



In Reply To:

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Lewistown Field Office
Upper Missouri River Breaks National Monument
920 NE Main Street
Lewistown, Montana 59457-1160
<http://www.blm.gov/mt>



Dear Reader;

Enclosed for your review and comment you'll find an environmental assessment (EA) titled "Application for Permit to Drill (APD) NFR Well # Federal 31-25-20B," and an unsigned Finding of No Significant Impact (FONSI). The EA analyzes three alternatives addressing the impacts of drilling a gas well on BLM managed public land in southern Blaine County.

The existing lease is in the Upper Missouri River Breaks National Monument and the proposed alternative would allow the lease holder, NFR Bear Paw Basin LLC, to drill one vertical well in the SENW quarter of Section 31, T25N, R20 E.

The EA and FONSI are available for a 30-day comment period ending November 30, 2010, and we would certainly welcome your comments. All substantive comments will be taken into consideration before making a decision on whether to approve the project. Specific comments addressing the adequacy of the scope of this EA or the impact analysis would be most useful.

Before including your address, phone number, e-mail address, or other personal identifying information on your comment, you should be aware that your entire comment – including your personal identifying information – will be available for public review. If you wish to withhold personal identifying information from public review or disclosure under the Freedom of Information Act, you must clearly state, in the first line of your written comment "CONFIDENTIALITY REQUESTED." While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from organizations, from businesses and from individuals identifying themselves as representatives of organizations or businesses, will be available for public review.

Comments should be sent to Lowell Hassler at the Lewistown BLM's Upper Missouri River Breaks National Monument Office at 920 NE Main, Lewistown, MT 59457.

You can also e-mail your comments to MT_Lewistown_FO@blm.gov.

Sincerely,

Gary E. Slagel
Monument Manager

**FINDING OF NO SIGNIFICANT IMPACT
FOR
NFR BEAR PAW BASIN LLC (NFR) APPLICATION FOR PERMIT TO DRILL (APD) WELL
#FEDERAL 31-25-20B**

SUMMARY OF NFR'S PROPOSAL

NFR proposes to drill one natural gas well in the Bullwhacker Coulee area in and adjacent to the Leroy Gas Field in Blaine County, Montana (EA Maps 1 & 2). These public lands are administered by the Bureau of Land Management's Upper Missouri River Breaks National Monument (Monument) Office, in Lewistown, Montana.

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

Based upon my review of the analysis in the NFR EA # DOI-BLM-MT-L070-2010-0020-EA (October 2010), I find that the project, including the implementation of required stipulations/mitigating measures, is not a major federal action and will not significantly affect the quality of the human environment, individually or cumulatively with other actions in the general area. No potential environmental effects associated with the project meet the definition of significance in context or intensity as defined in 40 CFR 1508.27, nor do potential effects exceed those effects described in the Monument RMP/EIS. An environmental impact statement (EIS) is not required.

MANAGEMENT CONSIDERATIONS/RATIONALE FOR DECISION

My FONSI determination for the NFR EA is based upon careful consideration of a number of factors including:

1. Consistency with Resource Management Plans - This decision is in conformance with the overall planning direction for the area. The approved Monument RMP (December 2008) states that "*The BLM's goal is to provide reasonable oil and gas exploration and development on existing leased land without diminishing the objects of the Monument*". It also states that "*All oil and gas lease activities will be subject to existing laws regardless of the age of the lease or the stipulations attached to the lease.*" Lastly, the RMP Record of Decision states, "*The current stipulations will apply ...along with other site-specific conditions determined during the permitting process.*" Site-specific conditions were identified and incorporated into the Proposed Action to reduce or eliminate adverse impacts.
2. Public Involvement and EA Comments - No comments or questions were received during the 30-day posting requirement for the proposed well. Comments received during the public review period provided for the NFR EA (October 30 – November 30) will be considered before finalizing the FONSI and issuing a Decision.
3. Measures to Avoid or Minimize Environmental Harm - Adopting the mitigation measures identified in the NFR EA, and that I intend to include in a Decision Record, represents all practicable means to avoid or minimize environmental harm.

4. Monitoring and Enforcement Program - BLM and NFR will provide qualified representatives on the ground during and following construction to validate construction, reclamation, and other approved compliance checks commensurate with the provisions and mitigation measures identified in the EA. Appropriate remedial action will be taken by NFR in the event unacceptable impacts are identified during the life of the project.

The decision to approve the NFR APD takes into account important management considerations, federal agency missions, and public need for natural gas. The decision balances these considerations with the degree of adverse impact to the natural and physical environment. This action will help meet public needs for oil and gas while minimizing irreversible or irretrievable commitment of other important resources.

The decision to approve or deny the proposed action and preparation of a signed Finding of No New Significant Impact/Decision Record with rationale, as appropriate, will be released after consideration of public comments and completion of the EA.

COMPLIANCE AND MONITORING

Because of the importance of mitigation and for avoiding or minimizing impacts, a monitoring program shall be implemented by NFR LLC. Monitoring by NFR and BLM will be in accordance with this decision. Appropriate remedial action will be taken by NFR in the event unacceptable impacts are identified.

Oil and Gas Field Manager

Date

**United States Department of the Interior
Bureau of Land Management**

**Environmental Assessment
DOI-BLM-MT-L070-2010-0020-EA
DOI-BLM-MT-040-2010-0018-EA**

Project Title

Application for Permit to Drill (APD) NFR Well #Federal 31-25-20B

***Location:* SENW Section 31, T 25 N, R 20 E, Blaine County MT**

Applicant/Address:

NFR Bear Paw Basin LLC
1415 Louisiana Street, Suite 1600
Houston, Texas 77002

U.S. Department of the Interior
Bureau of Land Management
Great Falls Oil and Gas Field Office
1101 15th Street North
Great Falls, MT 59401
406-791-7700
406-731-5303



Project Title
DOI-BLM-MT-L070-2010-0020-EA Application for Permit to Drill (APD) NFR Well
#Federal 31-25-20B

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ACRONYMS

APD –	application for permit to drill
BLM –	Bureau of Land Management
COA –	conditions of approval
DR –	decision record
EA –	environmental assessment
EIS –	environmental impact statement
FOGRMA –	Federal Oil and Gas Royalty Management Act
FONSI –	finding of no significant impact
mcf –	1,000 cubic feet
Monument –	Upper Missouri River Breaks National Monument
NOS –	notice of staking
NEPA –	National Environmental Policy Act
NFR –	NFR Bear Paw Basin LLC
RFD –	reasonably foreseeable future
RMP –	the approved resource management plan for the Upper Missouri River Breaks National Monument (December 2008)
ROD –	record of decision for the Upper Missouri River Breaks National Monument (December 2008)
VRM –	visual resource management

1.0 PURPOSE & NEED

1.1 Introduction:

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of drilling a natural gas well, #Federal 31-25-20B, as proposed by NFR Bear Paw Basin LLC (NFR). The EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. The EA assists the BLM in project planning, ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any “significant” impacts could result from the analyzed actions.

