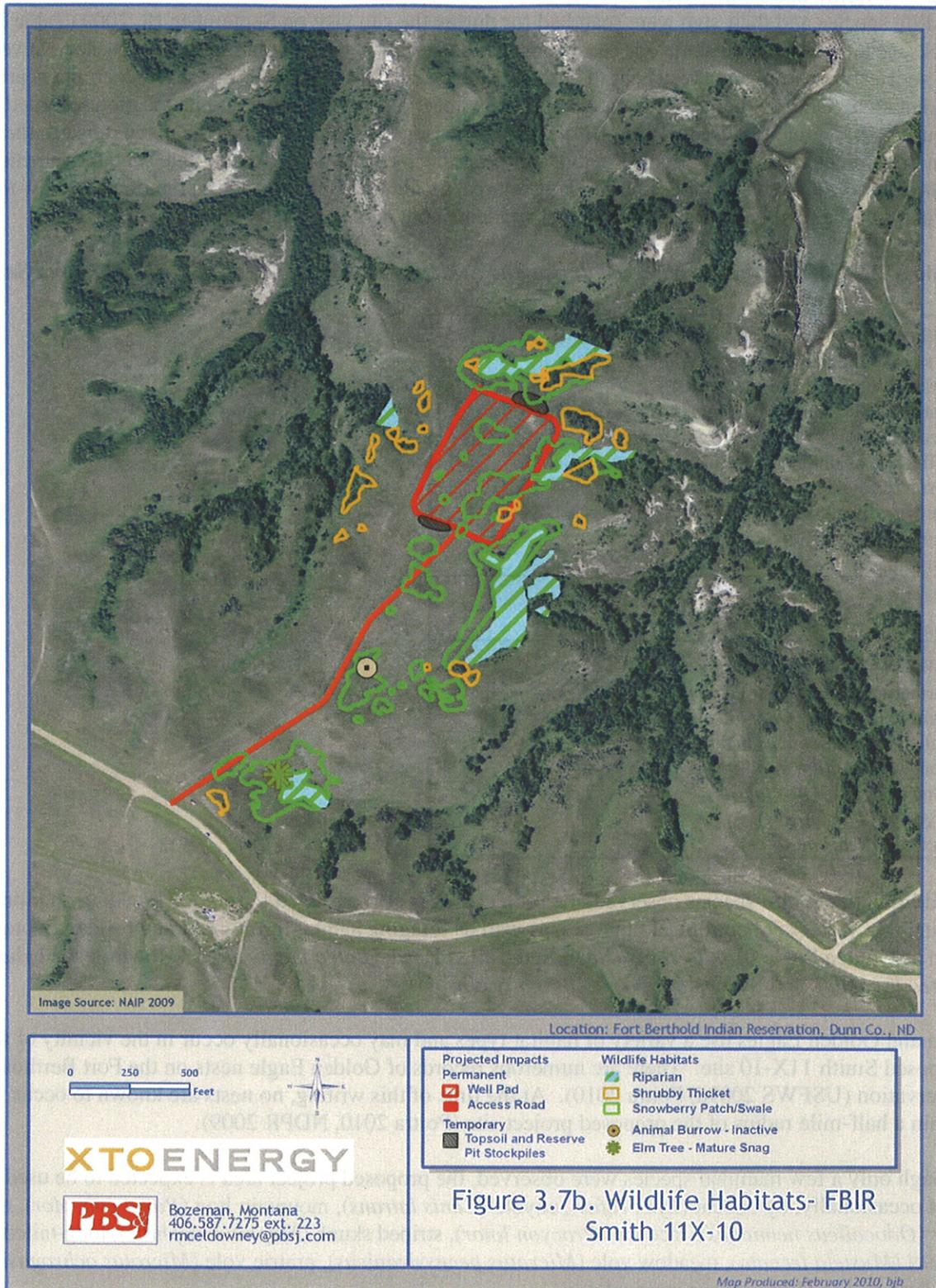
Habitat Type	Project Area* (acre)	Permanent Impact (acre)	Temporary Impact (acre)	Total Impact (acre)
Grassland	13.811	6.024	0.245	6.269
Snowberry patch/swale	2.816	1.370	0.046	1.416
Shrubby thicket	0.277	0.054	0.000	0.054
Riparian area	0.314	0.001	0.000	0.001
Total	17.218	7.449	0.291	7.741

*Project area is defined as 100 feet on either side of the new access road (200 feet total width) and a 10-acre circle around the proposed well pad.

Snowberry-dominated (*Symphoricarpos* sp.) patches and swales occur intermixed with grasslands (Figure 3.7b). The density of snowberry occurring as discrete patches on the landscape and in topographic low points, such as swales, can vary considerably; ranging from approximately 10 to 100 percent cover. Understory plant species can also vary considerably, depending upon soil moisture availability and other environmental factors (e.g., exposure, soil type). Plant species commonly found in snowberry patches/swales in the project area include prairie smoke (*Geum triflorum*), cudweed sagewort (*Artemisia ludoviciana*), black samson (*Echinacea angustifolia*), and green sagewort (*Artemisia dracuncululus*). Snowberry provides important cover and forage for small mammals (e.g. rabbits, deer mice, 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 is typically comprised of silver buffaloberry (*Shepherdia argentea*) but can also contain or be dominated by other shrub species such as prairie rose (*Rosa arkansana*), chokecherry (*Prunus virginiana*), and/or hawthorn (*Crataegus* sp.) (Figure 3.7b). Understory plant species are 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 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 provide important cover, forage, and travel corridors for resident wildlife. One primary riparian draw originates near the beginning of the access road and parallels the access road to its terminus at a narrow bay to Lake Sakakawea (Figure 3.7b). Other riparian fingers originate just east and north of the access road and well pad. The proposed access road clips a riparian area just east of the well pad. None of the riparian draws near the project area have defined channels that allow surface water to flow on a regular or seasonal basis, although surface water may occasionally run down the well-beaten cattle and wildlife trails in the riparian bottoms. Common riparian overstory species include, green ash (*Fraxinus pennsylvanica*), chokecherry, and silver buffaloberry.



3.7.2 Wildlife and Fish Species

Wildlife species and their sign were searched for during the site visit on September 18, 2009 (Table 3.7b). Tracks, scat, burrows, and skeletons were considered signs of that particular species' presence. Several bird species were seen at or very near the project area, as well as a pair of white-tailed deer in a nearby riparian area. One distinct inactive mammal burrow location was observed and its location recorded (Figure 3.7b). A clearly defined game trail crosses the ridgeline that separates the bison range to the west from the project area. The bottom strand of fence has been cut, possibly to facilitate such movement of wildlife between the bison range and the project area. A hunting blind located in the riparian draw to the southeast of the well pad, indicates that local residents hunt deer seasonally in this area.

Table 3.7b. Wildlife species observed during the September 18, 2009 site visits at the proposed Smith 11X-10 project site.

Birds
Downy Woodpecker (<i>Picoides pubescens</i>)
Turkey Vulture (<i>Cathartes aura</i>)
Sharp-tailed Grouse (<i>Tympanuchus phasianellus</i>)
Great Horned Owl (<i>Bubo virginianus</i>)
Gull (species unknown)
Northern Flicker (<i>Colaptes auratus</i>)
Warbler (species unknown)
Sparrow (species unknown)
Song Sparrow (<i>Melospiza melodia</i>)
Herptile
None
Mammals
Northern pocket gopher (<i>Thomomys talpoides</i>)
White-tailed deer (<i>Odocoileus virginianus</i>)
Mule deer (<i>Odocoileus hemionus</i>)
Pronghorn (<i>Antilocapra americana</i>)
Domestic cattle (<i>Bos taurus</i>)
Coyote (<i>Canis latrans</i>)
Raccoon (<i>Procyon lotor</i>)

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 Golden Eagle (*Aquila chrysaetos*), Red-Tailed Hawk (*Buteo jamaicensis*), Rough-legged Hawk (*Buteo lagopus*), and Swainson's Hawk (*Buteo swainsoni*).

Bald and Golden Eagles use a variety of habitat types and may occasionally occur in the vicinity of the proposed Smith 11X-10 site. There are numerous records of Golden Eagle nests on the Fort Berthold Reservation (USFWS 2009d, Poitra 2010). At the time of this writing, no nests are known to occur within a half-mile radius of the proposed project site (Poitra 2010, NDPR 2009).

Though only a few mammal species were observed, the proposed project area is expected to be used, at least occasionally, by bobcat (*Lynx rufus*), coyote (*Canis latrans*), mountain lion (*Puma concolor*), mule deer (*Odocoileus hemionus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), long-tailed weasel (*Mustela frenata*), meadow vole (*Microtus pennsylvanicus*), prairie vole (*Microtus ochrogaster*), and deer mouse (*Peromyscus maniculatus*).

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

potentially occur in the project area (Table 3.7c). With the exception of approximately 10 sharp-tailed grouse, none of these species were observed during the site visit but could be present at other times during the year.

Table 3.7c: Species of conservation priority that potentially could occur in the proposed Smith 11X-10 project site.

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

¹ Source: Hagen et al. (2005)

Level I= species that are in decline and presently receive little or no monetary support or conservation efforts.

Level II= species that have a moderate level of conservation priority *or* have a high level of conservation priority with substantial funding that is available to them from other wildlife programs.

Level III = species that have a moderate level of conservation priority and are believed to be peripheral or non-breeding in North Dakota.

No fisheries occur in the immediate project area although; a narrow bay to Lake Sakakawea occurs approximately 1,000 feet (0.2 miles) northeast of the well pad location. Game fish species common to Lake Sakakawea include northern pike (*Esox lucius*), rainbow trout (*Oncorhynchus mykiss*), sauger (*Stizostedion canadense*), walleye (*Stizostedion vitreum*), and yellow perch (*Perca flavescens*). Riparian draws in close proximity to the proposed access road and well pad have no defined channel and do not support fish.

3.7.3 Wildlife and Fish Projected Impacts

An estimated 6.0 acres of grassland, 1.4 acres of snowberry patch/swale, 0.05 acre of shrubby thicket, and 0.001 acre of riparian habitat would be permanently impacted due to construction of the access road and well pad at the Smith 11X-10 site (Table 3.7a). An estimated additional 0.25 acre of grassland and 0.05 acre of snowberry patch/swale would be temporarily impacted from the stockpiling of topsoil.

Construction of the project could 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, such as 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. Other migratory birds are afforded protection under the Migratory Bird Treaty Act (MBTA), and are also susceptible to nest abandonment during nesting.

According to the USFWS (2009d) 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 (2009d). A semi-closed-loop system would be used for drilling activities conducted on the Smith 11x-10 site (see Section 2.4).

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 could 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 and residential development contribute to habitat fragmentation in the project vicinity. However, no substantial impediment to wildlife movement is apparent. The proposed well site and access road would contribute to temporary habitat fragmentation during the drilling process. If the wells are developed for commercial production the project would add to more permanent habitat fragmentation in the project area primarily by increasing the level of activity in the area.

Of particular concern at this site is the previously mentioned game trail located immediately north of the well pad. Short and long-term disturbance in the project area could serve to disrupt movement patterns in this area.

Other forms (i.e., increased noise or odor) of indirect impacts may affect local distributions of wildlife in the vicinity of the proposed well pad and access road. 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 the 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 would 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 2009d).
- If initial site construction occurs within the nesting season, the project site would be surveyed by a qualified biologist to determine if and where active nests occur in relation to proposed

construction activities. If active nests are found, construction would be suspended or buffers established to ensure no adverse impacts occur until nesting has been completed.

- The USFWS recommends that a buffer of at least one-half mile be placed around any known Bald or Golden Eagle nest (USFWS 2009d). If a Bald or Golden Eagle nest is observed within a half-mile of the proposed project, the USFWS would be notified.
- A semi-closed-loop system would 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 will be installed below ground.
- The entire well pad would be fenced to prevent livestock and wildlife access to the site.
- 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 development is situated near the center of the Williston Basin at the boundary of the Missouri Plateau and the Missouri Trench above Lake Sakakawea. The Sentinel Butte Formation is found at the surface to depths of several hundred feet (300 to 500 feet) and consists of poorly lithified sandstone, siltstone and mudstone. Remnant thin to moderately thick glacial till deposits cap the Sentinel Butte Formation as evidenced by scattered glacial erratics (stones and boulders). Physiography is characterized by glaciated sedimentary hills having simple to complex slopes. The proposed development is bisected south to north by soils developed in residuum and alluvium from glacial till to the west and residuum and alluvium from calcareous sandstone to the east. Deeply incised drainages lie to the east, north and west.

3.8.1 Soil Mapping

Fifteen sites were sampled during an on-site soil inventory conducted September 29-30, 2009. Reference soil maps and soil data tables were obtained prior to conducting fieldwork (NRCS 2009). Detailed soil pedon descriptions consistent with changes in landscape position and vegetative ecological sites were taken along the proposed access road and at the well pad location (Figure 3.8, Table 3.8b and Appendix D). Representative NRCS soil survey map units (SMUs), listed in Table 3.8a and described in later in this section, are those that best fit the on-site inventory and do not necessarily match SMUs for this area found in the Dunn County soil survey.

Table 3.8a: Soils at the proposed Smith 11X-10 project site.

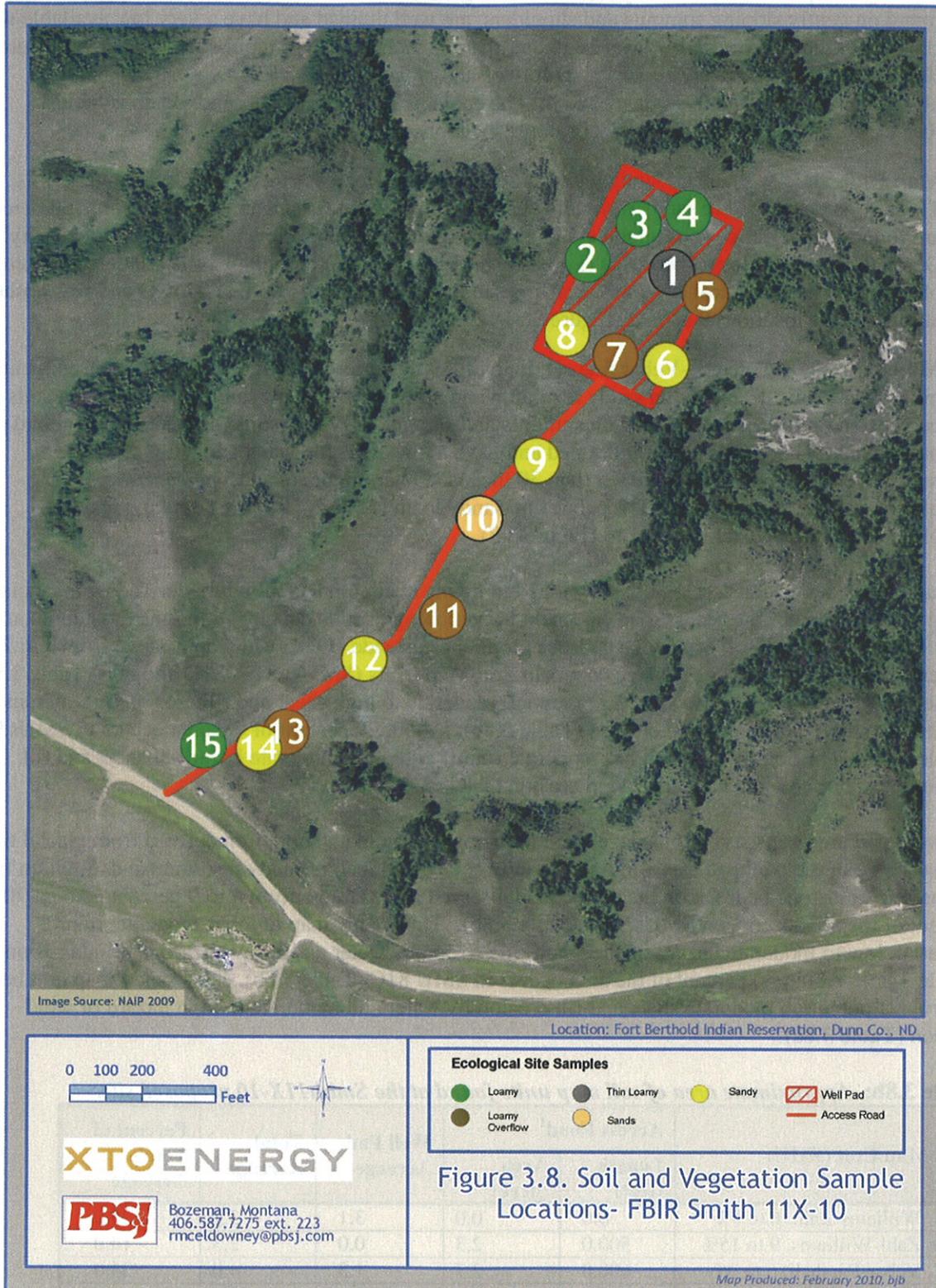
Soil Series Component	Textural Family and Taxonomic Class	Representative NRCS Soil Map Unit (assigned)	Percent Slope (observed)	Presence in Access Road	Presence in Well Pad
Arnegard loam	Fine-loamy, mixed, superactive, frigid Pachic Haplustolls	93C Williams-Zahl loams, 6 to 9 percent slopes Arnegard is an inclusion	5-9	No	Yes
Bowbells loam	Fine-loamy, mixed superactive, frigid Pachic Argiustolls	93C Williams-Zahl loams, 6 to 9 percent slopes; Zahl-Williams loams, 9 to 15 percent slopes; Bowbells is an inclusion	9-12	Yes	Yes
Williams loam	Fine loamy, mixed, superactive, frigid Typic Argiustolls	93C Williams-Zahl loams, 6 to 9 percent slopes	8	No	Yes

Soil Series Component	Textural Family and Taxonomic Class	Representative NRCS Soil Map Unit (assigned)	Percent Slope (observed)	Presence in Access Road	Presence in Well Pad
Zahl loam	Fine-loamy, mixed, superactive, frigid Typic Calcicustolls	93C Williams-Zahl loams, 6 to 9 percent slopes; Zahl-Williams loams and 9 to 15 percent slopes	4-16	Yes	Yes
Parshall fine sandy loam	Coarse-loamy, mixed, superactive, frigid Pachic Haplustolls	81C Vebar-Parshall fine sandy loams, 6 to 9 percent slopes	4-9	Yes	Yes
Lihen loamy fine sand	Sandy, mixed, frigid, Entic Haplustolls	81C Vebar-Parshall fine sandy loams, 6 to 9 percent slopes; Lihen is an inclusion	3-4	Yes	Yes
Vebar fine sandy loam	Coarse-loamy, mixed, superactive, frigid Typic Haplustolls	81D Vebar fine sandy loam 9 to 15 percent slopes 30E Cohagen- Vebar fine sandy loams, 9 to 25 percent	11-25	Yes	No

3.8.2 Soil Mapping Units

Soil map units are summarized below:

- Map Unit 93C:** Williams-Zahl loams, 6 to 9 percent slopes, is located on glaciated hills and uplands. These soils developed in fine-loamy glacial till. Williams soils (50 percent) are found on backslopes and Zahl soils (35 percent) are found on shoulders and summits. Minor soils include Bowbells (5 percent) found in depressions and swales and Arnegard (3 percent) found on toeslopes. All soils are well drained and have a high available water capacity. Depth to restrictive layer (bedrock) is greater than 60 inches. Other minor soils (7 percent) were not observed. The ecological site for Williams loam is Loamy-R054XY031ND and was observed at sample location 2. The ecological site for Zahl loam is Thin Loamy-R054XY038ND and was observed at sample location 1. The ecological site for Arnegard loam is Loamy-R054XY031D and was observed at sample locations 3 and 4. The ecological site for Bowbells is Loamy Overflow (R054XY023ND) and was observed at sample location 5 (Figure 3.8).
- Map Unit 93D:** Zahl-Williams loams, 9 to 15 percent slopes, is located on glaciated hills and uplands. These soils developed in fine-loamy glacial till. Zahl soils (40 percent) are found on shoulders and summits and Williams soils (40 percent - not observed in this slope range) are found on backslopes. Minor soils include Bowbells (5 percent) found in depressions and swales. Zahl and Bowbells soils are well drained and have a high available water capacity. Depth to restrictive features (bedrock) is greater than 60 inches. Other minor soils (15 percent) were not observed. The ecological site for Zahl loam is Thin Loamy-R054XY038ND and was observed at sample location 15. The ecological site for Bowbells is Loamy Overflow-R054XY023ND and was observed at sample site location 11 and 13 (Figure 3.8).
- Map Unit 81C:** Vebar-Parshall fine sandy loams, 6 to 9 percent slopes, is located on sedimentary hills. These soils developed in sandy residuum and alluvium from soft sandstone. Vebar soils (60 percent - not observed in this slope range) are found on backslopes and shoulders. Parshall soils (20 percent) are found on toeslopes and in swales, are well drained and have a moderate available water



capacity. Depth to restrictive layer (bedrock) is greater than 60 inches. Lihen soils (4 percent) are found on gently sloping summits and shoulders, are well drained and have a very low available water capacity. Depth to restrictive layer is greater than 60 inches. Other minor soils (20 percent) were not observed. The ecological site for Parshall fine sandy loam is Sandy-R054XY026ND and was observed at sample site locations 7 and 8. The ecological site for Lihen sandy loam is Sands-R054XY025ND and was observed at sample locations 6 and 10 (Figure 3.8).

- Map Unit 81D:** Vebar fine sandy loams, 9 to 15 percent slopes, is located on sedimentary hills. These soils developed in sandy residuum and alluvium from soft sandstone. Vebar soils (80 percent) are found on backslopes and shoulders, are well drained and have a low available water capacity. Depth to restrictive layer (bedrock) is greater than 30 inches. Other minor soils (20 percent) were not observed. The ecological site for Vebar fine sandy loam is Sandy-R054XY026ND and was observed at sample site locations 9 and 12 (Figure 3.8).
- Map Unit 30E:** Cohagen-Vebar fine sandy loams, 9 to 25 percent slopes, is located on sedimentary hills. These soils developed in sandy residuum and alluvium from soft sandstone. Cohagen soils (45 percent - not observed) are found on summits and shoulders. Vebar soils (40 percent) are found on backslopes. These soils are well drained and have a low available water capacity. Depth to restrictive layer (bedrock) is greater than 30 inches. Other minor soils (15 percent) were not observed. The ecological site for Vebar fine sandy loam is Sandy (R054XY026ND) and was observed at sample site location 14 (Figure 3.8)

The access road area consists of soils developed in loamy residuum and alluvium derived from glacial till along the west side of the access road easement transitioning to soils developed in sandy residuum and alluvium derived from soft sandstone bedrock along the east side. Observed slopes range from 3 to 25 percent. About 71 percent of the area occurs in Soil Map Units (SMUs) 81C, 81D and 30E (Table 3.8b). These sandy map units have low runoff potential, moderate to high sheet and rill erosion by water and moderate to high hazard of wind erosion (Table 3.8c). About 29 percent of the area occurs in SMUs 93D (Table 3.8b). This loamy map unit has moderate runoff potential, moderate hazard of sheet and rill erosion by water and low hazard of wind erosion (Table 3.8c).

The well pad area consists of soils developed in loamy residuum and alluvium derived from glacial till on the west side of the well pad transitioning to sandy soils developed in sandy residuum and alluvium from calcareous sandstone bedrock on the east side. Observed slopes range from 4 to 9 percent. About 70 percent of the area occurs on SMUs 93C (Table 3.8b). This loamy map unit has moderate runoff potential, low to moderate hazard of sheet and rill erosion by water and a low hazard of wind erosion (Table 3.8c). About 30 percent of the area occurs in SMU 81C (Table 3.8b). This sandy map unit has low runoff potential, moderate sheet and rill erosion by water and moderate to high hazard of wind erosion (Table 3.8c).

Table 3.8b: Approximate area of soil map units found at the Smith11X-10 proposed site.

Soil Map Unit (SMU)	Access Road ¹		Well Pad Acreage	Total Acreage	Percent of Total Acreage
	Length (feet)	Area (acre)			
93C, Williams-Zahl, 6 to 9%	0.0	0.0	3.1	3.1	25.0
93D, Zahl-Williams, 9 to 15%	500.0	2.3	0.0	2.3	19.0
81C, Vebar-Parshall, 6 to 9%	600.0	2.7	1.3	4.0	33.0
81D, Vebar, 9 to 15%	510.0	2.3	0.0	2.3	19.0
30E, Cohagen-Vebar 9 to 25%	100.0	0.5	0.0	0.5	4.0
Total	1,710.0	7.8	4.4	12.2	100.0

¹Based on a 200-foot ROW width.

Table 3.8c: Soil attributes for the Smith11X-10 site.¹

Soil Series	Soil Map Unit (s)	Presence in Access Road	Presence in Well Pad	Surface Layer Composition			Erosion Factor ²		Hydrologic Soil Group ⁵
				% sand	% silt	% clay	Kf ³	T ⁴	
Arnegard	93C	No	Yes	41.1	36.9	22.0	0.24	5	B
Bowbells	93C,93D	Yes	Yes	41.1	36.9	22.0	0.24	5	B
Williams	93C	No	Yes	41.1	36.9	22.0	0.28	5	B
Zahl	93C,93D	Yes	Yes	41.1	36.9	22.0	0.28	5	B
Lihen	81C	Yes	Yes	78.6	16.4	5.0	0.17	5	A
Parshall	81C	Yes	Yes	69.6	16.4	14.0	0.20	5	B
Vebar	81D,30E	Yes	No	69.6	16.4	14.0	0.24	3	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 1 for 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).

Sampled soils are moderately deep to very deep and are well suited to construction and restoration. Depth of topsoil varies considerably, from about 4 to 9 inches on summits and backslopes to about 10 to 24 inches on toeslopes and in swales. When exposed, sandy surface and subsurface material in map units 81C, 81D and 30E is vulnerable to erosion from wind and water. Erosion control measures would be needed along deep cuts to prevent deposition into drainageways. Due to high subsurface hydraulic conductivity (100-705 µm/sec), Lihen and Parshall soils may pose a high risk of transporting contaminants.

Soils in map units 93C and 93D have high subsurface calcium carbonate equivalents with soil reaction (pH) ranging from 7.8 to 8.8 (up to 20 percent calcium carbonate by volume). These materials may adversely affect successful re-vegetation of disturbed areas if left at the surface. Random electrical conductivity (EC) tests revealed very low to low soluble salt content (0 to <2 mmhos/cm) and pose no appreciable risk to re-vegetation. These materials pose a moderate to high risk of corrosion to untreated steel.

Soils are described and classified from the surface to about 60 inches or limiting layer. Upon deep excavation, areas of moderately deep (20 to 40 inches) soils derived from soft sandstone bedrock may be encountered. Sub-stratum (>80 inches) characteristics may yield materials alien to the soil series described. It is not expected, however, that the Smith 11X-10 access road location and well pad site would yield materials having substratum textures other than those described for the soil series. Reference engineering materials for the Unified Classification System are provided in **Table 3.8d**.

Table 3.8d: Unified classification of subsoil materials for the proposed Smith11X-10 project site.

Soil Series	Depth Range (inches)	Unified Classification ¹
Arnegard	36 to 60	CL,SC
Bowbells	36 to 60	CL
Williams	36 to 60	CL
Zahl	20 to 60	CL
Lihen	24 to 60	SC-SM,SM

Soil Series	Depth Range (inches)	Unified Classification ¹
Parshall	48 to 60	CL,CL-ML,SC,SC-SM,SM
Vebar	32 to 60	Soft sandstone bedrock-rippable

¹See Figure D1 in Appendix D for definitions of the unified classification symbols.

3.8.3 Soil Impacts

Once the soil layer is disturbed, many soil functions are nearly impossible to regain. Approximately 7.72 acres of soil would be permanently impacted by the well pad and access road improvements. The greatest concerns with regard to soils are the loss of topsoil and the possibility of soil erosion during construction.

3.8.4 Soil Mitigation

Approximately six to twelve inches of topsoil would be stripped from areas of new construction and stockpiled for use during reclamation. 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 applicable to the proposed Smith 11X-10 project 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.
- Reduce the time that topsoil is stockpiled in order to retain viable soil nutrients.
- 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.

3.9 Vegetation and Invasive Species

This section describes the existing conditions, potential impacts from the Proposed Action, and suggested mitigation measures for vegetation and invasive species in the project area. A field inventory of vegetative species was conducted on the proposed Smith 11X-10 well site location on September 29 and 30, 2009.

3.9.1 Ecological Sites

Fifteen ecological site inventories were conducted on the proposed Smith 11X-10 project site location (Figure 3.8). An ecological site is the product of all the environmental factors responsible for its development, and has a set of defining characteristics (NRCS 2003). 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 2003).

Five types of ecological sites were identified within the project area: Loamy, Thin Loamy, Loamy Overflow, Sands, and Sandy (Table 3.9a). The most common ecological site types were loamy (four locations), Loamy Overflow (four locations), Sandy (four locations), followed by Sands (two locations), and Thin Loamy (one location). More commonly encountered plant species found at these sample locations were prairie junegrass (*Koeleria macrantha*), blue grama (*Bouteloua gracilis*), needleandthread grass (*Hesperostipa comata*), green needlegrass (*Nassella viridula*), Sandberg bluegrass (*Poa secunda*),

Kentucky bluegrass (*Poa pratensis*), western wheatgrass (*Pascopyrum smithii*), little bluestem (*Schizachyrium scoparium*), cudweed sagewort (*Artemisia ludoviciana*), prairie rose (*Rosa arkansana*), fringed sagewort (*Artemisia frigida*), and common snowberry (*Symphoricarpos albus*). A comprehensive plant list for the project area was compiled (Table 3.9b). No State sensitive plant species were found during the September 29 and 30, 2009 site visit (Table 3.9b).

Table 3.9a: Summary of vegetation sample sites at the proposed Smith 11x-10 project area.

Sample Site ID	Ecological Soil Type (reference ID)	Location	Approx. Elevation (feet)	Aspect	Percent Slope	Dominant Plant Species ¹ Photo Numbers in App. B ²
Site #1	Thin Loamy (R054XY038ND)	Pad Site	2,017	W	2	prairie junegrass, blue grama, needleandthread grass, fringed sagewort Photos 1-3 , page B-1.
Site #2	Loamy (R054XY031ND)	Pad Site	2,034	E	8	prairie junegrass, blue grama, needleandthread grass Photos 4-6 , page B-1.
Site #3	Loamy (R054XY031ND)	Pad Site	2,020	NE	9	Sandberg bluegrass, blue grama, Kentucky bluegrass, common snowberry Photos 7-9 , page B-2.
Site #4	Loamy (R054XY031ND)	Pad Site	2,006	NE	5	Sandberg bluegrass, blue grama, Kentucky bluegrass, prairie junegrass, fringed sagewort Photos 10-12 , page B-2.
Site #5	Loamy Overflow (R054XY023ND)	Pad Site	2,003	NE	9	big bluestem, Kentucky bluegrass, common snowberry Photos 13-15 , page B-3.
Site #6	Sands (R054XY025ND)	Pad Site	2,026	SW	4	Sandberg bluegrass, prairie sandreed, green needlegrass, needleandthread grass, prairie junegrass, prairie rose Photos 16-18 , page B-3.
Site #7	Loamy Overflow (R054XY023ND)	Pad Site	2,019	NE	4	Kentucky bluegrass, cudweed sagewort, common snowberry Photos 19-21 , page B-4.
Site #8	Sandy (R054XY026ND)	Pad Site	2,030	NE	9	prairie junegrass, blue grama, prairie rose, cudweed sagewort Photos 22-24 , page B-4
Site #9	Sandy (R054XY026ND)	Access Road	2,042	N	11	needleandthread grass, little bluestem, common snowberry Photos 25-27 , page B-5
Site #10	Sands (R054XY025ND)	Access Road	2,058	SE	3	needleandthread grass, blue grama, prairie junegrass Photos 28-30 , page B-5
Site #11	Loamy Overflow (R054XY023ND)	Access Road	2,049	NE	10	Kentucky bluegrass, cudweed sagewort, common snowberry Photos 31-33 , page B-6
Site #12	Sandy (R054XY026ND)	Access Road	2,064	S	15	blue grama, needleandthread grass, cudweed sagewort Photos 34-36 , page B-6
Site #13	Loamy Overflow (R054XY023ND)	Access Road	2,066	E	12	Kentucky bluegrass, cudweed sagewort, stiff goldenrod, common snowberry

Sample Site ID	Ecological Soil Type (reference ID)	Location	Approx. Elevation (feet)	Aspect	Percent Slope	Dominant Plant Species ¹ Photo Numbers in App. B ²
						Photos 37-39 , page B-7
Site #14	Sandy (R054XY026ND)	Access Road	2,080	N	25	little bluestem, green needlegrass Photos 40-42 , page B-7
Site #15	Loamy (R054XY031ND)	Access Road	2,102	E	16	blue grama, prairie junegrass, green needlegrass, Sandberg bluegrass, western wheatgrass Photos 43-45 , page B-8
West, North, East, South Perimeters						Photos 46-53 , pages B-8 to B-9.

¹See Appendix C for more detailed information on species encountered at each site and for scientific names.

²Photographs at each Ecological Site are found on pages B-1 through B-9 in Appendix B.

The following are brief descriptions of the five types of ecological sites found in the project area NRCS (2004). Photographs of each site are in Appendix B while worksheets for each ecological site are in Appendix C. More detailed information is also available from the NRCS (2004).

Loamy Ecological Site

The Loamy ecological site is found on gently undulating to rolling sedimentary uplands, such as alluvial fans, alluvial flats, and on hillsides. These sites are well drained, in fact, water is the limiting factor to vegetative production. The historic climax plant community (HCPC) for this ecological site type is the western wheatgrass/green needlegrass community type. The potential vegetative composition for this community type is estimated at roughly 85 percent grasses/grass-like, 10 percent forbs, and 5 percent shrubs. Dependent on site specific conditions, annual vegetative productivity would be expected to range from 1,400 lbs/acre to 3,400 lbs/acre, with the majority (79 percent) of plant growth occurring in May, June, and July (NRCS 2004). When compared to the HCPC, the loamy ecological sites found in the project area are in fair to good ecological condition. Previous livestock grazing and wildlife use has caused some departure from the HCPC. However, the departure poses no concern for oil and gas drilling activities or concern for the immediate area (Photos 4-12 and 43-45 in Appendix B).

Thin Loamy Ecological Site

Thin Loamy ecological sites occur on moderately steep to steep sedimentary sites, such as hills, knolls, and ridges. These sites are well drained, and water is a limiting factor to vegetative production. The HCPC for the thin loamy ecological site is needlegrass/bluestem/western wheatgrass. The potential vegetative composition for the thin loamy ecological site is estimated at 85 percent grasses/grass-like, 10 percent forbs, and 5 percent shrubs. However, compared to those ecological site types, annual vegetative production is somewhat reduced, ranging from 1,000 lbs/acre to 2,400 lbs/acre. The majority (81 percent) of vegetative production occurs in May, June, and July (NRCS 2004). When compared to the HCPC, the thin loamy ecological sites found in the project area are in good ecological condition. Previous livestock grazing and wildlife use has caused some departure from the HCPC. However, the departure poses no concern for oil and gas drilling activities or concern for the immediate area (Photos 1-3 in Appendix B).

Table 3.9b: Plant species observed in each ecological site for the proposed Smith 11X-10 project site.¹

SCIENTIFIC NAME	COMMON NAME	SAMPLE SITE ID															PERIMETER
		#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	
GRASS/GRASS-LIKE:																	
<i>Andropogon gerardii</i>	big bluestem										X						X
<i>Aristida longiseta</i>	red threeawn			X	X	X					X	X					X
<i>Bouteloua curtipendula</i>	sidecoats grama											X	X				X
<i>Bouteloua dactyloides</i>	buffalograss				X												
<i>Bouteloua gracilis</i>	blue grama	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Calamovilfa longifolia</i>	prairie sandreed					X	X	X	X	X	X	X	X	X	X	X	X
<i>Carex filifolia</i>	threadleaf sedge	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Elymus caninus</i>	bearded wheatgrass										X						
<i>Hesperostipa comata</i>	needleandthread grass	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Koeleria macrantha</i>	prairie junegrass	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Nassella viridula</i>	green needlegrass			X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Pascopyrum smithii</i>	western wheatgrass	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Poa secunda</i>	Sandberg bluegrass		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Schizachyrium scoparium</i>	little bluestem				X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Spartina pectinata</i>	prairie cordgrass				X												
FORBS:																	
<i>Glycyrrhiza lepidota</i>	American licorice				X										X		
<i>Achillea millefolium</i>	common yarrow			X							X	X			X		X
<i>Arabis spp.</i>	rock cress				X						X						X
<i>Artemisia dracunculus</i>	green sagewort	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Artemisia ludoviciana</i>	cudweed sagewort	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Astragalus spp.</i>	milkvetch				X												
<i>Balsamorhiza macrophylla</i>	cutleaf balsamroot																
<i>Dalea purpurea</i>	purple prairie clover				X												
<i>Echinacea angustifolia</i>	black samson	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Eriogonum spp.</i>	buckwheat																
<i>Geum triflorum</i>	prairie smoke	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Glaux spp.</i>	milkwort																
<i>Grindelia squarrosa</i>	curlycup gumweed																X
<i>Heterotheca villosa</i>	hairy goldenaster	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

SCIENTIFIC NAME	COMMON NAME	SAMPLE SITE ID															
		#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	PERIMETER
<i>Liatris punctata</i>	dotted gayfeather		X		X		X		X		X		X		X		X
<i>Lygodesmia juncea</i>	rush skeletonweed	X	X				X		X		X		X				X
<i>Oligoneuron rigidum</i>	stiff goldenrod				X		X		X					X		X	X
<i>Penstemon spp.</i>	penstemon								X								X
<i>Phlox hoodii</i>	hood phlox											X					
<i>Plantago patagonica</i>	woolly indianwheat		X	X			X					X					
<i>Ratibida columnifera</i>	prairie coneflower		X	X			X		X					X			X
<i>Solidago missouriensis</i>	Missouri goldenrod	X					X		X					X		X	X
<i>Spergula arvensis</i>	corn spurry						X										
<i>Sphaeralcea coccinea</i>	scarlet globemallow		X													X	
<i>Symphoricarichum falcatum</i>	white prairie aster				X				X					X		X	
INVASIVES/WEEDS:																	
<i>Brassica spp.</i>	mustard				X				X							X	
<i>Camelina crantz.</i>	false flax	X	X		X		X		X				X		X		X
<i>Cirsium arvense</i>	Canadian thistle				X		X										X
<i>Cirsium flodmanii</i>	Flodman's thistle			X	X		X		X							X	X
<i>Cirsium undulatum</i>	wavyleaf thistle			X												X	
<i>Descurainia sophia</i>	flixweed	X								X							X
<i>Lactuca serriola</i>	prickly lettuce																X
<i>Melilotus officinalis</i>	yellow sweetclover												X	X		X	
<i>Poa pratensis</i>	Kentucky bluegrass			X	X		X				X		X				X
<i>Salsola kali</i>	Russian thistle													X			
<i>Taraxacum officinale</i>	common dandelion	X	X		X		X				X			X			X
<i>Tragopogon dubius</i>	western salsify	X	X		X		X		X		X		X	X			
SHRUBS/TREES:																	
<i>Amelanchier alnifolia</i>	Saskatoon serviceberry				X												X
<i>Artemisia frigida</i>	fringed sagewort	X	X		X		X		X		X		X		X		X
<i>Fraxinus pennsylvanica</i>	green ash				X												X
<i>Juniperus horizontalis</i>	creeping juniper													X			
<i>Prunus virginiana</i>	chokecherry			X	X									X		X	X
<i>Ribes spp.</i>	gooseberry																X

SCIENTIFIC NAME	COMMON NAME	SAMPLE SITE ID																
		#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	PERIMETER	
<i>Rosa arkansana</i>	prairie rose	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Rosa woodsii</i>	Wood's rose				X													X
<i>Shepherdia argentea</i>	silver buffaloberry					X			X						X			X
<i>Symphoricarpos albus</i>	common snowberry	X	X	X	X		X	X	X			X	X	X	X			X
<i>Toxicodendron rydbergii</i>	poison ivy					X								X				X
<i>Yucca glauca</i>	small soapweed	X		X			X					X						X

Presence is indicated by an "X". **Bolded** species are noxious in North Dakota.

Sands Ecological Site

The Sands ecological site occurs on nearly level to steep sedimentary uplands, such as stream terraces, knolls, and hills. These sites are well to excessively well drained and water is the main factor limiting vegetative production. The HCPC for this ecological site is the sand bluestem/prairie sandreed community type. The potential vegetative composition for this community type is estimated at roughly 85 percent grasses/grass-like, 10 percent forbs, and 5 percent shrubs. Dependent on site specific conditions, annual vegetative productivity would be expected to range between 1,600 lbs/acre and 3,400 lbs/acre, with the majority (83 percent) of plant growth occurring in May, June, and July (NRCS 2004). When compared to the HCPC, the Sands ecological sites found in the project area are in fair to good ecological condition. Previous livestock grazing and wildlife use has caused some departure from the HCPC. However, the departure poses no concern for oil and gas drilling activities or concern for the immediate area (Photos 16-18 and 28-30 in Appendix B).