An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of Finding of No Significant Impact (FONSI). If the decision maker determines that this project could create significant impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record may be signed for the EA approving the selected alternative, whether the proposed action or another alternative. A Decision Record (DR), including a FONSI statement, documents the reasons why implementation of the selected alternative would not result in significant environmental impacts (effects) beyond those already addressed in Upper Missouri River Breaks National Monument Record of Decision and Approved Resource Management Plan (RMP) (December 2008).

1.2 Background:

NFR Bear Paw Basin LLC has proposed drilling one natural gas well, #Federal 31-25-20B, on an existing lease in the SENW Section 31, T25N, R20E, in Blaine County Montana (Maps 1 & 2). The well center footages are 1,777 feet from the north boundary line and 2,230 feet from the west boundary line of Section 31. This existing lease is in the Upper Missouri River Breaks National Monument (Monument). NFR would utilize standard drilling procedures and if the well is found capable of producing gas in paying quantities, NFR would complete the well and produce the gas into an existing pipeline. If the Application for Permit to Drill (APD) is approved, NFR proposes to commence drilling operations within 60 days of approval, outside of any timing limits imposed by this decision or by the Upper Missouri River Breaks National Monument Record of Decision (ROD) (December 2008).

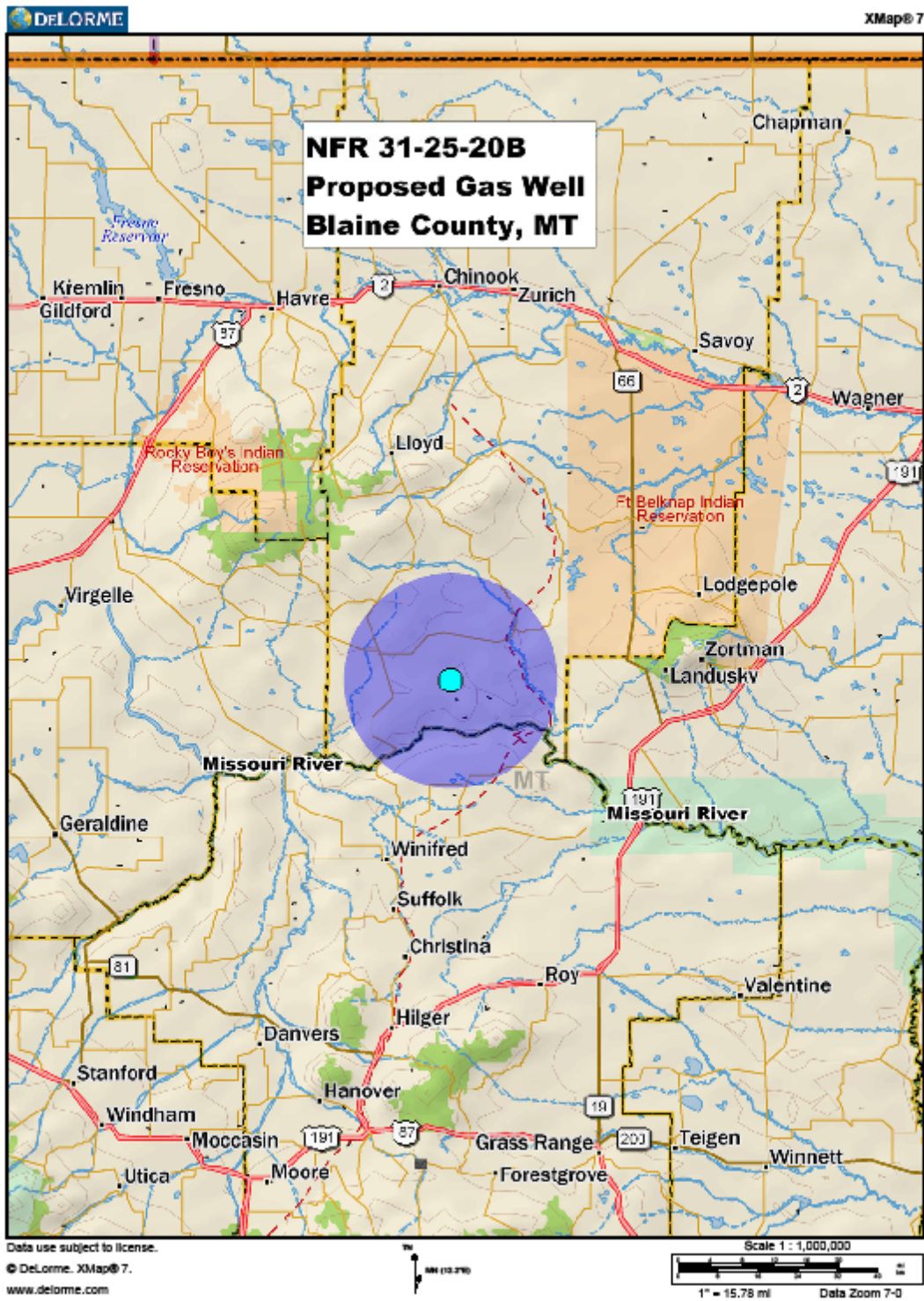
1.3 Need for the Proposed Action:

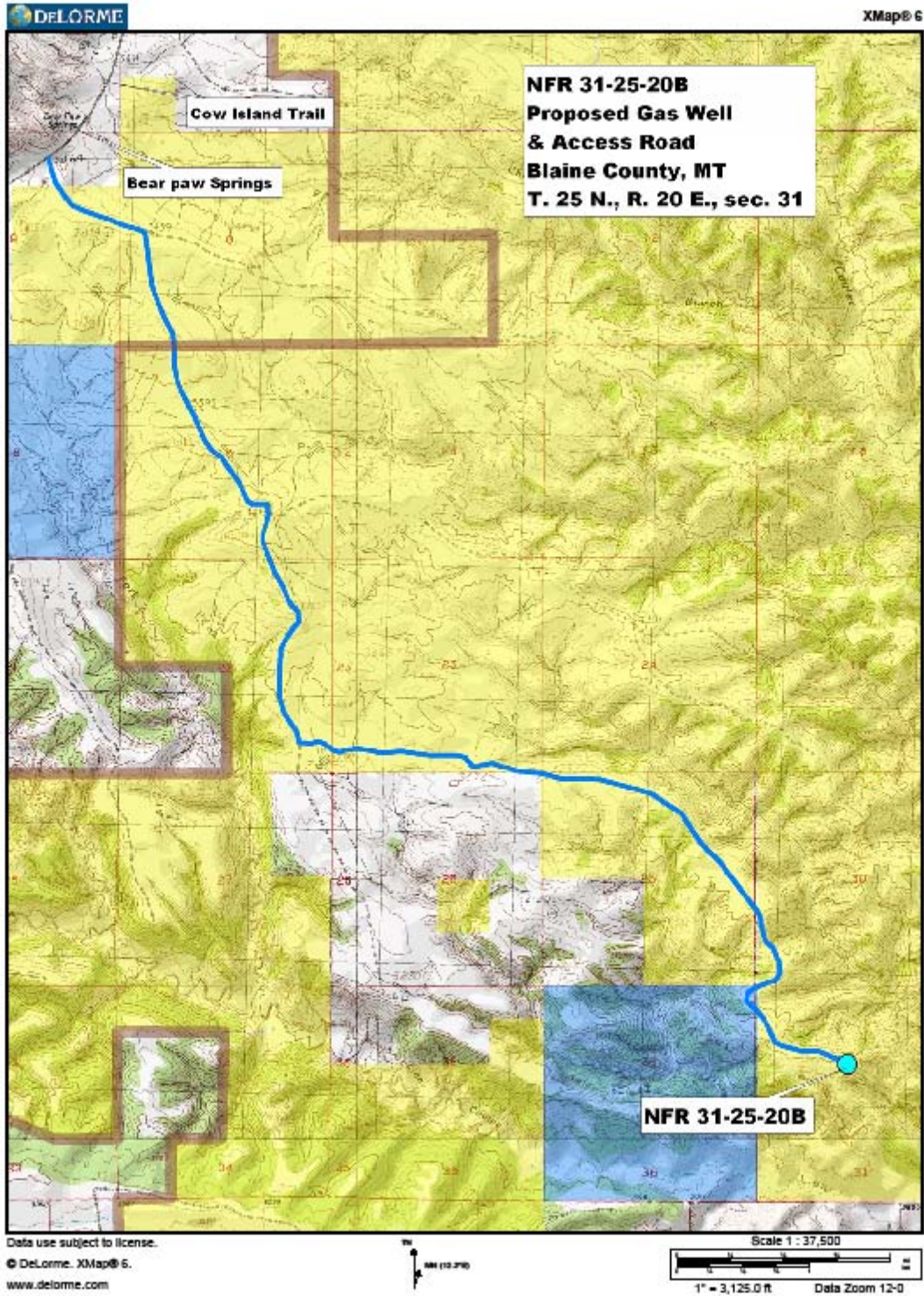
NFR has filed an Application for Permit to Drill. The underlying need for the proposed action is for NFR to develop its Federal Lease MTM 16461 by drilling an exploratory well, and if successful, producing commercial quantities of natural gas from the Federal oil and gas lease.

1.4 Purpose(s) of the Proposed Action:

BLM is considering approval of private exploration and production from federal oil and gas leases because the activity is an integral part of BLM's oil and gas leasing program under authority of the Mineral Leasing Act of 1920, as amended by the Federal Land Policy and Management Act of 1976, and the Federal Onshore Oil and Gas Leasing Reform Act of 1987. Additionally, oil and gas exploration and development is recognized as an appropriate use of public lands in the Monument RMP that provides management direction for the leased area. BLM will consider approval of the proposed drilling in a manner that avoids or reduces impacts on resources and activities as identified in the Monument RMP and is consistent with the lease rights granted to the applicant and prevents unnecessary or undue degradation of the public lands.

Map1





1.5 Conformance with BLM Land Use Plan(s):

The proposed action and alternatives described below are in conformance with the Monument RMP. See pages 70 and 71 of the Monument ROD which state, “*The BLM’s goal is to provide reasonable oil and gas exploration and development on existing leased land without diminishing the objects of the Monument.*”

1.6 Relationship to Statutes, Regulations, or other Plans:

This action is consistent with the federal oil and gas leasing and development laws and regulations (the Federal Oil and Gas Royalty Management Act and the Mineral Leasing Act). This proposed action and alternatives are consistent with other plans, programs of affiliated Tribes, other federal agencies, state and local governments to the extent practical within federal law, regulation and policy.

1.7 Identification of Issues:

NFR submitted a Notice of Staking (NOS) for this location on February 15, 2002 which was subsequently posted at BLM offices in Great Falls and Havre Montana for 30 days . (The 30 day posting of the NOS meets the public notification requirement in Onshore Order #1.III.E.1.) As required by OO#1, the initial onsite for this location was held on April 23, 2002. One other field onsite was held on June 25, 2009. Attendees at both onsites were NFR Energy representatives and BLM resource specialists. No members of the general public were in attendance. This proposed well was discussed in Volume III, Appendix O.3, in the Reasonable Foreseeable Development (RFD) section of the Monument RMP. Also, this EA is listed on the Great Falls NEPA log and the Monument NEPA log in FY 2010, which lists contact information for public comments.

1.7.1 Wildlife:

This proposed well is located in elk and mule deer winter range, and the existing access road is within pronghorn winter range. Building the well pad and installing pipeline connections may disrupt elk, mule deer, or pronghorn during the winter months. The access road passes through sage and sharp-tail grouse winter and nesting habitat, and less than ½ mile from two sage grouse leks and about .1 mile from a sharp-tail grouse lek. Access to complete the well and pipeline hookups may impact wintering sage and sharp-tail grouse or interfere with breeding and nesting during the spring.

1.7.2 Transportation/Roads:

A portion of the existing access road (approximately 150 feet) is on a steep slope (approximately 23 percent slope). The operator has opted to use this portion of road as is without improving/upgrading the road. Using this portion of road may cause further erosion. If the operator was to upgrade the road, prior to making improvements, the operator shall submit

a certified engineered plan that demonstrates how problems will be mitigated. This plan must be approved by the Central Montana District Engineer (Monument ROD, Ch 2, pg 74).

1.7.3 Recreation/Visual Resource Management:

Visual resource management (VRM) is integral to mitigating the general public's concern over extraction of natural resources within the Monument. However, oil and gas activity has been ongoing in this portion of Blaine County since the early 1970s and before the area was designated as a national monument.

1.8 Summary:

This chapter has presented the purpose and need of the proposed project, as well as the relevant issues (those elements of the human environment that could be affected by the implementation of the proposed project). In order to meet the purpose and need of the proposed project in a way that resolves the issues, the BLM has developed a range of action alternatives. These alternatives, as well as a no action alternative, are presented in Chapter 2. The potential environmental impacts or consequences resulting from the implementation of each alternative are then analyzed in Chapter 4 for each of the identified issues.

2.0 DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION

2.1 Introduction:

The criteria used for developing the range of alternatives meets the purpose and need detailed in Section 1.3 above (to drill and if successful, produce hydrocarbon resources from a Federal Oil and Gas lease).