Sandy Ecological Site

Similar to the loamy ecological site, the sandy ecological site is found on gently undulating to rolling sedimentary uplands, such as alluvial fans, alluvial flats, and on hillsides. These sites are moderately well to well drained; vegetative production is limited by water availability at this ecological site. The HCPC for the sandy ecological site is the prairie sandreed/bluestem community type. Similarly with the thin loamy ecological site, the potential vegetative composition for the sandy ecological site is estimated at 85 percent grasses/grass-like, 10 percent forbs, and 5 percent shrubs. Roughly, 83 percent of the annual plant growth occurs in May, June, and July. Total annual vegetative productivity will vary based on site-specific conditions, but would be expected to range from 1,500 lbs/acre to 3,300 lbs/acre (NRCS 2004). When compared to the HCPC, the sandy ecological sites found in the project area are in good ecological condition. Previous livestock grazing and wildlife use has caused some departure from the HCPC. However, the departure poses no concern for oil and gas drilling activities or concern for the immediate area (Photos 22-27, 34-36 and 40-42 in Appendix B).

Loamy Overflow Ecological Site

The Loamy Overflow ecological site frequently occurs on flooded intermittent streams and their floodplains, including swales. These sites are moderately well to well drained and frequently experience brief periods of inundation, though water is still a limiting factor to vegetative production. The HCPC for this ecological site is the big bluestem/green needlegrass/switchgrass community type. The potential vegetative composition for this community type is estimated at roughly 83 percent grasses/grass-like, 10 percent forbs, 5 percent shrubs, and 2 percent trees. Dependent on site specific conditions, annual vegetative productivity would be expected to range between 2,400 lbs/acre and 4,000 lbs/acre, with the majority (83 percent) of plant growth occurring in May, June, and July (NRCS 2004). When compared to the HCPC, the loamy overflow ecological sites found in the project area are in fair to good ecological condition. Previous livestock grazing and wildlife use has caused some departure from the HCPC. However, the departure poses no concern for oil and gas drilling activities or concern for the immediate area (Photos 13-15, 19-21, 31-33 and 37-39 in Appendix B).

3.9.2 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 Smith 11X-10 project site, ten exotic and invasive plants are present: false flax (*Camelina crantz*), yellow sweetclover (*Melilotus officinalis*), mustard (*Brassica spp.*), Kentucky bluegrass (*Poa pratensis*), flixweed (*Descurainia sophia*), common dandelion (*Taraxacum officinale*), western salsify (*Tragopogon dubius*), prickly lettuce (*Lactuca serriola*), Canadian thistle (*Cirsium arvense*), and Russian thistle (*Salsola kali*). Under certain rangeland conditions, native plants may also be considered invasive to that environment. Two species that are

native to the area, but considered invasive in their nature at the project site are: Flodman's thistle (*Cirsium flodmanii*) and wavyleaf thistle (*Cirsium undulatum*).

3.9.3 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) or a county weed board (after consulting with the county extension agent) to be injurious 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 the management of natural or agricultural systems. In North Dakota, twelve species have been declared noxious under the North Dakota Century Code (Chapter 63-01.1) (Table 3.9c). However, only five are known to occur in Dunn County (Table 3.9c). One noxious weed, Canada thistle (*Cirsium arvense*) was observed within the Smith 11X-10 project area in small patches at three sample sites. Canadian thistle was found in Ecological Site #5 (in well pad), Ecological Site #7 (in well pad), and within the perimeter of the pad site.

Table 3.9c: North Dakota noxious weeds present in Dunn County and in vicinity of the project site.

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

3.9.4 Vegetation Impacts

Construction of the well pad would affect all five types of ecological sites found within the project area. Construction of the access road would affect five of the ecological sites found within the project area. The total temporary and permanent disturbance area of approximately 7.72 acres could be expected to reduce available forage to livestock and wildlife in the area from 13,000 pounds to 24,700 pounds per 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 might hinder vegetation regrowth and 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 eroded away by precipitation (Goodwin and Sheley 2003).

Potential disturbance associated with well pad construction (approximately 5 acres) could spread Canada thistle and possibly allow other noxious weeds to colonize. 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 wildlife and livestock, reduce crop production, reduce bio-diversity in the landscape, and generally does not provide habitat for native fauna (NDDA 2009).

3.9.5 Vegetative Mitigation

The following mitigation measures 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 rights-of-way 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 soil with a ripper shank that is pulled behind a tractor, grader, or bulldozer.
- Areas stripped of topsoil would be re-seeded with desirable plant species and be reclaimed at the earliest practical 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 through the project area (Appendix A). To reduce the spread of noxious weeds in the project area (particularly Canada thistle) control efforts should be implemented for a growing season prior to ground-disturbing activities and after ground-disturbing activities occur (see Figure 3.7b for locations of infestations). Control measures could include using herbicides, hand-pulling, applying bio-control, seeding, and/or planting of desirable 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.

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 condition 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 (pure live seed)/acre. The recommended seed mix developed by Darryl Turcotte of the BIA is comprised of native grasses to the area (Table 3.9d). More details on the species in this seed mix are included in Appendix C. A native forb component is generally encouraged but may be difficult to achieve for various reasons, including commercial availability, difficulty in germination, etc. Dependent on commercial availability, potential native forbs for inclusion in the seed mix include 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 3.9d.

Table 3.9d. Native seed mix to be used in reclamation of the proposed Smith 11X-10 project site.

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

¹pounds of 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.

Cultural resources are sites, objects, or practices that have archaeological, historical, cultural, and/or religious significance. Cultural resources on federal or tribal lands are protected by many laws, regulations, and agreements. The *National Historic Preservation Act* (NHPA) requires a cultural resources survey of the Area of Potential Effect (APE) prior to undertaking a federal action. Resources identified are evaluated for eligibility as historic properties on the National Register of Historic Places (NRHP). Eligibility criteria (36 CFR 60.4) include association with important events or people, distinctive construction or artistic characteristics, and either a record of yielding or a potential to yield at least locally important information. Cultural properties are generally not eligible for listing on the NRHP if they lack diagnostic artifacts, subsurface remains or structural features, but those considered eligible are treated as though they were listed on the NRHP, even when no formal nomination has been filed.

The 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* (AIRFA) 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.*).

Traditional and cultural properties can take the form of earthlodge villages, eagle trapping pits, natural springs, or sites used for hunting, gathering, gardening, fasting, praying, human burial or other ceremonial purposes. Landforms, such as buttes, ridges, valleys, and hills, can constitute a traditional and cultural property (TCP) with a specific purpose for the Nation, as can whole landscapes containing boulders placed on hilltops or hillsides as trailmarkers identifying routes to sacred and cultural places. Various rock constructions, including cairns, circles, lines, alignments, and effigies, are also critical to the continuity and revitalization of spiritual and cultural lifeways of the Nation. Hundreds of such places are woven into origin stories, oral histories, and continuing practices. The BIA relies upon tribal elders and practitioners for advice on the presence of TCPs and proper avoidance or buffer zones. Depending on the nature of the site, identified TCPs may be protected under several regulations, conventions, and/or traditions.

For any type of cultural resource that is addressed by a statute or tradition, federal actions require consultation at one or more stages in the process. The Three Affiliated Tribes of the Mandan, Hidatsa and Arikara Nation (MHA Nation) have designated a Tribal Historic Preservation Officer (THPO) by Tribal Council resolution. The THPO operates with the same authority exercised in most of the rest of North Dakota by the State Historic Preservation Officer (SHPO). As a result, the BIA consults and corresponds with the THPO on all projects proposed within the Fort Berthold Reservation. The SHPO may have certain information, but has no official role regarding proposed federal actions on trust land. The MHA Nation has also designated responsible parties for consultations and actions under NAGPRA and cultural resources generally.

Cultural resources were evaluated at the Smith 11X-10 well pad and access road locations on September 1, 2009 (KLJ 2009) and by a tribal monitor for the MHA Nation (Appendix E). The Class I literature search identified earlier fieldwork and previously recorded sites within a mile, but outside of the project area. The Class III surface inspections examined a total of 22 acres centered on the well stake and parallel pedestrian transects were spaced about 20 meters apart to examine the area. The access road corridor (about 2,013 feet) was inventoried using similar transects on either side of the road to cover a 150-foot wide corridor. No historic or cultural properties previously recorded were encountered within the project area. There were two areas of Tribal concern identified by Casey Fox of the MHA Nation THPO; however, upon inventorying and additional 5 acres (for possible avoidance measures), the sites were determined to not be affected by the project undertaking.

No effects to cultural resources are expected at the Smith 11X-10 well pad location (KLJ 2009). In addition, TCP practitioners reported no resources at risk. After reviewing both reports for the proposed site, BIA determined that no historic properties would be affected in official correspondence to the THPO mailed [date]. The THPO did/did not respond within the 30-day concurrence/objection period. Related correspondence is included in Chapter 5 of this Environmental Assessment. For the purposes of Section 106 a determination of "No Historic Properties Affected" was assigned.

Two areas of Tribal concern were identified in the APE; however, no further work or avoidance is required (KLJ 2009). 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.** No laws, regulations or other requirements have been waived; no compensatory mitigation measures are required.

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. As shown in Table 3.11a, in 2000, FBIR had a lower median household income (\$26,274) and higher unemployment rate (6.4 percent) in comparison to the overlapping

counties and the state. Fort Berthold Reservation had a high percent of persons living below poverty (28.1 percent), 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 an unemployment rate of 51 percent and 47 percent of the population living below poverty. The higher unemployment rate can be attributable to the lower employment-to-population ratio for American Indians.

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 (1999).

² Source: USCB (2000).

The latest American Indian Population and Labor Force Report (BIA 2005) indicates that within the Three Affiliated Tribes, approximately 4,381 persons were available for work. Of these, 1,287 were employed, 430 were not available for work, and 3,094 were not employed. Between 2000 and 2005, the unemployment rate increased from 51 percent to 71 percent and the percent of persons living below poverty increased from 47 percent to 55 percent. Meanwhile, in 2005, Dunn (3.4 percent) and McKenzie (3.7 percent) counties experienced a decrease in the unemployment rate while McLean (5.0 percent) and Mountrail (6.0 percent) counties and the State of North Dakota (3.4 percent) experienced an increase in unemployment rates (BLS 2005).

The most recent census (held in 2000) and subsequent mathematical projections indicates that per capita income for residents of the FBIR is \$10,291 or about 58 percent 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 percent of the North Dakota median household income.

Population trends and demographics are shown in Table 3.11b. The number of people in North Dakota decreased slightly during the last eight years. The four counties surrounding the project area exhibited greater estimated decreases in population than exhibited at the state level in 2008. Between the 1990 and 2000 censuses the population on the Fort Berthold Reservation increased by almost ten percent. 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: 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%)

Reservation, County, & State	Estimated 2008 Population	% of 2008 State Population	% Change, April 2000 – July 2008	Predominant Ethnic Group (2008)	Predominant Minority (2008)
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.

As shown in Table 3.12, within the overlapping counties the predominant race is White ranging from 65.7 percent in Mountrail County to 92.3 percent in McLean County. Within the FBIR, the predominant race is American Indian (65.3 percent) followed by White (26.7 percent) and other races (5.3 percent) which include Asian, Native Hawaiian and other Pacific Islander, some other race alone, and two or more races.

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).

It is nevertheless clear that tribal members on the Great Plains 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 six percent of North Dakota residents and about 14 percent of the population of 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. In these cases, indirect benefits of employment and general tribal gains would be the only offset to negative impacts.

Potential impacts to tribes and tribal members include disturbance of cultural resources. There is potential for disproportionate impacts, especially if the impacted tribes and members do not reside within the reservation and therefore do not share in direct or indirect benefits. This potential is significantly reduced following the survey of the possible six wells on a single location and one access road route and determination by the BIA that there would be no effect to historic properties or TCPs. 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 it unlikely that a disproportionate amount of adverse impact to low-income or minority populations would occur. The Proposed Action offers many positive consequences for tribal members, while recognizing Environmental Justice concerns. Procedures summarized in this document and in the APD are binding and sufficient. No laws, regulations or other requirements have been waived; no compensatory 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.
- Fresh water would be used to drill the well bore to a depth of 1,500 – 2,500 feet.
- Surface casing would be cemented in place to a depth of about 1,500 – 2,500 feet.
- Water produced from the 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 occurred between February 1st-July 15th then the project area would be surveyed by a qualified biologist to determine if active migratory bird nests were present, and if present, construction would be suspended or buffers established to ensure no adverse impacts to nesting migratory birds.
- Utility lines will 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.
- The well pad would be fenced to prevent access to the pad by livestock and wildlife.

- If an active 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.
- Biological monitors would be available between February 1st and July 15th to survey the project site for threatened or endangered species, and for avian nesting activity.
- Any sighting of a protected species within one-mile of the project area would be immediately reported to the USFWS, NDGFD, and BIA.
- 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, particularly Canada thistle, 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. Herbicides would be used in accordance to their specific label instruction (which includes personal protective equipment and storage and disposal requirements).
- An approved weed-free seed mix would be used, such as the seed mix and cover crop identified in *Section 3.9.5* and 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, cost would be covered by issuance of a bond.
- 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 viability of soil nutrients.
- The amount of time at which barren areas are exposed would be minimized, as is practicable, 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.
- Soil stabilizers or soil binders could be applied, as needed.
- Monitoring of any identified cultural resource impacts by qualified personnel is recommended during all ground-disturbing activities.
- Project personnel are prohibited from collecting any artifacts or disturbing cultural resources in the area under any circumstances.
- A Semi-Closed loop system will be utilized for all drilling from this location.

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 are expected to continue with little change since virtually all available acreage is already organized into range units to use 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 is not expected to have more than a minor effect on land use patterns.

Prairie habitat is increasingly being lost or fragmented in North Dakota. Structures (e.g., oil pad wells, buildings, and houses), roadways, and vehicular traffic fragment the landscape, alter movement patterns by wildlife species, and increase the ability for invasive/noxious plants to colonize. Many prairie species require large, contiguous blocks of grasslands for their biological needs and may avoid fragmented habitat or experience reduced reproduction. To prevent or limit habitat fragmentation XTO has proposed to install multiple wells (up to six) at one well pad location, and accessed by one road. XTO has also positioned this proposed well pad such that it would use an existing road entrance off BIA 10. 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.

XTO has proposed that additional well pads might eventually be drilled from other sections within the Fort Berthold Indian Reservation. Associated surface disturbance would be relatively minimal and other impacts, such as air quality, would mostly be 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 SO₂, NO₂, O₃, 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 February 2010, 302 active, confidential, drilling, or permitted oil wells occur within a 20-mile radius of the proposed project site (Table 3.14; Figure 3.14). There are no inactive, abandoned, or wells with expired permits within the 20-mile radius. On the FBIR, 102 active, 136 confidential, two drilling, and 23 permitted exploratory wells area occurring (Table 3.14; Figure 3.14). Another 247 oil/gas wells have become dry, abandoned, expired, inactive, or cancelled within the FBIR.

The proposed project would not share roads with any of the other listed installation. However, vehicular traffic would increase slightly on the rural road system. Visual changes would 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 completely 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. No cumulative impacts are reasonably foreseen from existing and proposed activities, other than increasingly positive impacts to the reservation economy.

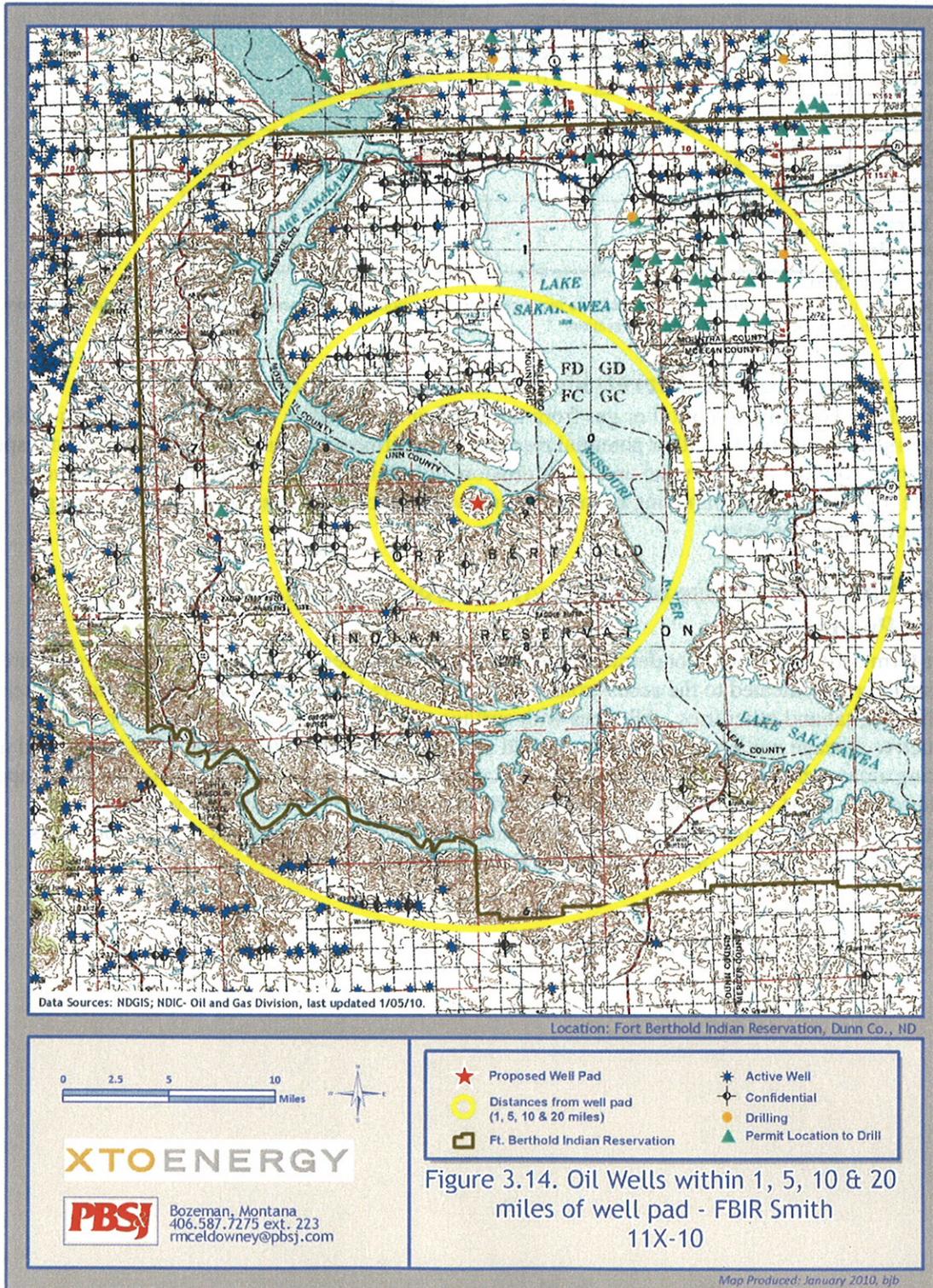


Table 3.14a: Number of oil wells and their proximity to the proposed Smith11X-10 project site.¹

Distance ² (mile)	Number of Oil Wells				
	Active	Confidential	Drilling	Permit Location to Drill	Total
0 to 1	0	0	0	0	0
1 to 5	7	5	0	0	12
5 to 10	5	21	0	0	26
10 to 20	112	126	3	23	264
Fort Berthold	102	136	2	23	263

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.

3.15 Irreversible and Irrecoverable 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 considerably 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 Formation.

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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:

- Chris Miller Project Manager, PBS&J
Sections 1 and 2; document QA/QC.
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Affected Environment, Water Resources, and Cumulative Effects
- Mark Traxler Senior Scientist, PBS&J
General Wildlife and Fisheries
- Andrea Pipp Senior Scientist, PBS&J
Air Quality, Public Health and Safety, Water Resources, Cultural
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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. Review of draft EA and
recommendation to BIA Regional Director regarding FONSI or EIS.

6.0 Consultation and Coordination

The project scoping letter reproduced below was mailed on March 30, 2010 and posted at the BIA Fort Berthold Agency. Direct mail recipients include those listed in Table 6.0. Eleven 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 an exploratory oil well pad and access road on the Fort Berthold Reservation by XTO Energy. The proposed well pad is in the following locations and shown on the enclosed project location map:

- **Smith 11X-10, N ½ NW¼NW¼ Section 10 T149N R92W**

Development of the project would consist of the mechanical excavation and preparation well pad and improvements of the access road. The well pad is roughly 5 acres in size. The proposed access road for the Smith 11X-10 site is roughly 1,700 feet long. The proposed well site would be located within a 1280-acre spacing unit and positioned to utilize existing roadways for access to the greatest extent possible. The drilling of these well sites is proposed to begin as early as summer/fall 2010.

To ensure that social, economic, and environmental effects are analyzed accurately, we solicit 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 the proposed project. We also ask your assistance in identifying any property or resources that you own, manage, oversee or otherwise value that might be adversely impacted. Please send your replies and requests for additional project information to:

Chris Miller, Project Manager
PBS&J
115 N. 28th Street, Suite 202
Billings, Montana 59101-2045
406-259-7979
cmiller@pbsj.com

If we do not hear from you by **May 1, 2010**, we will assume that you have no comment on this project. Questions can be directed to Chris Miller using the information provided, or Rich McEldowney at (406) 587-7275 (ext. 223).

Sincerely,

Chris Miller
Project Director

Table 6.0: Responses by direct mail by recipients of scoping letter sent on March 30, 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	No comments received.
	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.
Regional Native American Tribes		
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	It is the determination of the Tribal Historic Preservation office that the proposed project will have no effect on historic properties of importance to the Turtle Mountain Band of Chippewa Indians.
U.S. Department of Agriculture		
Natural Resource Conservation Service	Paul Sweeney State Conservationist	No comments received.
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	Garrison Project Office	No comments received.
U.S. Army Corps of Engineers	Omaha District	No comments received.
U.S. Army Corps of Engineers	Daniel E. Cimarosti Regulatory Program Manager Bismarck District	Section 10 of the Rivers and Harbors Act regulates work in or affecting navigable waters including work over, through, or under Section 10 water including Lake Sakakawea and Lake Oahe. For any proposed well where the well line and/or bottom hole is under or crosses under Lake Sakakawea, regardless of depth, we require a DA permit application (ENG form 4345). Fact sheets for Nationwide Permits 12 and 14 (Utility Line Activities and Linear Transportation Projects), EPA 401 conditions for nationwide permits,

ENTITY	CONTACT	RESPONSE*
		and pre-construction notification requirements are provided. Recommend contacting Brent Truskowski (EPA) to review the conditions pursuant to Section 401 of the Clean Water Act prior to any construction.
U.S. Army Corps of Engineers	Charles Sorensen Riverdale, ND Office	USACE requests the following conditions be considered in the construction of a well location: avoid potential for river and lake contamination by using a closed-loop mud and drilling fluid system; all sewage collection systems are a closed system –no open or exposed tanks, catch basins; all fill/soil material be certified free of noxious weeds; equipment be pressure washed prior to arrival at the site; no surface occupancy within 0.5 miles of known T&E critical habitat; no water withdrawals from Lake Sakakawea via the recreation area at Skunk Creek will be allowed; no vehicles or equipment will be allowed within the recreation area.
U.S. Department of Energy		
Western Area Power Administration		No comments received.
U.S. Department of Homeland Security		
Federal Emergency Management Agency Region VIII		No comments received.
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.
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	Ron Melhouse Bismarck, ND Office	Proposed oil well site appears to be near rural water pipelines, access roads are not shown on map. A rural water system pipeline map is attached to assist in determining potential affects to rural water pipelines. Any work planned should be coordinated with Mr. Lester Crows Heart.
U.S. Fish and Wildlife Service	Jeffrey Towner	Numerous recommendations

ENTITY	CONTACT	RESPONSE*
		received – see Appendix F.
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 objection provided the FAA is notified of construction or alternations as required by Federal Aviation Regulations, Part 77, Objects Affecting Navigable Airspace.
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	Michael McKenna Conservation and Communication Division	Primary concern is the 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	Proposed project does not affect state parks lands or Land and Water Conservation Fund recreation projects. There are no known occurrences of animal or plant species of concern within or adjacent to the proposed project. Recommend using native species for revegetation on impacted areas.
State Water Commission	Larry Knudtson Research Analyst	The proposed project is not located in an identified floodplain nor will it affect an identified floodplain. All waste material must be properly disposed - not in floodways. No sole-source aquifers have been designated.
State Historical Society of North	Merlan E. Paaverud, Jr.	Request that a copy of cultural resource site forms and reports be

ENTITY	CONTACT	RESPONSE*
Dakota/SHPO	Director	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	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.

Appendix A

FBIR Smith 11X-10 Application for Permit to Drill

*Smith 11X-10 Well Pad and Access Road Environmental Assessment
XTO Energy, Inc.*

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2016

5. Lease Serial No. 7420A48398	
6. If Indian, Allottee or Tribe Name Three Affiliated Tribes	
7. If Unit or CA Agreement, Name and No.	
8. Lease Name and Well No. FBIR Smith 11X-10	
9. API Well No. Pending	
3a. Address 7114 W. Jefferson Ave., Suite 305 Denver, CO 80235	3b. Phone No. (include area code) 303.969.8280
10. Field and Pool, or Exploratory Heart Butte - Bakken	
4. Location of Well (Report location clearly and in accordance with any State requirements.) A: surface 370' FNL & 772' FWL, NWNW Sec. 10-T149N-R92W At proposed prod. zone 745' FNL & 1270' FWL, NWNW Sec. 10-T149N-R92W	
11. Sec., T. R. M. or Blk. and Survey or Area 10-149N-92W	
14. Distance in miles and direction from nearest town or post office*	12. County or Parish Dunn
	13. State ND
15. Distance from proposed* 370' location to nearest property or ease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease 1280 Ac. Spacing Unit
	17. Spacing Unit dedicated to this well All of Sec. 10 & 15 T149N-R92W
18. Distance from proposed location* n/a to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth 20,577' MD 10,277' TVD
	20. BLM/BIA Bond No. on file 104312789 (EIA Bond)
21. Elevations (Show whether DT, KDB, KI, GI, etc.) 2015' GL; 2039' KB	22. Approximate date work will start* 01/01/2011
	23. Estimated duration 45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, must be attached to this form:

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Well plat certified by a registered surveyor. 2. A Drilling Plan. 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | <ol style="list-style-type: none"> 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). 5. Operator certification 6. Such other site specific information and/or plans as may be required by the BLM. |
|---|---|

25. Signature 	Name (Printed/Typed) J Michael Warren	Date 06/23/2010
Title Regulatory Supervisor		
Approved by (Signature)	Name (Printed/Typed)	Date
Title	Office	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)



PO Box 1589, Sidney, MT 59273

Drilling Plan - Drill, Complete & Equip Single Lateral Wellbore in the Bakken

Well Name and Location

FBIR Smith 11X-10
 Location: NW NW Sec 10, 149N-92W
 Footage: 370 ft FNL, 772 ft FWL
 Elev: Graded Pad 2015', KB 2039'
 Dunn County, ND

Latitude	47.745331	North
Longitude	102.447014	West

Driving Directions

From Mandaree, ND: 4.3 mi E on BIA 12, 7.7 mi N, then E on BIA 10, then 0.3 mi NE into location

Drilling Rig Description

Rig Patterson 311
 Draw Works Oilwell 860-E - 1400 HP
 Mast Pyramid 142' mast (750,000# on 12 lines)
 Prime Movers 3 - Caterpillar 3512 w/ 1365 KW generators
 Pumps 2 - NOV FD-1600 (independently driven)
 BOPE Shaffer 13-5/8" 5,000 psi double gate BOP
 Hydriil 13-5/8" 5,000 psi Annular BOP
 4" x 10,000 psi manifold

Formation Tops

Formation	TVD	Notes
Base of Fox Hills	1,739	
Greenhorn	4,176	
Dakota Silt	4,928	Brackish Water
Dunham Salt	8,062	(0 - 100 ft)
Spearfish	8,304	
Pine / Opeche Salts	8,502	(+400 ft)
Minnelusa	7,014	soft/hard formation laminations can wipe out bit if drilled too aggressively
Tyler (Big Channels)	7,504	
Kibbey Lime	7,977	
Charles	8,126	
Base Last Salt	8,652	
Mission Canyon	8,837	Possible losses
Lodgepole	9,403	
Bakken Shale	10,239	
Middle Bakken	10,253	
Target - Bakken	10,277	

Offset XTO Wells - none

Logging, DST and Coring Program

1. A mud log will be run from Base of Last Salt to TD & on all laterals: Mudlog to include: total gas chromatograph and sample cuttings - 10' sample intervals in vertical hole & 30' intervals in laterals. A CBLGR log will be run from deepest free-fall depth in 7 inch casing to surface. An MWD GR/ROP log will also be run from KOP (where the CBL will tie into) to TD of lateral.
2. Open hole logs are anticipated for this well (if first well on this dual pad).
3. No DST's are planned at this time.

H2S

A minor H2S show may be present from below Base Last Salt to KOP. If noticed, RU H2S safety trailer etc.

Maximum Formation Pressure and Temp

1. Normal formation pressure gradient is expected (up to 0.5 psi/ft or 9.6 ppg) from surface to the Bakken Shale. The Bakken Shale, Bakken Middle Member, and Three Forks may be over pressured up as much as 0.66 psi/ft (12.8 ppg).
2. The maximum anticipated BHT is 250 degrees F, or less.

BOP Equipment Requirements

See attached diagram detailing BOPE specifications.

1. Rig will be equipped with upper and lower kelly cocks with handles available.
2. Inside BOP and TIW valves will be available to use on all sizes and threads of DP used on well.
3. BOP accumulator will have enough capacity to close HCR valve, close all rams plus annular preventer & retain minimum of 200 psi above precharge on the closing manifold without the use of closing pumps. The fluid reservoir capacity shall be at least double the usable fluid volume of the accumulator system capacity & the fluid level shall be maintained at manufacturer's recommendation. There will be 2 additional sources of power for the closing pumps (electric and air). Sufficient N2 bottles will be available and will be recharged when pressure falls below manufacturer's minimum
4. BOP ram preventers will be tested to 5,000 psi using a test plug when initially installed and after 7 inch casing is nipples up and at 30 day intervals. Test BOP & casing strings to 1,500 psi just prior to drilling out 9-5/8" and 7" casing shoes. Function test rams and hydraulically operated remote choke line valve daily (preferably at every crew change).
5. Remote valve for BOP rams, HCR & choke shall be placed in a location that is readily available to Driller. The remote BOP valve shall be capable of closing and opening the rams.
6. Hand wheels on BOP shall be equipped with locking devices. A locking device shall be placed on annular preventer line valve & must be locked in the open position. This lock shall only be removed when the closing unit is inoperative.

Drilling Fluid and Related Equipment

1. Pumps shall be equipped with stroke counters with displays located in dog house. Slow pump speed shall be recorded on drilling report daily after mudding up.
2. A Pit Volume Totalizer will be installed and the readout will be displayed in the dog house.
3. Gas detecting equipment (for a chromatograph) will be installed at shaker. Readouts will be available in dog house and in geologist trailer.
4. In the event gas flow becomes an issue. A flare pit shall be constructed not less than 100' from wellhead & 50' from reserve pit area. Lines to the flare pit will be straight runs (staked down) and turns will utilize targeted tees. Flare pit will be located down wind as much as

possible. An electronic ignitor will be used along with a propane line to provide for a continuous flare pilot.

Drilling Plan

Section 1 - Surface Casing >>> Surface to: 1,820 (Surface Casing Depth + 20')

Conductor: 16" set at 45° - 80° (depending on gravel or coal depths)
 Hole Size: 13-1/2"
 Mud: Fresh Water
 Bits: Type 1 mill tooth
 Procedure: Set 16" conductor pipe into firm clay (45°-80°).
 Drill to casing setting depth (plus necessary rat hole).
 After reaching TD, run gyro or multi-shot directional survey (inclination and azimuth at 100' stations).
 Run casing and cement. Weld on C22 5M psi casing head, NU 11" x 5M psi drilling spool.
 NU 5M psi BOPE. Test to 5,000 psi.
 Casing: 9-5/8" 36# K-55 8rd ST&C R3 SMLS - New. Set at: 1,300 ft
 Centralizers: 2 turbolizers per jt on 1st 2 jts (stop banded 10' from each collar) & 1 regular centralizer per 5 jts to surface
 Cement: Lead Slurry: 350 Sacks
 50/50 Poz: Class C w/ defoamer, water loss & 1/8 #/sk polyflake. Mixed at 17.83 gpc wtr, 2.93 cfsk yield & 11.5 ppg.
 Tail Slurry: 200 Sacks
 Class C with 3% salt & 1/8 #/sk polyflake. Mixed at 7.37 gpc wtr, 1.48 cfsk yield and 14.2 ppg.
 Note: Volumes calculated assuming 40% excess over 13-1/2" hole size.

Section 2 - Surf Csg Shoe to KOP >>> 1,800 to: 9,868

Hole Size: 8-3/4"
 Mud: Invert - 80% Diesel / 20% Salt Water. Mud Weight 9.5 - 9.7 PPG. ES 500-600.
 Bits: PCC bits with mud motors and MWD. Avoid RPM's at bit > 230 in fast hole section.
 Procedure: Drill w/ PDC bit & mud motor. Steer as needed with MWD or SWD. Survey every 90'. Hold deviation to 2 deg max from surf casing shoe to -6,000'; then -3 deg max to -8,900'; then -4 deg max to KOP. Condition hole for logs (if needed). TOH
 NOTE: a +215 ft tangent section is currently planned after landing the curve to get casing point beyond the NDIC 1,220 ft "poller" setback. If possible, allow wellbore to drift ESE while drilling the vertical hole to reduce the amount of tangent required to reach casing point.

Logs: Mudlogger will start at Base of Last Salt.
 if 1st well drilled on pad GR, Resistivity BHC Sonic From TD To Surf Csg
 Density - Neutron Porosity From TD To 50' above Tyler

Section 3 - Drill Curve (14 Degree/100' >>> 9,868 to: 10,745 7" Casing Point

Hole Size: 8-3/4"
 Mud: Invert - 80% Diesel / 20% Salt Water. Mud weight 9.5 - 9.7 PPG. ES 500-600.
 Bits: Type 3 Insert Roller Cone.
 Procedure: Drill Curve per directional plan (maximum survey interval is 30').
 Casing: Set 7" 29# P-110 & MS-110 LT&C and 32# P-110 (100' above & below salts) at 10,725 ft
 Anticipated Casing Design to facilitate fracture stimulating down casing

Top	Blm	Rtg	
0	5,962	5,962	7" 29# P-110 LT&C Surf to 100' above Dunham salt
5,962	7,114	1,152	" SC# -110 LT&C 100' above Dunham to 100' below base of Hine/Opeche salt
7,114	9,020	912	7" 29# P-110 LT&C 100' below base of Hine/Opeche to 100' above Charles salt
8,026	8,762	728	7" 32# P-110 LT&C 100' above Charles salt to 100' below Base of Last Salt
8,752	9,868	1,216	7" 29# MS-110 LT&C 100' below Base of Last Salt 100' below KOP
9,868	10,725	757	7" 29# P-110 LT&C 100' below KOP to TD

Centralizers: 2 stand-off bands per jt on 3m 3 jts (banded 10' from collars). 1 stand-off band on every other jt from curve landing depth through KOP. 1 turbolizer centralizer per jt from 100' above to 100' below each salt section. Ther. 1 regular centralizer per 6 jts up to anticipated cement top
 Cement: Lead Slurry: 167 Sacks (est. TOC - 300' above Mowry)
 High-early strength 50/50 Pozmix with defoamer, fluid loss additive, dispersant, 0.2% thixotropic additive & 1/8 #/sk polyflakes. Mixed at 14.45 gpc, 2.51 cfsk, 11.8 ppg
 1st Tail Slurry: 584 Sacks (est. TOC 200' above Dunham Salt)
 50/50 Pozmix with defoamer, fluid loss additive, 0.25% retarder, 0.2% thixotropic additive, 1/8 #/sk polyflakes. Mixed at 0.38 gal/sk, 1.39 cfsk, 14.2 ppg
 2nd Tail Slurry: 308 Sacks (est. TOC 100' below the Mission Canyon)
 Class G with expanding agent, friction reducer, fluid loss additive, 35% silica flour, 0.2% retarder, 1/3 #/sk polyflakes. Mixed at 6.49 gal/sk, 1.57 cfsk, 15.6 ppg.
 NOTE: Slurry volumes are based on 9" hole + 50% excess (= 8.75" hole + 75% excess)
 Logs: MWD GR/ROP. Mud log.

Section 4 - Lateral #1 >>> 10,725 to: 20,577 TD (MD)

Hole Size: 6"
 Mud: Salt Water Mud. Typically 9.5-9.7 ppg using NaCl. If conditions warrant use CaCl brine (up to 11.2 ppg).
 Bits: PCC bits.
 Procedure: TIIH w/bit and directional tools. Drill open hole lateral per directional plan to TD target. Max survey interval in lateral is 00'. TCH with DP & BHA. Run 4 1/2" 11.35# J-55 FM-II liner w/ pre-drilled, 0.5" holes per 2 ft below bottom-most external swell pkr, followed by 13.5# P-110 FM-II blank pipe with external swell packers (evenly spaced in open hole, unless natural fractures were encountered while drilling) from +/- TD to last swell packer in open hole. Run 4.5" 13.5# P-110 Tanaris-Blue casing above last swell packer in the open hole to +/- KOP with a final swell packer located immediately below the liner hanger.
 Once liner is run, circulate out oil & gas and spot FW in lateral to activate swell pkcs. Drop ball & wait +/- 1 hr for t to seat. Set liner hanger & top pkr - test to +/- 5,000 psi.
 Liner: Top: Btm:
 9,863 - KOP 20,577 - spaced out as close to TD as possible

Finalize Well >>>> Set wireline-set, tubing-retrievable packer with BHP gauges and top blanking plug installed at, or just above, KOP. Displace vertical section of wellbore above plug with clean brine water. LD CP. ND BOP and NU tree. RDMO

Prepared By: Ross H. Lubbers - 04/20/10
 Updated By: Ross H. Lubbers - 04/20/10 - fixed drlg prog Section 2 tangent comment
 - 5/17/10 - adj BHL to be 250' FSL of section 15 per new RUC orders



FBIR Smith 11X-10
 Location: NW NW Sec 10, 149N-92W
 Footage: 370 ft FNL, 772 ft FWL
 Elev: Graded Pad 2015', KB 2039'
 Dunn County, ND

Well Construction Diagram

From Mandaree, ND: 4.3 mi E on BIA 12, 7.7 mi N, then E on BIA 10, then 0.3 mi NE into location

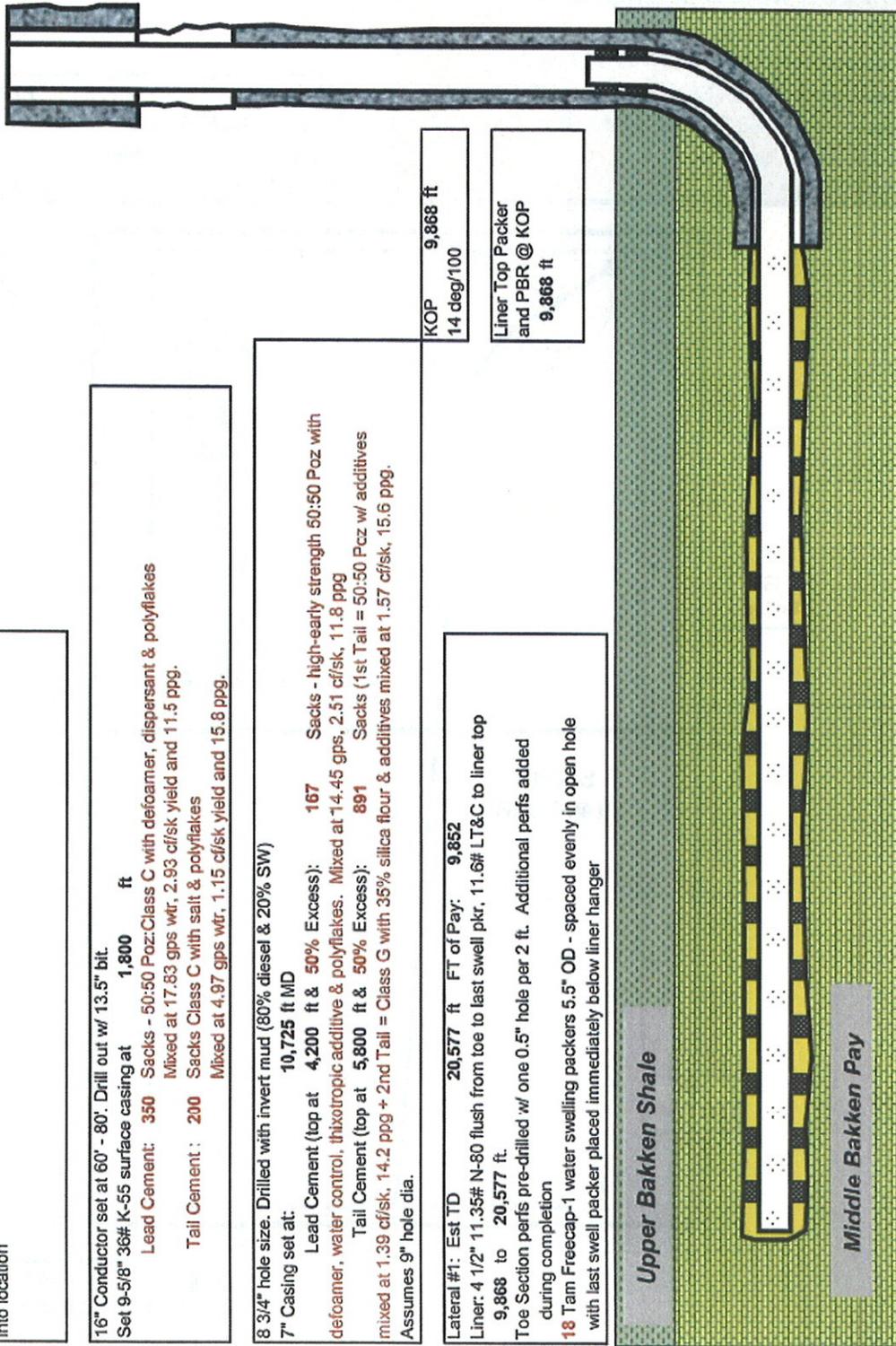
16" Conductor set at 60' - 80'. Drill out w/ 13.5" bit.
 Set 9-5/8" 36# K-55 surface casing at **1,800** ft
 Lead Cement: **350** Sacks - 50:50 Poz:Class C with defoamer, dispersant & polyflakes
 Mixed at 17.63 gps wtr, 2.93 cf/sk yield and 11.5 ppg.
 Tail Cement: **200** Sacks Class C with salt & polyflakes
 Mixed at 4.97 gps wtr, 1.15 cf/sk yield and 15.8 ppg.

8 3/4" hole size. Drilled with invert mud (80% diesel & 20% SW)
 7" Casing set at: **10,725** ft MID
 Lead Cement (top at **4,200** ft & **50%** Excess): **167** Sacks - high-early strength 50:50 Poz with defoamer, water control, thixotropic additive & polyflakes. Mixed at 14.45 gps, 2.51 cf/sk, 11.8 ppg
 Tail Cement (top at **5,800** ft & **50%** Excess): **891** Sacks (1st Tail = 50:50 Poz w/ additives mixed at 1.39 cf/sk, 14.2 ppg + 2nd Tail = Class G with 35% silica flour & additives mixed at 1.57 cf/sk, 15.6 ppg. Assumes 9" hole dia.

KOP **9,868** ft
 14 deg/100

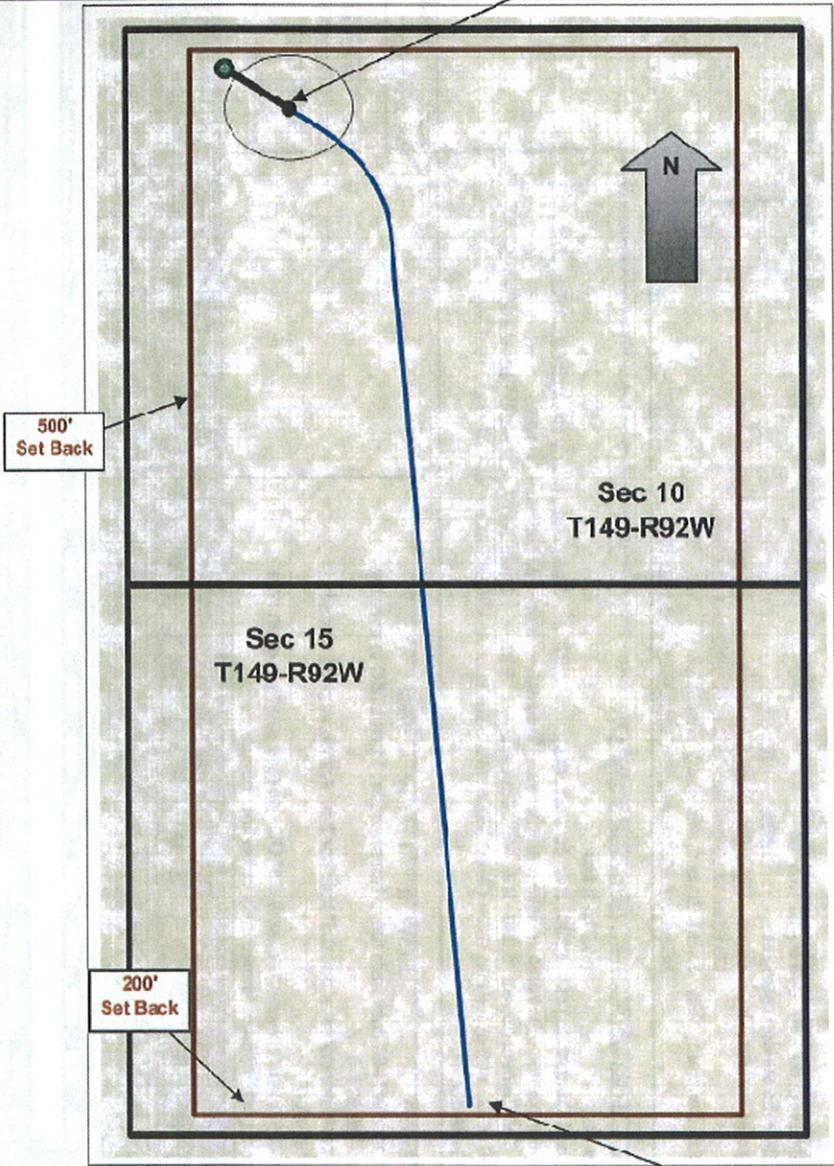
Lateral #: Est TD **20,577** ft FT of Pay: **9,852**
 Liner: 4 1/2" 11.35# N-80 flush from toe to last swell pkr, 11.6# LT&C to liner top
9,868 to **20,577** ft.
 Toe Section perfs pre-drilled w/ one 0.5" hole per 2 ft. Additional perfs added during completion
18 Tam Freecap-1 water swelling packers 5.5" OD - spaced evenly in open hole with last swell packer placed immediately below liner hanger

Liner Top Packer and PBR @ KOP **9,868** ft



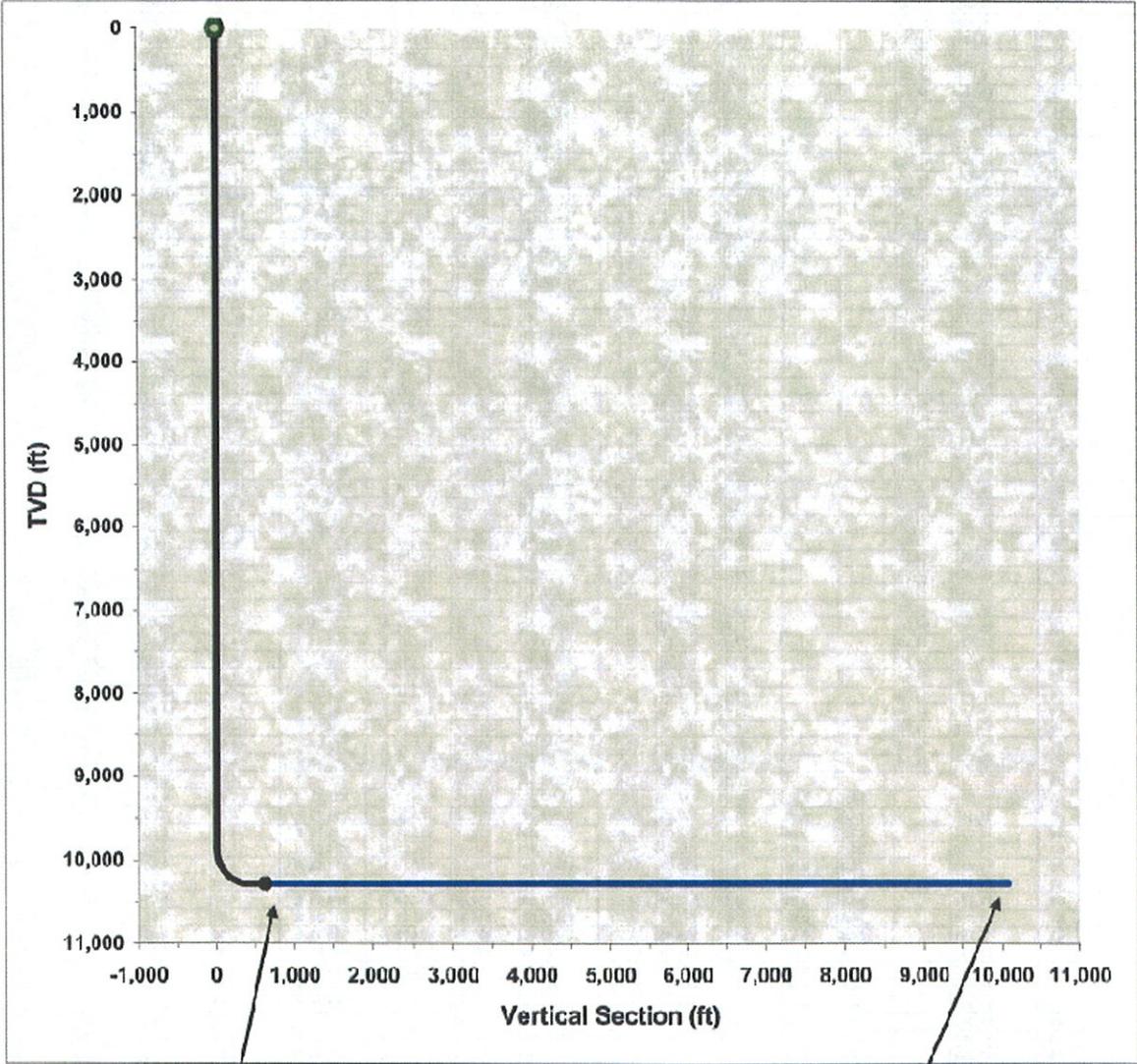
DIRECTIONAL DRILLING PLAN
FBIR Smith 11X-10
 Location: NW NW Sec 10, 149N-92W
 Footage: 370 ft FNL 772 ft FWL
 Elev: Graded Pad 2015', KB 2039'
 Dunn County, ND
 Scale: 1 sq = 100'

7" Casing: 10,725 FT MD
BHL: 1,270 ft FWL 746 ft FNL
Coord: 498 E 375 S
Az to Shoe: 127.00 Deg



TARGET
TMD: 20,577 ft
TVD: 10,277 ft
9,907 SOW 1,879 EOW
250 FSL 2,640 FWL
WH to BH Target Az 169.28

DIRECTIONAL DRILLING PLAN
FBIR Smith 11X-10
 Location: NW NW Sec 10, 149N-92W
 Footage: 370 ft FNL 772 ft FWL
 Elev: Graded Pad 2015', KB 2039'
 Dunn County, ND
 Scale: 1 sq = 500'



7" Casing: 10.725 FT MD
 BHL: 1,270 ft FWL 745 ft FNL
 Coord: 498 E 375 S
 Az to Shoe: 127.00 Deg

TARGET
 TMD: 20,577 ft
 TVD: 10,277 ft
 9,907 SOW 1,879 EOW
 250 FSL 2,640 FWL
 WH to BH Target Az 169.26

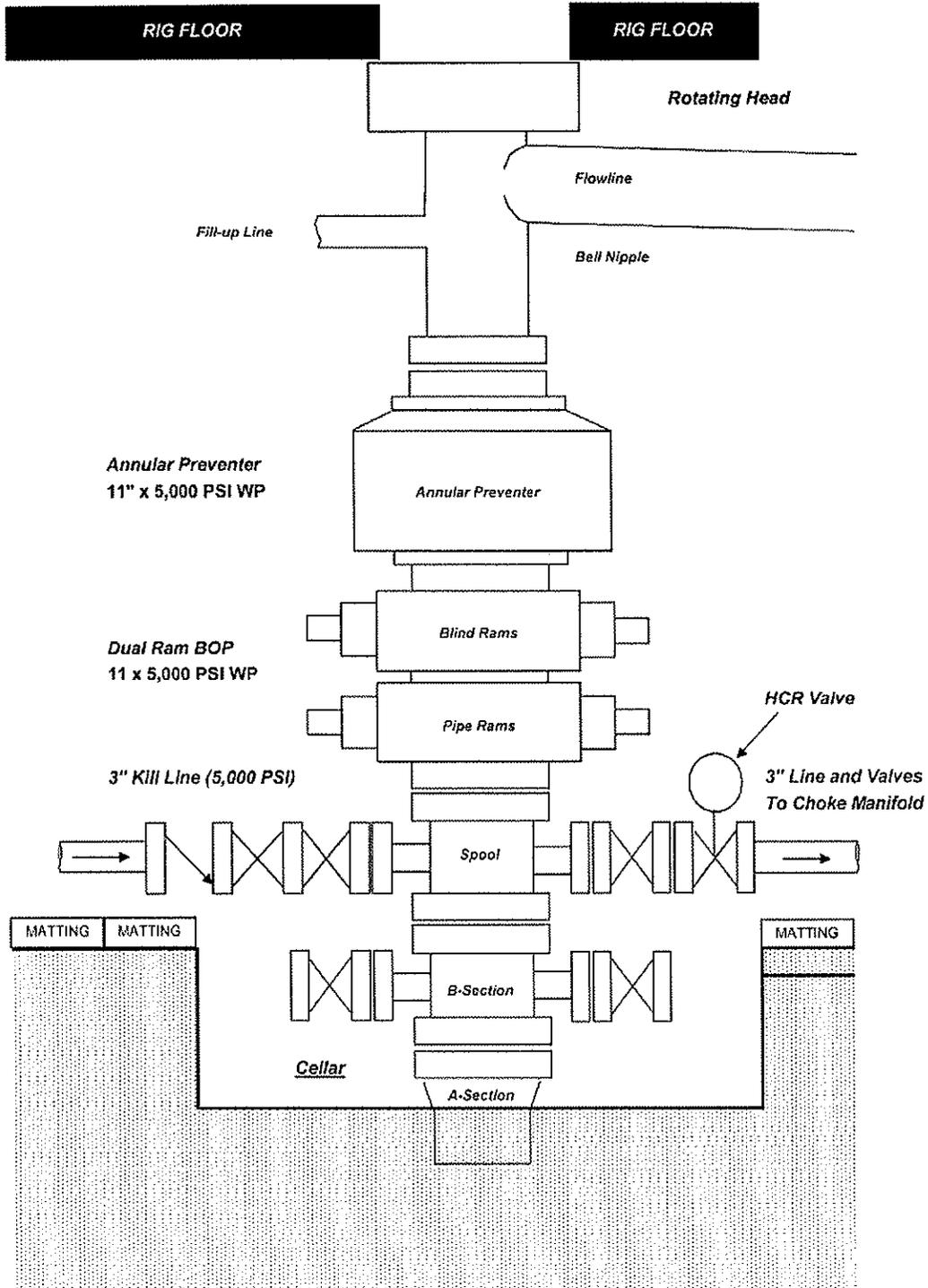
HORIZONTAL DRILLING PLAN - LATERAL NO.1

Company		XTO Energy, Inc										Target Inclination		90		
Well		FBIR Smith 11X-10										Magnetic Declination				
Build Rate		14.00										Target TVD		10,277		
Relative Turn Direction		R										Target Azimuth		169.26 127.00 Initial Azimuth		
Turn Rate - Deg/100		4.00 49.04 Total Turn										Target Coordinates from Surf Locn		1879 E 9907 S 10,084 VS		
Date	No.	DEPTH	BR	DL	DA	INC.	AZM	C.L.	T.V.D.	V.S.	N/S	E/W	DLS	B./D.	Walk	BRN
KOP1	1	0	14.00						0.00	0.00	0.00 N	0.00 E	0.00			0.00
	2	9,868	14.00			0.00	0.00	9868	9867.74	0.00	0.00 N	0.00 E	0.00	0.00	0.00	14.00
	3	9,881	14.00			1.80	127.00	12.9	9880.60	0.20	0.12 S	0.16 E	14.00	14.00	987.78	14.00
	4	9,893	14.00			3.60	127.00	12.9	9893.44	0.81	0.49 S	0.64 E	14.00	14.00	0.00	14.00
	5	9,906	14.00			5.40	127.00	12.9	9906.26	1.82	1.09 S	1.45 E	14.00	14.00	0.00	14.00
	6	9,919	14.00			7.20	127.00	12.9	9919.04	3.23	1.94 S	2.58 E	14.00	14.00	0.00	14.00
	7	9,932	14.00			9.00	127.00	12.9	9931.77	5.04	3.03 S	4.02 E	14.00	14.00	0.00	14.00
	8	9,945	14.00			10.80	127.00	12.9	9944.43	7.25	4.36 S	5.79 E	14.00	14.00	0.00	14.00
	9	9,958	14.00			12.60	127.00	12.9	9957.02	9.86	5.93 S	7.87 E	14.00	14.00	0.00	14.00
	10	9,971	14.00			14.40	127.00	12.9	9969.52	12.96	7.74 S	10.27 E	14.00	14.00	0.00	14.00
	11	9,983	14.00			16.20	127.00	12.9	9981.92	16.25	9.78 S	12.98 E	14.00	14.00	0.00	14.00
	12	9,996	14.00			18.00	127.00	12.9	9994.21	20.03	12.05 S	16.00 E	14.00	14.00	0.00	14.00
	13	10,009	14.00			19.80	127.00	12.9	10006.37	24.19	14.56 S	19.32 E	14.00	14.00	0.00	14.00
	14	10,022	14.00			21.60	127.00	12.9	10018.40	28.74	17.30 S	22.95 E	14.00	14.00	0.00	14.00
	15	10,035	14.00			23.40	127.00	12.9	10030.28	33.66	20.26 S	26.88 E	14.00	14.00	0.00	14.00
	16	10,048	14.00			25.20	127.00	12.9	10042.00	38.95	23.44 S	31.11 E	14.00	14.00	0.00	14.00
	17	10,061	14.00			27.00	127.00	12.9	10053.54	44.60	26.84 S	35.62 E	14.00	14.00	0.00	14.00
	18	10,073	14.00			28.80	127.00	12.9	10064.90	50.62	30.47 S	40.43 E	14.00	14.00	0.00	14.00
	19	10,086	14.00			30.60	127.00	12.9	10076.07	56.99	34.30 S	45.51 E	14.00	14.00	0.00	14.00
	20	10,099	14.00			32.40	127.00	12.9	10087.03	63.71	38.34 S	50.88 E	14.00	14.00	0.00	14.00
	21	10,112	14.00			34.20	127.00	12.9	10097.78	70.77	42.59 S	56.52 E	14.00	14.00	0.00	14.00
	22	10,125	14.00			36.00	127.00	12.9	10108.30	78.16	47.04 S	62.42 E	14.00	14.00	0.00	14.00
	23	10,138	14.00			37.80	127.00	12.9	10118.58	85.88	51.68 S	68.58 E	14.00	14.00	0.00	14.00
	24	10,151	14.00			39.60	127.00	12.9	10128.61	93.92	56.52 S	75.00 E	14.00	14.00	0.00	14.00
	25	10,163	14.00			41.40	127.00	12.9	10138.39	102.27	61.55 S	81.67 E	14.00	14.00	0.00	14.00
	26	10,176	14.00			43.20	127.00	12.9	10147.90	110.92	66.75 S	88.58 E	14.00	14.00	0.00	14.00
	27	10,189	14.00			45.00	127.00	12.9	10157.13	119.86	72.14 S	95.73 E	14.00	14.00	0.00	14.00
	28	10,202	14.00			46.80	127.00	12.9	10166.08	129.10	77.69 S	103.10 E	14.00	14.00	0.00	14.00
	29	10,215	14.00			48.60	127.00	12.9	10174.73	138.61	83.42 S	110.69 E	14.00	14.00	0.00	14.00
	30	10,228	14.00			50.40	127.00	12.9	10183.08	148.38	89.30 S	118.50 E	14.00	14.00	0.00	14.00
	31	10,241	14.00			52.20	127.00	12.9	10191.12	158.42	95.34 S	126.51 E	14.00	14.00	0.00	14.00
	32	10,253	14.00			54.00	127.00	12.9	10198.84	168.70	101.53 S	134.73 E	14.00	14.00	0.00	14.00
	33	10,266	14.00			55.80	127.00	12.9	10206.23	179.21	107.86 S	143.13 E	14.00	14.00	0.00	14.00
	34	10,279	14.00			57.60	127.00	12.9	10213.29	189.96	114.32 S	151.71 E	14.00	14.00	0.00	14.00
	35	10,292	14.00			59.40	127.00	12.9	10220.01	200.92	120.92 S	160.48 E	14.00	14.00	0.00	14.00
	36	10,305	14.00			61.20	127.00	12.9	10226.38	212.09	127.64 S	169.38 E	14.00	14.00	0.00	14.00
	37	10,318	14.00			63.00	127.00	12.9	10232.39	223.45	134.48 S	178.45 E	14.00	14.00	0.00	14.00
	38	10,331	14.00			64.80	127.00	12.9	10238.05	235.00	141.43 S	187.67 E	14.00	14.00	0.00	14.00
	39	10,343	14.00			66.60	127.00	12.9	10243.34	246.71	148.48 S	197.03 E	14.00	14.00	0.00	14.00
	40	10,356	14.00			68.40	127.00	12.9	10248.26	258.59	155.63 S	206.52 E	14.00	14.00	0.00	14.00
	41	10,369	14.00			70.20	127.00	12.9	10252.81	270.62	162.87 S	216.12 E	14.00	14.00	0.00	14.00
	42	10,382	14.00			72.00	127.00	12.9	10256.97	282.78	170.19 S	225.84 E	14.00	14.00	0.00	14.00
	43	10,395	14.00			73.80	127.00	12.9	10260.75	295.07	177.58 S	235.65 E	14.00	14.00	0.00	14.00
	44	10,408	14.00			75.60	127.00	12.9	10264.14	307.47	185.04 S	245.55 E	14.00	14.00	0.00	14.00
	45	10,421	14.00			77.40	127.00	12.9	10267.14	319.97	192.57 S	255.54 E	14.00	14.00	0.00	14.00
	46	10,433	14.00			79.20	127.00	12.9	10269.75	332.56	200.14 S	265.59 E	14.00	14.00	0.00	14.00
	47	10,446	14.00			81.00	127.00	12.9	10271.96	345.22	207.77 S	275.70 E	14.00	14.00	0.00	14.00
	48	10,459	14.00			82.80	127.00	12.9	10273.77	357.95	215.43 S	285.87 E	14.00	14.00	0.00	14.00
	49	10,472	14.00			84.60	127.00	12.9	10275.18	370.73	223.12 S	296.07 E	14.00	14.00	0.00	14.00
	50	10,485	14.00			86.40	127.00	12.9	10276.19	383.55	230.83 S	306.31 E	14.00	14.00	0.00	14.00
	51	10,498	14.00			88.20	127.00	12.9	10276.80	396.39	238.56 S	316.57 E	14.00	14.00	0.00	14.00
END OF CURVE	52	10,511	14.00			90.00	127.00	12.9	10277.00	409.24	246.30 S	326.83 E	14.00	14.00	0.00	0.00
CASING SHOE	53	10,725				90.00	127.00	214	10277.00	623.24	375.08 S	497.74 E	4.00	0.00	0.00	0.00
START TURN	54	11,025		24.5	0.98	90.00	127.00	300	10277.00	923.24	555.63 S	737.33 E	4.00	0.00	0.00	0.00
	55	11,049		24.5	0.98	90.00	127.98	24.52	10277.00	701.58	570.55 S	756.79 E	4.00	0.00	4.00	0.00
	56	11,074		24.5	0.98	90.00	128.96	24.52	10277.00	720.15	585.81 S	775.98 E	4.00	0.00	4.00	0.00
	57	11,098		24.5	0.98	90.00	129.94	24.52	10277.00	738.98	601.39 S	794.92 E	4.00	0.00	4.00	0.00
	58	11,123		24.5	0.98	90.00	130.92	24.52	10277.00	758.08	617.29 S	813.58 E	4.00	0.00	4.00	0.00
	59	11,147		24.5	0.98	90.00	131.90	24.52	10277.00	777.45	633.51 S	831.97 E	4.00	0.00	4.00	0.00
	60	11,172		24.5	0.98	90.00	132.89	24.52	10277.00	797.06	650.04 S	850.08 E	4.00	0.00	4.00	0.00
	61	11,196		24.5	0.98	90.00	133.87	24.52	10277.00	816.93	666.89 S	867.90 E	4.00	0.00	4.00	0.00
	62	11,221		24.5	0.98	90.00	134.85	24.52	10277.00	837.04	684.03 S	885.43 E	4.00	0.00	4.00	0.00
	63	11,245		24.5	0.98	90.00	135.83	24.52	10277.00	857.39	701.47 S	902.67 E	4.00	0.00	4.00	0.00
	64	11,270		24.5	0.98	90.00	136.81	24.52	10277.00	877.97	719.20 S	919.61 E	4.00	0.00	4.00	0.00
	65	11,294		24.5	0.98	90.00	137.79	24.52	10277.00	898.77	737.22 S	936.24 E	4.00	0.00	4.00	0.00
	66	11,319		24.5	0.98	90.00	138.77	24.52	10277.00	919.79	755.52 S	952.55 E	4.00	0.00	4.00	0.00
	67	11,343		24.5	0.98	90.00	139.75	24.52	10277.00	941.03	774.10 S	968.56 E	4.00	0.00	4.00	0.00
	68	11,368		24.5	0.98	90.00	140.73	24.52	10277.00	962.47	792.95 S	984.24 E	4.00	0.00	4.00	0.00
	69	11,392		24.5	0.98	90.00	141.71	24.52	10277.00	984.11	812.07 S	999.60 E	4.00	0.00	4.00	0.00
	70	11,417		24.5	0.98	90.00	142.69	24.52	10277.00	1005.95	831.44 S	1014.62 E	4.00	0.00	4.00	0.00
	71	11,441		24.5	0.98	90.00	143.67	24.52	10277.00	1027.97	851.07 S	1029.32 E	4.00	0.00	4.00	0.00
	72	11,466		24.5	0.98	90.00	144.66	24.52	10277.00	1050.18	870.95 S	1043.67 E	4.00	0.00	4.00	0.00
	73	11,490		24.5	0.98	90.00	145.64	24.52	10277.00	1072.56	891.08 S	1057.69 E	4.00	0.00	4.00	0.00
	74	11,515		24.5	0.98	90.00	146.62	24.52	10277.00	1095.11	911.43 S	1071.35 E	4.00	0.0		

83	11,736	24.5	0.98	90.00	155.44	24.52	10277.00	1304.51	1104.32 S	1178.13 E	4.00	0.00	4.00	0.00
84	11,760	24.5	0.98	90.00	156.43	24.52	10277.00	1326.37	1126.71 S	1188.13 E	4.00	0.00	4.00	0.00
85	11,785	24.5	0.98	90.00	157.41	24.52	10277.00	1352.33	1149.27 S	1197.75 E	4.00	0.00	4.00	0.00
86	11,809	24.5	0.98	90.00	158.39	24.52	10277.00	1376.37	1171.38 S	1206.97 E	4.00	0.00	4.00	0.00
87	11,834	24.5	0.98	90.00	159.37	24.52	10277.00	1400.43	1194.36 S	1215.81 E	4.00	0.00	4.00	0.00
88	11,858	24.5	0.98	90.00	160.35	24.52	10277.00	1424.63	1217.38 S	1224.25 E	4.00	0.00	4.00	0.00
89	11,883	24.5	0.98	90.00	161.33	24.52	10277.00	1448.93	1241.34 S	1232.30 E	4.00	0.00	4.00	0.00
90	11,907	24.5	0.98	90.00	162.31	24.52	10277.00	1473.25	1264.34 S	1239.95 E	4.00	0.00	4.00	0.00
91	11,932	24.5	0.98	90.00	163.29	24.52	10277.00	1497.61	1287.10 S	1247.20 E	4.00	0.00	4.00	0.00
92	11,956	24.5	0.98	90.00	164.27	24.52	10277.00	1522.02	1311.31 S	1254.05 E	4.00	0.00	4.00	0.00
93	11,981	24.5	0.98	90.00	165.25	24.52	10277.00	1546.47	1334.36 S	1260.50 E	4.00	0.00	4.00	0.00
94	12,005	24.5	0.98	90.00	166.23	24.52	10277.00	1570.91	1358.73 S	1266.55 E	4.00	0.00	4.00	0.00
95	12,030	24.5	0.98	90.00	167.21	24.52	10277.00	1595.44	1382.39 S	1272.17 E	4.00	0.00	4.00	0.00
96	12,054	24.5	0.98	90.00	168.20	24.52	10277.00	1619.95	1406.55 S	1277.30 E	4.00	0.00	4.00	0.00
97	12,079	24.5	0.98	90.00	169.18	24.52	10277.00	1644.47	1430.20 S	1282.20 E	4.00	0.00	4.00	0.00
98	12,104	24.5	0.98	90.00	170.16	24.52	10277.00	1668.92	1454.72 S	1286.60 E	4.00	0.00	4.00	0.00
99	12,128	24.5	0.98	90.00	171.14	24.52	10277.00	1693.63	1478.31 S	1290.58 E	4.00	0.00	4.00	0.00
100	12,153	24.5	0.98	90.00	172.12	24.52	10277.00	1718.03	1502.17 S	1294.18 E	4.00	0.00	4.00	0.00
101	12,177	24.5	0.98	90.00	173.10	24.52	10277.00	1742.43	1527.19 S	1297.31 E	4.00	0.00	4.00	0.00
102	12,202	24.5	0.98	90.00	174.08	24.52	10277.00	1766.91	1551.36 S	1300.01 E	4.00	0.00	4.00	0.00
103	12,226	24.5	0.98	90.00	175.06	24.52	10277.00	1791.35	1576.17 S	1302.36 E	4.00	0.00	4.00	0.00
END TURN	104	12,251	24.5	0.98	90.00	176.04	10277.00	1815.72	1600.72 S	1304.27 E	4.00	0.00	4.00	0.00
TOTAL	105	20,977		90.00	176.04	8326.14	10277.00	10883.61	9807 S	1579 E	0.00	0.00	6.00	0.00
OPEN HOLE PAY														
9.853														

XTO Energy, Inc.
BOP STACK DIAGRAM

FBIR Smith 11X-10
Location: NW NW Sec 10, 149N-92W
Footage: 370 ft FNL, 772 ft FWL
Elev: Graded Pad 2015', KB 2039'
Dunn County, ND



XTO Energy, Inc.

CHOKES MANIFOLD DRAWING

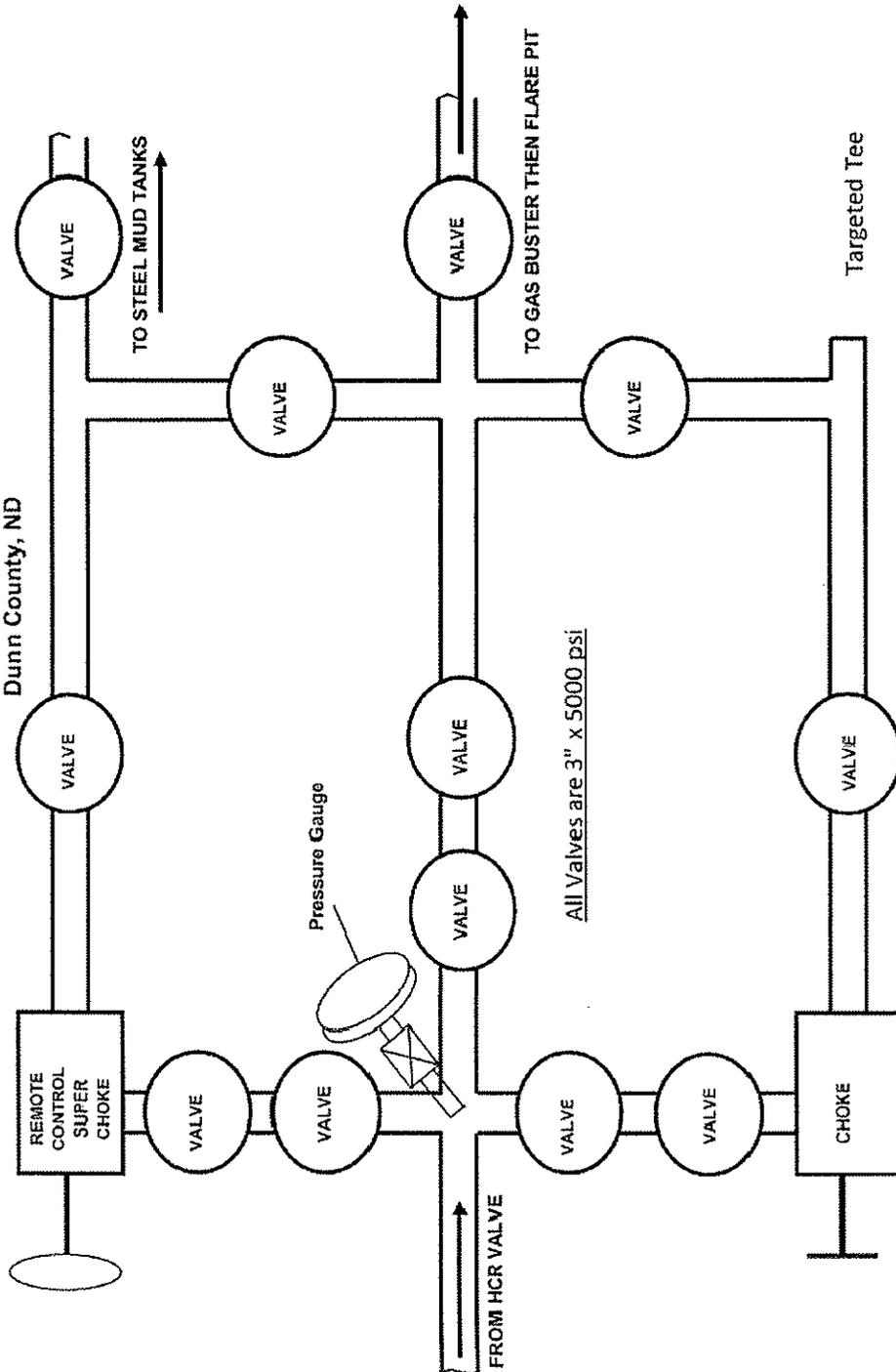
FBIR Smith 11X-10

Location: NW NW Sec 10, 149N-92W

Footage: 370 ft FNL, 772 ft FWL

Elev: Graded Pad 2015; KB 2039'

Dunn County, ND



**XTO ENERGY INC
H2S CONTINGENCY PLAN**

FBIR Smith 11X-10

**Location: NW NW Sec 10, 149N-92W
Footage: 370 ft FNL, 772 ft FWL
Elev: Graded Pad 2015', KB 2039'**

Dunn County, ND

**Latitude 47.745331N
Longitude 102.447014W**

H2S DRILLING OPERATIONS PLAN INDEX

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I. INTRODUCTION

A. OPERATOR'S ADDRESS AND PHONE

XTO ENERGY, INC.
PO BOX 1589 or 35399 Highway 23 - 8 miles East
SIDNEY, MT 59270
406-482-4000 (24 HR #)

B. DIRECTIONS TO WELL SITE

From Mandaree, ND: 4.3 mi E on BIA 12, 7.7 mi N, then E on BIA 10, then 0.3 mi NE into location

C. PURPOSE OF PLAN

The purpose of this plan is to safeguard the lives of the public, contract personnel and company personnel in the event of equipment failure or disasters during drilling or completion operations in formations which may contain Hydrogen Sulfide Gas, H₂S.

As a precautionary measure, this H₂S Contingency Plan has been prepared to assure the safety of all concerned, should a disaster occur. However, the Operator's on-site representative may have specified materials and practices for the drilling or completion of this well, which supercede the minimum requirements as outlined in this plan.

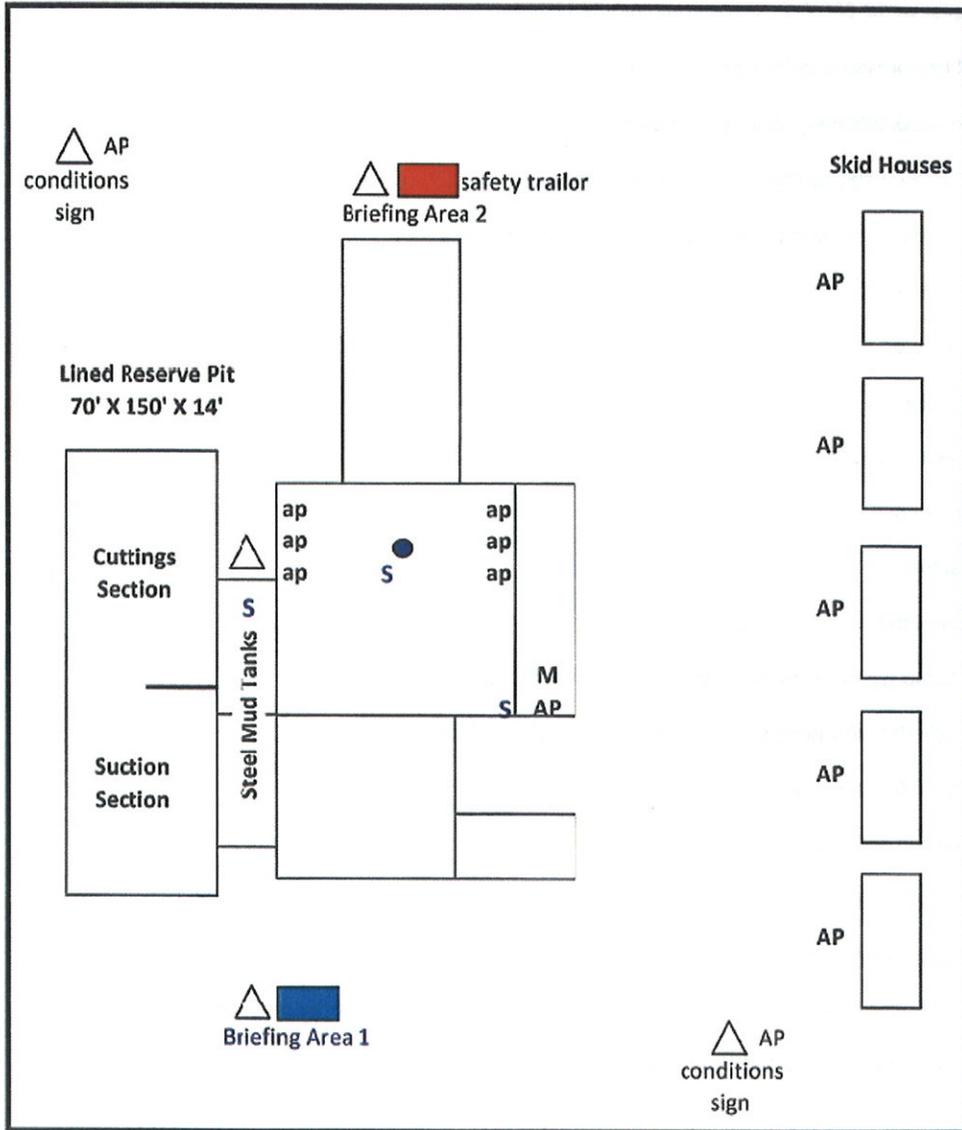
II. LOCATION LAYOUT

A. LOCATION MAP

FBIR Smith 11X-10



Planned Dual Pad = 350' x 550'



MAP KEY	
△	WIND SOCK
M	H2S MONITOR
AP	30 MIN SCBA PACK
ap	5 MIN SAR W/ EGRESS
S	H2S SENSOR

III. SAFETY EQUIPMENT

All H2S related safety equipment must be installed, tested and operational at a depth of 500 feet above, or 3 days prior to penetrating the first zone expected to contain H2S (whichever comes first).

A. SAFETY EQUIPMENT PROVIDED BY TOTAL SAFETY INC.

1. Safety trailer w/ 10-380 C.F. cylinder air supply system
2. Sufficient low-pressure airline hose with quick connects
3. Six-airline mask w/emergency escape cylinders
4. Seven 30 minute self contained breathing apparatus
5. Airline manifolds and air pack stands to accompany air packs
6. Three windsocks, frames and poles
7. Oxygen powered resuscitator
8. One set of signs
9. One 36 unit first aid kit
10. One 30# fire extinguisher
11. One stretcher
12. Flare gun w/shells (supplied upon request)
13. Gastec pump type gas detector w/full range of H2S detector tubes
14. One air cylinder w/regulator and filler hose for briefing area #2
15. H2S and briefing area signs
16. Well condition signs and flags
17. Explosion-proof bug blower (provided upon request)
18. 3 channel electronic monitor w/explosion proof warning system
19. One SO2 (Sulfur Dioxide) portable detector (supplied if or when H2S is being flared)
20. Additional equipment - added as needed.