Assumptions – The lease is valid and was legally leased under existing and former BLM/federal policies that were found to be in conformance with the regulations/laws in existence at the time of the lease. The discussion of lease validity is beyond the scope of this EA. The standard operating procedures of drilling/completing and producing a well are listed in the Monument RMP.

Lease MTM 16461 includes 2,547 acres, was issued in September 1970, and encompasses all of Sections 29, 31, 32 and 33 of T25N, R20E. The entire lease is within the Monument. Three wells have been drilled on the lease, all of which are plugged and abandoned and the locations restored. The lease has not been fully explored or developed, per the lease terms.

Topographically, Sections 29, 32, 33 and most of 31 have steep coulees, highly erodible soils and few roads; making development of those portions of the lease a major undertaking. It would be safe to assume that the cost of developing those steep, roadless portions of the lease would exceed the benefits of hydrocarbon extraction, even if natural gas prices exceeded 2007

historic highs. In addition, the Monument RMP has mitigation measures that would not allow development of these areas, so essentially those sections of the lease are dropped from further analysis.

Conditions of Approval (COA) for this action are contained in a number of documents, specifically the Monument ROD, Appendix H and Chapter 2, ROD, pages 70-77. These general COAs are reviewed at the time of an APD to ensure that the resource is either present or not present for the proposed action. Mitigation measures in this document will be forwarded into the COAs which are attached to the approved drill permit. In essence any COAs found in the ROD (Appendix H and Chapter 2) that are applicable to the proposed action and any site specific mitigation written as a result of analysis in this NEPA document are forwarded into the APD COAs.

Only COAs that apply to the proposed action are specifically highlighted and carried forward. For instance, in this proposed action there would be no need to condition the approval of this APD for protection of bighorn sheep habitat as there is no bighorn sheep habitat in the area of the proposed action.

Appendix A of this document contains the COAs for either action alternative.

The following COAs (contained in Appendix H, Monument RMP ROD) are not applicable to this action:

- Greater Sage-grouse leks (pg 145)
- Black-tailed prairie dogs (pg 147)
- Designated Sensitive Species (pg 147)
- Ferruginous Hawk (pg 147)
- Bald Eagle Nest Sites and Nesting Habitat (pg 148)
- Bighorn Sheep Distribution (pg 148-9)
- Bighorn Sheep Lambing Areas (pg 149)
- Streams, Riparian/Wetland Areas and 100 Year Floodplains (pg 149-50)
- VRM Class 1 (pg 151)
- Recreation (pg 152)

In addition, the mitigation measures in Appendix I – Wildlife Mitigation Noise Levels, Monument ROD will not apply, except for Item 3.

2.2 Alternative A – No Action:

Under the No Action alternative the BLM would deny the APD. However, the BLM's authority to implement the No Action alternative is limited. NFR has an existing and valid lease, which under the lease terms, gives them the right to drill, extract, remove and dispose of all oil and gas deposits from the lands encumbered by the lease (as allowed by the terms and conditions attached to the leases). Selecting this alternative would require BLM's demonstrating that the proposal would cause significant adverse impacts, resulting in unnecessary and undue degradation of the public lands or resources.

2.3 Alternative B – Proposed Action:

NFR proposes to drill a vertical well in the SENW quarter of Section 31, T 25 N, R 20 E in Blaine County, Montana. Surveyed footages of well center are 1,777 feet from the north section line and 2,230 feet from the east section line. Lat/long of well center is N47.88016 degrees; W109.20051 degrees.

The well would be drilled through the Upper and Basal Judith River Sand, Eagle Silt and Sandstone, First White Specks (Niobrara Shale) and TD in Colorado Sand at 2,206 feet or less. NFR estimates that the drilling would take 3-10 days. Following drilling, and if the well is deemed commercially productive, the well would be completed which would take an additional 7-10 days. The well would have surface casing cemented to a depth of 220 feet below the surface to protect groundwater resources. NFR would employ safe standard drilling practices and procedures that are typical of wells drilled in the adjacent Leroy field. Fresh water for drilling would be obtained from a private pond located in SWNE Section 14, T 25N, R18E. Drilling muds would be hauled off and disposed of on private lands/reservoir of the same landowner. A portable toilet would be on location for the drilling operations. All garbage and waste would be disposed of in a portable container and hauled off to an approved facility.

The leveled well pad would have dimensions of 150 feet by 150 feet, which is the minimum size needed for safe operations (ROD, Ch 2 pg 76). Cuts would range from 1.1 feet in the south west corner to 1.4 feet in the north west corner and corresponding fills would range from 1.5 feet in the north east corner to 3.7 feet in the south east corner. The well pad would have reserve pits to catch drilling fluids, muds and cuttings. NFR would erect a perimeter fence to confine all their equipment, machinery and personnel in the area that is 250 feet square. This larger area is needed so that equipment can reclaim the cut/fill slopes and/or material and equipment can be parked/stored off the leveled pad. The larger area would not be 'cleared' of vegetation. Most of the equipment, materials and employee parking would be on sod. Certified weed free straw wattles would be placed just inside the perimeter fence on the southeast side and all of the east side of the location to capture sediment.

Access to the location would be from the existing Cow Island Trail. From that trail, the access route then continues via an existing two-track trail for approximately 5.5 miles through Sections 9, 10, 15, 22, 23, 24 and 25 of T 25N, R19E, and through Section 30 and into Section 31 of T25N, R20E . No new roads would be needed to access the location. The operator has committed to using the existing roads as they are with no upgrades.

If the well is deemed commercially successful, a 2 inch poly pipeline would be trenched in using a chain type trencher to minimize disturbance for 1,165 feet to the west from the well head to an existing pipeline. A riser would be installed at this point. A metershed with approximate dimensions of 8 feet high, 9 feet long and 6 feet wide would be installed over the wellhead. The shed would contain gas measuring equipment, a small heater and possibly glycol. Glycol is used to remove the water from the gas stream before measuring. If water remains in the gas stream during winter, it could freeze and ruin the measuring equipment. A metershed is necessary to keep the measuring instruments protected from weather and dust. If the gas is 'wet' (the gas is entrained in water) NFR may dig a pit sized according to water production (ROD, Ch 2, pg 76) adjacent to the metershed to contain the water. All above

ground facilities would be painted a neutral color as determined by the BLM, except for those facilities that must be painted OSHA safety colors.

In addition, Appendix A outlines the conditions of approval (surface stipulations, downhole stipulations, plugging requirements, etc.) that would be part of this alternative.

2.4 Alternative C – Well drilled on old pad of 31-25-20:

The interdisciplinary Team proposed a possible location approximately 1,099 feet to the southwest of the proposed location (within 100 feet of P+A Well 31-25-20). The footages of the P+A well are 2,588 feet from the south boundary line and, 1,621 feet from the west boundary line of Section 31.