B. TYPE OF EQUIPMENT AND STORAGE LOCATIONS

1. There will be six Scott airline masks on location. Five will be located on the rig floor with access to the shale shaker. One will be located in the derrick. Each mask will have an easily accessible air line hose.
2. There will be seven 30-minute self-contained breathing apparatus on location. They will be positioned as follows: one at Operator's representative's trailer, one at Tool Pusher's trailer, one at Briefing Area #1 one at Briefing Area #2, one at rig dog house stairway, one at mud logger's trailer and one at hopper area.
3. A Gastec, pump type, gas detector with low and high range detector tubes will be located in the doghouse
4. Two cleared, briefing areas will be designed as Safe Briefing Areas #1 and #2.
5. The Briefing Area most upwind is designated as Safety Briefing Area #1. In an emergency, personnel must assemble at this upwind area for instructions from their supervisor.
6. The H2S Safety Trailer will contain a cascade system of (10) 380 C.F. air cylinders that will provide a continuous air supply to air lines located on the rig. It will also contain one resuscitator, one 30 minute air pack and one stretcher, one 36 unit first aid kit, one 30# dry chemical fire extinguisher, and will have a windsock or streamer to indicate wind direction.
7. Two other windsocks will be installed so as to be visible from all parts of the location.
8. A well condition warning sign will be displayed at the location entrance to advise of current operating conditions.
9. A list of emergency telephone numbers will be kept on rig floor, tool pusher's trailer, the Operator's on-site representative's trailer and in the Safety Trailer.
10. A barricade will be available to block the entrance to location should an emergency occur. In most cases, a vehicle will be used to block the entrance.
11. A three-channel H2S monitor will be located in the doghouse. The three sensors will be installed: one on the shale shaker, one in the cellar and one near the bell nipple.
12. An undulating high and low pitch siren and light will be installed on the derrick "A" leg.
13. If H2S concentrations reach 10 ppm, an explosion-proof bug blower (fan) will be installed under the rig floor to disperse possible accumulations of H2S.
14. Any time it is necessary to flare gas containing H2S, a Sulfur Dioxide monitor will be used to determine SO2 concentrations

C. MAXIMUM NUMBER OF PEOPLE ON LOCATION AT ANY ONE TIME

1. There will be a maximum of 13 persons on location at any one time, unless additional respirators are provided during special operations where more than 13 persons will be on location.

IV. OPERATING PROCEDURES

A. BLOWOUT PREVENTION MEASURES DURING DRILLING

1. Blowout Prevention Requirements: All BOP equipment shall meet the American Petroleum Institute specifications as to materials acceptable for H₂S service and tested accordingly (or to BLM specifications).
2. Drilling String Requirements: All drill string components are to be of material that meets the American Petroleum Institute's specifications for H₂S service. All drill string components should be inspected to IADC critical service specifications prior to running in well.

B. GAS MONITORING EQUIPMENT

1. A continuous H₂S detection system, consisting of three H₂S detectors and an audible/visual warning system will be in operation during all phases of this H₂S Contingency Plan. The detection system will be adjusted and calibrated such that an H₂S exposure of 10 ppm or higher (at any sensor) will trigger the visual portion (blinking or rotating light), and an H₂S exposure of 15 ppm or higher (at any sensor) will trigger the audible portion (wailing or yelping siren) of the warning system (i.e., H₂S continually present at or above threshold levels). A trained operator or H₂S supervisor will monitor the H₂S detection system.
2. When approaching or completing H₂S formations, crewmembers may attach 8-hour electronic H₂S personnel monitors to their person.
3. Hand held H₂S sampling gas detectors will be used to check areas not covered by automatic monitoring equipment.

C. CREW TRAINING AND PROTECTION

1. All personal working at the well site will be properly trained in accordance with the general training requirements outlined in the API Recommended Practices for Safe Drilling of Wells Containing H₂S. The training will include, but not be limited to, the following:
 - a. General information about H₂S and SO₂ gases
 - b. Hazards associated with H₂S and SO₂ gases
 - c. Safety equipment on location
 - d. Proper use and care of personal protective equipment
 - e. Operational procedures in dealing with H₂S gas
 - f. Evacuation procedures
 - g. First aid, reviving an H₂S victim, toxicity, etc.
 - h. Designated Safe Briefing Areas
 - i. Buddy System
 - j. Regulations
 - k. Review of Drilling Operations Plan
2. Initial training shall be completed when drilling reaches a depth of 500' above or 3 days prior to penetrating (whichever comes first) the first zone containing or expected to contain H₂S.
3. Weekly H₂S and well control drills for all personnel on each working crew shall be conducted.
4. Safety Equipment: As outlined in the Safety Equipment index, H₂S safety protection equipment will be available to/or assigned each person on location.

D. METALLURGICAL CONSIDERATIONS

1. Steel drill pipe used in H₂S environments should have yield strength of 95,000 psi or less due to potential embrittlement problems. Drill stem joints near the top of the drill string are normally under the highest stress levels during drilling and do not have the protection of elevated down hole temperatures. These factors should be considered in design of the drill string.

Precautions should be taken to minimize drill string stress caused by conditions such as excessive dogleg severity, improper torque, whip, abrasive wear or tool joints and joint imbalance. American Petroleum Institute, Bulletin RR 7G, will be used as a guideline for drill string precautions.

2. Corrosion inhibitors may be applied to the drill pipe or to the mud system as an additional safeguard.

3. Blowout preventors should meet or exceed the recommendations for H₂S service as set forth in the latest edition of API RI 53.

E. MUD PROGRAM AND TREATING

1. It is of utmost importance that the mud be closely monitored for detection of H₂S and reliability of the H₂S treating chemicals.

2. Identification and analysis of sulfides in the mud and mud filtrates will be carried out per operator's prescribed procedures.

3. The mud system will be pre-treated with Zinc Carbonate, Ironite Sponge or similar chemicals of H₂S control prior to drilling into the H₂S bearing formation. Sufficient quantities of corrosion inhibitor should be on location to treat the drill string during Drill Stem Test Operations. Additionally, Aqua Ammonia should be on hand to treat the drill string for crew protection, should H₂S be encountered while tripping the drill string following drill stem testing

F. WELL CONTROL EQUIPMENT

1. Flare System

a. A flare system shall be designed and installed to safely gather and burn H₂S bearing gas.

b. Flare lines shall be located as far from the operating site as feasible and in a manner to compensate for wind changes.

c. The flare line mouth shall be located not less than 150' from wellbore.

d. Flare lines shall be straight unless targeted with running tees.

2. Remote Controlled Choke: A remote controlled choke shall be installed for all H₂S drilling and where feasible for completion operations. A remote controlled valve may be used in lieu of this requirement for completions operations.

3. Mud-gas separators and rotating heads shall be installed and operable for all exploratory wells.

V. OPERATING CONDITIONS

A Well Condition Sign and Flag will be posted on all access roads to the location. The sign shall be legible and large enough to be read by all persons entering the well site and be placed a minimum of 200', but no more than 500', from the well site to allow vehicles to turn around at a safe distance prior to reaching the site.

A. DEFINITION OF WARNING FLAGS

1. Condition Green: Normal operations. Any operation where the possibility of encountering H₂S exists, but no H₂S has been detected.

2. Condition Yellow: Potential Danger. Any operation where the possibility of encountering H₂S exists and in all situations where concentrations of H₂S are detected in the air below the threshold level (10 ppm).

a. Cause of condition:

- *Circulating up drill breaks
- *Trip gas after trip
- *Circulating out gas on choke
- *Poisonous gas present, but below threshold concentrations
- *Drill stem test

b. Safety Action:

- *Check safety equipment and keep it with you
- *Be alert for a change in condition
- *Follow instructions

3. Condition Red: Extreme Danger. Presence of H₂S at or greater than 10 ppm. Breathing apparatus must be worn.

a. Safety action:

*MASK UP. All personal will have protective breathing equipment with them. All nonessential personnel will move to the Safe Briefing Area and stay there until instructed to do otherwise. All essential personnel (those necessary to maintain control of the well) shall wear breathing apparatus to perform operations related to well control.

b. Order evacuation of local people within the danger zone. Request help from local authorities, State Police, Sheriff's Dept. and Service Representative.

c. The decision to ignite the well is the responsibility of the Operator's on-site representative and should be made only as a last resort, when it is clear that:

- *human life is endangered
- *there is no hope of controlling the well under prevailing conditions

B. CIRCULATING OUT KICK (WAIT AND WEIGHT METHOD)

If it is suspected that H₂S is present with the gas whenever a kick is taken, the wait and weight method of eliminating gas and raising the mud will be followed (below):

- a. Increase density of mud in pits to 'kill' weight mud.
- b. Open choke and bring pump to initial circulating pressure by holding casing pressure at original value until pump is up to predetermined speed.
- c. When initial circulating pressure is obtained on drill pipe, zero pump stroke counter and record time.
- d. Reduce drill pipe pressure from initial circulating pressure to final circulating pressure by using pump strokes and/or time according to graph
- e. When 'kill' weight mud is at the bit, hold final circulating pressure until kill weight mud is to surface.
- f. When the well has been put on the choke and circulation has been established, the following safety procedures must be initiated:
 - *determine when gas is anticipated to reach surface
 - *move all non-essential personnel to Safe Briefing Area
 - *check out protective breathing apparatus to all remaining personnel (apparatus is to be kept with them until the kick has been completely circulated out)
 - *mud men will see that the proper amount of H₂S scavenging chemical is in

the mud and record times checked
*ensure ignition flare is burning and valves are open to designated flare stacks

C. CORING OPERATIONS IN H2S BEARING ZONES

1. Personal protective breathing apparatus will be worn from 10 to 15 stands in advance of retrieving the core barrel. Cores to be transported should be sealed and marked indicating the presence of H2S.
 - a. Yellow Caution Flag will be flown at the well condition sign.
 - b. The "NO SMOKING" rule will be enforced

D. DRILL STEM TESTING OF H2S ZONES

1. The DST subsurface equipment will be suitable for H2S service as recommended by the API.
2. Drill stem testing of H2S zone will be conducted in daylight hours.
3. All non-essential personnel will be moved to an established safe area or off location.
4. The "NO SMOKING" rule will be enforced.
5. DST fluids will be circulated through a remote controlled choke and a separator to permit flaring of gas. A continuous pilot light will be used.
6. A yellow or red flag will be flown at entrance to location depending on present gas condition.
7. If warranted, use Aqua Ammonia for neutralizing the toxicity of H2S from drill string. Aqua Ammonia should be on location even if not used for DST.
8. On completion of DST, if H2S contaminated formation fluids or gases are present in drill string, floor workers will be masked up before test valve is removed from drill string and continue "mask on" condition until such time that readings in work area do not exceed 15 ppm of H2S gas.

VI. EMERGENCY PROCEDURES

A. SOUNDING ALARM

1. The fact is to be instilled in the minds of all rig personnel that the sounding of the alarm means only one thing - H2S IS PRESENT and everyone is to proceed to his assigned station and the contingency plan is put into effect.

B. DRILLING CREW ACTIONS

1. All personnel will don their protective breathing apparatus. The driller will take necessary precautions as indicated in operating procedures.
2. The Buddy system will be implemented. All personnel will act upon directions from the Operator's on-site representative.
3. If there are non-essential personnel on location, they will move off location.
4. Entrance to the location will be patrolled, and the proper well condition flag will be displayed at the entrance to the location.

C. RESPONSIBILITIES OF PERSONNEL

1. In order to assure the proper execution of this plan, it is essential that one person be responsible for and in complete charge of implementing these procedures. The responsible person will be as follows:

- a. The Operator's on-site representative (consultant) or his assistant.
- b. Contract Tool Pusher.

D. STEPS TO BE TAKEN

1. Contact the main office(s) of the Operator &/or the Rig Contractor as listed in this plan below (by the quickest means of communications):
2. An assigned crewmember will blockade the entrance to the location. No unauthorized personnel will be allowed entry into the location.
3. The Operator's on-site representative will remain on location and attempt to regain control of the well.
4. The Rig Contractor's rig superintendent will begin evacuation of those persons in immediate danger. He will begin by telephoning residents in the danger zone. In the event of no contact by telephone, the tool pusher will proceed at once to each dwelling for a person-to-person contact. In the event the tool pusher cannot leave the location, he will assign a responsible crewmember to proceed in the evacuation of local residents. Upon arrival, the Sheriff's Department and safety equipment contractor's personnel will aid in further evacuation.

E. COMPANY & CONTACT PERSONNEL

1. Operator's Drilling Supt Kal Beckman	Office Home Cell	406-482-6808 701-572-6057 701-570-2536
2. Operator's Drilling Engineer Ross Lubbers	Office Home Cell	405-319-3285 405-513-5955 405-659-8563
3. Patterson Drilling Supt John Hlebechuk	Office Cell	701-483-6640 701-260-2904
4. Nabors Drilling Supt Scott Reid	Office Home Cell	701-572-6704 701-385-4697 701-848-6227
5. Petroleum Experience – Drilling Consultants Pete Peterson	Office	701-774-8357

F. LEAK IGNITION

Leak Ignition Procedure: (used to ignite a leak in the event it becomes necessary to protect the public)

1. Two men, the Operator's on-site representative and the Contractor's Drig Superintendent or safety equipment provider's representative, wearing self-contained pressure demand air masks must determine the perimeter of the flammable area. This should be done with one man using an H2S detector and the other one using a flammable gas detector. The flammable perimeter should be established at 30% to 40% of the lower flammable limits.
2. After the flammable perimeter has been established and all employees and citizens have been removed from the area, the ignition team should move to the up-wind area of the leak perimeter and fire a flare into the area. If the leak isn't ignited on the 1st attempt, move in 30 - 40 feet and fire again. Continue moving in and firing until the leak is ignited or the flammable gas detector indicates the ignition team is moving into the hazardous area. If trouble is incurred in igniting the leak by firing toward the leak, try firing 40 - 90 feet to each side of the area where you have been firing. If still no ignition is accomplished, ignite the copper line burner and push it into the leak area. This should accomplish ignition. If ignition is not possible due to the makeup of the gas, the toxic leak perimeter must be established and maintained to ensure evacuation is completed and continue until the emergency is secure.
3. The following equipment and man-power will be required to support the ignition team:
 - a. One flare gun.
 - b. Four pressure demand air packs.
 - c. Two nylon ropes tied to the ignition team.
 - d. Two men in a clear area equipped with air packs.
 - e. Portable butane bottle with copper line.
4. The person with the final authority will then ignite the well.

G. GENERAL EQUIPMENT

1. Two areas on the location will be designated as briefing areas. The one that is upwind from the well will be designated as the "Safe Briefing Area" or "Briefing Area #1".
2. In the case of an emergency, personnel will assemble in the upwind area as per prior instructions from the operator's representative.
3. The H2S trailer provided by the safety contractor will contain 10 air cylinders, a resuscitator, one 30 minute air pack and will have a windsock.
4. Two other windsocks will be installed.
5. A condition warning sign will be displayed at the location entrance.
6. A list of emergency telephone numbers will be kept on the rig floor, tool pusher's trailer and the Operator's on-site representative's trailer.
7. Two barricades will be available to block the entrance to location.
8. An undulating high and low pitch siren will be installed.
9. A telephone line or mobile phone will be available at the well site for incoming and outgoing communications.

VII. APPENDIX

A. EMERGENCY & MEDICAL FACILITIES:

NORTH DAKOTA EMERGENCY ASSISTANCE: 800-472-2121

AMBULANCE SERVICE:

BELFIELD, ND	911
DICKINSON, ND	911
SIDNEY, MT	406-488-2100
TIOGA, ND	701-664-2200
WILLISTON, ND	911
WATFORD CITY, ND	701-444-3516
KILLDEER, MANNING, ND	911

HOSPITALS:

SIDNEY HEALTH CENTER - SIDNEY, MT	406-488-2100
MERCY MEDICAL CENTER - WILLISTON, ND	701-774-7400
McKENZIE COUNTY MEMORIAL HOSPITAL - WATFORD CITY	701-842-3000
ST. JOSEPH'S HOSPITAL - DICKINSON, ND	701-225-7200
TIOGA MEDICAL CENTER	701-568-3626

B. LAW ENFORCEMENT AND FIRE FIGHTING AGENCIES

POLICE or SHERIFF:

BELFIELD, ND	911
DICKINSON, ND	911
SIDNEY, MT	911 OR 406-433-2809
MCKENZIE COUNTY	701-444-3654
TIOGA - WILLIAMS COUNTY	911 OR 701-664-2514
WATFORD CIY, ND	911 OR 701-842-2400
MANNING, ND SHERIFF	911 OR 701-573-4449

FIRE:

ALEXANDER, ND	911
ARNEGARD, ND	701-586-3500
BELFIELD, ND	911
DICKINSON, ND	911
SIDNEY, MT	406-433-1122
TIOGA, ND	701-664-2200
WATFORD CITY, ND	701-842-3516
WILLISTON, ND	911

C. WELL CONTROL SPECIALISTS:

BOOTS AND COOTS	713-931-8884
RED ADAIR COMPANY INC	713-464-0230
WILD WELL CONTROL	701-353-5481

D: GOVERNMENTAL AGENCIES:

STATE WATER COMMISSION 701-224-4940

NDIC:
CHIEF ENFORCEMENT OFFICER 701-224-2969
STATE GEOLOGIST 701-777-2231

NORTH DAKOTA STATE DEPARTMENT OF HEALTH:
DIVISION OF ENVIRONMENTAL ENGINEERING 701-224-2348

DIVISION OF WATER & POLLUTION CONTROL:
BISMARCK, ND 701-224-2375

DISTRICT FOREST SERVICE RANGER:
DICKINSON, ND 701-225-5151
MEDORA, ND 701-623-4466
WATFORD CITY, ND 701-842-2393

BUREAU OF LAND MANAGEMENT:
DICKINSON, ND 701-225-9148

U.S. CORPS OF ENGINEERS:
RIVERDALE, ND 701-654-7411

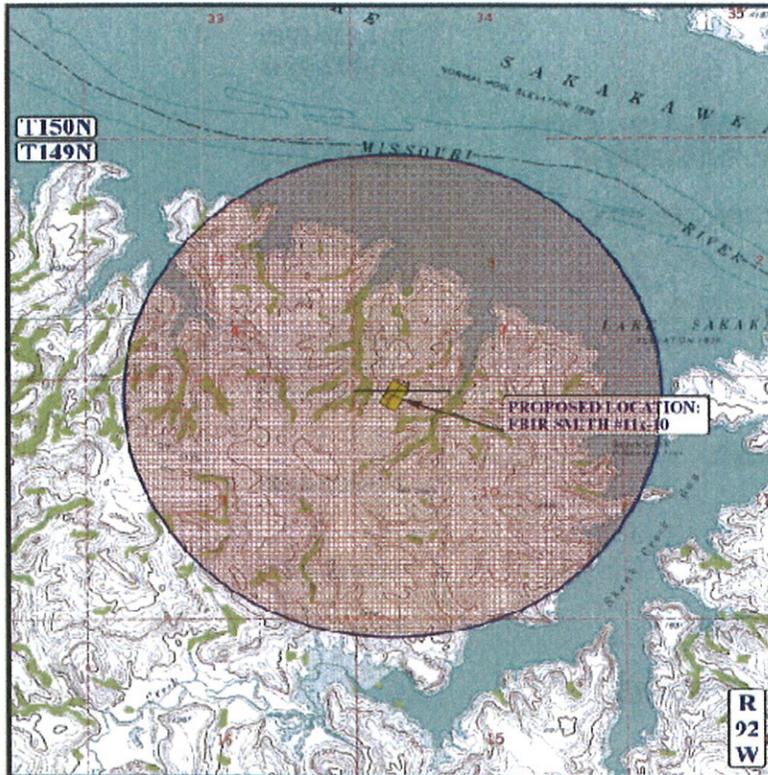
OIL SPILLS DISASTER REPORTING: 800-424-8802

E. RADIO & TELEVISION STATIONS:

KEYZ AM 660 701-572-5371
KYYZ FM 96.1 701-572-3911
KDIX 701-225-5133
KRRB-FM 701-227-1222
KUMV TV 701-572-4676
KXMD TV 701-572-2345
KQCD TV 701-225-6843

VIII. RESIDENTS AND LANDOWNERS

A. 1 MILE RADIUS EXPOSURE MAP



B. RESIDENTS WITHIN 1 MILE AND PHONE NUMBERS

There are numerous dwellings in the Skunk Bay Resort which fall within a 1 mile radius of the proposed pac

Name	Home Address	Phone #	Block No.	Lot No.
Andrus, Chuck	305 5th St. NW, South Heart, ND 58655	701-677-4112	6	15
Badinger, Miles	1445 2nd Ave., E. Dickinson, ND 58601	701-264-7020	5	20
Berg, Daryl	Box 614, Killdeer, ND 58640	701-764-5394	7	6
Binder, Mark	1697 Crocus Dr, Sidney, MT 59270	406 382 4783	6	17
Canks, Ed	411 1st Ave NW, Box 25, Dunn Center, ND 58626	701-548-8410	6	12
Erickson, John	406 High St. NE, Killdeer, ND 58640	701-764-5549	6	11
Fetig, Ron	500 High St. NE, Killdeer, ND 58640	701-764-5198	7	6
Fetig, Royd	300 5th Ave NW, Killdeer, ND 58640	701-764-5380	7	7
Fitterer, Richard	188 Baker Ave, Dickinson, ND 58601	701-225-5387	7	1
Freidt, Alan J.	192 Palm Beach Rd, Dickinson, ND 58601	701-483-0408	6	W/2 of 14
Fugere, Blaine	134 4th Ave SE, Dickinson, ND 58601	701-264-1128	7	12
Glasser, Jim	874 Shinagle Dr, Dickinson, ND 58601	701-225-0696	5	19
Hoffer, Larry	2820 Clydesdale Dr, Bismark, ND 58503	701-258-4696	6	10
Jaske, Jim	Box 122 Killdeer, ND 58640	701-764-5450	7	10
Jones, Nick	904 3rd Ave SE, Sidney, MT 59270	406-482-2844	9	1
Jorstad, Marvin	HCR3, Box 24, Regent, ND 58550	701-563-4518	7	9
Koffor, Al	409 7th St. E, New England, ND 58647	701-579-4836	6	N/2 of 18
Lynch, Al/Brian Urzenek	563 3rd Ave SW, Dickinson, ND 58601	701-258-0951	5	1/
Morlock, Lee	221 1st St. SE, Killdeer, ND 58640	701-764-6088	7	9
Prince, Lowell	27015 W. Monawk Ln. Buckeye, AZ 85396	928-525-3225	6	18
Reisenauer, Gary	5260 120th Ave SW, New England, ND 58647	701-579-4488	6	8
Thielen, Dan	304 4th Ave SE, Dickinson, ND 58601	701-227-8688	6	2

Thorton, Alvir	213 4th Ave, Dickinson, ND 58601	701-483-5370	6	7
Schaff, Dale	1610 Bison Dr, Williston, ND 58801	701-572-7778	7	2
Stockert, Kevin	1365 37th St. E, Dickinson, ND 58601	701-225-7980	9	10
Urlacher, Allan	11691 58th St. SW, New England, ND 58647	701-579-4979	6	S/2 of 16
Wandter, Doyle	1470 2nd Ave E, Dickinson, ND 58601	701-225-1576	5	22
Wardler, Dave	Gadstone, ND 58630	701-290-0969	9	N/2 of 4
Wehrung, Kim/Tammy	1044 19th St. W, Dickinson, ND 58601	701-225-6431	5	18
Wenko, Al	198 Baker Ave, Dickinson, ND 58601	701-227-1703	7	5
Wert, Gene	12703 56th St. SW, New England, ND 58647	701-579-4326	6	15
Wert, Marvin	RR2, Box 40, New England, ND 58647	701-579-4205	6	7

XTO ENERGY, INC.
FBIR Smith 11X-10
BIA Lease # 7420A48398
NW¼NW¼, Section 10, T149N, R92W
Dunn County, North Dakota

MULTI-POINT SURFACE USE & OPERATIONS PLAN

A. EXISTING ROADS -

1. The proposed well site is staked and four (4) 200-foot reference stakes are present.
2. From Mandaree, North Dakota proceed in an easterly direction along BIA 12 approximately 4.3 miles to the junction of this road and existing BIA 10 to the north; turn left and proceed in a northerly, then easterly direction approximately 7.7 miles to the beginning of the proposed access road to the northeast; follow road flags in a northeasterly direction approximately 0.3 miles to the proposed location
3. Access roads - All roads are labeled on Topo Maps A and B.
4. Existing roads will be maintained and kept in good repair during all drilling and completion operations associated with this well.
5. Total distance from Mandaree, ND to the proposed well location is approximately 12.3 miles.

B. PLANNED ACCESS ROADS - Refer to Topo Map "B"

Approximately 0.3 miles of new road construction will be required for access to the proposed FBIR Smith 11X-10 well location.

1. Width - fourteen (14) foot running surface with a sixteen (16) foot sub-grade, crowned and ditched.
2. Construction standard - the access road will be constructed in accordance with roading guidelines established for oil & gas exploration and development activities as referenced in the joint BLM/USFS publication: *Surface Operating Standards for Oil and Gas Exploration and Development*, Fourth Edition and/or BLM Gold Book.

All topsoil will be stripped from the access road route prior to performing any further construction activities thereon. The salvaged topsoil will be stockpiled apart from subsoil materials for future reclamation of the access road right-of-way.

If soils along the access road route are dry during construction, water will be applied to the road surface to facilitate soil compaction and minimize soil loss as a result of wind erosion.

3. Maximum grade - eight (8) percent or less.
4. Turnouts - as deemed necessary

5. Drainage design - the access road will be upgraded and maintained as necessary to prevent soil erosion and accommodate all-weather traffic. Road will be crowned and ditched with water turnouts installed as necessary to provide for proper drainage along the access road route.
6. Culverts, cuts and fills - culverts will be installed along the access road route as depicted on Topo Map B or required by the Authorized Officer, Bureau of Indian Affairs. These culverts will be installed in accordance with roading guidelines contained in the joint BLM/USFS publication: *Surface Operating Standards for Oil and Gas Exploration and Development*, Fourth Edition and/or BLM Gold Book.
7. Surfacing material - the access road will be surfaced with gravel or scoria purchased from a local contractor having a permitted source of materials within the general area, as required by the Authorized Officer, Bureau of Indian Affairs.
8. Gates, cattle guards or fence cuts - two (2) cattle guards will be required; one at the entrance of the location as the entire location will be fenced for drilling and completion operations and one at the beginning of the proposed access road.
 - a. The cattle guards will be installed in accordance with roading guidelines contained in the joint BLM/USFS publication: *Surface Operating Standards for Oil and Gas Exploration and Development*, Fourth Edition and/or BLM Gold Book.
 - b. One fence cut will be made in an existing fence at the beginning of the proposed access road. Refer to Figure #1 and Topo Map B for the location of the cattle guards and fence cut.
9. Road maintenance - the road surface and shoulders will be kept in a safe and useable condition and will be maintained in accordance with the original construction standards.

All drainage ditches and culverts will be kept clear and free-flowing, and will also be maintained in accordance with the original construction standards.

The access road right-of-way will be kept free of trash during all operations.

10. The proposed access road route has been centerline staked.

C. EXISTING WELLS WITHIN A ONE (1) MILE RADIUS -

1. Existing Wells – Refer to Topo Map C showing the location of the proposed well and the point of radius for the one mile area of review.
 - a. Water wells - none known
 - b. Abandoned wells - none known
 - c. Temporarily abandoned wells - none known
 - d. Disposal wells - none known
 - e. Drilling wells - none known
 - f. Producing wells - none known
 - g. Shut-in wells - none known
 - h. Injection wells - none known
 - i. Monitoring wells - none known

D. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES OWNED BY XTO ENERGY, INC. WITHIN A ONE (1) MILE RADIUS

1. Existing Facilities

- a. Tank batteries - none.
- b. Production facilities - none.
- c. Oil gathering lines - none.
- d. Gas gathering lines - none.

2. New Facilities Contemplated

- a. All production facilities will be located on the disturbed portion of the well pad and at a minimum of twenty (25) feet from the toe of the back slope or top of the fill slope. See Figure #1 and Figure #2 for plats depicting the original contours of the location and the proposed cuts and fills and the typical cross sections for the location.
- b. Production facilities will require a working area approximately 300' X 500' in size and will generally consist of a pumping unit at each well head, tank battery, heater-treater and emergency/flare pit.

A berm will be constructed completely around those production facilities designed to hold fluids (i.e., production tanks, produced water tanks and/or heater-treater). These berms will be constructed to hold >110% of the capacity of the largest tank plus one full day's production, and is independent of the back cut. See Figure #3 for a diagram of the proposed facilities.

Load out lines will be located within the tank battery berm and will have a drip barrel with steel mesh guard installed under the outlet.

- 3. Prior to the commencement of drilling operations, the FBIR Smith 11X-10 well location will be fenced, having four (4) strands of barbed wire held in place by metal side posts and wooden corner "H" braces in order to protect both livestock and wildlife.
- 4. During drilling and subsequent operations, all equipment and vehicles will be confined to the access road and any additional areas which may be specified in the approved Application for Permit to Drill.
- 5. Reclamation of disturbed areas no longer needed for operations will be accomplished by grading, leveling and seeding as recommended.

E. LOCATION AND TYPE OF WATER SUPPLY

- 1. Fresh water for use in drilling operations will be obtained from the water supply close to the town of Killdeer, North Dakota.

F. SOURCE OF CONSTRUCTION MATERIALS

- 1. Any construction materials (gravel or scoria) which may be required for surfacing of the drill pad will be obtained from a private contractor having a previously approved source of materials within the general area.

G. METHODS OF HANDLING WASTE MATERIALS

1. Cuttings - the drilled cuttings will be deposited in the reserve pit as shown on Figure #1 and Figure #5. The reserve pit will be designed to prevent the collection of surface runoff and will be constructed entirely in cut section of the well location (see Figure #1).

Reclaiming and backfilling will occur when completion operations are finished by solidifying with fly ash and burial in accordance with North Dakota rules and regulations.

2. Drilling fluids utilized in the mud systems will be contained in the reserve pit. Drilling fluids utilized in the oil-based mud system will be contained in steel tanks on location. All free fluid will be reclaimed from the reserve pit before solidification.
3. Produced fluids - liquid hydrocarbons produced during completion operations will be placed in test tanks on the location. Produced water will be placed in the reserve pit for a period not to exceed ninety (90) days after initial production.

Any spills of oil, gas, salt water or any other potentially hazardous substance will be cleaned up and immediately removed to an approved disposal site.

4. Sewage - portable, self-contained chemical toilets will be provided for human waste disposal. As required, the toilet holding tanks will be pumped and the contents disposed of in an approved sewage disposal facility.
5. Garbage and other waste material - all garbage and non-flammable waste materials will be contained in a self contained, portable dumpster or trash cage. Upon completion of operations, or as needed, the accumulated trash will be hauled off-site to a state approved sanitary landfill.

Used motor oil (change oil) will be placed in closed containers and disposed of at an authorized disposal site.

No trash will be placed in the reserve pit.

6. Immediately after removal of the drilling rig, all debris and other waste materials not contained in the trash cage will be cleaned up and removed from the well location. No potentially adverse materials or substances will be left on the location.
7. Hazardous Materials - XTO Energy, Inc. maintains responsibility for recognizing and handling hazardous materials. All hazardous materials will be handled in an appropriate manner to minimize the potential for leaks or spills to the environment. All spills of reportable quantity will be contained, reported and cleaned up in accordance with State and Federal regulations.

H. ANCILLARY FACILITIES

None anticipated.

I. WELLSITE LAYOUT

1. Figure #1 shows the drill site layout as staked. Cross-sections have been drafted to visualize the planned cuts and fills across the proposed well location (refer to Figure #2). All topsoil will be stripped from the location (including areas of cut, fill, and/or subsoil storage) and stockpiled for future reclamation of the well site.
2. Figure #4 is a diagram showing a typical location layout. No permanent living facilities are planned on the FBIR Smith 11X-10 well location.
3. All equipment and vehicles will be confined to the approved areas in this Application for Permit to Drill (i.e., access road, well pad, spoil and topsoil storage areas).
4. The reserve pit will be lined with a minimum 12 mil liner and designed to maintain a two foot free board. See Figure #6 for a spec sheet on the proposed liner.
5. Prior to the commencement of drilling operations, the entire well location will be fenced with four (4) strands of barbed wire. The fencing will be maintained until such time as the well bore has been physically plugged and abandoned and the well location has been successfully reclaimed.
6. Any hydrocarbons on the pit will be removed as soon as possible after drilling operations are completed.

J. PLANS FOR SURFACE RECLAMATION

1. Rat and mouse holes will be backfilled immediately upon release of the drilling rig from the location.
2. If any oil is in the pits and is not immediately removed after operations cease, the pit containing the oil or other adverse substance(s) will be flagged overhead or covered with wire mesh to protect migrating waterfowl.
3. Producing Operations:
 - a. Backfilling, leveling and re-contouring are planned as soon as possible after cessation of drilling and completion operations.
 - b. All disturbed surfaces (including the access road and well pad areas) will be reseeded using a seed mixture to be recommended by the Authorized Officer, Bureau of Indian Affairs in consultation with the surface allottee as appropriate.
4. Abandoned Well Location:
 - a. Upon final abandonment of the well location, both the access road and well location will be restored to approximately the original ground contour(s) by replacing the fill material into the cut and over the back slope.

K. SURFACE OWNERSHIP

The well site and access road are situated on two allotted surface estates within the Fort Berthold Indian Reservation, Allotment Number T603A and T602A. The allottee of these tribal lands is as follows:

Three Affiliated Tribes
404 Frontage Road
New Town, ND 58763-9402

James Danks
P. O. Box 690
Killdeer, ND 58640

L. OTHER INFORMATION

1. Surface Use Activities:
 - a. The primary surface use is for livestock grazing.
2. Proximity of Water, Occupied Dwellings, Archaeological, Historical or Cultural Sites:
 - a. The closest source of permanent water is Lake Sakakawea, which is located approximately ¼ mile north of the proposed well location.
 - b. XTO Energy, Inc. will be responsible for informing all persons associated with this project that they will be subject to prosecution for damaging, altering, excavating or removing any archaeological, historical, or vertebrate fossil objects or site(s).
 - c. If archaeological, historical or vertebrate fossil materials are discovered, XTO Energy, Inc. will suspend all operations that further disturb such materials and immediately contact the Authorized Officer. Operations will not resume until written authorization to proceed is issued by the Authorized Officer.

Within five (5) working days the Authorized Officer will evaluate the discovery and inform XTO Energy, Inc. of actions that will be necessary to prevent loss of significant cultural or scientific values.

XTO Energy, Inc. will be responsible for the cost of any mitigation required by the Authorized Officer. The Authorized Officer will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the Authorized Officer that the required mitigation has been completed, XTO Energy, Inc. will be allowed to resume operations.
3. Additional Requirements for Operations on Surface Estate Administered by the Bureau of Indian Affairs:
 - a. XTO Energy, Inc. will be responsible for weed control on disturbed areas within the exterior limits of this permit and will consult with the Authorized Officer, Bureau of Indian Affairs and/or local authorities for acceptable weed control measures.

Lessee's or Operator's Representative and Certification

**FBIR Smith 11X-10
NWNW, Sec. 10-T149N-R92W
Dunn County, North Dakota
BIA Lease No. 7420A48398**

OPERATOR

XTO Energy, Inc.
7114 W. Jefferson Ave., Suite 305
Denver, Colorado 80235
303.969.8280

OPERATOR'S REPRESENTATIVES

Permit Matters: J. Michael Warren (303.963.8243)
Drilling Matters: Ross Lubbers (405-319-3285)
Completion Matters: Doug McCrady (303.969.8280)
On-Site Meeting Representative: Kal Beckman (406.482.4000)

CERTIFICATION

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 23rd day of June, 20 10.



Name: J. Michael Warren
Position Title: Regulatory Coordinator
Telephone: 303-963-8243
mike_warren@xtoenergy.com

Field Representative: Kal Beckman
Address: P. O. Box 1589, Sidney, MT 59270
Phone: 406-482-4000 Ext. 107
kal_beckman@xtoenergy.com

LEGEND:

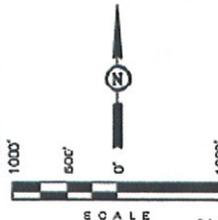
- └ = 90° SYMBOL
- = PROPOSED WELL HEAD
- ▲ = SECTION CORNERS LOCATED.
- △ = SECTION CORNERS RE-ESTABLISHED. (Not Set on Ground)

XTO ENERGY, INC.

Well location, FBIR SMITH #11x-10, located as shown in the NW 1/4 NW 1/4 of Section 10, T149N, R92W, 5th P.M., Dunn County, North Dakota.

**WELL LOCATION PLAT
T149N, R92W, 5th P.M.**

NOTE: THE PROPOSED BOTTOM HOLE FOR THIS WELL BEARS 310°31'N & A DISTANCE OF 2182.92' FROM THE PROPOSED WELL HEAD.



VERTICAL CONTROL DATUM: NAVD83

SURFACE LOCATION

(NAD 83)
 LATITUDE = 47°44'43.19" (47.745331)
 LONGITUDE = 102°28'49.25" (102.447014)
 (NAD 27)
 LATITUDE = 47°44'43.15" (47.745319)
 LONGITUDE = 102°28'47.59" (102.445553)
(DERIVED FROM: NAD 27 TO NAD 83 SOURCE: NAD TRANSFORM: NAD_83_TO_NAD_27_000000)

CERTIFICATE

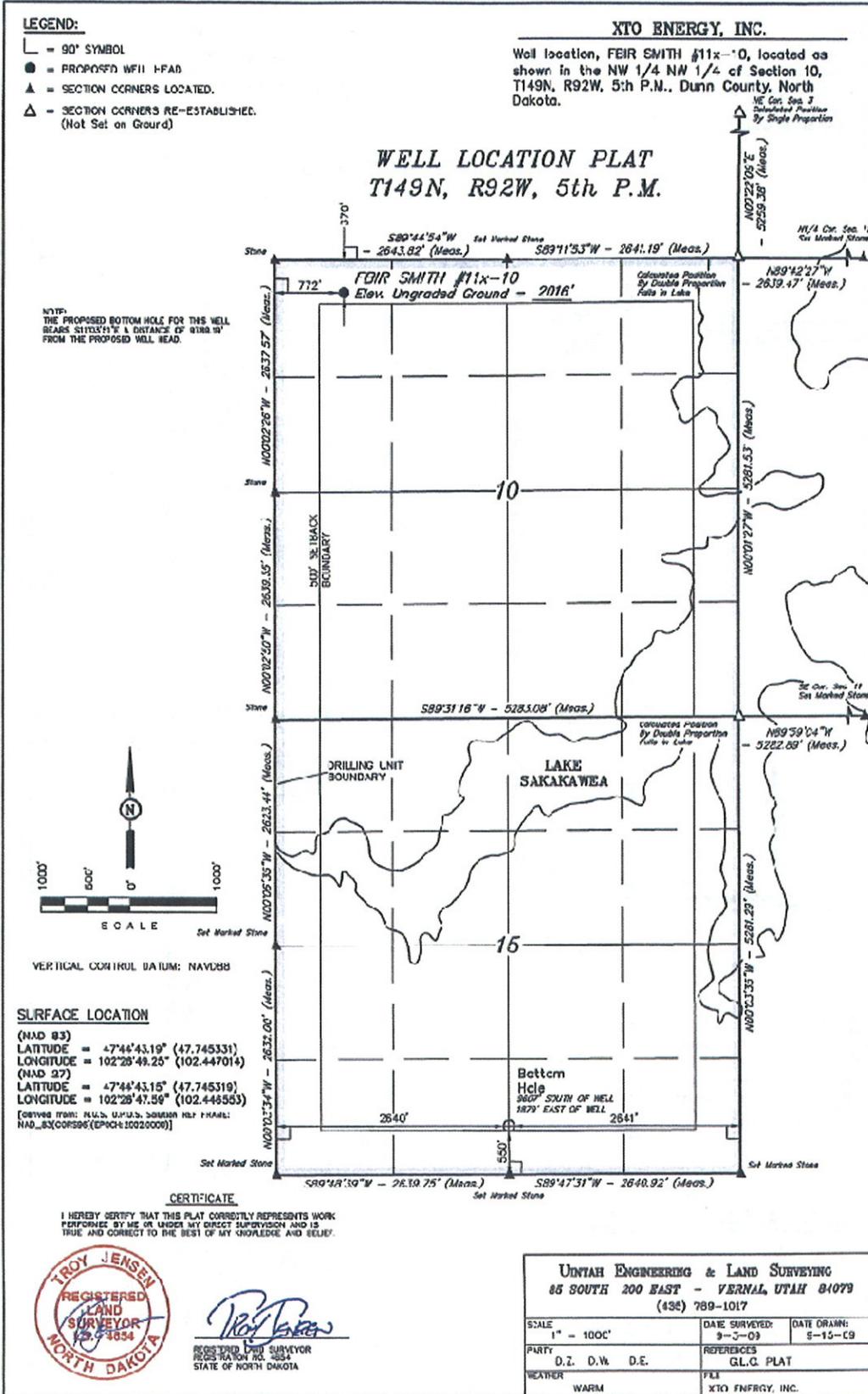
I HEREBY CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS WORK PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



Troy Jensen
 REGISTERED LAND SURVEYOR
 REGISTRATION NO. 3854
 STATE OF NORTH DAKOTA

UNTAH ENGINEERING & LAND SURVEYING
 85 SOUTH 200 EAST - VERNAL, UTAH 84079
 (435) 789-1017

SCALE 1" = 100'	DATE SURVEYED 9-3-09	DATE DRAWN 9-15-09
PARTY D.Z. D.W. D.E.	REFERENCES G.L.C. PLAT	
WEATHER WARM	FILE XTO ENRGY, INC.	