The differences between the proposed location and this location are:

- The leveled well pad would have to be 300' x 300' to accommodate the directional drilling equipment.
- There would be no need to install pipeline as the old pipeline connection and line is buried on the old well pad.

This alternative may meet all objectives and utilizes an existing, albeit restored, disturbance.

Well #31-25-20 was drilled in August 1975. The well produced from September 1990, through June 1992, at an average of 61 mcf/day and from December 1998 through June 1999 with average daily production at 23 mcf. The well was shut in during all other times. In October 2005, the well was plugged and abandoned.

2.5 Alternatives considered but Eliminated from Further Analysis:

- a. Drilling outside the monument: The nearest Monument boundary is approximately 4 miles west of the proposed location. Due to the shallowness of the gas trap, this distance is considered technologically unfeasible.
- b. Another location on the lease: The majority of this lease contains steep slopes, unstable soils and/or is located in the bottom of Bullwhacker Coulee. Roads into the coulee would need to be upgraded, extended and maintained throughout the life of the well. These road upgrades or extensions may not meet the objectives of the Monument proclamation.

3.0 AFFECTED ENVIRONMENT

A complete and thorough discussion of the Monument resource environment is outlined in Chapter 3 of the Monument Proposed Resource Management Plan and Final Environmental Impact Statement (January 2008). This EA will describe site specific resources that are present or near the proposed well location. The following descriptions will only discuss those resources that are directly affected by the proposed action. Those resources that are not affected will not be analyzed.

3.1 Introduction:

This chapter presents the potentially affected existing environment (the physical, biological, social, and economic values and resources) of the project area. This chapter provides the baseline for comparison of impacts/consequences described in Chapter 4.

3.2 General Setting:



Well center stake; June 25, 2009

The proposed well location is located on a flat ridge top in an area consisting of badlands and breaks. The breaks consist of steep, rugged topography interspersed with benches and rolling hills. These badlands support little vegetation because of steep terrain, shale and rock outcroppings, and the abundance of heavy clays. The vegetation in the area is primarily Ponderosa pine and sagebrush. The climate is semiarid continental and is marked by cold winters, warm to rarely hot summers, 12 to 14 inches of precipitation annually, winds primarily from the west and abundant sunshine. The elevation at well center is 3,204 feet above sea level. Historically, the area has been used primarily for hunting, livestock grazing, dispersed recreation and oil and gas exploration. The views from any of the roads are perceived to be stunning due to the deep coulees and timbered ridges.

3.3.1 Wildlife, Threatened, Endangered, and Species Proposed for Listing, BLM Designated Sensitive Species, Migratory Birds and Fisheries:

Wildlife-General: The project area includes habitat for many species common to the Missouri River Breaks and sagebrush grasslands adjacent to the breaks. Those species include bighorn sheep, elk, mule deer, sage and sharp-tailed grouse, coyote, badger, long and short-tailed weasel, jackrabbit, various rodents, red-tailed hawk, golden eagle, various migratory birds, prairie rattlesnake, and short-horned lizard. The project area is within identified elk, mule deer, and pronghorn winter range. There are bighorn sheep present in the general area; however, suitable habitat is several miles south of the project area. The access road passes within .1 mile of a sharp-tailed grouse lek, and through breeding, nesting, and winter habitat.

Threatened, Endangered and Species Proposed for Listing: There are no known threatened and endangered species near or on the project site or access trails. There is no record of the presence of threatened and endangered species at these sites or documentation of habitats or forage species, which would be important to these species.

BLM Designated Sensitive Species:

On March 5, 2010, the USDI Fish and Wildlife Service announced that listing of the Greater sage-grouse as an endangered species under the Endangered Species Act is warranted, but listing is precluded by the need to complete listing actions of higher priority. Following the Service's 'precluded' decision, the BLM drafted Instruction Memorandum (IM) No. 2010-071, which provides further guidance to ensure environmentally responsible exploration, authorization, leasing, and development of ...non-renewable energy resources within the ranges of the ...Greater sage-grouse.

The access road passes through Greater sage-grouse nesting and winter habitat. There are two active leks less than ½ mile from the access road. The sage-grouse has been petitioned for listing under the Endangered Species Act and is a BLM Sensitive Species. Sage grouse are susceptible to vehicle strikes and disturbance during winter, breeding, and nesting.

Ferruginous and Swainson's hawks and Golden eagles are known to use the analysis area. However, no nests have been documented within the analysis area that would be affected by any of the proposed alternatives. Bald eagles could be transient during seasonal migrations, but no crucial habitat, forage species or nesting sites occur within the project area. Loggerhead Shrikes use brushy draws adjacent to open grasslands and are known to occur in the analysis area. Long-legged and long-eared myotis and Townsend's big-eared bat are known to occur in Douglas fir and ponderosa pine sites within the project area.

The greater short-horned lizard occupies open sagebrush grassland habitat and is likely present within the project area and along the access road.

Migratory Birds: The Migratory Bird Treaty Act (16 USC 703 - 711) protects all migratory birds including those listed as BLM Sensitive Species. The sagebrush/ grassland/badlands habitat present is a minor component of larger adjacent habitat for Neotropical Migratory Birds. The species present are those common to the short and mid-grass prairie, sagebrush grasslands, and associated badlands habitat.

Fisheries: There are no fisheries present in the area of the proposed action.

3.3.2 Visual Resource Management (VRM): The proposed drill site is located in a VRM Class IV area. The level of change to the landscape can be high in a Class IV area and management activities may dominate the view and be the major focus of the observer. However, changes to the landscape should repeat the basic elements found in the predominant natural features of the characteristic landscape.

3.3.3 Soils: Soils were identified from the Natural Resources Conservation Service's (NRCS) Soil Survey Geographic (SSURGO) dataset, the Soil Data Mart (SDM) website (<http://soildatamart.nrcs.usda.gov/>) and at the time of the onsite. Soil surveys were performed by the NRCS according to National Cooperative Soil Survey (NCSS) standards. Pertinent information for review and analysis is from the SDM and the National Soils Information System (NASIS) database for the area.

The primary soil map units the actions would occur on are the Bascovy clay, 2 to 6 percent slopes; Bascovy-Lisam-Dilts clays, 2 to 8 percent slopes; Cabbart-Rock outcrop, shale complex, 25 to 60 percent slopes; and, Lisam-Dilts clays, 8 to 35 percent slopes.