LEGEND:

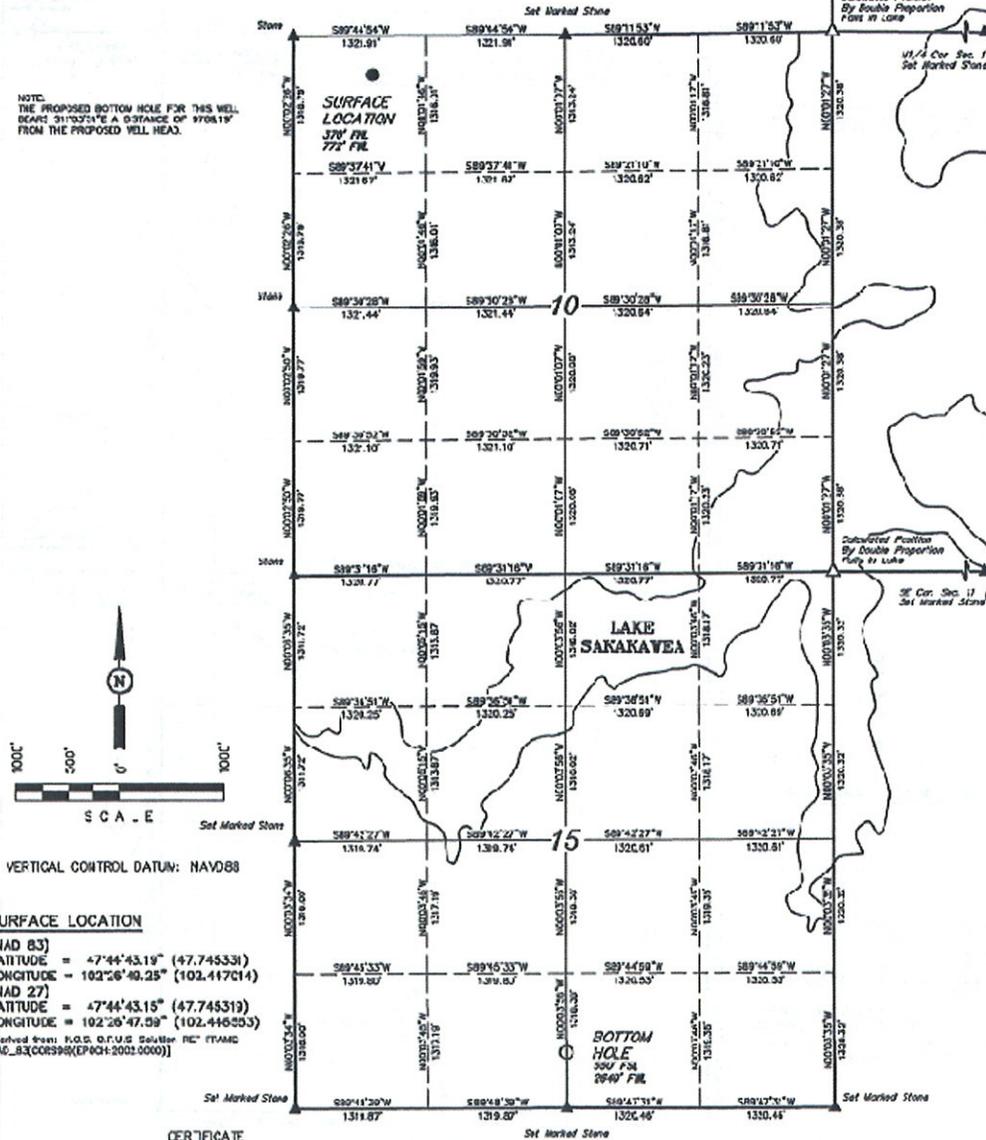
- L = 90° SYMBOL
- = PROPOSED WELL HEAD.
- ▲ = SECTION CORNERS LOCATED.
- △ = SECTION CORNERS RE-ESTABLISHED.
(Not Set on Ground)

XTO ENERGY, INC.

Well location, FBIR SMITH #11x-10, located as shown in the NW 1/4 NW 1/4 of Section 10, T149N, R92W, 5th P.M., Dunn County, North Dakota.

**SECTION BREAKDOWN
T149N, R92W, 5th P.M.**

NOTE:
THE PROPOSED BOTTOM HOLE FOR THIS WELL BEARS 31°10'31" E A DISTANCE OF 3708.19' FROM THE PROPOSED WELL HEAD.



SURFACE LOCATION

(NAD 83)
 LATITUDE = 47°44'43.19" (47.745331)
 LONGITUDE = 102°26'49.25" (102.447014)
 (NAD 27)
 LATITUDE = 47°44'43.15" (47.745319)
 LONGITUDE = 102°26'47.99" (102.446503)
 [defined from: N.G.S. D.P.U.S. Solution PC-ITVAMD
 NAD_83_CORS98(EPOCH:2002.0000)]

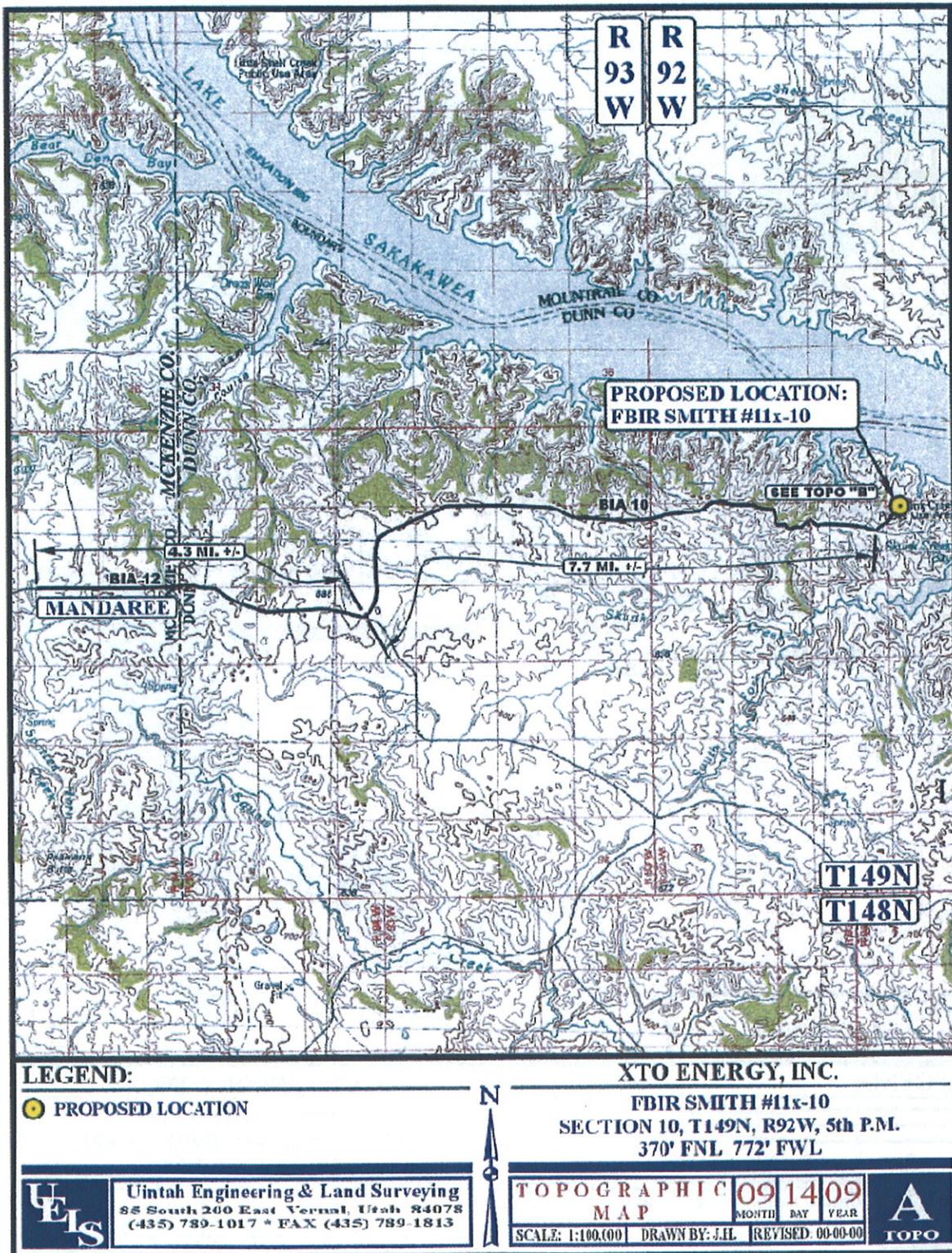
CERTIFICATE

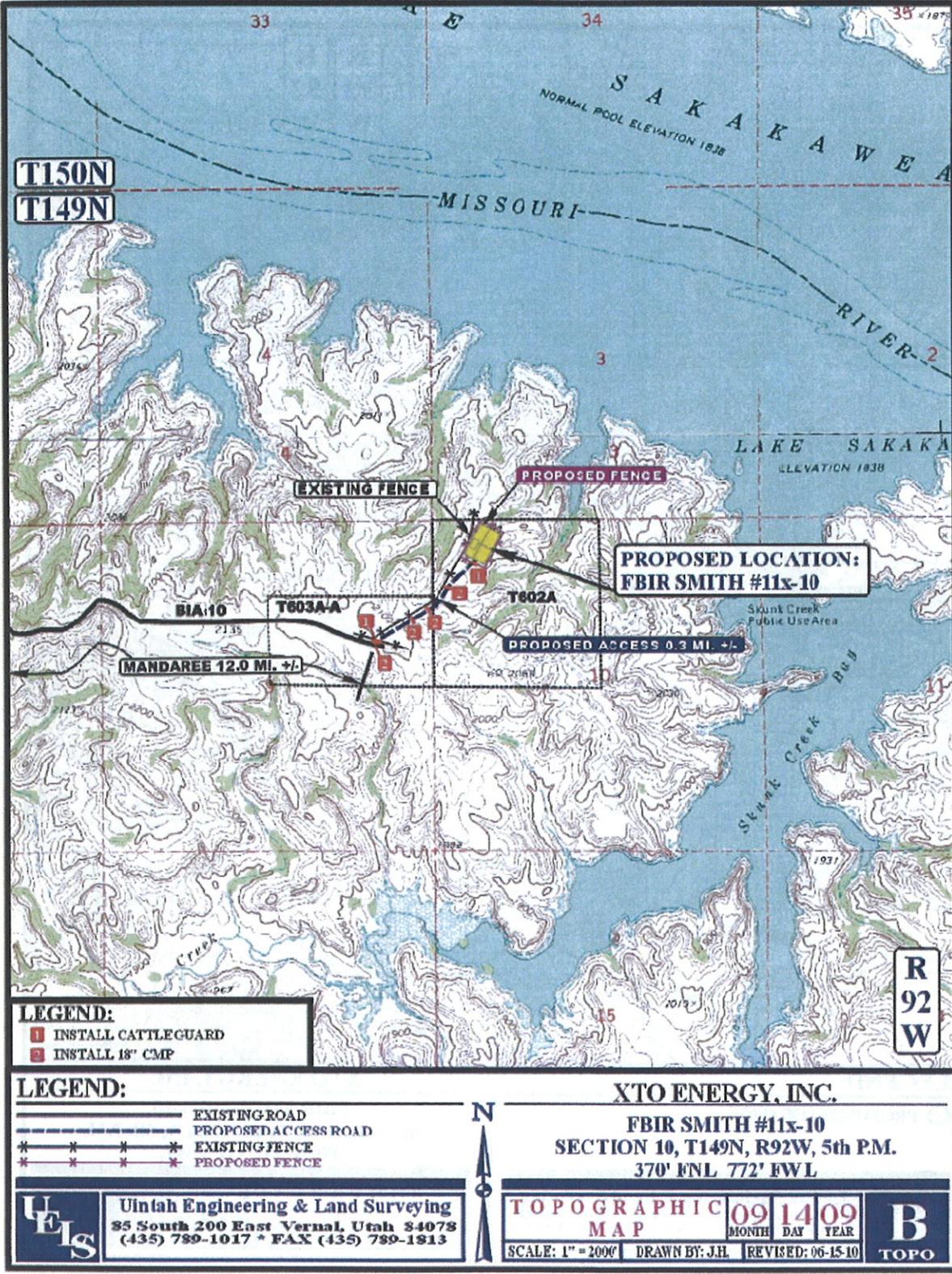
I HEREBY CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS WORK PROVIDED BY ME OR UNDER MY DIRECT SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

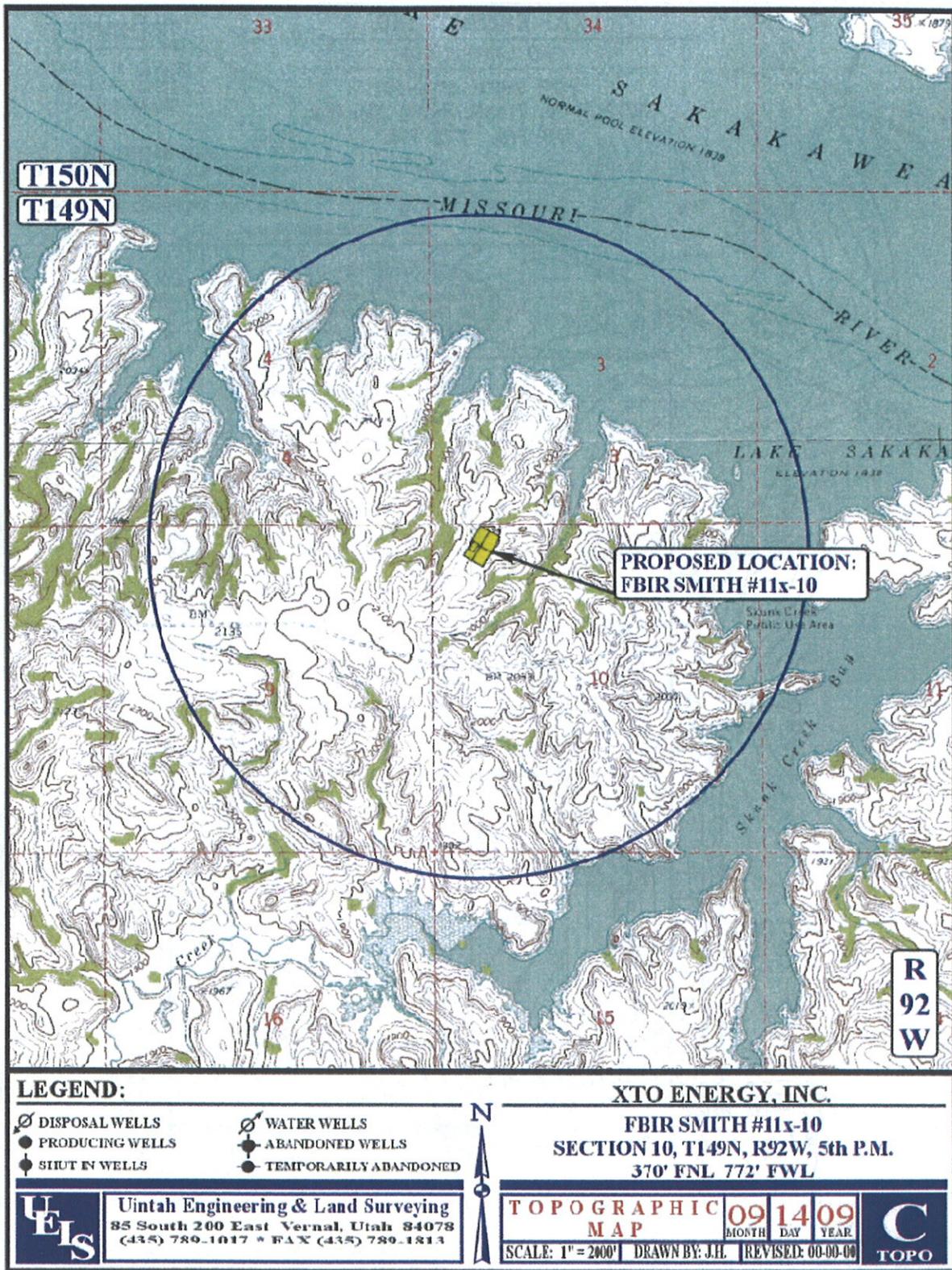


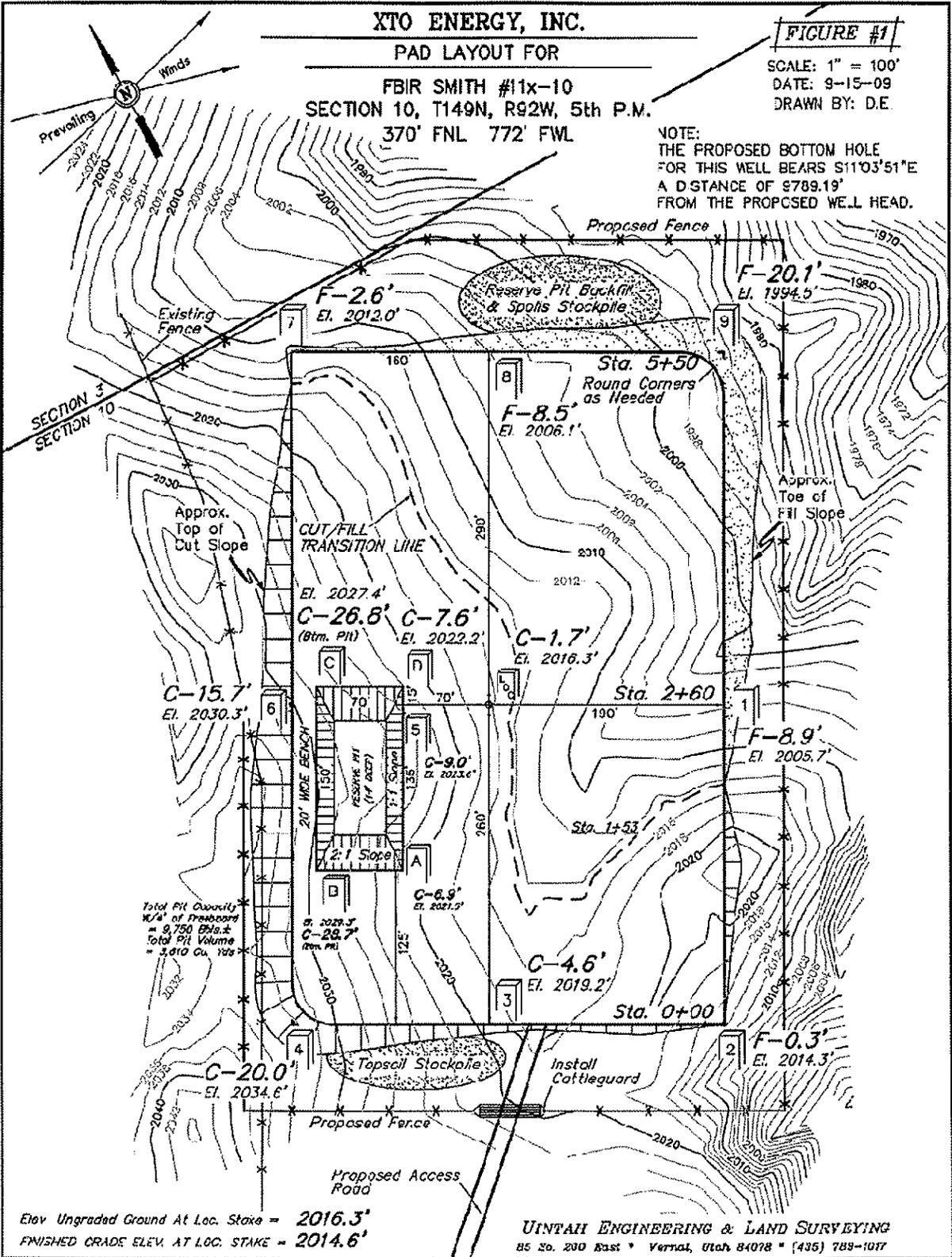
Troy Jensen
 REGISTERED LAND SURVEYOR
 REGISTRATION NO. 1654
 STATE OF NORTH DAKOTA

UTAH ENGINEERING & LAND SURVEYING 85 SOUTH 200 EAST - VERNAL UTAH 84078 (435) 786-1217		
SCALE 1" = 1000'	DATE SURVEYED: 9-3-09	DATE DRAWN: 9-15-09
PKNT D.Z. D.W. D.E.	REFERENCES G.I.O. PLAT	
WEATHER WAVY	FILE XTO ENERGY, INC.	









XTO ENERGY, INC.

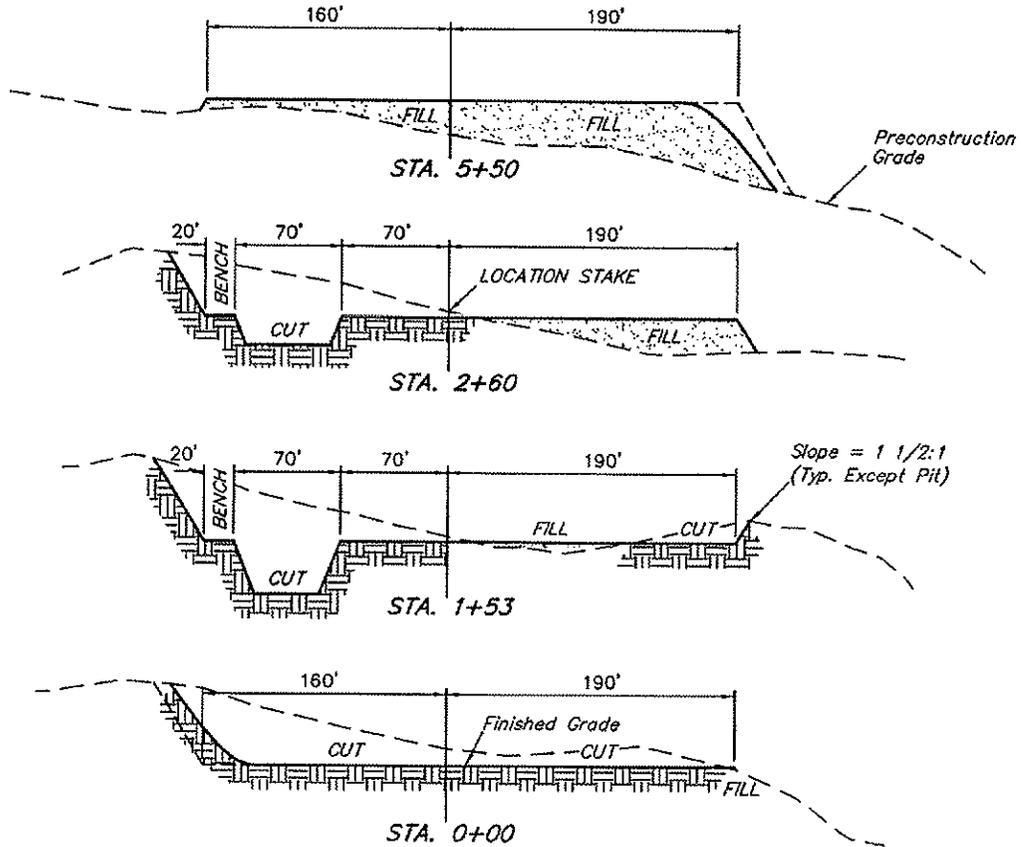
TYPICAL CROSS SECTIONS FOR

**FBIR SMITH #11x-10
SECTION 10, T149N, R92W, 5th P.M.
370' FNL 772' FWL**

FIGURE #2

1" = 40'
X-Section
Scale
1" = 100'

DATE: 9-15-09
DRAWN BY: D.E.



NOTE:

Topsoil should not be Stripped Below Finished Grade on Substructure Area.

APPROXIMATE ACREAGES

WELL SITE DISTURBANCE = ±5.422 ACRES
ACCESS ROAD DISTURBANCE = ±2.319 ACRES
TOTAL = ±7.741 ACRES

* NOTE:
FILL QUANTITY INCLUDES 5% FOR COMPACTION

APPROXIMATE YARDAGES

CUT
(6") Topsoil Stripping = 4,290 Cu. Yds.
Location Cut = 26,150 Cu. Yds.
Reserve Pit Cut = 3,610 Cu. Yds.
TOTAL CUT = 34,050 CU. YDS.
FILL = 27,950 CU. YDS.

EXCESS MATERIAL = 6,100 Cu. Yds.
Topsoil & Pit Backfill = 6,100 Cu. Yds.
(1/2 Pit Vol.)
EXCESS UNBALANCE = 0 Cu. Yds.
(After Interim Rehabilitation)

UINTAH ENGINEERING & LAND SURVEYING
85 So. 200 East • Vernal, Utah 84078 • (435) 789-1017

Figure #4



FBIR Smith 11X-10
Location: NW NW Sec 10, 149N-92W
Footage: 370 ft FNL, 772 ft FWL
Elev: Graded Pad 2015', KB 2039'
Dunn County, ND

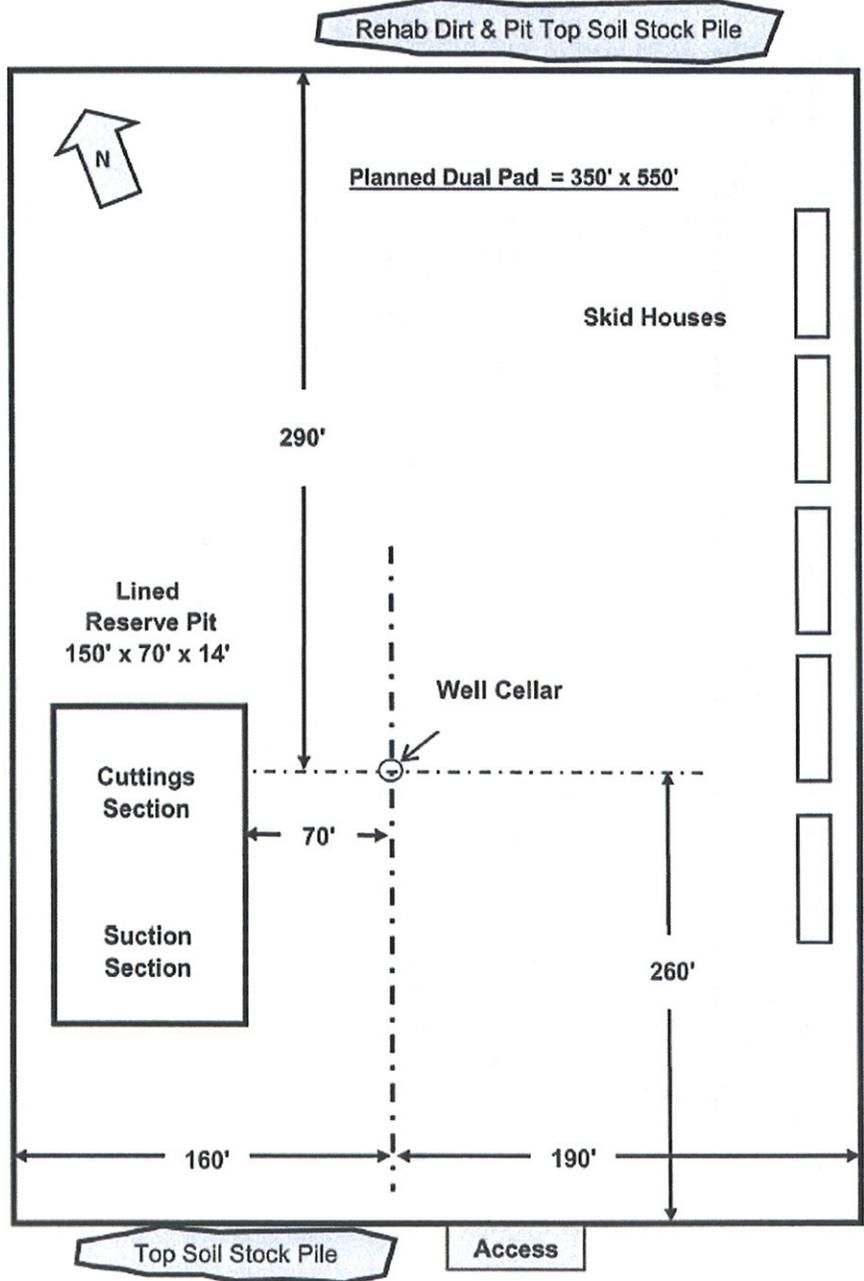
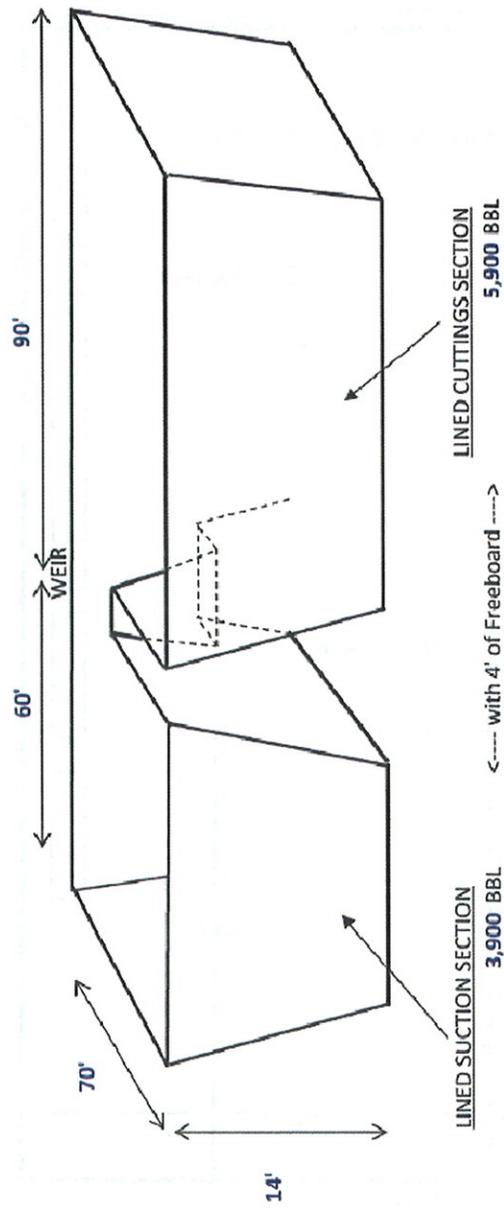


Figure #5

XTO Energy, Inc.
RESERVE PIT LAYOUT

FBIR Smith 11X-10

Location: NW NW Sec 10, 149N-92W
Footage: 370 ft FNL, 772 ft FWL
Elev: Graded Pad 2015', KB 2039'
Dunn County, ND



LORTEX 12 MIL LINER

Woven Reinforced High Density Polyethylene Fabric Coated With Low Density Polyethylene

PHYSICAL PROPERTIES AND SPECIFICATIONS

CONSTRUCTION:	12xD6 count per square inch Warp 950 Denier @ 50 Fill 1900 Denier @ 100
FABRIC GRADE:	Industrial, Carbon Black
STANDARD COATING COLORS:	Black
STANDARD COATING THICKNESS:	12 Mils +/- .15 mil each side LDRE
TOTAL THICKNESS:	12 Mils +/- .5 mil
NOMINAL WEIGHT:	5.3 oz/ square yard
NOMINAL TENSILE STRENGTH:	160 lbs W x 140 lbs Fill ASTM 1682-64 (Grab)
TEAR STRENGTH:	46 lbs W x 49 lbs Fill ASTM 2261-71 (Tongue)
MULLEN BURST STRENGTH:	325 psi ASTM D751-73
HYDROSTATIC RESISTANCE:	125 psi ASTM D1682-63
FLEX ABRASION:	5000+ cycles W 5000+ cycles Fill ASTM D1175-71
PUNCTURE RESISTANCE:	40 pounds FTMS 101B method 2065
IDENTIFICATION:	Printed in white ink "12 Mil" on 36 inch repeat

XTO ENERGY, INC.
FBIR SMITH #11x-10
 LOCATED IN DUNN COUNTY, NORTH DAKOTA
 SECTION 10, T149N, R92W, 5th P.M.



PHOTO: VIEW FROM CORNER #1 TO LOCATION STAKE

CAMERA ANGLE: NORTHWESTERLY



PHOTO: VIEW FROM BEGINNING OF PROPOSED ACCESS

CAMERA ANGLE: NORTHERLY



UELS Uintah Engineering & Land Surveying
 85 South 200 East Vernal, Utah 84078
 (435) 789-1017 * FAX (435) 789-1813

LOCATION PHOTOS	09	14	09	PHOTO
	MONTH	DAY	YEAR	
TAKEN BY: D.Z.	DRAWN BY: J.H.		REVISED: 00-00-00	

Appendix B

Ecological Site Photographs

*Smith 11X-10 Well Pad and Access Road Environmental Assessment
XTO Energy, Inc.*



Photo 1: Ecological Site #1 – Thin Loamy. On pad Site looking north. SE1/4NW1/4 Section 36, T149N, 92W.



Photo 2: Ecological Site #1 – Thin Loamy. On pad Site looking east. UTM Coordinates: N5290948.096 E691445.480



Photo 3: Ecological Site – Thin Loamy. Soil pit on Pad Site.



Photo 4: Ecological Site #2 – Loamy. Looking east. NE1/4NW1/4NW1/4 Section 10, T149N, R92W.

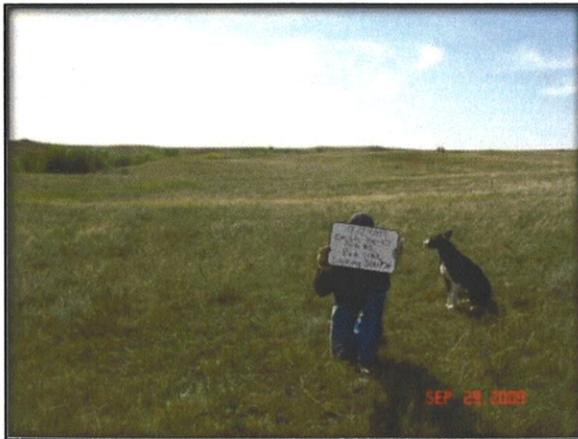


Photo 5: Ecological Site #2 – Loamy. On pad site looking south. UTM Coordinates: N5290958.273 E691373.951.



Photo 6: Ecological Site #2 – Loamy. Soil pit on pad site.

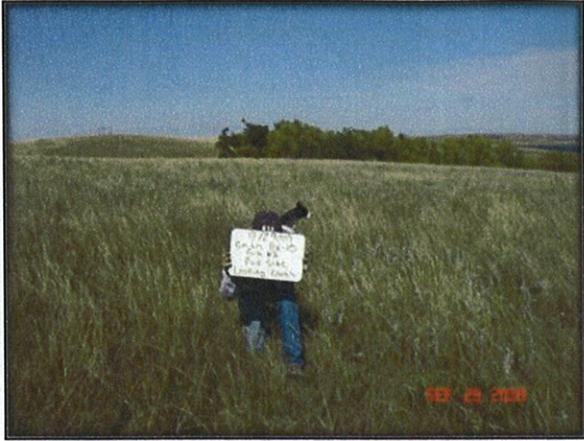


Photo 7: Ecological Site #3 – Loamy. On pad site looking north. NE1/4NW1/4NW1/4 Section 10, T149N, R92W.

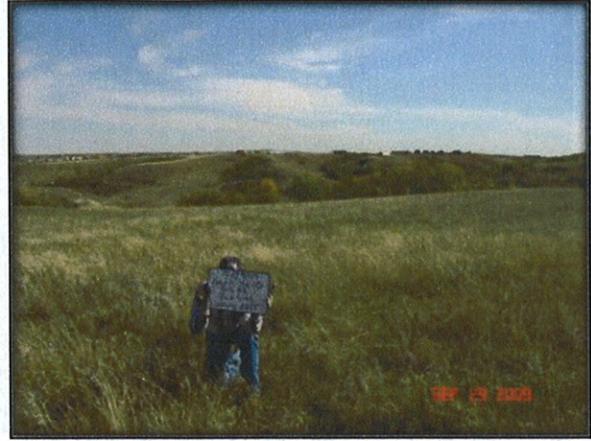


Photo 8: Ecological Site #3 – Loamy. On pad site looking east. UTM Coordinates: N5290988.370 E691417.337.



Photo 9: Ecological Site #3 – Loamy. Soil Pit on Pad Site.



Photo 10: Ecological Site #4 – Loamy. Looking east. NE1/4NW1/4NW1/4 Section 10, T149N, R92W.



Photo 11: Ecological Site #4 – Loamy. On Pad Site looking south. UTM Coordinates: N5290997.550 E691459.306.



Photo 12: Ecological Site #4 – Loamy. Soil Pit on Pad Site.



Photo 13: Ecological Site #5 – Loamy Overflow. Pad Site looking north. NE1/4NW1/4NW1/4 Section 10, T149N, R92W.



Photo 14: Ecological Site #5 – Loamy Overflow. Pad Site looking west. UTM Coordinates: N5290928.714 E691473.428.



Photo 15: Ecological Site #5 – Loamy Overflow. Soil Pit on pad site.



Photo 16: Ecological Site #6 – Sands. Looking east. SE1/4NW1/4NW1/4 Section 10, T149N, R92W.

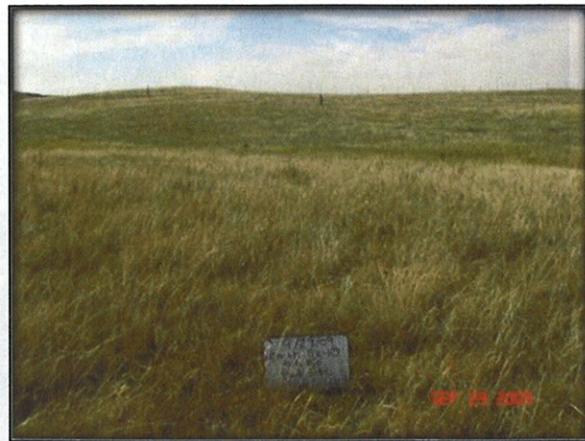


Photo 17: Ecological Site #6 – Sands. Pad Site looking west. UTM Coordinates: N5290870.162 E691440.596.



Photo 18: Ecological Site #6 – Sands. Soil Pit on pad site.

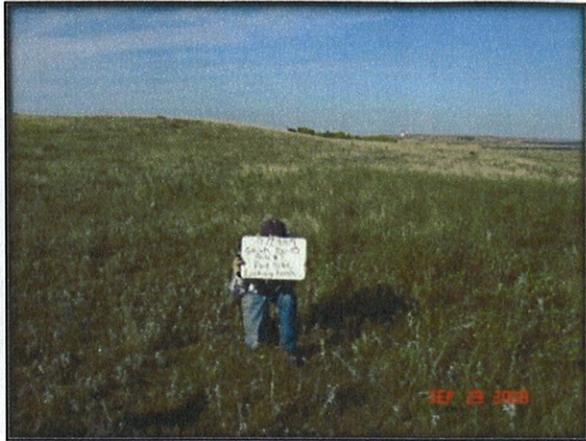


Photo 19: Ecological Site #7 – Loamy Overflow. Pad Site looking north. SE1/4NW1/4NW1/4 Section 10, T149N, R92W.



Photo 20: Ecological Site #7 – Loamy Overflow. Pad Site looking west. UTM Coordinates: N5290877.641 E691397.570.



Photo 21: Ecological Site #7 – Loamy Overflow. Soil Pit on pad site.



Photo 22: Ecological Site #8 – Sandy. Looking north. SE1/4NW1/4NW1/4 Section 10, T149N, R92W.



Photo 23: Ecological Site #8 – Sandy. Pad Site looking east. UTM Coordinates: N5290896.381 E691356.240.



Photo 24: Ecological Site #8 – Sandy. Soil Pit on pad site.

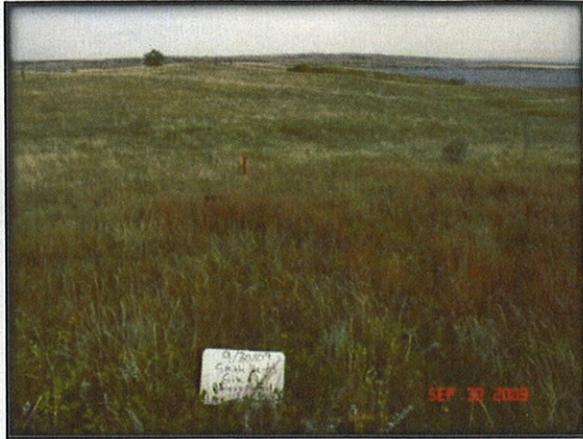


Photo 25: Ecological Site #9 – Sandy. Access Road looking north. SW1/4NW1/4NW1/4 Section 10, T149N, R92W.