Bascovy clay, 2 to 6 percent slopes

The Bascovy component makes up 90 percent of the map unit. Slopes are 2 to 6 percent. This component is on plains. The parent material consists of residuum weathered from shale. Depth to a root restrictive layer, bedrock, paralithic, is 20 to 40 inches. The natural drainage class is well drained. Available water to a depth of 60 inches is low. Shrink-swell potential is high. This soil is not flooded. It is not ponded. Organic matter content in the surface horizon is about 2 percent. This component is in the R058AC041MT Clayey (cy) Rru 58a-C 11-14" P.z. ecological site. This soil does not meet hydric criteria. The soil has a slightly saline horizon within 30 inches of the soil surface. The soil has a moderately sodic horizon within 30 inches of the soil surface. Water erosion hazard is slight and wind erosion hazard is moderate.

Bascovy soils are moderately suited for roads due to low strength and high plasticity index. Rutting hazard is severe due to low strength.

Bascovy-Lisam-Dilts clays, 2 to 8 percent slopes

The Bascovy component makes up 40 percent of the map unit. Slopes are 2 to 8 percent. This component is on plains. The parent material consists of residuum weathered from shale. Depth to a root restrictive layer, bedrock, paralithic, is 20 to 40 inches. The natural drainage class is well drained. Available water to a depth of 60 inches is low. Shrink-swell potential is high. This soil is not flooded. It is not ponded. Organic matter content in the surface horizon is about 2 percent. This component is in the R058AC041MT Clayey (cy) Rru 58a-C 11-14" P.z. ecological site. This soil does not meet hydric criteria. The soil has a slightly saline horizon within 30 inches of the soil surface. The soil has a moderately sodic horizon within 30 inches of the soil surface. Water erosion hazard is slight and wind erosion hazard is moderate.

The Lisam component makes up 25 percent of the map unit. Slopes are 4 to 8 percent. This component is on knolls on plains. The parent material consists of residuum weathered from shale. Depth to a root restrictive layer, bedrock, paralithic, is 10 to 20 inches. The natural drainage class is well drained. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. Organic matter content in the surface horizon is about 1 percent. This component is in the R058AC059MT Shallow Clay (swc) Rru 58a-C 11-14" P.z. ecological site. This soil does not meet hydric criteria. Water erosion hazard is slight and wind erosion hazard is moderate.

The Dilts component makes up 25 percent of the map unit. Slopes are 4 to 8 percent. This component is on knolls. The parent material consists of residuum weathered from acid shale. Depth to a root restrictive layer, bedrock, paralithic, is 10 to 20 inches. The natural drainage class is well drained. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. Organic matter content in the surface horizon is about 1 percent. This component is in the R058AC059MT Shallow Clay (swc) Rru 58a-C 11-14" P.z. ecological site. This soil does not meet hydric criteria. Water erosion hazard is slight and wind erosion hazard is moderate.

Bascovy, Lisam, and Dilts soils are moderately suited for roads due to low strength, high plasticity index, and slope. Rutting hazard is severe due to low strength.

Cabbart-Rock outcrop, shale complex, 25 to 60 percent slopes

The Cabbart component makes up 50 percent of the map unit. Slopes are 25 to 60 percent. This component is on escarpments. The parent material consists of residuum weathered from sandstone and siltstone. Depth to a root restrictive layer, bedrock, paralithic, is 10 to 20 inches. The natural drainage class is well drained. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. Organic matter content in the surface horizon is about 2 percent. This component is in the R058AC057MT Shallow (sw) Rru 58a-C 11-14" P.z. ecological site. This soil does not meet hydric criteria. The soil has a slightly saline horizon within 30 inches of the soil surface. The soil has a slightly sodic horizon within 30 inches of the soil surface. Water erosion hazard is severe and wind erosion hazard is moderate.

Cabbart soils are poorly suited for roads due to slope and low strength. Rutting hazard is severe due to low strength.

Lisam-Dilts clays, 8 to 35 percent slopes

The Lisam component makes up 45 percent of the map unit. Slopes are 8 to 35 percent. This component is on hills. The parent material consists of residuum weathered from shale. Depth to a root restrictive layer, bedrock, paralithic, is 10 to 20 inches. The natural drainage class is well drained. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. Organic matter content in the surface horizon is about 1 percent. This component is in the R058AC059MT Shallow Clay (swc) Rru 58a-C 11-14" P.z. ecological site. This soil does not meet hydric criteria. Water erosion hazard is severe and wind erosion hazard is moderate.

The Dilts component makes up 35 percent of the map unit. Slopes are 8 to 35 percent. This component is on hillslopes. The parent material consists of residuum weathered from acid

shale. Depth to a root restrictive layer, bedrock, paralithic, is 10 to 20 inches. The natural drainage class is well drained. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. Organic matter content in the surface horizon is about 1 percent. This component is in the R058AC059MT Shallow Clay (swc) Rru 58a-C 11-14" P.z. ecological site. This soil does not meet hydric criteria. Water erosion hazard is severe and wind erosion hazard is moderate.

Lisam and Dilts soils are poorly suited for roads due to slope, low strength, and high plasticity index. Rutting hazard is severe due to low strength.

3.3.4 Recreation: Recreation activities in the area consist of scenic viewing in the spring and summer, and big game hunting during the fall.

3.3.5 Cultural Resources: A search of the Montana Antiquities Database was completed on February 8, 2010, for the affected parcels. No historic properties have been identified within the analysis area. A cultural resource inventory associated with the proposed action was documented in BLM Report #M61032-98-MT-066-016, prepared by Gar Wood in 1998. A BLM archeology technician resurveyed the area in 2009 (Report # 09-MT-066-002). The reports were forwarded to the Montana State Historic Preservation Office, documenting negative results (no historic properties) for the area of potential effect.

3.3.6 Vegetation/Forestry:

Vegetation: The proposed natural gas well drill site is located within a shrub/grassland plant community typical of the Missouri River breaks in central Montana. The shrub community is dominated by big sagebrush with an understory of bluebunch and western wheatgrass, green needlegrass, Sandberg bluegrass, prairie junegrass and mixed annual and perennial forbs. Timbered areas adjacent to the well site consist of ponderosa pine on drier, south facing slopes with north facing slopes dominated by Douglas fir; the forest resource is non-merchantable.

There are no riparian plant communities within the project area.

Grazing: The drill site lies within the Hackett Pasture of the Bullwhacker #06181 grazing allotment. The Hackett pasture is part of a six pasture rest rotation grazing system. The pasture is 5,739 acres in size with a carrying capacity of 605 AUMs. Depending on the year and schedule, the pasture can be grazed for up to four weeks with 515 head of cattle between April 1st and January 31st.

4.0 ENVIRONMENTAL IMPACTS

4.1 Introduction:

The following description will only discuss those resources that are directly affected by the proposed action. Those resources that are not affected will not be analyzed.

4.2 Direct & Indirect Impacts:

4.2.1 Alternative A – No Action:

There would be no direct, indirect or cumulative impacts if this alternative was selected. However, oil and gas operations would continue in the area, primarily from the existing producing gas wells in the Leroy Gas Field and the Sherard Unit. This proposed well is within the Leroy Field. Please refer to Appendix O, Volume III, pages 1374-1375 of the Monument RMP for a discussion regarding the Leroy Field and Sherard Unit.

4.2.2 Alternative B – Proposed Action:

4.2.2.1 Wildlife, Threatened, Endangered, and Species Proposed for Listing, LM Designated Sensitive Species, Migratory Birds and Fisheries:

Threatened, Endangered, and Species Proposed for Listing

There are no threatened, endangered, or candidate species or species proposed for listing present in or near the project area. No critical habitat or important prey base for any listed species is present within the project area. There would be no effect to any species listed or proposed for listing.

Other Wildlife, including Sensitive Species and Migratory Birds: Initial construction may cause direct mortality to a few individuals not mobile enough to leave the construction zone. There could be a temporary displacement of wildlife during construction operations. There would be a short-term loss of vegetation and habitat on <1 acre from the pad site, and reduction of habitat security from the road and traffic on 1,600 acres of habitat, all of which is big game year round habitat (this acreage figures was determined by calculating the total acres within a ¼ mile buffer on each side of the existing access route and around the production site). Removal of vegetation important to wildlife on all sites and lines could impact wildlife if disturbance sites are not adequately reclaimed. This same loss of vegetation and habitat could occur if noxious weeds move into disturbed areas, which would be a greater and long term impact.

BLM Designated Sensitive Species

Resident wildlife species would be displaced during the implementation of this project and there may be individual mortality among smaller species. There would be potential for additional loss of individual birds to vehicle strikes due to increased traffic, reduced breeding and nesting success, and increased juvenile mortality of birds in the immediate area.

Additional road traffic and pipeline construction into breaks habitat may result in an increased mortality for resident reptiles (including short-horned lizard, a BLM Sensitive Species) due to road kill and dispersal to less suitable habitat.

Very little is known about impacts to long-legged and Long-eared myotis and Townsend's big-eared bat; however, no impact would be expected from any of the alternatives, due to the location of the project and because the existing access road is not near timbered habitat.

Migratory Birds: Impacts could occur if construction or production activities disturbed nesting birds, destroyed nests, or caused vehicle strikes during site visits or non-industry use of access roads. There would be potential for additional loss of individuals to vehicle strikes due to increased traffic, reduced breeding and nesting success, and increased juvenile mortality of migratory birds in the immediate area. There would be direct short-term impacts from constructing the pipeline. There would be a temporary displacement of wildlife during construction operations. During the life of the well, traffic from production activity, maintenance, and monitoring would continue to affect species along the access route.

4.2.2.2 Visual Resource Management:

The drill pad, rig, and fencing would create a moderate contrast to the characteristic environment, but would be a short-term visual impact through the construction and exploration phase. Once the rig is removed and the drill pad and roads are reclaimed, only the meter shed and riser would remain in view if production occurs, and they would be painted a standard environmental color.

4.2.2.3 Soils:

Direct effects to soils would include removal of vegetation, exposure of the soil, mixing of soil horizons, loss of topsoil productivity, alteration of soil chemistry and biology, soil compaction, and increased susceptibility to wind and water erosion. The impacts would be both short-term (well pad and pipeline) and long-term (production area and access roads).

There would be approximately 2.7 acres of new soil disturbances associated with the well pad and pipeline construction. Interim reclamation of the areas not needed for production and operations would be initiated after completion of the well. Approximately 2.6 acres would be reclaimed. There would be a long-term commitment of the soil resource on approximately 0.1 of an acre required for the production area.

Soil productivity would be severely restricted within the traveled-way of the access road due to compaction. Equipment/vehicle disturbance alters soil physical characteristics, subjecting soils to water and wind erosion. Equipment/vehicles on the steep portion (T. 25 N., R. 20 E., NWSE Sec. 30) of the access road, as is, could result in increased soil erosion.

Construction equipment and vehicular traffic associated with the drilling operations, completion, and production would cause soil compaction; severity would be directly related to soil type, frequency, and weight (lbs/sq. inch). Compaction alters soil structure decreasing

porosity, infiltration rate, air space, and available water holding capacity. A combination of these factors would decrease the vegetative capacity and reestablishment, and increase the potential for water and wind erosion of affected areas.

Soils could also be affected by fluid spills, including engine oil, hydraulic oil, gear lube, anti-freeze, fuel (gasoline or diesel fuel), and produced water. These spills could severely affect soil in localized areas – high concentrations may be capable of soil sterilization; affecting reclamation.

4.2.2.4 Recreation:

The drilling operation would directly impact hunting in the immediate area if it continues into the fall season.

4.2.2.5 Cultural Resources:

This alternative would have no effect on cultural resources within the area of potential effect. However, should changes in the application be requested via a Sundry Notice and additional NEPA analysis required, additional inventories would be required to ensure that cultural resources are not adversely affected.

4.2.2.6 Vegetation/Forestry:

The proposed drill site is located next to a watersaver, a major source of livestock water within this pasture. Rehabilitation of the drill pad would be impacted by a possible concentration of cattle at the nearby watersaver and consequently the newly seeded drill pad. Mitigation of potential impacts is discussed in Section 4.2.2.7 below.

The existing two-track trail and proposed well pad do not contain any trees that would be impacted by implementation of any of the alternatives.

4.2.2.7 Mitigation Measures:

All impacts would be mitigated by using the Conditions of Approval in Appendix A. Descriptions of specific resource related mitigation efforts follow.

Wildlife

Drilling, construction or activity related to the proposed project will not be allowed from December 1 - March 31 to protect wintering sage grouse and big game. Sage grouse breeding and nesting activities will require prohibition of disruptive activities between March 1 – June 15, due to proximity of access road to breeding leks, and location of drilling less than two miles from a lek.

Water holding pits will require fencing to prevent large animal use. If the pit is lined, escape structures or matting to allow smaller animals such as birds, snakes, or rodents to escape will be required. If water production exceeds pit storage capability, the pit may be enlarged with authorizing officer approval; otherwise water hauling would be limited to June 16 – November 31. Trips to the well site should be limited to no more than two per month during this time. If excessive water production requires more frequent removal, approval should only be granted by authorizing officer on a temporary basis. Excess water should be piped from the site to limit disturbance to all local wildlife.

Soils

The operator shall be responsible for erosion control and sediment containment until final reclamation standards have been met. Appropriate erosion control and sediment containment devices shall be installed by the operator and the operator shall be responsible for maintaining those devices for their intended function.

Construction, drilling, completion, pipeline installation, interim or final reclamation activities shall not be performed during periods when the soil is too wet to adequately support equipment/vehicles. If such equipment/vehicles create ruts in excess of 3 inches deep, operations must cease as the soil will be deemed too wet to adequately support equipment/vehicles.