Photo 26: Ecological Site #9 – Sandy. Access Road looking east. UTM Coordinates: N5290789.878 E691330.989.

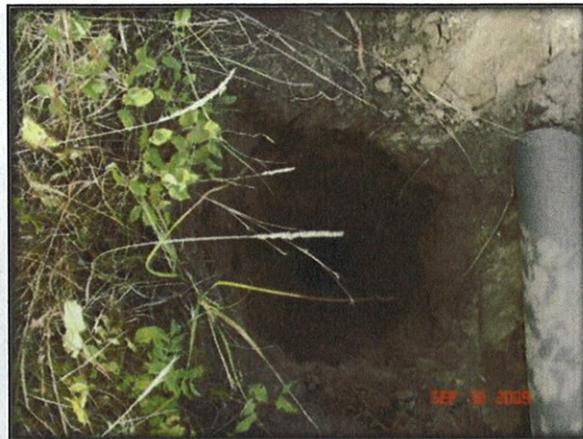


Photo 27: Ecological Site #9 – Sandy. Soil Pit on access road.



Photo 28: Ecological Site #10 – Sands. Looking north. SW1/4NW1/4NW1/4 Section 10, T149N, R92W.



Photo 29: Ecological Site #10 – Sands. Access Road looking south. UTM Coordinates: N5290741.216 E691283.145



Photo 30: Ecological Site #10 – Sands. Soil Pit on access road.

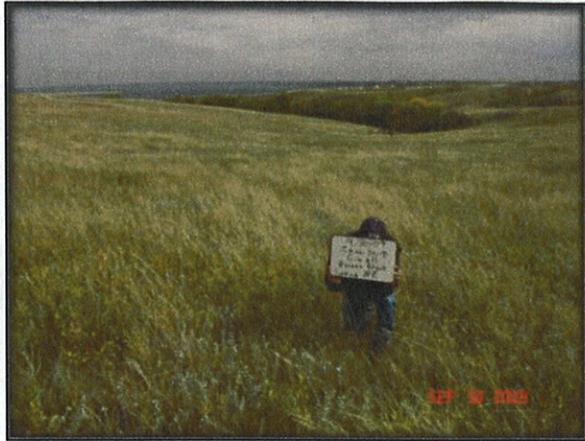


Photo 31: Ecological Site #11 – Loamy Overflow. Access Road looking northeast. SW1/4NW1/4NW1/4 Section 10, T149N, R92W.

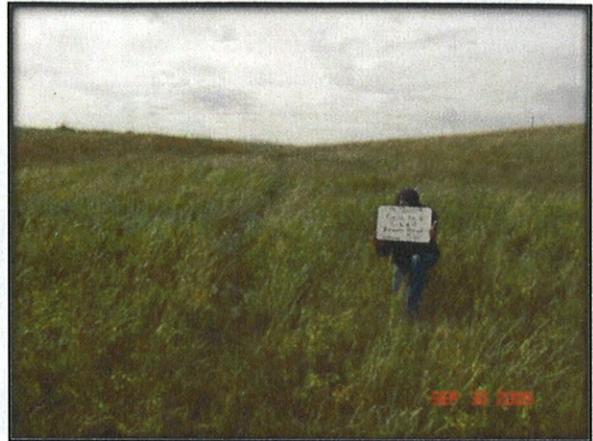


Photo 32: Ecological Site #11 – Loamy Overflow. Access Road looking southwest. UTM Coordinates: N5290659.069 E691252.496.



Photo 33: Ecological Site #11 – Loamy Overflow. Soil Pit on access road.



Photo 34: Ecological Site #12 – Sandy. Looking east. SE1/4NE1/4NE1/4 Section 9, T149N, R92W.



Photo 35: Ecological Site #12 – Sandy. Access Road looking south. UTM Coordinates: N5290623.191 E691186.903.



Photo 36: Ecological Site #12 – Sandy. Soil Pit on access road.



Photo 37: Ecological Site #13 – Loamy Overflow. Access Road looking east. SE1/4NE1/4NE1/4 Section 9, T149N, R92W.

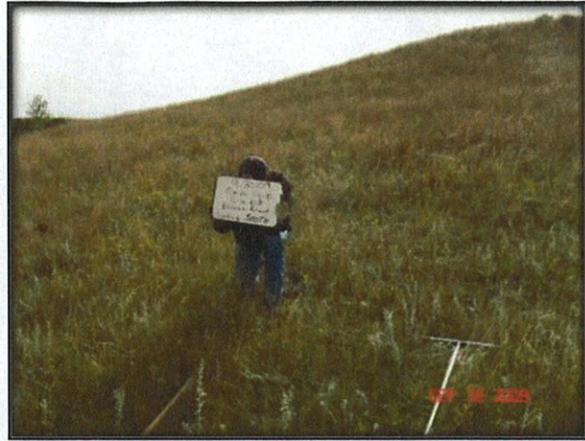


Photo 38: Ecological Site #13 – Loamy Overflow. Access Road looking south. UTM Coordinates: N5290561.750 E691121.175.



Photo 39: Ecological Site #13 – Loamy Overflow. Soil Pit on access road.

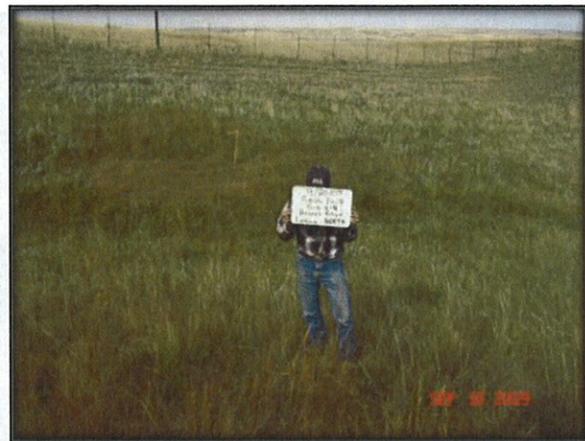


Photo 40: Ecological Site #14 – Sandy. Looking north. SE1/4NE1/4NE1/4 Section 9, T149N, R92W.

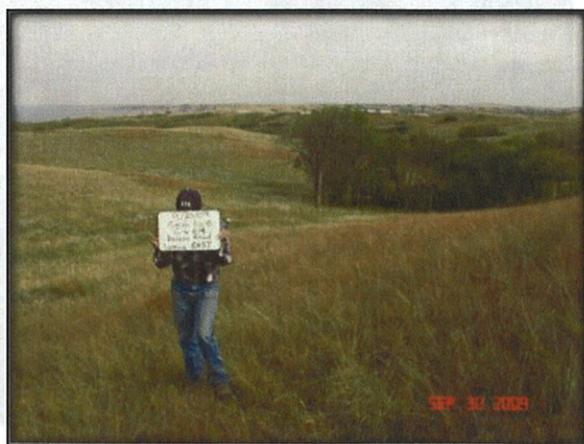


Photo 41: Ecological Site #14 – Sandy. Access Road looking east. UTM Coordinates: N5290547.801 E691098.131.



Photo 42: Ecological Site #14 – Sandy. Soil Pit on access road.



Photo 43: Ecological Site #15 – Loamy. Access Road looking east. SE1/4NE1/4NE1/4 Section 9, T149N, R92W.

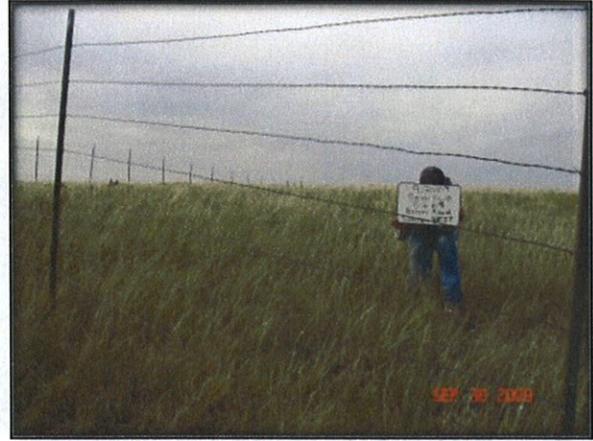


Photo 44: Ecological Site #15 – Loamy. Access Road looking west. UTM Coordinates: N5290549.823 E691051.896.



Photo 45: Ecological Site #15 – Loamy. Soil Pit on access road.



Photo 46: West Perimeter of Pad – Looking north.



Photo 47: West Perimeter of Pad – Looking east.



Photo 48: North Perimeter of Pad – Looking north.



Photo 49: North Perimeter of Pad – Looking east.

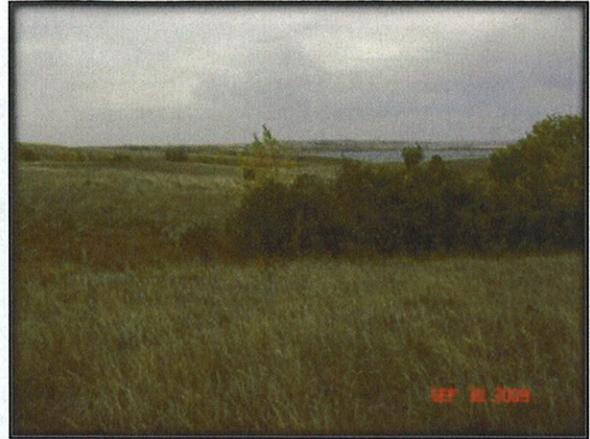


Photo 50: East Perimeter of Pad – Looking north.

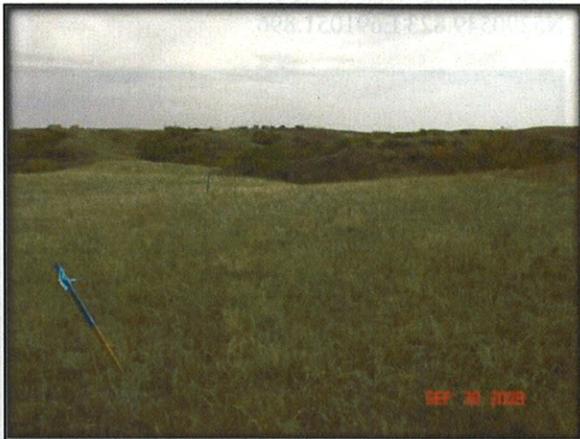


Photo 51: East Perimeter of Pad – Looking east.



Photo 52: South Perimeter of Pad – Looking north.



Photo 53: South Perimeter of Pad – Looking east.

Appendix C

Ecological Site Worksheets and Characteristics of Native Seed Mix

*Smith 11X-10 Well Pad and Access Road Environmental Assessment
XTO Energy, Inc.*

Plant Species Worksheet

Site #1 - Pad Site

Date: 9-29-09

Slope: 2 Percent

Aspect: West

Resource Area: Smith 11x-10

Legal Description: NE1/4NW1/4NW1/4 Section 10, T149N, R92W

UTM Coordinates: N5290948.096 E691445.480

Ecological Site: Thin Loamy

Community Type: Prairie junegrass/Blue grama/Needle-and-thread grass/ Fringed sagewort

Plant Composition Common Name		Scientific Name
GRASSES:		
Blue grama		<i>Bouteloua gracilis</i>
Needleandthread grass		<i>Hesperostipa comata</i>
Prairie junegrass		<i>Koeleria macrantha</i>
Threadleaf sedge		<i>Carex filifolia</i>
Western wheatgrass		<i>Pascopyrum smithii</i>
FORBS:		
Black samson		<i>Echinacea angustifolia</i>
Cudweed sagewort		<i>Artemisia ludoviciana</i>
Green sagewort		<i>Artemisia dracuncululus</i>
Hairy goldenaster		<i>Heterotheca villosa</i>
Missouri goldenrod		<i>Solidago missouriensis</i>
Prairie smoke		<i>Geum triflorum</i>
Rush skeletonweed		<i>Lygodesmia juncea</i>
INVASIVES/WEEDS:		
Common dandelion		<i>Taraxacum officinale</i>
False flax		<i>Camelina crantz</i>
Flixweed		<i>Descurainia sophia</i>
Western salsify		<i>Tragopogon dubius</i>
SHRUBS:		
Common snowberry		<i>Symphoricarpos albus</i>
Fringed sagewort		<i>Artemisia frigida</i>
Prairie rose		<i>Rosa arkansana</i>
Small soapweed		<i>Yucca glauca</i>

Plant Species Worksheet

Site #2 - Pad Site

Date: 9-29-09 **Slope: 8 Percent**

Aspect: East

Resource Area: Smith 11x-10

Legal Description: NE1/4NW1/4NW1/4 Section 10, T149N, R92W

UTM Coordinates: N5290958.273 E691373.951

Ecological Site: Loamy

Community Type: Prairie junegrass/Blue grama/Needleandthread grass

Plant Composition Common Name		Scientific Name
GRASSES:		
Blue grama		<i>Bouteloua gracilis</i>
Green needlegrass		<i>Nassella viridula</i>
Needleandthread grass		<i>Hesperostipa comata</i>
Prairie junegrass		<i>Koeleria macrantha</i>
Sandberg bluegrass		<i>Poa secunda</i>
Threadleaf sedge		<i>Carex filifolia</i>
Western wheatgrass		<i>Pascopyrum smithii</i>
FORBS:		
Black samson		<i>Echinacea angustifolia</i>
Cudweed sagewort		<i>Artemisia ludoviciana</i>
Dotted gayfeather		<i>Liatris punctata</i>
Green sagewort		<i>Artemisia dracunculus</i>
Hairy goldenaster		<i>Heterotheca villosa</i>
Prairie coneflower		<i>Ratibida columnifera</i>
Prairie smoke		<i>Geum triflorum</i>
Scarlet globemallow		<i>Sphaeralcea coccinea</i>
Rush skeletonweed		<i>Lygodesmia juncea</i>
Woolly indianwheat		<i>Plantago patagonica</i>
INVASIVES/WEEDS:		
Common dandelion		<i>Taraxacum officinale</i>
False flax		<i>Camelina crantz</i>
Western salsify		<i>Tragopogon dubius</i>
SHRUBS:		
Common snowberry		<i>Symphoricarpos albus</i>
Fringed sagewort		<i>Artemisia frigida</i>
Prairie rose		<i>Rosa arkansana</i>

Plant Species Worksheet

Site #3 - Pad Site

Date: 9-29-09

Slope: 9 Percent

Aspect: Northeast

Resource Area: Smith 11x-10

Legal Description: NE1/4NW1/4NW1/4 Section 10, T149N, R92W

UTM Coordinates: N5290988.370 E691417.337

Ecological Site: Loamy

Community Type: Sandberg bluegrass/Blue grama/Kentucky bluegrass/Common snowberry

Plant Composition Common Name		Scientific Name
GRASSES:		
Blue grama		<i>Bouteloua gracilis</i>
Green needlegrass		<i>Nassella viridula</i>
Needleandthread grass		<i>Hesperostipa comata</i>
Prairie junegrass		<i>Koeleria macrantha</i>
Red threeawn		<i>Aristida longiseta</i>
Sandberg bluegrass		<i>Poa secunda</i>
Threadleaf sedge		<i>Carex filifolia</i>
Western wheatgrass		<i>Pascopyrum smithii</i>
FORBS:		
Common yarrow		<i>Achillea millefolium</i>
Cudweed sagewort		<i>Artemisia ludoviciana</i>
Green sagewort		<i>Artemisia dracuncululus</i>
Hairy goldenaster		<i>Heterotheca villosa</i>
Prairie coneflower		<i>Ratibida columnifera</i>
Prairie smoke		<i>Geum triflorum</i>
Scarlet globemallow		<i>Sphaeralcea coccinea</i>
Woolly indianwheat		<i>Plantago patagonica</i>
INVASIVES/WEEDS:		
False flax		<i>Camelina crantz</i>
Flodman's thistle		<i>Cirsium flodmanii</i>
Kentucky bluegrass		<i>Poa pratensis</i>
Wavyleaf thistle		<i>Cirsium undulatum</i>
Western salsify		<i>Tragopogon dubius</i>
SHRUBS:		
Chokecherry		<i>Prunus virginiana</i>
Common snowberry		<i>Symphoricarpos albus</i>
Fringed sagewort		<i>Artemisia frigida</i>
Prairie rose		<i>Rosa arkansana</i>
Small soapweed		<i>Yucca glauca</i>

Plant Species Worksheet

Site #4 - Pad Site

Date: 9-29-09

Slope: 5 Percent

Aspect: Northeast

Resource Area: Smith 11x-10

Legal Description: NE1/4NW1/4NW1/4 Section 10, T149N, R92W

UTM Coordinates: N5290997.550 E691459.306

Ecological Site: Loamy

Community Type:

Sandberg bluegrass/Blue grama/Kentucky bluegrass/ Prairie junegrass/Fringed sagewort

Plant Composition Common Name	Scientific Name
GRASSES:	
Blue grama	<i>Bouteloua gracilis</i>
Green needlegrass	<i>Nassella viridula</i>
Little bluestem	<i>Schizachyrium scoparium</i>
Needleandthread grass	<i>Hesperostipa comata</i>
Prairie junegrass	<i>Koeleria macrantha</i>
Red threeawn	<i>Aristida longiseta</i>
Sandberg bluegrass	<i>Poa secunda</i>
Threadleaf sedge	<i>Carex filifolia</i>
Western wheatgrass	<i>Pascopyrum smithii</i>
FORBS:	
Black samson	<i>Echinacea angustifolia</i>
Cudweed sagewort	<i>Artemisia ludoviciana</i>
Dotted gayfeather	<i>Liatris punctata</i>
Green sagewort	<i>Artemisia dracunculus</i>
Milkvetch	<i>Astragalus spp.</i>
Prairie smoke	<i>Geum triflorum</i>
Purple prairie clover	<i>Dalea purpurea</i>
Rock cress	<i>Arabis spp.</i>
Woolly indianwheat	<i>Plantago patagonica</i>
INVASIVES/WEEDS:	
Common dandelion	<i>Taraxacum officinale</i>
False flax	<i>Camelina crantz</i>
Flodman's thistle	<i>Cirsium flodmanii</i>
Kentucky bluegrass	<i>Poa pratensis</i>
Mustard	<i>Brassica spp.</i>
Western salsify	<i>Tragopogon dubius</i>
SHRUBS:	
Common snowberry	<i>Symphoricarpos albus</i>
Fringed sagewort	<i>Artemisia frigida</i>
Prairie rose	<i>Rosa arkansana</i>

Plant Species Worksheet

Site #5 - Pad Site

Date: 9-29-09 Slope: 9 Percent

Aspect: Northeast

Resource Area: Smith 11x-10

Legal Description: NE1/4NW1/4NW1/4 Section 10, T149N, R92W

UTM Coordinates: N5290928.714 E691473.428

Ecological Site: Loamy Overflow

Community Type: Big bluestem/Kentucky bluegrass/Common snowberry

Plant Composition Common Name		Scientific Name
GRASSES:		
Big bluestem		<i>Andropogon gerardii</i>
Buffalograss		<i>Bouteloua dactyloides</i>
Green needlegrass		<i>Nassella viridula</i>
Prairie cordgrass		<i>Spartina pectinata</i>
FORBS:		
American licorice		<i>Glycyrrhiza lepidota</i>
Black samson		<i>Echinacea angustifolia</i>
Cudweed sagewort		<i>Artemisia ludoviciana</i>
Green sagewort		<i>Artemisia dracunculus</i>
Prairie smoke		<i>Geum triflorum</i>
Purple prairie clover		<i>Dalea purpurea</i>
Stiff goldenrod		<i>Oligoneuron rigidum</i>
White prairie aster		<i>Symphyotrichum falcatum</i>
INVASIVES/WEEDS:		
Canadian thistle		<i>Cirsium arvense</i>
Flodman's thistle		<i>Cirsium flodmanii</i>
Kentucky bluegrass		<i>Poa pratensis</i>
SHRUBS/TREES:		
Chokecherry		<i>Prunus virginiana</i>
Common snowberry		<i>Symphoricarpos albus</i>
Fringed sagewort		<i>Artemisia frigida</i>
Green ash		<i>Fraxinus pennsylvanica</i>
Poison ivy		<i>Toxicodendron rydbergii</i>
Prairie rose		<i>Rosa arkansana</i>
Saskatoon serviceberry		<i>Amelanchier alnifolia</i>
Wood's rose		<i>Rosa woodsii</i>

Plant Species Worksheet

Site #6- Pad Site

Date: 9-29-09

Slope: 4 Percent

Aspect: Southwest

Resource Area: Smith 11x-10

Legal Description: SE1/4NW1/4NW1/4 Section 10, T149N, R92W

UTM Coordinates: N5290870.162 E691440.596

Ecological Site: Sands

Community Type: Sandberg bluegrass/Prairie sandreed/Green needlegrass

Needleandthread grass/Prairie junegrass/Prairie rose

Plant Composition Common Name		Scientific Name
GRASSES:		
Blue grama		<i>Bouteloua gracilis</i>
Green needlegrass		<i>Nassella viridula</i>
Little bluestem		<i>Schizachyrium scoparium</i>
Needleandthread grass		<i>Hesperostipa comata</i>
Prairie junegrass		<i>Koeleria macrantha</i>
Prairie sandreed		<i>Calamovilfa longifolia</i>
Red threeawn		<i>Aristida longiseta</i>
Sandberg bluegrass		<i>Poa secunda</i>
Threadleaf sedge		<i>Carex filifolia</i>
FORBS:		
Black samson		<i>Echinacea angustifolia</i>
Corn spurry		<i>Spergula arvensis</i>
Cutleaf balsamroot		<i>Balsamorhiza macrophylla</i>
Dotted gayfeather		<i>Liatris punctata</i>
Green sagewort		<i>Artemisia dracunculus</i>
Hairy goldenaster		<i>Heterotheca villosa</i>
Missouri goldenrod		<i>Solidago missouriensis</i>
Prairie coneflower		<i>Ratibida columnifera</i>
Prairie smoke		<i>Geum triflorum</i>
Rock cress		<i>Arabis spp.</i>
Rush skeletonweed		<i>Lygodesmia juncea</i>
Stiff goldenrod		<i>Oligoneuron rigidum</i>
INVASIVES/WEEDS:		
Common dandelion		<i>Taraxacum officinale</i>
False flax		<i>Camelina crantz</i>
Western salsify		<i>Tragopogon dubius</i>
SHRUBS:		
Fringed sagewort		<i>Artemisia frigida</i>
Prairie rose		<i>Rosa arkansana</i>
Silver buffaloberry		<i>Shepherdia argentea</i>
Small soapweed		<i>Yucca glauca</i>

Plant Species Worksheet

Site #7- Pad Site

Date: 9-29-09

Slope: 4 Percent

Aspect: Northeast

Resource Area: Smith 11x-10

Legal Description: SE1/4NW1/4NW1/4 Section 10, T149N, R92W

UTM Coordinates: N5290877.641 E691397.570

Ecological Site: Loamy Overflow

Community Type: Kentucky bluegrass/Cudweed sagewort/Common snowberry

Plant Composition Common Name		Scientific Name
GRASSES:		
Blue grama		<i>Bouteloua gracilis</i>
Green needlegrass		<i>Nassella viridula</i>
Needleandthread grass		<i>Hesperostipa comata</i>
Prairie junegrass		<i>Koeleria macrantha</i>
Sandberg bluegrass		<i>Poa secunda</i>
Western wheatgrass		<i>Pascopyrum smithii</i>
FORBS:		
Black samson		<i>Echinacea angustifolia</i>
Cudweed sagewort		<i>Artemisia ludoviciana</i>
Green sagewort		<i>Artemisia dracunculus</i>
Hairy goldenaster		<i>Heterotheca villosa</i>
Prairie smoke		<i>Geum triflorum</i>
Stiff goldenrod		<i>Oligoneuron rigidum</i>
Woolly indianwheat		<i>Plantago patagonica</i>
INVASIVES/WEEDS:		
Canadian thistle		<i>Cirsium arvense</i>
False flax		<i>Camelina crantz</i>
Flodman's thistle		<i>Cirsium flodmanii</i>
Kentucky bluegrass		<i>Poa pratensis</i>
SHRUBS:		
Common snowberry		<i>Symphoricarpos albus</i>
Fringed sagewort		<i>Artemisia frigida</i>
Prairie rose		<i>Rosa arkansana</i>

Plant Species Worksheet

Site #8- Pad Site

Date: 9-29-09

Slope: 9 Percent

Aspect: Northeast

Resource Area: Smith 11x-10

Legal Description: SE1/4NW1/4NW1/4 Section 10, T149N, R92W

UTM Coordinates: N5290896.381 E691356.240

Ecological Site: Sandy

Community Type: Prairie junegrass/Blue grama/Prairie rose/Cudweed sagewort

Plant Composition Common Name		Scientific Name
GRASSES:		
Blue grama		<i>Bouteloua gracilis</i>
Green needlegrass		<i>Nassella viridula</i>
Needleandthread grass		<i>Hesperostipa comata</i>
Prairie junegrass		<i>Koeleria macrantha</i>
Prairie sandreed		<i>Calamovilfa longifolia</i>
Red threeawn		<i>Aristida longiseta</i>
Sandberg bluegrass		<i>Poa secunda</i>
Threadleaf sedge		<i>Carex filifolia</i>
Western wheatgrass		<i>Pascopyrum smithii</i>
FORBS:		
Black samson		<i>Echinacea angustifolia</i>
Cudweed sagewort		<i>Artemisia ludoviciana</i>
Dotted gayfeather		<i>Liatris punctata</i>
Green sagewort		<i>Artemisia dracunculus</i>
Hairy goldenaster		<i>Heterotheca villosa</i>
Missouri goldenrod		<i>Solidago missouriensis</i>
Prairie smoke		<i>Geum triflorum</i>
Rush skeletonweed		<i>Lygodesmia juncea</i>
Woolly indianwheat		<i>Plantago patagonica</i>
INVASIVES/WEEDS:		
Common dandelion		<i>Taraxacum officinale</i>
False flax		<i>Camelina crantz</i>
Western salsify		<i>Tragopogon dubius</i>
SHRUBS:		
Common snowberry		<i>Symphoricarpos albus</i>
Fringed sagewort		<i>Artemisia frigida</i>
Prairie rose		<i>Rosa arkansana</i>

Plant Species Worksheet

Site #9 - Access Road

Date: 9-30-09

Slope: 11 Percent

Aspect: North

Resource Area: Smith 11x-10

Legal Description: SW1/4NW1/4NW1/4 Section 10, T149N, R92W

UTM Coordinates: N5290789.878 E691330.989

Ecological Site: Sandy

Community Type: Needleandthread grass/Little bluestem/Common snowberry

Plant Composition		
Common Name		Scientific Name
GRASSES:		
Blue grama		<i>Bouteloua gracilis</i>
Green needlegrass		<i>Nassella viridula</i>
Little bluestem		<i>Schizachyrium scoparium</i>
Needleandthread grass		<i>Hesperostipa comata</i>
Prairie junegrass		<i>Koeleria macrantha</i>
Prairie sandreed		<i>Calamovilfa longifolia</i>
Red threeawn		<i>Aristida longiseta</i>
Sandberg bluegrass		<i>Poa secunda</i>
Threadleaf sedge		<i>Carex filifolia</i>
Western wheatgrass		<i>Pascopyrum smithii</i>
FORBS:		
Black samson		<i>Echinacea angustifolia</i>
Cudweed sagewort		<i>Artemisia ludoviciana</i>
Green sagewort		<i>Artemisia dracunculus</i>
Hairy goldenaster		<i>Heterotheca villosa</i>
Missouri goldenrod		<i>Solidago missouriensis</i>
Penstemon		<i>Penstemon spp.</i>
Prairie coneflower		<i>Ratibida columnifera</i>
Prairie smoke		<i>Geum triflorum</i>
Rush skeletonweed		<i>Lygodesmia juncea</i>
Stiff goldenrod		<i>Oligoneuron rigidum</i>
White prairie aster		<i>Symphotrichum falcatum</i>
INVASIVES/WEEDS:		
False flax		<i>Camelina crantz.</i>
Flodman's thistle		<i>Cirsium flodmanii</i>
Mustard		<i>Brassica spp.</i>
Western salsify		<i>Tragopogon dubius</i>
SHRUBS:		
Common snowberry		<i>Symphoricarpos albus</i>
Fringed sagewort		<i>Artemisia frigida</i>
Prairie rose		<i>Rosa arkansana</i>
Silver buffaloberry		<i>Shepherdia argentea</i>

Plant Species Worksheet

Site #10 - Access Road

Date: 9-30-09

Slope: 3 Percent

Aspect: Southeast

Resource Area: Smith 11x-10

Legal Description: SW1/4NW1/4NW1/4 Section 10, T149N, R92W

UTM Coordinates: N5290741.216 E691283.145

Ecological Site: Sands

Community Type: Needleandthread grass/Blue grama/Prairie junegrass

Plant Composition Common Name	Scientific Name
GRASSES:	
Blue grama	<i>Bouteloua gracilis</i>
Green needlegrass	<i>Nassella viridula</i>
Little bluestem	<i>Schizachyrium scoparium</i>
Needleandthread grass	<i>Hesperostipa comata</i>
Prairie junegrass	<i>Koeleria macrantha</i>
Prairie sandreed	<i>Calamovilfa longifolia</i>
Threadleaf sedge	<i>Carex filifolia</i>
FORBS:	
Black samson	<i>Echinacea angustifolia</i>
Cudweed sagewort	<i>Artemisia ludoviciana</i>
Dotted gayfeather	<i>Liatris punctata</i>
Green sagewort	<i>Artemisia dracunculus</i>
Hairy goldenaster	<i>Heterotheca villosa</i>
Milkwort	<i>Glaux spp.</i>
Prairie smoke	<i>Geum triflorum</i>
Rock cress	<i>Arabis spp.</i>
Rush skeletonweed	<i>Lygodesmia juncea</i>
White prairie aster	<i>Symphotrichum falcatum</i>
INVASIVES/WEEDS:	
False flax	<i>Camelina crantz</i>
Flixweed	<i>Descurainia sophia</i>
Mustard	<i>Brassica spp.</i>
SHRUBS:	
Fringed sagewort	<i>Artemisia frigida</i>
Prairie rose	<i>Rosa arkansana</i>

Plant Species Worksheet

Site #11 - Access Road

Date: 9-30-09

Slope: 10 Percent

Aspect: Northeast

Resource Area: Smith 11x-10

Legal Description: SW1/4NW1/4NW1/4 Section 10, T149N, R92W

UTM Coordinates: N5290659.069 E691252.496

Ecological Site: Loamy Overflow

Community Type: Kentucky bluegrass/Cudweed sagewort/Common snowberry

Plant Composition Common Name	Scientific Name
GRASSES:	
Bearded wheatgrass	<i>Elymus caninus</i>
Big bluestem	<i>Andropogon gerardii</i>
Green needlegrass	<i>Nassella viridula</i>
Little bluestem	<i>Schizachyrium scoparium</i>
Needleandthread grass	<i>Hesperostipa comata</i>
Prairie junegrass	<i>Koeleria macrantha</i>
Prairie sandreed	<i>Calamovilfa longifolia</i>
Red threeawn	<i>Aristida longiseta</i>
Sandberg bluegrass	<i>Poa secunda</i>
Western wheatgrass	<i>Pascopyrum smithii</i>
FORBS:	
Black samson	<i>Echinacea angustifolia</i>
Common yarrow	<i>Achillea millefolium</i>
Cudweed sagewort	<i>Artemisia ludoviciana</i>
Green sagewort	<i>Artemisia dracunculus</i>
Hairy goldenaster	<i>Heterotheca villosa</i>
INVASIVES/WEEDS:	
Common dandelion	<i>Taraxacum officinale</i>
Kentucky bluegrass	<i>Poa pratensis</i>
Western salsify	<i>Tragopogon dubius</i>
SHRUBS:	
Common snowberry	<i>Symphoricarpos albus</i>
Prairie rose	<i>Rosa arkansana</i>
Small soapweed	<i>Yucca glauca</i>

Plant Species Worksheet

Site #12 - Access Road

Date: 9-30-09

Slope: 15 Percent

Aspect: South

Resource Area: Smith 11x-10

Legal Description: SE1/4NE1/4NE1/4 Section 9, T149N, R92W

UTM Coordinates: N5290623.191 E691186.903

Ecological Site: Sandy

Community Type: Blue grama/Needleandthread grass/Cudweed sagewort

Plant Composition Common Name		Scientific Name
GRASSES:		
Blue grama		<i>Bouteloua gracilis</i>
Needleandthread grass		<i>Hesperostipa comata</i>
Prairie junegrass		<i>Koeleria macrantha</i>
Prairie sandreed		<i>Calamovilfa longifolia</i>
Red threeawn		<i>Aristida longiseta</i>
Sandberg bluegrass		<i>Poa secunda</i>
Sideoats grama		<i>Bouteloua curtipendula</i>
Threadleaf sedge		<i>Carex filifolia</i>
FORBS:		
Black samson		<i>Echinacea angustifolia</i>
Cudweed sagewort		<i>Artemisia ludoviciana</i>
Dotted gayfeather		<i>Liatris punctata</i>
Green sagewort		<i>Artemisia dracunculus</i>
Hairy goldenaster		<i>Heterotheca villosa</i>
Hood phlox		<i>Phlox hoodii</i>
Rush skeletonweed		<i>Lygodesmia juncea</i>
Woolly indianwheat		<i>Plantago patagonica</i>
INVASIVES/WEEDS:		
False flax		<i>Camelina crantz</i>
SHRUBS:		
Fringed sagewort		<i>Artemisia frigida</i>
Prairie rose		<i>Rosa arkansana</i>

Plant Species Worksheet

Site #13 - Access Road

Date: 9-30-09

Slope: 12 Percent

Aspect: East

Resource Area: Smith 11x-10

Legal Description: SE1/4NE1/4NE1/4 Section 9, T149N, R92W

UTM Coordinates: N5290561.750 E691121.175

Ecological Site: Loamy Overflow

Community Type: Kentucky bluegrass/Cudweed sagewort/

Stiff goldenrod/Common snowberry

Plant Composition Common Name	Scientific Name
GRASSES:	
Big bluestem	<i>Andropogon gerardii</i>
Blue grama	<i>Bouteloua gracilis</i>
Green needlegrass	<i>Nassella viridula</i>
Little bluestem	<i>Schizachyrium scoparium</i>
Needleandthread grass	<i>Hesperostipa comata</i>
Prairie junegrass	<i>Koeleria macrantha</i>
Prairie sandreed	<i>Calamovilfa longifolia</i>
Sideoats grama	<i>Bouteloua curtipendula</i>
FORBS:	
Black samson	<i>Echinacea angustifolia</i>
Common yarrow	<i>Achillea millefolium</i>
Cudweed sagewort	<i>Artemisia ludoviciana</i>
Dotted gayfeather	<i>Liatris punctata</i>
Missouri goldenrod	<i>Solidago missouriensis</i>
Prairie smoke	<i>Geum triflorum</i>
Stiff goldenrod	<i>Oligoneuron rigidum</i>
INVASIVES/WEEDS:	
False flax	<i>Camelina crantz</i>
Kentucky bluegrass	<i>Poa pratensis</i>
Western salsify	<i>Tragopogon dubius</i>
Yellow sweetclover	<i>Melilotus officinalis</i>
SHRUBS:	
Chokecherry	<i>Prunus virginiana</i>
Common snowberry	<i>Symphoricarpos albus</i>
Fringed sagewort	<i>Artemisia frigida</i>
Poison ivy	<i>Toxicodendron rydbergii</i>
Prairie rose	<i>Rosa arkansana</i>

Plant Species Worksheet

Site #14 - Access Road

Date: 9-30-09 **Slope:** 25 Percent

Aspect: North

Resource Area: Smith 11x-10

Legal Description: SE1/4NE1/4NE1/4 Section 9, T149N, R92W

UTM Coordinates: N5290547.801 E691098.131

Ecological Site: Sandy

Community Type: Little bluestem/Green needlegrass

Plant Composition Common Name		Scientific Name
GRASSES:		
Bearded wheatgrass		<i>Elymus caninus</i>
Blue grama		<i>Bouteloua gracilis</i>
Green needlegrass		<i>Nassella viridula</i>
Little bluestem		<i>Schizachyrium scoparium</i>
Needleandthread grass		<i>Hesperostipa comata</i>
Prairie junegrass		<i>Koeleria macrantha</i>
Sandberg bluegrass		<i>Poa secunda</i>
Sideoats grama		<i>Bouteloua curtipendula</i>
Western wheatgrass		<i>Pascopyrum smithii</i>
FORBS:		
American licorice		<i>Glycyrrhiza lepidota</i>
Black samson		<i>Echinacea angustifolia</i>
Buckwheat		<i>Eriogonum spp.</i>
Common yarrow		<i>Achillea millefolium</i>
Green sagewort		<i>Artemisia dracunculus</i>
Missouri goldenrod		<i>Solidago missouriensis</i>
Prairie coneflower		<i>Ratibida columnifera</i>
Prairie smoke		<i>Geum triflorum</i>
Stiff goldenrod		<i>Oligoneuron rigidum</i>
White prairie aster		<i>Symphotrichum falcatum</i>
INVASIVES/WEEDS:		
Common dandelion		<i>Taraxacum officinale</i>
False flax		<i>Camelina crantz</i>
Russian thistle		<i>Salsola kali</i>
Western salsify		<i>Tragopogon dubius</i>
Yellow sweetclover		<i>Melilotus officinalis</i>
SHRUBS:		
Chokecherry		<i>Prunus virginiana</i>
Common snowberry		<i>Symphoricarpos albus</i>
Creeping juniper		<i>Juniperus horizontalis</i>
Fringed sagewort		<i>Artemisia frigida</i>
Prairie rose		<i>Rosa arkansana</i>
Silver buffaloberry		<i>Shepherdia argentea</i>

Plant Species Worksheet

Site #15 - Access Road

Date: 9-30-09

Slope: 16 Percent

Aspect: East

Resource Area: Smith 11x-10

Legal Description: SE1/4NE1/4NE1/4 Section 9, T149N, R92W

UTM Coordinates: N5290549.823 E691051.896

Ecological Site: Loamy

Community Type: Blue grama/Prairie junegrass/Green needlegrass/
Sandberg bluegrass/Western wheatgrass

Plant Composition Common Name	Scientific Name
GRASSES:	
Blue grama	<i>Bouteloua gracilis</i>
Green needlegrass	<i>Nassella viridula</i>
Little bluestem	<i>Schizachyrium scoparium</i>
Prairie junegrass	<i>Koeleria macrantha</i>
Red threeawn	<i>Aristida longiseta</i>
Sandberg bluegrass	<i>Poa secunda</i>
Sideoats grama	<i>Bouteloua curtipendula</i>
Western wheatgrass	<i>Pascopyrum smithii</i>
FORBS:	
Black samson	<i>Echinacea angustifolia</i>
Cudweed sagewort	<i>Artemisia ludoviciana</i>
Curlycup gumweed	<i>Grindelia squarrosa</i>
Dotted gayfeather	<i>Liatris punctata</i>
Green sagewort	<i>Artemisia dracunculus</i>
Prairie smoke	<i>Geum triflorum</i>
Scarlet globemallow	<i>Sphaeralcea coccinea</i>
Stiff goldenrod	<i>Oligoneuron rigidum</i>
White prairie aster	<i>Symphotrichum falcatum</i>
INVASIVES/WEEDS:	
False flax	<i>Camelina crantz</i>
Flodman's thistle	<i>Cirsium flodmanii</i>
Russian thistle	<i>Salsola kali</i>
Wavyleaf thistle	<i>Cirsium undulatum</i>
Yellow sweetclover	<i>Melilotus officinalis</i>
SHRUBS:	
Fringed sagewort	<i>Artemisia frigida</i>

Plant Species Worksheet

Perimeter

Date: 9-30-09

Resource Area: Smith 11x-10

Legal Description: NE1/4NW1/4NW1/4 Section 10, T149N, R92W

Community Type: Blue grama/Prairie junegrass/Needleandthread grass

Plant Composition Common Name		Scientific Name
GRASSES:		
Big bluestem		<i>Andropogon gerardii</i>
Blue grama		<i>Bouteloua gracilis</i>
Green needlegrass		<i>Nassella viridula</i>
Little bluestem		<i>Schizachyrium scoparium</i>
Needleandthread grass		<i>Hesperostipa comata</i>
Prairie junegrass		<i>Koeleria macrantha</i>
Prairie sandreed		<i>Calamovilfa longifolia</i>
Red threeawn		<i>Aristida longiseta</i>
Sandberg bluegrass		<i>Poa secunda</i>
Sideoats grama		<i>Bouteloua curtipendula</i>
FORBS:		
Black samson		<i>Echinacea angustifolia</i>
Common yarrow		<i>Achillea millefolium</i>
Cudweed sagewort		<i>Artemisia ludoviciana</i>
Dotted gayfeather		<i>Liatris punctata</i>
Green sagewort		<i>Artemisia dracunculus</i>
Hairy goldenaster		<i>Heterotheca villosa</i>
Missouri goldenrod		<i>Solidago missouriensis</i>
Penstemon		<i>Penstemon spp.</i>
Prairie coneflower		<i>Ratibida columnifera</i>
Prairie smoke		<i>Geum triflorum</i>
Rock cress		<i>Arabis spp.</i>
Rush skeletonweed		<i>Lygodesmia juncea</i>
Stiff goldenrod		<i>Oligoneuron rigidum</i>
INVASIVES/WEEDS:		
Canadian thistle		<i>Cirsium arvense</i>
Common dandelion		<i>Taraxacum officinale</i>
False flax		<i>Camelina crantz</i>
Flixweed		<i>Descurainia sophia</i>
Flodman's thistle		<i>Cirsium flodmanii</i>
Kentucky bluegrass		<i>Poa pratensis</i>
Mustard		<i>Brassica spp.</i>
Prickly lettuce		<i>Lactuca serriola</i>

SHRUBS/TREES		
Chokecherry		<i>Prunus virginiana</i>
Common snowberry		<i>Symphoricarpos albus</i>
Fringed sagewort		<i>Artemisia frigid</i>
Gooseberry		<i>Ribes spp.</i>
Green ash		<i>Fraxinus pennsylvanica</i>
Poison ivy		<i>Toxicodendron rydbergii</i>
Prairie rose		<i>Rosa arkansana</i>
Saskatoon serviceberry		<i>Amelanchier alnifolia</i>
Silver buffaloberry		<i>Shepherdia argentea</i>
Small soapweed		<i>Yucca glauca</i>
Wood's rose		<i>Rosa woodsii</i>

Complete Plant Species List

Date: 9-30-09

Resource Area: Smith 11x-10

Plant Composition Common Name		Scientific Name
GRASSES:		
Bearded wheatgrass		<i>Elymus caninus</i>
Big bluestem		<i>Andropogon gerardii</i>
Blue grama		<i>Bouteloua gracilis</i>
Buffalograss		<i>Bouteloua dactyloides</i>
Green needlegrass		<i>Nassella viridula</i>
Little bluestem		<i>Schizachyrium scoparium</i>
Needleandthread grass		<i>Hesperostipa comata</i>
Prairie cordgrass		<i>Spartina pectinata</i>
Prairie junegrass		<i>Koeleria macrantha</i>
Prairie sandreed		<i>Calamovilfa longifolia</i>
Red threeawn		<i>Aristida longiseta</i>
Sandberg bluegrass		<i>Poa secunda</i>
Sideoats grama		<i>Bouteloua curtipendula</i>
Threadleaf sedge		<i>Carex filifolia</i>
Western wheatgrass		<i>Pascopyrum smithii</i>
FORBS:		
American licorice		<i>Glycyrrhiza lepidota</i>
Black samson		<i>Echinacea angustifolia</i>
Buckwheat		<i>Eriogonum spp.</i>
Common yarrow		<i>Achillea millefolium</i>
Corn spurry		<i>Spergula arvensis</i>
Cudweed sagewort		<i>Artemisia ludoviciana</i>
Curlycup gumweed		<i>Grindelia squarrosa</i>

Cutleaf balsamroot		<i>Balsamorhiza macrophylla</i>
Dotted gayfeather		<i>Liatris punctata</i>
Green sagewort		<i>Artemisia dracuncululus</i>
Hairy goldenaster		<i>Heterotheca villosa</i>
Hood phlox		<i>Phlox hoodii</i>
Milkvetch		<i>Astragalus spp.</i>
Milkwort		<i>Glauca spp.</i>
Missouri goldenrod		<i>Solidago missouriensis</i>
Penstemon		<i>Penstemon spp.</i>
Prairie coneflower		<i>Ratibida columnifera</i>
Prairie smoke		<i>Geum triflorum</i>
Purple prairie clover		<i>Dalea purpurea</i>
Rock cress		<i>Arabis spp.</i>
Rush skeletonweed		<i>Lygodesmia juncea</i>
Scarlet globemallow		<i>Sphaeralcea coccinea</i>
Stiff goldenrod		<i>Oligoneuron rigidum</i>
White prairie aster		<i>Symphyotrichum falcatum</i>
Woolly indianwheat		<i>Plantago patagonica</i>
INVASIVES/WEEDS:		
Canadian thistle		<i>Cirsium arvense</i>
Common dandelion		<i>Taraxacum officinale</i>
False flax		<i>Camelina crantz</i>
Flixweed		<i>Descurainia sophia</i>
Flodman's thistle		<i>Cirsium flodmanii</i>
Kentucky bluegrass		<i>Poa pratensis</i>
Mustard		<i>Brassica spp.</i>
Prickly lettuce		<i>Lactuca serriola</i>
Russian thistle		<i>Salsola kali</i>
Wavyleaf thistle		<i>Cirsium undulatum</i>
Western salsify		<i>Tragopogon dubius</i>
Yellow sweetclover		<i>Melilotus officinalis</i>
SHRUBS/TREES:		
Chokecherry		<i>Prunus virginiana</i>
Common snowberry		<i>Symphoricarpos albus</i>
Creeping juniper		<i>Juniperus horizontalis</i>
Fringed sagewort		<i>Artemisia frigida</i>
Gooseberry		<i>Ribes spp.</i>
Green ash		<i>Fraxinus pennsylvanica</i>
Poison ivy		<i>Toxicodendron rydbergii</i>
Prairie rose		<i>Rosa arkansana</i>
Saskatoon serviceberry		<i>Amelanchier alnifolia</i>
Silver buffaloberry		<i>Shepherdia argentea</i>
Small soapweed		<i>Yucca glauca</i>
Wood's rose		<i>Rosa woodsii</i>

Table C1. Characteristics of native seed mix to be used in reclamation of the proposed project site.

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	<i>Elymus trachycaulus</i> ssp. <i>trachycaulus</i>	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	<i>Pascopyrum smithii</i>	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	<i>Koeleria macrantha</i>	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	<i>Nassella viridula</i>	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	<i>Bouteloua gracilis</i>	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	<i>Bouteloua curtipendula</i>	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	<i>Andropogon scoparius</i>	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

Smith 11X-10 Well Pad and Access Road Environmental Assessment
XTO Energy

Table D1: A summary of soil attributes for ecological sites at the proposed Smith 11X-10 project site.

Site ID	Soil Pit Location	Map Unit #	Soil Series Component	Text. Family/Taxonomic Class	Slope %	Aspect	Landform	Depth	Parent Material	Ecological Site
Well Pad										
>001	E691445 N5290948	93C	Zahl loam	Fn-lo,m,SA,f,Typic Calcistolls	4	N	Hills/Summit	>60"	Alluvium/till	Thin Loamy
>002	E691374 N5290958	93C	Williams loam	Fn-lo,m,SA,f,Typic Argistolls	8	E	Hills/Shoulder	>60"	Alluvium/till	Loamy
>003	E691417 N5290988	93C	Arnegard loam	Fn-lo,m,SA,f,Pachic Haplustolls	9	NE	Hills/Toeslope	>60"	Alluvium/till	Loamy
>004	E691459 N5290998	93C	Arnegard loam	Fn-lo,m,SA,f,Pachic Haplustolls	5	NE	Hills/Toeslope	>60"	Alluvium/till	Loamy
>005	E691473 N5290929	93C	Bowbells loam	Fn-lo,m,SA,f,Pachic Argistolls	9	NE	Hills/Swale	>60"	Alluvium/till	Loamy Overflow
>006	E691441 N5290870	81C	Lihen sandy loam	Co-lo,m,SA,f,Entic Haplustolls	4	SW	Hills/Summit	>60"	Alluvium/till	Sands
>007	E691398 N5290878	81C	Parshall fine sandy loam	Co-lo,m,SA,f,Pachic Haplustolls	4	NE	Hills/Swale	>60"	Alluvium/till	Sandy
Access Road										
>008	E691356 N5290896	81C	Parshall fine sandy loam	Co-lo,m,SA,f,Pachic Haplustolls	9	NE	Hills/Backslope	>60"	Sandy Alluvium	Sandy
>009	E691331 N5290790	81D	Vebar fine sandy loam	Co-lo,m,SA,f,Typic Haplustolls	11	N	Hills/Backslope	>60"	Sandy Alluvium	Sandy
>010	E691283 N5290741	81C	Lihen sandy loam	Co-lo,m,SA,f,Entic Haplustolls	3	SE	Hills/Summit	>60"	Sandy Alluvium	Sands
>011	E691252 N5290659	93D	Bowbells loam	Fn-lo,m,SA,f,Pachic Argistolls	10	NE	Hills/Swale	>60"	Alluvium/till	Loamy Overflow
>012	E691187 N5290623	81D	Vebar fine sandy loam	Co-lo,m,SA,f,Typic Haplustolls	15	NW	Hills/Backslope	>60"	Sandy Alluvium	Sandy
>013	E691121 N5290562	93D	Bowbells loam	Fn-lo,m,SA,f,Pachic Argistolls	12	E	Hills/Swale	>60"	Sandy Alluvium	Loamy Overflow
>014	E691098 N5290548	30E	Vebar fine sandy loam	Co-lo,m,SA,f,Typic Haplustolls	25	N	Hills/Backslope	>60"	Sandy Residuum	Sandy
>015	E691052 N5290550	93D	Zahl loam	Fn-lo,m,SA,f,Typic Calcistolls	16	E	Hills/Summit	>60"	Alluvium/till	Loamy

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.		
		GRAVELS WITH FINES (Appreciable amt. of fines)		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines.		
		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.	
			SANDS WITH FINES (Appreciable amt. of fines)		SP	Poorly-graded sands or gravelly sands, little or no fines.	
	FINE GRAINED SOILS (More than 50% of material is SMALLER than No. 200 sieve size)	SILTS AND CLAYS (Liquid limit LESS than 50)		SM	Silty sands, sand-silt mixtures.		
				SC	Clayey sands, sand-clay mixtures.		
				ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.		
		SILTS AND CLAYS (Liquid limit GREATER than 50)		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.		
			OH	Organic silts and organic silt-clays of low plasticity.			
			MH	Inorganic clays of high plasticity, fat clays.			
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. W. F.

Figure G 160

Appendix E

Cultural Resources Documentation

Smith 11X-10 Well Pad and Access Road Environmental Assessment
XTO Energy



United States Department of the Interior

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



IN REPLY REFER TO:
DESCRM
MC-208

SEP 29 2009

Perry 'No Tears' Brady, THPO
Mandan, Hidatsa and Arikara Nation
404 Frontage Road
New Town, North Dakota 58763

Dear Mr. Brady:

We have considered the potential effects on cultural resources of an oil well pad and access road in Dunn County, North Dakota. Approximately 22 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the area depicted in the enclosed report. No historic properties were located that appear to possess the quality of integrity and meet at least one of the criteria (36 CFR 60.4) for inclusion on the National Register of Historic Places. Two properties were located that may qualify for protection under the American Indian Religious Freedom Act (16 USC 1996). The access road has been routed so as to avoid any impact to the "arcas of tribal concern."

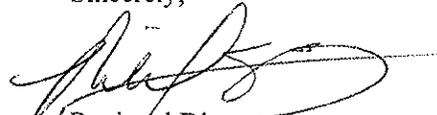
As the surface management agency, and as provided for in 36 CFR 800.5, we have therefore reached a determination of **no historic properties affected** for this undertaking. Catalogued as **BIA Case Number AAO-1669/FB/09**, the proposed undertaking, location, and project dimensions are described in the following report:

Herson, Chandler S.
(2009) Smith 11x-10 Well Pad and Access Road: A Class III Cultural Resource Inventory in 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,



Regional Director

Enclosure

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

Appendix F

Agency Correspondence

Smith 11X-10 Well Pad and Access Road Environmental Assessment
XTO Energy

October 27, 2009

Christine Dirk
Natural Resource Division
North Dakota Parks & Recreation Department
1600 East Century Ave., Suite 3
Bismarck, ND 58503

Dear Ms. Dirk:

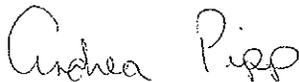
We are requesting known location information and any associated data for threatened, endangered, and rare animals and plants within a one-mile distance of our project area boundary (**Project Vicinity Map**). Our project is located on the Fort Berthold Indian Reservation, east of Mandaree, in Dunn County,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

- * Township 149N, Range 92W, Sections 10-12, 13-15, 22-24, 25-27, and 34-36;
- * Township 149N, Range 91W, Sections 7-8, 17-18, 19-20, 29-30, and 31-32;
- * Township 148N, Range 92W, Sections 3 & 10.

I understand there is a fee for out-of-state information requests. I will gladly pay this fee. Please let me know the amount, types of payment you accept (e.g. check, money order, etc.), and any other details. 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 K. Pipp
Botanist



John Hoeven, Governor
Douglass A. Prchal, Director
1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649
Phone 701-328-5357
Fax 701-328-5363
E-mail parkrec@nd.gov
www.parkrec.nd.gov

November 17, 2009

Andrea K. Pipp
PBS & J
801 N. Last Chance Gulch, Suite 101
Helena, MT 59601-3360

Re: Project on the Fort Berthold Indian Reservation

Dear Ms. Pipp:

The North Dakota Parks and Recreation Department has reviewed the above referenced project proposal located in Sections 10-12, 13-15, 22-27, and 34-36, T149N, R92W; Sections 7-8, 17-20, and 29-32, T149N, R91W; and Sections 3 and 10, T148N, R92W, 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, there are no known occurrences within or adjacent to the project area.

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

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

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

Sincerely,


Jesse Hanson, Coordinator
Planning and Natural Resources Division
R.USNDNHI*2009-332

.....
Play in our backyard!

October 27, 2009

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

Dear Mr. Towner:

XTO Energy, Inc. (XTO) is proposing to conduct oil exploration activities at several sites in Dunn County, east of Mandaree, North Dakota on the Fort Berthold Indian Reservation (FBIR). 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 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 six 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**. 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 40 feet wide and will be placed to maximize the use of the existing road system to the greatest extent possible.

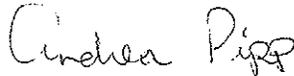
Table 1. Proposed XTO Energy oil well sites on the Fort Berthold Indian Reservation.

Site Name	Township	Range	Section(s)	Notes
FBIR Iron Woman 21X-10, FBIR Yellow Wolf 21X-10	148N	92W	3, 10	Well pad and access road occur on native prairie with existing cattle use.
FBIR Stephen 31X-19, FBIR Bird 31X-19	149N	91W	19	The well pad and access road occur in a hayfield.
FBIR Beaks 24X-8, FBIR Medicine 24X-8	149N	91W	8, 17	Well pad occurs on native prairie with a substantial amount of snowberry on it. Site has some use by cattle. Access road follows an existing two-track road for the majority of its length. It also crosses along one edge of a hayfield and some native prairie to reach the well pad.
FBIR Smith 11X-10	149N	92W	9, 10	The well pad and access road occur on native prairie.
FBIR Walter Packs Wolf 31X-12	149N 149N	92W 91W	12 7, 18	Well pad occurs on native prairie with existing cattle use and a substantial amount of snowberry. Access road follows an existing two-track road for almost its entire length.
FBIR Baker 34X-25	149N	92W	25, 36	Well pad occurs on native prairie with existing horse and cattle use. Access road follows an existing driveway from BIA Road 13 before heading north across native prairie to the well pad.

If at all possible, we would greatly appreciate a response by November 15, 2009. Please contact me with questions by e-mail at apipp@pbsj.com or by phone at (406) 439-0284.

Thank you very much for your attention and I look forward to discussing this project with you.

Sincerely,



Andrea K. Pipp
Botanist

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



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58101

DEC 17 2009

Ms. Andrea K. Pipp, Botanist
PBS&J
801 N. Last Chance Gulch, Suite 101
Helena, Montana 59601-3360

Re: Nine exploratory oil and gas wells on
the Fort Berthold Reservation

Dear Ms. Pipp:

This is in response to your October 27, 2009, letter regarding proposed exploratory oil and gas wells on the Fort Berthold Reservation. XTO Energy Inc. has proposed nine exploratory oil and gas well on six well pad sites on the Fort Berthold Reservation, Dunn County, North Dakota.

Specific locations are:

FBIR Iron Woman 21X-10 and FBIR Yellow Wolf 21 X-10: T. 148 N., R. 92 W.,
Sections 3, 10
FBIR Stephen 31 X-19 and FBIR Bird 31X-19: T. 149 N., R. 91 W., Section 19
FBIR Beaks 24X-8 and FBIR Medicine 24X-8: T. 149 N., R. 91 W., Sections 8, 17
FBIR Smith 11X-10: T. 149 N., R. 92 W., Sections 9, 10
FBIR Walter Packs: T. 149 N., R. 92 W., Section 12
Wolf 31X-12: T. 149., R. 91 W., Sections 7, 18
FBIR Baker 34X-25: T. 149 N., R. 92 W., Sections 25, 36

We offer the following comments under the authority of and in accordance with the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.) (MBTA), the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.) (NEPA), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250) (BGEPA), Executive Order 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds", the Endangered Species Act (16 U.S.C. 1531 et seq.) (ESA), and the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57).

In an e-mail dated October 13, 2009, the Bureau of Indian Affairs (BIA) designated PBS&J, as a consultant to XTO Energy, to represent the BIA for informal Section 7 consultation under the ESA. Therefore, the U.S. Fish and Wildlife Service (Service) is responding to you as the designated non-Federal representative.

Threatened and Endangered Species

A list of federally endangered and threatened species that may be present within the proposed project's area of influence is enclosed. This list fulfills requirements of the Service under Section 7 of the ESA. This list remains valid for 90 days. The BIA or designated non-Federal agent should make a determination of the proposed projects' effects on listed species, including whether there is anticipated destruction or adverse modification of designated critical habitat. This determination may be included in the EA. It should state whether or not the BIA plans to incorporate the Service's recommendations to avoid and minimize any adverse effects. If the BIA does not plan to take the recommended measures, the document should explain why not.

There is designated critical habitat for the piping plover in Dunn County. We recommend that a buffer of at least one-half mile be maintained from piping plover critical habitat. Critical habitat can be viewed on the Service website (http://www.fws.gov/northdakotafieldoffice/endspecies/species/piping_plover.htm). GIS layers of critical habitat can be obtained by contacting our office at the letterhead address.

The Aransas Wood Buffalo Population (AWBP) of endangered whooping cranes is the only self-sustaining migratory population of whooping cranes remaining in the wild. These birds breed in the wetlands of Wood Buffalo National Park in Alberta and the Northwest Territories of northern Canada, and overwinter on the Texas coast. Whooping cranes in the AWBP annually migrate through North Dakota during their spring and fall migrations. They make numerous stops along their migration route to feed and roost before moving on.

Whooping cranes in the AWBP annually migrate through North Dakota during their spring and fall migrations. The proposed project lies within a 90 mile corridor that includes approximately 75 percent of all reported whooping crane sightings in the State (enclosure).

Whooping cranes are unlikely to spend more than a few days in any one spot during migration. The Service suggests that the Environmental Assessment (EA) include a requirement that if a whooping crane is sighted within one mile of a well site or associated facilities while it is under construction, that all work cease within one mile of that part of the project and the Service be contacted immediately. In coordination with the Service, work may resume after the bird(s) leave the area.

Potential habitat for the Dakota skipper exists on the Fort Berthold Reservation in Dunn and McKenzie Counties. In 1995, the Dakota skipper was determined to be a candidate species under the ESA. No legal requirement exists to protect candidate species; however, it is within the spirit of the ESA to consider these species as having significant value and worth protecting.

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

Migratory Birds

The MBTA has no provisions for incidental take. Regardless, it is understood that some birds may be killed even if all reasonable conservation measures are implemented. The Service's Office of Law Enforcement carries out its mission to protect migratory birds through investigations and enforcement, and through fostering relationships with individuals and industries seeking to eliminate their impacts to migratory birds. While it is not possible under the MBTA and BGEPA to absolve individuals or companies from liability by following these guidelines, enforcement will be focused on those individuals or companies that take migratory birds with disregard for the law, and where no legitimate conservation measures have been applied. Please inform us as to whether you intend to follow the following recommendations to minimize impacts to migratory birds, including bald and golden eagles.

Schedule construction for late summer or fall/early winter so as not to disrupt migratory birds or other wildlife during the breeding season (February 1 to July 15). If work is proposed to take place during the breeding season or at any other time which may result in the take of migratory birds, their eggs, or active nests, the Service recommends that the project proponent arrange to have a qualified biologist conduct a field survey of the affected habitats to determine the presence of nesting migratory birds. If nesting migratory birds, their eggs, or active nests are found, we request you contact this office, suspend construction, or take other measures, such as maintaining adequate buffers, to protect the birds until the young have fledged. The Service further recommends that field surveys for nesting birds, along with information regarding the qualifications of the biologist(s) performing the surveys, and any avoidance measures implemented at the project site be thoroughly documented and that such documentation be shared with the Service and maintained on file by the project proponent.

The Service estimates that 500,000 to 1 million birds are killed nationwide every year from exposed oil at oil drilling and/or production sites. The unauthorized take of migratory birds at oil production facilities can be prevented with a minimum of expense

and effort. Wildlife mortalities in North Dakota are most often observed in association with drilling reserve pits, flare pits, and/or drip buckets and barrels. The Service strongly recommends that the pads be constructed as closed-loop systems, without a reserve pit. Regardless of whether the pads are built with reserve pits, we recommend that the BIA include the following measures in the EA so as to ensure compliance with the MBTA.

- **Keep Oil Off Open Pits or Ponds.** Immediate clean up of oil in open pits is critical to prevent wildlife mortalities.
- **Place Covers on Drip Buckets/Barrels Located Under Valves and Spigots.** Bird entrapments are common within the small (55 gallon or less) barrels placed under valves and spigots to collect dripped oil. Placing a wire mesh or grate over the top of these barrels is a very practical way of preventing access for wildlife.
- **Use Effective and Proven Exclusionary Devices.** Netting is the most effective method of keeping birds from entering open pits (reserve and flare pits). Flagging, reflectors, and strobe lights are not effective. Published scientific studies as well as field inspections by Service personnel have documented bird mortalities at oil pits with flagging, reflectors, and strobe lights (e.g. Esmoil 1995). The effectiveness of netting pits to exclude birds and other wildlife depends on its installation. Effective installation requires a design allowing for snow-loading and one that also prevents ground entry by small mammals and birds. A maximum mesh size of 1.5 inches will allow for snow-loading and will exclude most birds. Nets or wire mesh over flare pits can be implemented if the flare tube is high enough to keep flame away from the net. Some examples of both effective and ineffective netting techniques can be found on the Service's website at <http://www.fws.gov/mountain%2Dprairie/contaminants/contaminants1c.html>.

Bald and/or golden eagles may use the project area where the proposed wells will be located. Golden eagles inhabit a wide variety of habitat types, including open grassland areas. They are known to nest on cliffs, in trees, manmade structures, and on the ground (Kochert et al. 2002). There are numerous records of golden eagle nests on the Fort Berthold reservation (Pers. Comm. Anne Marguerite Coyle, Dickinson State University). While the bald eagle tends to be more closely associated with forested areas near water (Buehler 2000), they have been found nesting in single trees several miles from the nearest water body. Therefore, there may also be potential habitat for the bald eagle at the proposed project sites. Especially early in the nesting season, eagles can be very sensitive to disturbance near the nest site and may abandon their nest as a result of low disturbance levels, even from foot traffic. A buffer of at least 1/2 mile should be maintained for golden and bald eagle nests. A permit is required for any take of bald or golden eagles or their nests. Permits to take golden eagles or their nests are available only for legitimate emergencies and as part of a program to protect golden eagles.

The Service recommends that aerial raptor surveys be conducted prior to any on-the-ground activities. The Service recommends that an aerial nest survey (preferably by

helicopter) be conducted within 1.0-mile of any proposed ground disturbances to identify active and inactive nest sites near the proposed well pad and associated facilities, including proposed new roads. Aerial surveys should be conducted between March 1 and May 15, before leaf-out so that nests are visible.

Aerial surveys should include the following:

1. Due to the ability to hover and facilitate observations of the ground, helicopters are preferred over fixed wing aircraft, although small aircraft may also be used for the raptor surveys. Whenever possible, two observers should be used to conduct the surveys. Even experienced observers only find approximately 50 percent of nests on a flight (Pers. Comm. Anne Marguerite Coyle, Dickinson State University), so we recommend that two flights be performed prior to any on-the-ground work, including other biological surveys or other work.
2. Observations of raptors and nest sites should be recorded using GPS. The date, location, nest condition, activity status, raptor species, and habitat should be recorded for each sighting.
3. We request that you share the qualifications of the biologist(s) conducting the survey, method of survey, and results of the survey with the Service.

High Value Habitat Avoidance

To minimize disturbance to fish and wildlife habitat in the project area, the Service provides the following recommendations:

- Make no stream channel alterations or changes in drainage patterns.
- Install and maintain appropriate erosion control measures to reduce sediment transport to adjacent wetlands and stream channels.
- Reseed disturbed areas with a mixture of native grass and forb species immediately after construction to reduce erosion.

Cumulative Effects Analysis

A large number of wells and appurtenant facilities are being constructed in the western portion of North Dakota. The Service is concerned that the wells, and especially the associated roads, are being put in piecemeal without an overarching plan to ensure that the facilities are being constructed to access all new pads most efficiently, while disturbing the least amount of habitat. While we understand that there is still some level of uncertainty regarding the extent of the oil formations, there has been enough drilling in this area that the Service believes that the uncertainty is relatively small and decreasing. It would be appropriate for the EA to include some cumulative effects analysis of the

existing and proposed pads, roads, electrical transmission lines, and preferably pipelines to transport the products.

Habitat Fragmentation

Prairie habitat is increasingly being lost or fragmented because of the large number of wells and associated roads that are being constructed in areas of the state that were formerly relatively undeveloped. Only about 30% of native prairie in North Dakota remains from pre-settlement times (Strong et al. 2005), with nearly all native tallgrass prairie converted nationwide (Ricketts et al. 1999). Oil pads, associated roadways and vehicle traffic can cause fragmentation of the landscape, disrupting wildlife patterns, and making it more likely that non-native plant species may invade an area. The Service recommends placing as few well pads as possible on the landscape and locating pads so as to avoid or minimize the construction of new roads. Many prairie species require large, contiguous blocks of grasslands for their biological needs and may either avoid patchy habitat or experience reduced reproductive success.

- The Service recommends that impacts to native prairie be avoided or minimized. If native prairie cannot be avoided, the Service recommends outlining stringent reclamation requirements, including a bond sufficient to cover the cost of reclamation, as described in the “Post-production Phase – Reclamation” section below.
- The Service recommends that oil wells use existing roads and trails to the greatest extent possible, minimizing all new road construction.
- If a new road is necessary, the Service recommends avoiding native prairie to the greatest extent possible.
- If new roads are constructed, the Service recommends that the disturbed areas along the road be reseeded immediately with a native prairie mix to reduce erosion and prevent invasion by non-native species. Disturbed areas should be monitored regularly throughout the life of the project, and treated with herbicide as necessary to ensure that exotic species are not infesting disturbed areas.
- If multiple companies are developing well pads in the same general area, roads should be shared to the greatest extent possible to minimize disturbance.
- Install and maintain appropriate erosion control measures to reduce sedimentation and water quality degradation of wetlands and streams near the project area.

The Service recommends that the BIA incorporate the relevant requirements described in the Dakota Prairie Grasslands Land and Resource Management Plan (USDA 2001). This document includes a number of requirements to avoid sensitive resources. In particular, the Service suggests that the BIA incorporate the relevant portions of Appendix D, Oil and Gas Stipulations.

Post-production Phase – Reclamation

Each project should include a plan to restore the landscape following project completion, including a bond sufficient to reclaim the area in full. Within one year of a well's closure, the well pads, roads, and associated facilities should be completely removed from the landscape, the land recontoured back to its original profile, and the area reseeded with a native prairie mix. Since native prairie species take some time to establish, and intensive management may be required for several years to ensure that weeds do not infest the area, the Service recommends that the BIA follow the timeline requirements set out in the 2003 *North Dakota Public Service Commission, Standards for evaluation of revegetation success and recommended procedures for pre-and postmining vegetation assessments* (available on-line at <http://www.psc.state.nd.us/jurisdiction/reclamation/files/revvegdocjuly2003final.pdf>). This document requires that reclaimed areas be managed for a minimum of ten years, starting in the year when first seeded. Starting in the sixth year, for at least two consecutive years, or three out of the last five, including the last year, the reclaimed area must meet the approved standard as described in the document.

For prairie areas, the Service recommends planting a diverse mixture of native cool and warm season grasses and forbs. While the North Dakota Public Service Commission document requires only five native grass species, recent research has suggested that a more diverse mix, including numerous forb species, is not only ecologically beneficial, but is also more weed resistant, allowing for less intensive management and chemical use. In essence, the more species included in a mixture, the higher the probability of providing competition to resist invasion by non-native plants. The seed source should be as local as possible, preferably collected from the nearby native prairie.

Thank you for the opportunity to comment on this project. If you require further information or the project plans change, please contact me or Carol Aron of my staff at (701) 250-4481 or at the letterhead address.

Sincerely,



Jeffrey K. Towner
Field Supervisor
North Dakota Field Office

Enclosures

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

Literature Cited

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FEDERAL THREATENED, ENDANGERED, AND CANDIDATE SPECIES
AND DESIGNATED CRITICAL HABITAT FOUND IN
DUNN COUNTY, NORTH DAKOTA
December 2009

ENDANGERED SPECIES

Birds

Interior least tern (*Sterna antillarum*): Nests along midstream sandbars of the Missouri and Yellowstone Rivers.

Whooping crane (*Grus americana*): Migrates through west and central counties during spring and fall. Prefers to roost on wetlands and stockdams with good visibility. Young adult summered in North Dakota in 1989, 1990, and 1993. Total population 140-150 birds.

Fish

Pallid sturgeon (*Scaphirhynchus albus*): Known only from the Missouri and Yellowstone Rivers. No reproduction has been documented in 15 years.

Mammals

Black-footed ferret (*Mustela nigripes*): Exclusively associated with prairie dog towns. No records of occurrence in recent years, although there is potential for reintroduction in the future.

Gray wolf (*Canis lupus*): Occasional visitor in North Dakota. Most frequently observed in the Turtle Mountains area.

THREATENED SPECIES

Birds

Piping plover (*Charadrius melodus*): Nests on midstream sandbars of the Missouri and Yellowstone Rivers and along shorelines of saline wetlands. More nest in North Dakota than any other state.

CANDIDATE SPECIES

Invertebrates

Dakota skipper (Hesperia dacotae): Found in native prairie containing a high diversity of wildflowers and grasses. Habitat includes two prairie types: 1) low (wet) prairie dominated by bluestem grasses, wood lily, harebell, and smooth camas; 2) upland (dry) prairie on ridges and hillsides dominated by bluestem grasses, needlegrass, pale purple and upright coneflowers and blanketflower.

DESIGNATED CRITICAL HABITAT

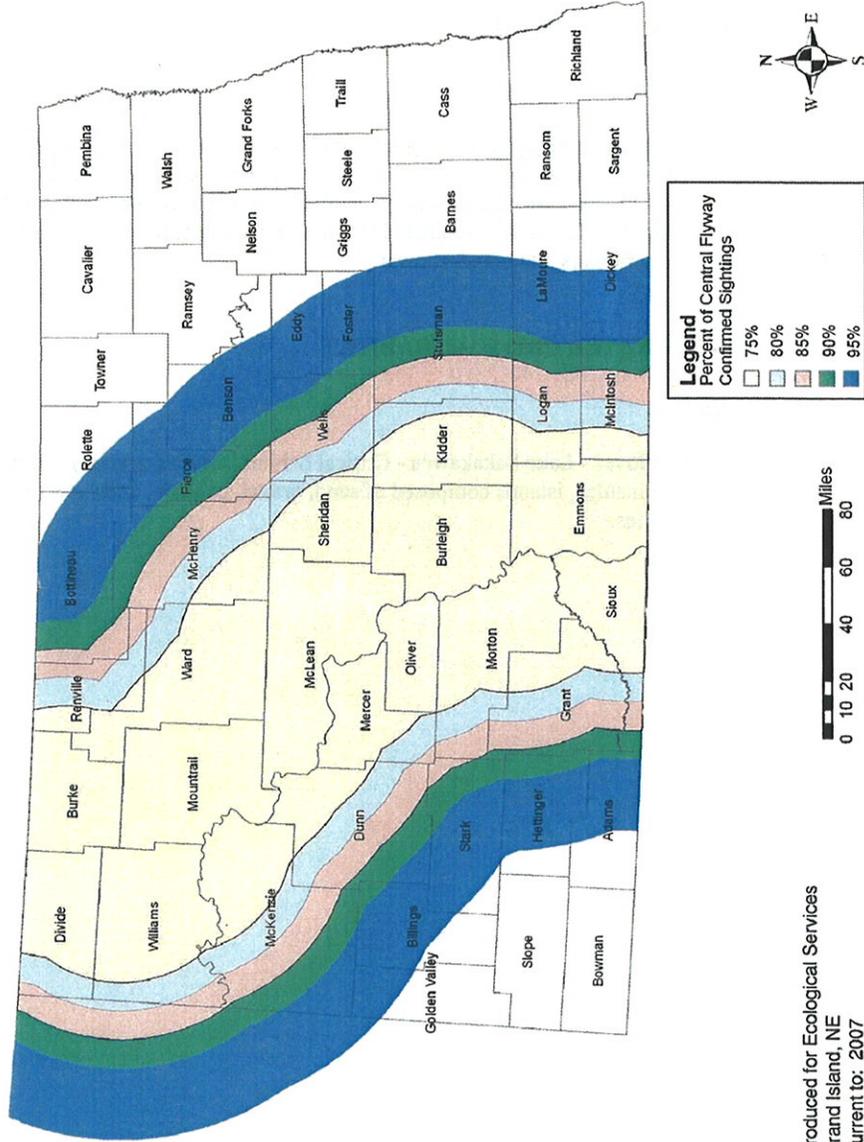
Birds

Piping Plover - Lake Sakakawea - Critical habitat includes sparsely vegetated shoreline beaches, peninsulas, islands composed of sand, gravel, or shale, and their interface with the water bodies.



U.S. Fish and Wildlife Service

North Dakota and Montana Whooping Crane Migration Corridor
 Central Flyway of the United States





REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640
April 9, 2010

North Dakota Regulatory Office

[NWO-2010-00628-BIS]

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 (XTO)**, received on April 1, 2010 requesting Department of the Army (DA), United States Army Corps of Engineers (Corps) comments for a proposed oil and gas exploratory well within the Fort Berthold Indian Reservation. The proposed well, **Smith 11X-10**, is located within NW ¼ Section 10, 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 include 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. Utility lines 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. 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.

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 (highlighted in yellow). **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. 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 will beyond 120 days.

This correspondence letter **does not approve** the proposed construction work or **does not verify** 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 or phone at (701) 255-0015.

Sincerely,



Daniel E. Cimarosti
Regulatory Program Manager
North Dakota

Enclosure

ENG Form 4345
Fact Sheet NWP 12
Fact Sheet NWP 14
EPA 401 Conditions for Nationwide Permits

CF w/o encl
EPA Denver (Brent Truskowski)



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640
April 23, 2010

North Dakota Regulatory Office

[NWO-2010-00814-BIS]

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 (XTO)**, received on April 15, 2010 requesting Department of the Army (DA), United States Army Corps of Engineers (Corps) comments for proposed oil and gas exploratory well pad and access road within the Fort Berthold Indian Reservation. The proposed well, **Smith 11X-10**, is located within N ½, NW ¼, NW ¼ Section 10, Township 149 North, Range 92 West, Dunn County, North Dakota.

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Enclosed for your information is the fact sheet for Nationwide Permit 12, Utility Line Activities. Utility lines 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. 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.

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 (highlighted in yellow). **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. 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 will beyond 120 days.

This correspondence letter **does not approve** the proposed construction work or **does not verify** 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 or phone at (701) 255-0015.

Sincerely,



Daniel E. Cimarosti
Regulatory Program Manager
North Dakota

Enclosure
ENG Form 4345
Fact Sheet NWP 12
Fact Sheet NWP 14
EPA 401 Conditions for Nationwide Permits

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 sidcast 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 NWP 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 330.1(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 NWP's 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 NWP's 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 NWP's 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 NWP's. 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 NWP's.

(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 NWP's 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.nd/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 NWP's 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 NWP 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 NWP's 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>

**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, identify 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; Manne 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
NWO-2010-814-BIS			
(ITEMS BELOW TO BE FILLED BY APPLICANT)			
5. APPLICANT'S NAME First - Middle - Last - Company - E-mail Address -		8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required) 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			

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 disguise 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.



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
<http://www.epa.gov/region08>

May 11, 2007

Ref: 8EPR-EP

Colonel Ronald N. Light
District Engineer, Sacramento District
Attn: Michael S. Jewel, Regulatory Section
U.S. Army Corps of Engineers
1325 J Street, 14th floor
Sacramento, California 95814-2922

Colonel David Press,
District Engineer, Omaha District
Attn: Martha Chieply, Chief of Regulatory
U.S. Army Corps of Engineers
106 S. 15th Street
Omaha, Nebraska 68102

Colonel Bruce Estok
District Engineer, Albuquerque District
Attn: Don Borda, Chief of Regulatory
U.S. Army Corps of Engineers
4101 Jefferson Plaza NE, Room 313
Albuquerque, New Mexico 87109-3435

Re: Certification of Nationwide Permits in Indian Country
Pursuant to Section 401 of the Clean Water Act

Dear Colonels Light, Press and Estok:

This letter is in response to the US Army Corps of Engineers Final Notice of Issuance of Nationwide Permits (NWP) listed in the Monday, March 12, 2007, Federal Register for Clean Water Act (CWA) Section 401 water quality certification. This water quality certification applies only to waters of the United States within Environmental Protection Agency (EPA) Region 8 where Tribes have not assumed CWA Section 401 Water Quality Certification and Section 303 Water Quality Standards Programs.

Region 8 has not received any final regional conditions from the USACE. Therefore, if final regional conditions are modified such that changes necessitate a change in 401 certification, Region 8 will modify this certification following receipt of final NWP regional conditions.

The USACE and applicants should consider contacting EPA, Region 8 as early as possible for potential permits and actions that may be complicated and when early discussions may be beneficial to all parties. EPA requests notification when the USACE District Engineer intends to exert discretionary authority or waive the acreage, linear feet or cubic yard limits of the 2007 Nationwide Permits. We would like the opportunity to discuss the rationale and finding of minimal impact in these instances.

For NWP's that do require an individual 401 certification application, submission or notification, the information should be sent to the EPA and to the appropriate Tribe. Suggested minimum information needed by EPA is enclosed; if minimum information is not included, the request for 401 certification may not be considered complete. The USACE should be aware of tribal trust lands that are outside of commonly known reservation boundaries. A state certification is not valid on these waters; and without a valid 401 certification, a permit would not be valid.

Your staff may contact: Ms. Toney Ott at 303-312-6909, ott.toney@epa.gov, or your assigned Region 8 Section 404 staff if there are any questions or if clarification is necessary.

Sincerely,

Original signed by Gene R. Reetz for

Brian Caruso, Unit Chief
Wetlands and Watershed Unit
Ecosystems Protection Program

cc: Region 8 Tribal Environmental Directors
Cheryl Goldsberry, Omaha District

Enclosures:

USEPA Region 8 Water Quality Certification in Accordance with Section 401 of the Clean Water Act for the 2007 Nationwide Permits in Indian Country

Application Checklist for Completeness - - 401 Certifications for USACE NWP's

Tribal Contacts in U.S.E.P.A. Region 8, Current as of May 8, 2007

Region 8 Tribes with Treatment as State Status for CWA Section 303 and Section 401. Current as of May 8, 2007

Environmental Protection Agency, Region 8

Water Quality Certification in Accordance with Section 401 of the Clean Water Act for the 2007 Nationwide Permits in Indian Country

May 11, 2007

These requirements apply to permitted activities occurring within "Indian country" as defined at 18 U.S.C. Section 1151, which includes lands located within formal Indian reservations as well as lands held in trust by the United States for Indian tribes and located outside the boundaries of formal Indian reservations. Please be aware that tribal trust lands located outside the boundaries of formal Indian reservations exist in Region 8.

A. SPECIFIC NATIONWIDE PERMITS CWA Section 401 CERTIFICATION DENIED

USEPA Region 8 is denying CWA Section 401 certification on all waters for the following NWP: # 16, # 17, # 21, # 33, # 34, # 44, # 45, # 46, # 47, # 49 and # 50. On NWPs that have been "denied" the EPA will review the proposed permit activity and issue a project-specific 401 Certification decision on each permit.

B. GENERAL CONDITIONS FOR ALL NATIONWIDE PERMITS

1. Project proponent/contractor must have the following on-site:
 - a copy of the appropriate USEPA Regional 401 certification general and specific conditions contained in this certification;

in addition, for NWP permits requiring a 401 certification application to USEPA:

- the 401 certification application, and
- EPA Region 8 CWA Section 401 certification document if applicable.

2. Certification is denied for any activity affecting fens and springs.

Note: EPA adopts the definitions of these aquatic resources as defined by the 2007 Regional Conditions, as defined by the published draft conditions.

3. This certification does not authorize the placement or construction of septic/leach systems or other sewage/waste treatment plants in wetlands.

4. This certification does not authorize the construction of dams, except for stream restoration projects.

5. This certification does not authorize the construction of any portion of a facility for confined animal feeding operations, including, but not limited to, the construction of buildings, holding/detention and sewage lagoons, and/or livestock holding areas.

6. Wetland mitigation under these nationwide permits shall be completed prior to, or concurrent with, the project impacts. Wetland mitigation should be in-kind and on-site replacing native wetland plant communities lost from all project impacts. If the USACE

recommends a mitigation bank or in-lieu fee program and the permittee chooses to utilize the option of a mitigation bank or in-lieu fee program, the applicant must submit the name of the bank or program, and the number and type of credits to be purchased prior to project impacts.

7. For any general or specific nationwide permit conditions requiring notification in accordance with the Preconstruction Notification general condition #27 (72 Fed. Reg. 11092, 11195 (March 12, 2007)), "Agency Coordination" for project activities should include coordination with Native American Tribe or Tribes affected by such project activities.

8. Based on experience with invasive species, infestations of invasive plant species may result in increased erosion and/or pesticide applications, have the potential to reduce water quality, impact aquatic habitat, and impact designated water quality uses. This certification requires the use of certified weed-free hay/straw with any revegetation of project areas for activities authorized under these nationwide permits. This certification requires the use of seed that contain no noxious weed seed and meets certified seed quality. All seed must have a valid seed test within one year of the use date, from a seed analysis lab by a registered seed analyst (Association of Official Seed Analysts). The seed lab results shall show no more than 0.5 percent by weight of other weed seeds; and the seed lot shall contain no noxious, prohibited, or restricted weed seeds according to State seed laws in the respective State(s).

9. This certification requires monitoring for and control of invasive species during project construction if areas are disturbed and not immediately revegetated. This certificate requires monitoring for and immediate control of invasive species after project completion through at least one growing season. A maximum goal of less than 5% weed-species plants should be set, unless local, State, Tribal, or USACE rules, ordinances or permit conditions require more stringent monitoring and response.

10. Vegetation should be protected except where its removal is absolutely necessary for completion of the work. Applicant should revegetate disturbed soil in a manner that optimizes plant establishment for that specific site. Revegetation may include topsoil replacement, planting, seeding, fertilization, liming, and weed-free mulching as necessary. Applicant should use native material where appropriate and feasible. Where practical, stockpile weed-seed-free topsoil and replace it on disturbed areas. All cut and fill slopes that will not be protected with riprap should be revegetated with appropriate species to prevent erosion.

11. The following conditions apply when operating equipment or otherwise undertaking construction in a water of the U.S.

A. This certification requires all equipment to be inspected for oil, gas, diesel, anti-freeze, hydraulic fluid and other petroleum leaks. All such leaks will be properly repaired and equipment cleaned prior to being allowed on the project.

Leaks that occur after the equipment is moved to the project site will be fixed that same day or the next day or removed from the project area. The equipment is not allowed to continue operating once the leak is discovered.

B. Construction equipment should not be operated below the existing water surface except as follows:

a) Forging at one location is acceptable; however, vehicles should not push or pull material along bed or bank below the existing water level. Impacts from forging should be minimized.

b) Work below the waterline which is essential should be done in a manner to minimize impacts to the aquatic system and water quality.

C. All equipment that has been operated in waters of the US, with known invasive species infestation(s) is to be inspected and cleaned before entering waters of the U.S. for this permit. All equipment is to be inspected and cleaned after use.

12. Any temporary crossings, bridge supports, cofferdams or other structures that are necessary during the permit activity should be designed to handle high flows that can be anticipated during permit activity. All temporary structures should be completely removed from the waterbody at the conclusion of the permitted activity and the area restored to a natural appearance.

13. This certification does not authorize any unconfined discharge of liquid cement in waters of the United States. Grouting riprap must occur under dry conditions with no exposure of wet concrete to the waterbody.

14. All discharges must occur during the low flow or no flow period of the season.

C. ADDITIONAL CONDITIONS FOR SPECIFIC NATIONWIDE PERMITS

In addition to the general conditions for all Nationwide Permits, the following conditions are specific to each listed nationwide permit.

Nationwide Permit 3. Maintenance Activities

A. For the repair of low water crossings, this certification is denied for discharges of any fill or dredged material that would result in an increase in land contour height beyond the original dimensions.

B. Silt and sediment removal associated with low water crossings shall be limited to a maximum of 50 linear feet.

C. Silt and sediment removal associated with bridge crossings shall be limited to a maximum of 100 linear feet.

Nationwide Permit 4. Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities

This certification does not allow for the introduction of non-native flora or fauna.

Nationwide Permit 7. Outfall Structures and Associated Intake Structures

For construction and maintenance activities:

A. Construction of the outfall structure shall be placed at the streambed elevation and, at a minimum; the pipeline should be oversized to prevent high-pressure discharge of stormwater.

B. Certification is denied for construction of the outfall structure in wetlands.

C. Controls shall be put in place to stabilize all areas of the bed and bank around and adjacent to the outfall structure and associated intake structures that may be affected by outfall or stream flows, respectively.

D. This certification does not authorize structures for drainage activities that result in a loss of waters of the U.S., such as tile systems.

Nationwide Permit 11. Temporary Recreational Structures

This certification does not allow for the introduction of non-native flora or fauna.

Nationwide Permit 12. Utility Line Activities

A. Project proponent/contractor must have a copy of the 401 certification application and the EPA 2007 water-quality-certification-document on-site.

B. Certification is denied for activities in perennial drainages and wetlands.

C. Certification is denied for all water intake structures.

D. Activities in ephemeral and intermittent drainages are certified with the following conditions:

- a) Crossings must be placed as close to perpendicular to the watercourse as possible.
- b) Affected streambanks must be sloped such that the stream bottom width is not reduced and bottom elevations are restored to original elevations.
- c) Disturbed stream banks must be reconfigured to mimic a stable naturally vegetated portion of the same stream within ½ mile in either direction of the project and not reduce the bottom width of the stream. If a natural/native stream reach is not available within the adjacent reach, other natural portions of the drainage can serve as a reference condition.

E. USACE General Condition 20. Mitigation, (72 Fed. Reg. 11092, 11193-11194 (March 12, 2007)) requires permittees to avoid and minimize adverse effects to the maximum extent practicable on the project site. A statement or other evidence that General Condition 20 has been met should be submitted.

F. Applications for this NWP water quality 401 certification must include the following detailed information at a minimum and will serve as baseline certification conditions for the project.

- a) Location and Wetland Map:
 - Narrative describing both the location (i.e., Section, Township Range, and decimal Latitude/Longitude) of the proposed construction project, the affected waters/wetlands, and the type of utility line.
 - An aerial photograph with wetland overlays must be provided with Ordinary High Water Mark delineated.
- b) Waters of the U.S. Description:
 - A description of the waterbody/wetlands including the dominant plant communities present in the wetlands or riparian areas.
 - On-site photographs of the site must be taken during the growing season to include a colored overlay line indicating the alignment of the pipeline across the waterbody/wetlands or other construction features.
- c) Construction Description:
 - A description of the methods by which the utility will be constructed on the site including (but not limited to) the trench size and depth, backfill materials (specifications), construction machinery to be used, cofferdam or road crossing specifications, and best

management practices to be implemented on-site (including invasives controls).

- Access roads must be constructed outside of waters /wetlands where alternatives are available.
- Proposed under drains (tile, french drains, etc.) must be described if proposed with the project.
- Details on pipeline corrosion protection methods must be provided.
- Where a positive gradient exists the wetlands such that drainage along the pipeline may occur, clay blocks, or another suitable method that will protect aquatic resources from inadvertent drainage, are required to prevent said wetland drainage.
- Site-specific cross-sectional drawings should be provided, including a drawing of the clay block or other method used to stop drainage.

d) Description of Impacts to Waters of the U.S.:

- A description of the amount (acreage and square feet) of disturbance/loss to waters of the U.S. (including wetlands) must be provided. Loss of waters includes both temporary and permanent impacts to wetlands resources from the construction project, including access roads.
- The length and width of the crossing and amount of impacts to the dominant plant communities must be provided.
- All unavoidable temporary sidestepping of materials (dredge or fill material) in wetlands must be placed on landscaping fabric or a weed-free hay/straw layer to mark the existing wetlands elevation.

e) Mitigation and Restoration Plan:

- Where proposed construction of the utility results in the conversion of a wetland type (i.e., forested/shrub willow type) to an herbaceous wetland type (i.e., wet meadow type), mitigation of the shrub community must be accomplished on-site to restore designated uses.
- The top six to 12 inches must be backfilled with topsoil from the trench.
- Mitigation plans (including road design specifications to minimize adverse impacts to adjacent wetlands) for unavoidable impacts resulting from access roads must be provided.

Nationwide Permit 13. Bank Stabilization

A. For this certification to be valid, the use of root wads, tree trunks, planting of live vegetation, proper bank sloping or a combination thereof will be used as bank stabilization structures. Native plants shall be planted in all disturbed areas and artificial soil stabilizing material (e.g. mulch, matting, netting etc) shall be used to reduce soil erosion. These materials, to include all plants and plant seed

shall be on site or scheduled for delivery prior to or upon completion of the earth moving activities. Sediment control measures shall be maintained in good working order at all times.

For the purpose of this condition, "proper sloping" is defined as configuring the disturbed bank to mimic a stable portion of the same stream within ½ mile in either direction of the project and not reduce the bottom width of the stream.

B. If flow conditions dictate the use of hardened structures, only appropriately sized angular rock may be used. The use of soil cement, concrete, grouted riprap, etc. is NOT certified.

Nationwide Permit 14. Linear Transportation Projects

A. Stormwater resulting from both the construction and operation of these authorized projects (including runoff from bridge decks) must be routed into constructed runoff water quality control systems (e.g. sediment basins, wet ponds, etc.) in order to eliminate sediment and other pollutants prior to entry of stormwater into waters of the United States.

B. Affected streambanks must be sloped such that the stream bottom width is not reduced and bottom elevations are restored to original elevations.

C. Crossings must be placed as close to perpendicular to the watercourse as possible.

D. The upland and riparian areas adjacent to all sides of the crossing must be revegetated in all directions from the banks of the tributary with native vegetation that is common to the geographical area. Native plants shall be planted in all disturbed areas and artificial soil stabilizing material (e.g. mulch, matting, netting etc) shall be used to reduce soil erosion. These materials, to include all plants and plant seed shall be on site or scheduled for delivery prior to or upon completion of the earth moving activities.

Nationwide Permit 15. U.S. Coast Guard Approved Bridges

A. Stormwater resulting from both the construction and operation of these authorized projects (including runoff from bridge decks) must be routed into constructed runoff water quality control systems (e.g. sediment basins, wet ponds, etc.) in order to eliminate sediment and other pollutants prior to entry of stormwater into waters of the United States.

B. Affected streambanks must be sloped such that the stream bottom width is not reduced and bottom elevations are restored to original elevations.

C. Crossings must be placed as close to perpendicular to the watercourse as possible.

D. The upland and riparian areas adjacent to all sides of the crossing must be revegetated in all directions from the banks of the tributary with native vegetation that is common to the geographical area. Native plants shall be planted in all disturbed areas and artificial soil stabilizing material (e.g. mulch, matting, netting etc) shall be used to reduce soil erosion. These materials, to include all plants and plant seed shall be on site or scheduled for delivery prior to or upon completion of the earth moving activities.

E. Bridge decks should be designed such that they do not drain directly into the waterbody.

Nationwide Permit 16. Return Water From Upland Contained Disposal Areas.

Certification is denied.

Nationwide Permit 17. Hydropower Projects.

Certification is denied.

Nationwide Permit 19. Minor Dredging

A. Dredge or fill may **not** be placed on temporary islet, islands, sandbars, landmass or other area of sediment accumulation, within the banks of a stream, shore of lake, edge of wetland or other type of waterbody; unless the vegetation and geomorphology signify a long term stable configuration. (e.g. Areas of accumulation are not formed from temporary situations such as drought conditions or temporary upstream reservoir release conditions).

B. Dredge materials must be placed in an upland and controlled such that it cannot return to waters of the U.S.

Nationwide Permit 21. Surface Coal Mining Operations. Nationwide Permit 21. Surface Coal Mining Activities

Certification is denied.

Nationwide Permit 23. Approved Categorical Exclusions

This certification is valid only for Categorical Exclusions listed in RGL 05-07.

Nationwide Permit 27. Aquatic Habitat Restoration, Establishment, and Enhancement Activities

A. This certification does not allow conversion of one habitat type to another (e.g. wetlands to open water, woody vegetation to herbaceous).

B. This certification does not allow for the introduction of non-native flora or fauna.

Nationwide Permit 28. Modifications of Existing Marinas

This certification does not allow for expansion.

Nationwide Permit 29. Residential Developments

A. Certification is denied for discharges into wetlands, intermittent or perennial drainages.

B. Subdivisions not authorized under this certification.

C. USACE General Condition 20. Mitigation (72 Fed. Reg. 11092, 11193-11194 (March 12, 2007)) requires permittees to avoid and minimize adverse effects to the maximum extent practicable on the project site. Statement or other evidence that General Condition 20 has been met should be submitted.

Nationwide Permit 30. Moist Soil Management for Wildlife

This certification does not allow for the introduction of non-native flora or fauna.

Nationwide Permit 33. Temporary Construction, Access and Dewatering

Certification is denied.

Nationwide Permit 34. Cranberry Production Activities

Certification is denied.

Nationwide Permit 37. Emergency Watershed Protection and Rehabilitation

A. In addition to the information specified in USACE General Condition 27 Preconstruction Notification (72 Fed. Reg. 11092, 11188 (March 12, 2007)), the notification to USEPA must include documentation that the work qualifies as an "emergency" situation and that immediate action will be taken if nationwide authorization is verified. In addition, notification must include:

a) A delineation of special aquatic sites;

b) Any spoil must be placed in an upland and controlled such that it cannot return to waters of the U.S.; and

c) A delineation of riparian areas to be cleared and an analysis of alternatives to such clearing.

B. Certification is denied for discharges for which notification is submitted more than one year after the official conclusion of the emergency that caused the situation.

C. Certification is denied for channelization of streams or sloughs or for removal of silt beyond what was deposited by the emergency.

Channelization is defined, for this purpose, as the placement of excess material in a manner that modifies the bank alignment, and subsequently the channel alignment, from its present condition.

D. Certification is denied for a discharge of fill or dredged material into special aquatic sites if a practicable alternative that does not involve discharge into a special aquatic site is available. If discharge into a special aquatic site is unavoidable, discharge must be minimized.

E. The disturbing or clearing of riparian areas shall be minimized to enough space to provide equipment access.

F. Construction of temporary structures or drains for the purpose of reducing or preventing flood damage is certified if the site is returned to pre-flood condition within 60 days following the emergency.

G. Repair of permanent structures damaged by floodwaters is certified to the extent that it returns the structure to pre-flood condition.

Nationwide Permit 38. Cleanup of Hazardous and Toxic Waste

For this certification to be valid, notification to USEPA and the Tribe is required.

Nationwide Permit 39. Commercial and Institutional Developments

A. Certification is denied for discharges into wetlands, intermittent or perennial drainages.

B. Certification is denied for subdivisions

C. USACE General Condition 20. Mitigation, (72 Fed. Reg. 11092, 11193-11194 (March 12, 2007)) requires permittees to avoid and minimize adverse effects to the maximum extent practicable on the project site. Statement or other evidence that general condition 20 has been met should be submitted.

Nationwide Permit 40. Agricultural Activities

A. Certification is denied for the construction of new levees, ditches, or drainage activities.

B. Certification is denied for the construction of building pads causing the loss of greater than 1/10 acre of wetlands for both USDA program participants and non-participants.

C. Certification is denied for activities related to tile construction.

Nationwide Permit 41. Reshaping Existing Drainage Ditches

A. Clearing of riparian corridors must be limited to the minimum necessary for project construction. Clearing limits must be specified in the construction contract.

B. This certification does not authorize stream relocation projects.

Nationwide Permit 42. Recreation Facilities

A. Certification is denied for the construction of parking lots, golf course, golf course buildings, ponds and reservoirs, ski areas and ski infrastructures, race tracks, and amusement parks.

B. Certification is denied for discharges resulting in the loss of more than 100 linear feet of channel, streambank, and/or wetlands for a single and complete project.

C. Clearing of riparian corridors and wooded and scrub shrub areas must be limited to the minimum necessary for project construction. Clearing limits must be specified in the construction contract on a drawing and/or map, and in narrative format.

Nationwide Permit 43. Stormwater Management Facilities

Certification is denied for the construction of new stormwater management facilities.

Nationwide Permit 44. Mining Activities. Nationwide Permit 44. Mining Activities

Certification is denied.

Nationwide Permit 45. Repair of Uplands Damaged by Discrete Events.

Certification is denied.

Nationwide Permit 46. Discharges in Ditches

Certification is denied.

Nationwide Permit 47. Pipeline Safety Program Designated Time Sensitive Inspections and Repairs

A. Certification is denied, unless there is imminent danger to human health or the health of the environment.

B. Notification and restoration should begin immediately after inspections and repairs are completed. After the fact, notification should be done as soon as possible and include documentation that the work done qualifies as an "emergency" situation and that immediate action was necessary.

Nationwide Permit 49. Coal Remining Activities.

Certification is denied.

Nationwide Permit 50. Underground Coal Mining Activities

Certification is denied.

**APPLICATION CHECKLIST FOR COMPLETENESS
401 CERTIFICATIONS for USACE NWPs**

1. Application date.
2. Applicant's full identity whether individual or corporate.
3. Applicant's full mailing address or addresses.
4. Signature of the legal applicant is required.
5. Telephone number and e-mail address (and FAX, if available) at which the applicant may be reached during normal business hours.
6. If the applicant is utilizing the services of a legal agent to apply for certification, items 2, 3, 4 and 5 will be also needed for this agent.
7. Full names and addresses of all property owners of the project.
8. Full names and addresses of all adjoining property owners to the project.
9. Overall project description and range of project. (This includes all phases of work.)
10. Purpose of the project (flood control, drainage improvement, erosion control, road construction, etc.).
11. Project dimensions (length, width, height) expressed in standard, commonly-used, units of measurement.
12. Site maps and engineering drawings for more complex projects are recommended, sketches may suffice for smaller or less complex projects. Maps or aerial photographs should be clear and readable. Aerial photographs should be marked with wetlands, waterbodies or high water mark and areas of activity marked.
13. Legal description of the project location (appropriate breakdown into Section(s), Township, Range and County sufficient to locate and define on topographic maps). The notification should also include locational information in decimal degree latitude and longitude.
14. General travel directions to the site.
15. Name or identity of the water body(s) that the project is expected to impact. If the stream is not permanent flow, the applicant will need to include an evaluation by the Corps of Engineers that the water body is jurisdictional.
16. Specifically, state which NWP(s) the applicant is applying for from the USACE. Include measures of impact to waterbody (for example: acreage for surface water impacts, linear feet of bank, shoreline linear feet and acreage) for each NWP.
17. A statement of the cubic yards of material or fill proposed to be placed below the ordinary high water mark within the watercourse, in a wetland, or other waterbody and a complete description as to the source and type of material or fill to be used.
18. A complete description of all work initiated or completed prior to the application submission at this site and within the vicinity. If there has been recent work done by others, this should be noted also.
19. As unavoidable losses to the aquatic resources (including streams and wetlands) must be mitigated, a detailed mitigation plan must be submitted where such losses will be incurred.
20. Statement discussing the avoidance and minimization, a presumption of NWPs and required for individual permits.
21. Monitoring of site, including photograph of site from marked sites, photograph of site after work is complete.
22. Complete copy of USACE application or Checklist (such as the PCN Checklist available from Southern Pacific Division), with supporting material.



North Dakota Department of Transportation

Francis G. Ziegler, P.E.
Director

John Hoeven
Governor

April 19, 2010

Chris Miller
Project Director
PBSJ
3810 Valley Commons Dr. – Suite 4
Bozeman, MT 59718

EA PROPOSED ACTION INCLUDES APPROVAL BY BIA AND BLM OF DRILLING AND COMPLETION OF UP TO TWELVE EXPLORATORY WELLS, SMITH, FORT BERTHOLD RESERVATION, NORTH DAKOTA

We have reviewed your March 30, 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.

A handwritten signature in black ink, appearing to read "Ronald Henke".

RONALD J. HENKE, P.E., DIRECTOR - OFFICE OF PROJECT DEVELOPMENT

57:rjh:js

c: Walter A. Peterson, Williston District



An employee owned company

March 30, 2010

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 an exploratory oil well pad and access road on the Fort Berthold Reservation by XTO Energy. The proposed well pad is in the following locations and shown on the enclosed project location map:

- Smith 11X-10, N½, NW¼, NW¼ Section 10, T149N, R92W

Development of the project would consist of the mechanical excavation and preparation well pad and improvements of the access road. The well pad is roughly 5 acres in size. The proposed access road for the Smith 11X-10 site is roughly 1,700 feet long. The proposed well site would be located within a 1280-acre spacing unit and positioned to utilize existing roadways for access to the greatest extent possible. The drilling of these well sites is proposed to begin as early as summer/fall 2010.

To ensure that social, economic, and environmental effects are analyzed accurately, we solicit 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 the proposed project. We also ask your assistance in identifying any property or resources that you own, manage, oversee or otherwise value that might be adversely impacted. Please send your replies and requests for additional project information to:

Chris Miller, Project Manager
PBS&J
115 N. 28th Street, Suite 202
Billings, Montana 59101-2045
406-259-7979
lcmiller@pbsj.com

If we do not hear from you by **May 1, 2010** we will assume that you have no comment on this project. Questions can be directed to Chris Miller using the information provided, or Rich McEldowney at (406) 587-7275 (ext. 223).

Sincerely,

Chris Miller
Project Director



U.S. Department
of Transportation
Federal Aviation
Administration

Date 4/13/10

No objection provided the Federal Aviation Administration is notified of construction or alterations as required by Federal Aviation Regulations, Part 77, Objects Affecting Navigable Airspace, Paragraph 77.13. Notice may be filed on-line at <https://www.faa.gov>.

Patricia L. Dressler, Environmental Protection Specialist
Federal Aviation Administration, Bismarck Airports District Office

3810 Valley Commons Drive • Suite 4 • Bozeman, Montana 59713 • Telephone: 406.587.7275 • Fax: 406.587.7278 • www.pbsj.com



"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

April 29, 2010

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

Dear Mr. Miller:

RE: Beaks/Huntsmedicine 24X-8
Stephen/Bird 31X-10
Smith 11X-10

XTO Energy has proposed up to twelve exploratory oil and gas wells using one well pad at two locations, and a single well and pad, on the Fort Berthold Reservation in Dunn County, North Dakota.

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

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

Sincerely,

A handwritten signature in black ink that reads "Steve Dyke". The signature is written in a cursive, flowing style.

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

js



John Hoeven, Governor
Douglass A. Prechal, Director

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

April 16, 2010

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

RE: XTO Energy Exploratory Oil Well Pad and Access Road

Dear Mr. Miller:

The North Dakota Parks and Recreation Department has reviewed the above referenced project proposal from XTO Energy to drill an oil well and construct an access road located in Section 10, T149N, R92W, Durn County.

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

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any 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, there are no known occurrences within or adjacent to the project area.

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

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

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

Sincerely,


Jess Hanson, Manager
Planning and Natural Resources Division
RUSNDNHI*2010-104

.....
Play in our backyard!



**STATE
HISTORICAL
SOCIETY**
OF NORTH DAKOTA

John Hoeven
Governor of North Dakota

North Dakota
State Historical Board

Chester E. Nelson, Jr.
Bismarck - President

Gerold 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

Douglass Prechal
Director
Parks and Recreation
Department

Francis Ziegler
Director
Department of Transportation

Merlan E. Paaverud, Jr.
Director

Accredited by the
American Association
of Museums

April 6, 2010

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

**NDSHPO REF. 10-0979 BIA/BLM/MHAN Oil pad and access road Smith
11X-10, [T149N R92W Section 10, N ½ NW ¼ NW ¼] Dunn County, North
Dakota**

Dear Mr. Miller,

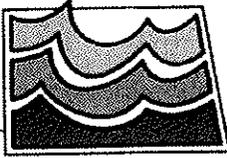
We received your letter regarding NDSHPO REF. 10-0979 BIA/BLM/MHAN
Oil pad and access road Smith 11X-10, [T149N R92W Section 10, N ½ NW ¼
NW ¼] in Dunn County North Dakota.

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. Perhaps one
might consider putting TCP (Traditional Cultural Properties) related information
in separate reports not sent to this office.

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>

May 12, 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 drilling and completion of up to twelve exploratory oil and gas wells using one well pad and one access road on the Fort Berthold Indian Reservation by XTO Energy, Inc – Smith.

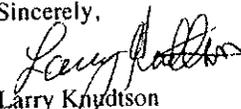
The proposed project has been reviewed by State Water Commission staff and the following comments are provided:

- The property is not located in an identified floodplain and it is believed the project will not affect an identified floodplain.
- 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

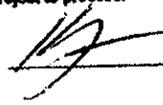
JOHN HOEVEN, GOVERNOR
CHAIRMAN

DALE L. FRINK
SECRETARY AND STATE ENGINEER



An employee-owned company

It is the determination of the Turtle Mountain Tribal Historic Preservation Office that this project will have no effect on historic properties of importance to the Turtle Mountain Band of Chippewa Indians. A determination of No Historic Properties Affected is granted for the project to proceed.

 4-8-10

March 30, 2010

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 an exploratory oil well pad and access road on the Fort Berthold Reservation by XTO Energy. The proposed well pad is in the following locations and shown on the enclosed project location map:

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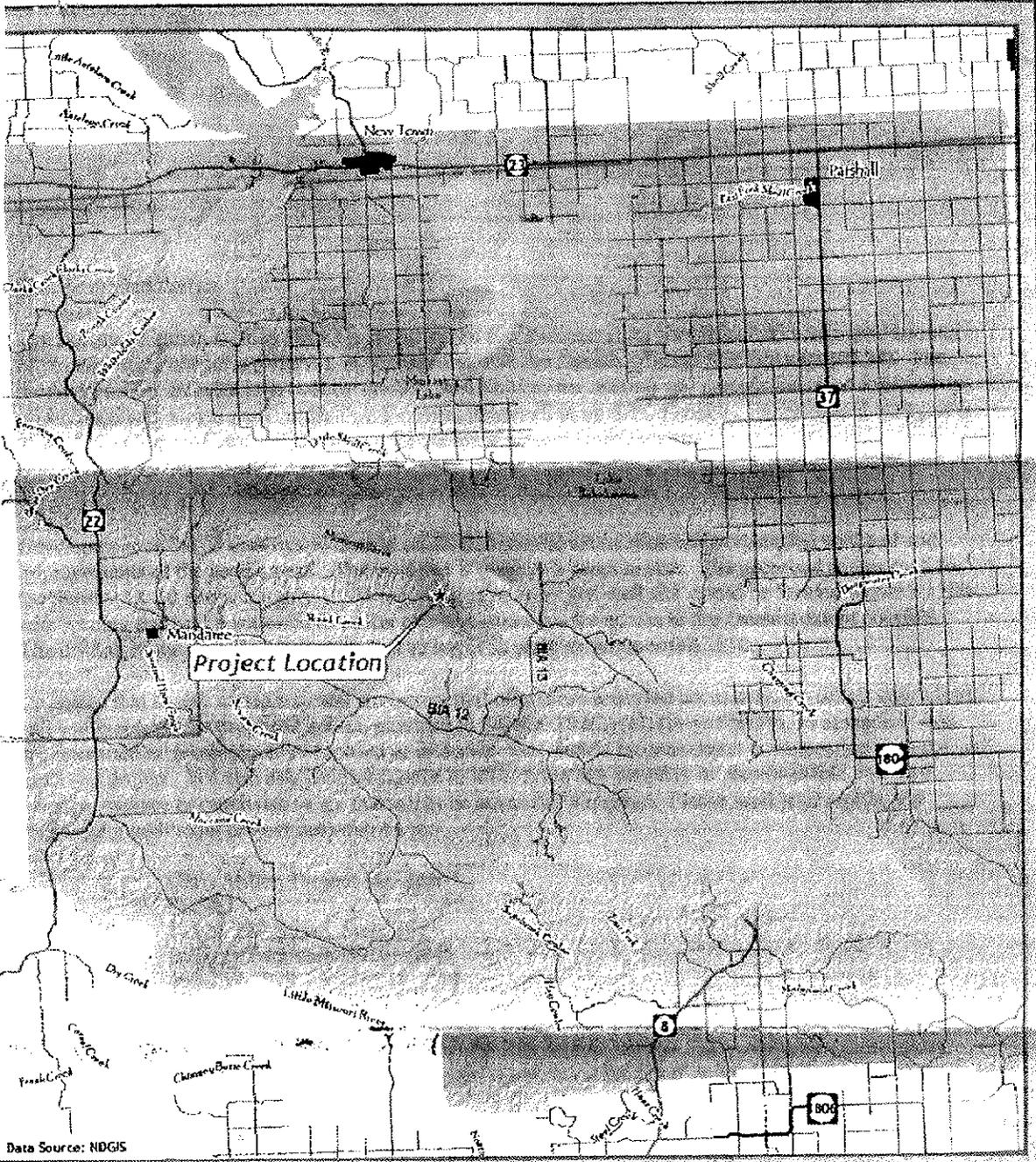
Chris Miller, Project Manager
PBS&J
115 N. 28th Street, Suite 202
Billings, Montana 59101-2045
406-259-7979
lcmliller@pbsj.com

If we do not hear from you by **May 1, 2010** we will assume that you have no comment on this project. Questions can be directed to Chris Miller using the information provided, or Rich McEldowney at (406) 587-7275 (ext. 223).

Sincerely,



Chris Miller
Project Director



Data Source: NDGIS

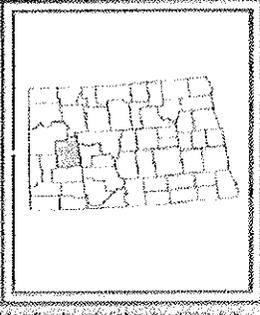
Location: Fort Berthold Indian Reservation, Dunn Co., ND

0 1.5 3 Miles

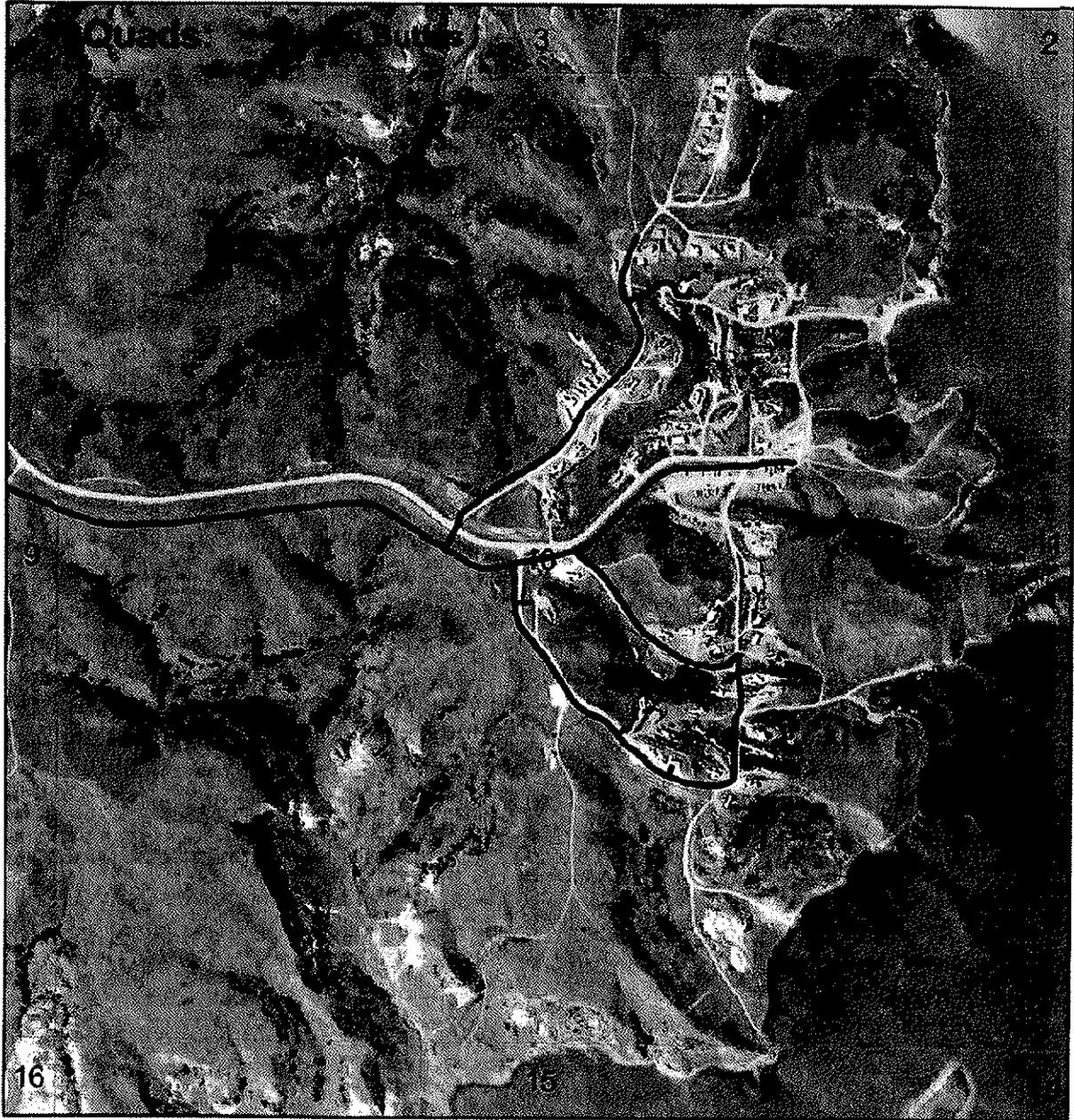
PBSJ Bozeman, Montana
406.587.7275 ext. 223
mccelowney@pbsj.com

- County Roads
- Streams
- Lakes
- Towns
- Fort Berthold Indian Reservation

**Project Location-
FBIR Smith 11X-10**



Map Produced: February 2010, bjb



T 149 N R 92 W sec 10

6	5	4	3	2	1
7	8	9		11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

1,000 500 0 1,000 Feet

10

From: Sorensen, Charles G NWO [mailto:Charles.G.Sorensen@usace.army.mil]
Sent: Tuesday, April 06, 2010 8:21 AM
To: Miller, Chris
Cc: charles.g.sorensen@usace.army.mil
Subject: Comments on the Smith 11X-10 Well

Chris

The U.S. Army Corps of Engineers Garrison Dam/Lake Sakakawea Project requests that XTO Energy consider and if at all possible implement the following management practices during the exploration phase of the Smith 11X-10 Well

Due to the close proximity of the well location to lands managed by the U.S. Army Corps of Engineers (USACE) there is a high risk that any storm water runoff from the well location will enter the Missouri River/Lake Sakakawea. As such the USACE would request that Marathon consider the construction/establishment of a catch trench located on the down sloping side of the well pad. Said trench would help in containing any hazardous wastes from the well pad. Those fluids that accumulate in the trench should be pumped out and disposed of properly. As previously mentioned the location of the proposed well site is extremely close to lands managed by the USACE and as previously stated the possibility for contamination of the Missouri River/Lake Sakakawea is of great concern to this agency. To aid in the prevention of hazardous wastes from entering the aforementioned bodies of water, the USACE would strongly recommend that a Closed Loop Drilling Method be used in the handling of all drilling fluids. Should living quarters be established onsite it is requested that all sewage collection systems be of a closed design and all holding tanks are to be either double walled or contained in a secondary containment system. All sewage waste removed from the well site location should be disposed of properly.

That all additional fill material required for the construction of the well pad is obtained from a private supplier who's material has been certified as being free of all noxious weeds. That prior to the drilling rig and associated equipment be placed that said equipment be either pressure washed or air blasted off Tribal lands to prevent the possible transportation of noxious or undesirable vegetation onto Tribal lands as well as USACE managed lands. That no surface occupancy be allowed within ½ mile of any known Threatened or Endangered Species critical habitat. No withdrawal of water from Lake Sakakawea via the adjacent recreation area (Skunk Creek) will be allowed. No vehicles and or equipment associated with the drilling of the well will be allowed within the recreational area (private vehicles are allowed).

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
Riverdale, North Dakota Office
(701) 654 7411 ext 232

Notice of Availability and Appeal Rights

XTO Energy: Smith 11X-10

The Bureau of Indian Affairs (BIA) is planning to issue administrative approvals related to installation of one oil/gas well pad, Smith 11X-10 and related infrastructure as shown on the attached map. Construction by XTO Energy is expected to begin in the Summer of 2010.

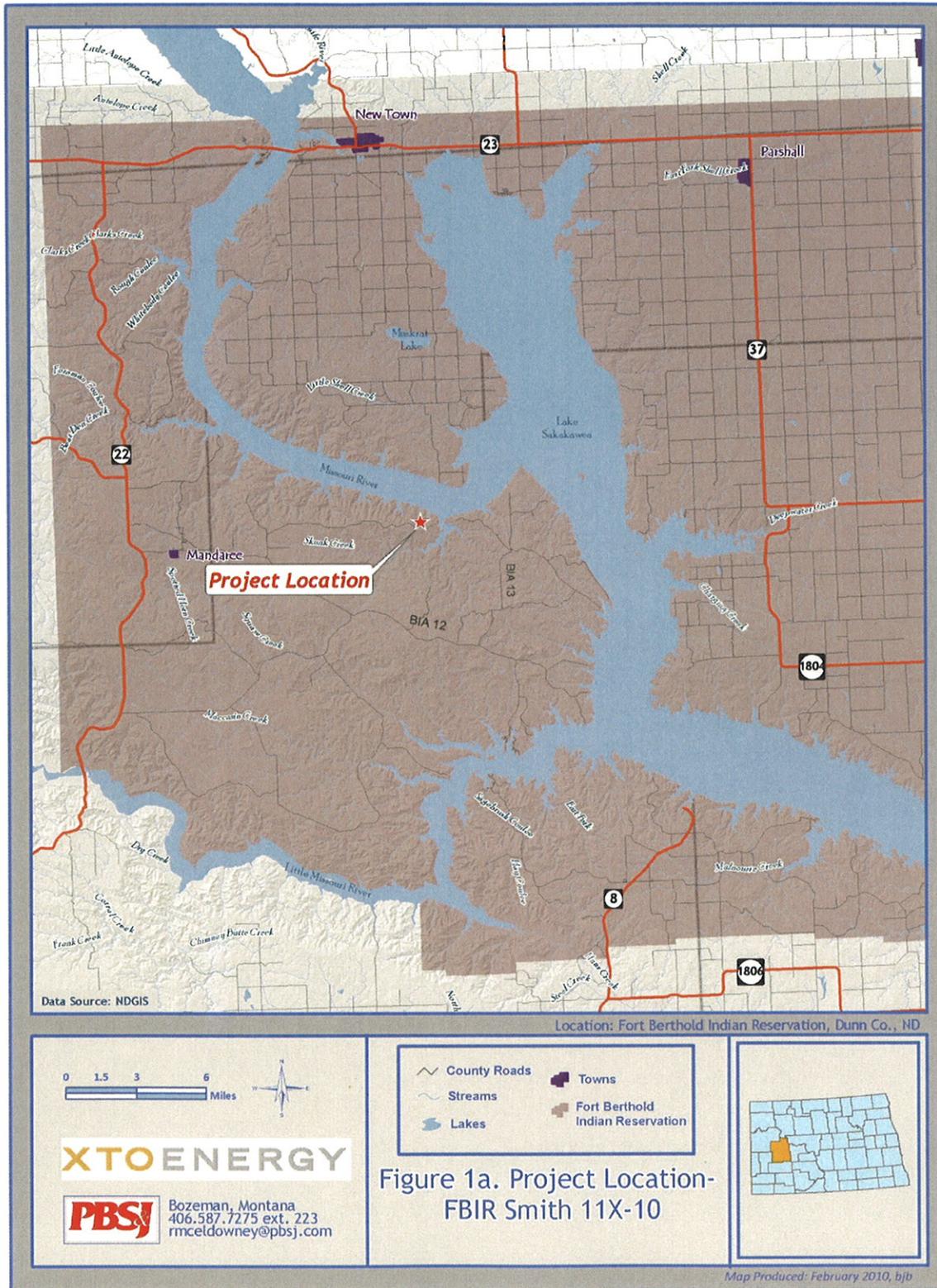
An environmental assessment (EA) determined that proposed activities will not cause significant impacts to the human environment. An environmental impact statement is not required. Contact Howard Bemer, Superintendent at 701-627-4707 for more information and/or copies of the EA and the Finding of No Significant Impact (FONSI).

The FONSI is only a finding on environmental impacts – it is not a decision to proceed with an action and *cannot* be appealed. BIA’s decision to proceed with administrative actions *can* be appealed until September 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.



**Figure 1a. Project Location-
FBIR Smith 11X-10**

Map Produced: February 2010, hjb