The topsoil/surface layer (usually 4-6 inches) must be removed and clearly separated and stockpiled separate from excess spoil material. Also, where the pipeline is not directly installed within the existing roadbed, topsoil shall be stripped and separated from spoil material. Topsoil will be stored and protected from erosion for use in reclamation on all areas of surface disturbance (roads, well pad, pipelines, etc.) Topsoil that is not re-spread within 30 days will be covered with a tackifier, mulch, or other approved cover.

Site reclamation will initiate with the ripping to an appropriate depth (generally below the root zone) of any compacted areas and grading to blend with the adjacent site characteristics and topography. In no instances will grading material and/or subsoil be placed over topsoil. The order of soil replacement will be the reverse of removal, e.g. first off, last on.

After seeding, straw mulch shall be applied over and crimped into the soil on all disturbed areas. Stem length of straw used shall average 10 inches or longer. Straw material shall be free from noxious weeds. Straw mulch shall be applied at a rate of 1.5 tons per acre.

Interim or final reclamation activities will not be conducted using frozen or saturated soil material.

If safety, disrepair, erosion, and/or rutting problems are discovered, the operator will be responsible to repair, improve and/or maintain the access road to assure safety, stability, and to limit soil erosion/rutting.

If desired reclamation standards are not being achieved, soil testing will be required to determine if soil chemistry is the causal factor and to determine appropriate soil remediation actions to be taken.

Vegetation/Forestry:

Impacts to the vegetative resource would primarily occur during rehabilitation of the well pad. Livestock could concentrate on the newly seeded pad due to the nearby vicinity of a watersaver. The proposed pad is located in an allotment managed under a six pasture rest-rotation grazing system. If timing allows, impacts may be mitigated by scheduling the pasture containing the rehabilitated pad for a rest year during the year of rehabilitation. If this schedule cannot be accommodated, an exclusionary fence would need to be constructed to keep livestock off the rehabilitated pad for at least one growing season. Rehabilitation results would be evaluated at the end of the first growing season; removal or continued use of the fence would be determined at that time.

4.2.3 Alternative C – On P+A Well pad 31-25-20:

4.2.3.1 Wildlife: The long term impacts to wildlife from this alternative would be essentially the same as Alternative B, except there will be a reduction in disturbed habitat and slightly shorter access road to wellhead for monitoring and maintenance. Less disturbance activity reduces the chance for direct mortality to small less mobile species.

4.2.3.2 Visual Resource Management:

The long term visual impact would be the same as Alternative B, with the exception that the footprint of the drilling operation would be somewhat larger; therefore, reclamation of the operations area would probably be more noticeable in the short term. However, there still would be minimal long term visual impacts from the meter shed and riser if production occurs.

4.2.3.3 Soils:

Direct effects to soils would be similar to Alternative B. However, there would be approximately 2.1 acres of new soil disturbances associated with the well pad. Interim reclamation of the areas not needed for production and operations would be initiated after completion of the well. Approximately 2.0 acres would be reclaimed. There would be a long-term commitment of the soil resource on approximately 0.1 of an acre required for the production area.

4.2.3.4 Recreation:

The impacts would be the same as those in Alternative B.

4.2.3.5 Cultural Resources:

This action would have no effect on cultural resources within the area of potential effect.

4.2.3.6 Vegetation/Forestry:

Implementation of Alternative C would have no impact on the forest resource.

4.2.3.7 Mitigation Measures:

Wildlife:

The impacts would be the same as those described in Alternative B.

Soils

The impacts would be the same as those described in Alternative B.

Vegetation/Forestry:

The impacts would be the same as those described in Alternative B.

4.2.4 Residual Impacts:

If noxious weeds become established or introduced on the pad, these impacts will be left for many years after the well has been plugged and abandoned.

Proliferation of surface disturbance associated with well development and its infrastructure affects the quality and quantity of vegetation, wildlife habitat, and rangeland through fragmentation by creating new roads and pipelines, disturbance of livestock and wildlife species by traffic to well sites, loss of forage and habitat to well structures and associated roads, and the potential loss of forage and habitat from the possible introduction of invasive species on equipment and by providing bare ground for invasive species establishment.

The loss of native vegetation from these proposed alternatives contributes to a region-wide trend of habitat alteration. The fragmentation and loss of native vegetation to cultivated crops, conservation reserve program vegetation, road building, oil and gas production, other construction activities and noxious weed infestation has decreased the amount of native vegetation in the area. Loss of vegetation leads to loss of species diversity, provides opportunities for invasive species to establish, and fragments quality habitat for all wildlife species.

Increased traffic into the area could reduce security to ground nesting species and the nesting success of the birds in the immediate area. There could be loss of a few individuals to vehicle strikes. Increases in noise from traffic, construction, maintenance, and production, could deter wildlife from using an area. Animals would react to noises, but it is especially troublesome for songbirds, including migratory birds. Noise related problems for birds would include interference with the males' ability to attract mates and defend territory, interference with the ability to recognize warning calls, and calls from juveniles. This impact would continue for the life of the project.

Big game would temporarily abandon areas near disturbance-causing activities and are acclimated in this area to flee from vehicles. This unnecessary movement uses energy resources and adds stress to the animals. Species would undergo additional stress during crucial times for the animals (fawning and winter) and throughout the year. This stress would be most notable during years with hard winters, drought or heavy disturbance in other winter/spring use areas. Disturbance corridors and activities associated with them could lead to wildlife avoiding habitats close to the corridors. Habitat in the vicinity to the corridor would be effectively lost. Fragmentation of the landscape could occur if avoidance of disturbance corridors prevents wildlife from fully using land on either side of a corridor. The presence of the road would continue to impact habitat security on 1600 acres of big game habitat. An increase in road use into badlands habitat would result in an increased mortality for short-horned lizards due to road kill and dispersal to less suitable habitat. There would be potential for additional loss of individuals of ground-nesting birds to vehicle strikes due to increased traffic, reduced breeding and nesting success, and increased juvenile mortality of birds in the immediate area. These impacts will continue for the life of the project.

4.2.5 Monitoring and/or Compliance:

The following components of this project will be monitored for NEPA and regulatory compliance:

- a) Within 6 months of well completion, NRS staff from Great Falls or Monument will inspect the location to insure interim reclamation has been performed.
- b) Within 30 days of receipt of "First Production Memo" resource specialists from the Great Falls Oil and Gas Field Station or the Monument staff will inspect the location to ensure that permanent production facilities meet visual resource objectives.
- c) Production from the well is monitored yearly by BLM petroleum engineering staff. Included in this monitoring are records review for correct volume reporting and field checks to insure the measuring equipment is performing within standards. Included in these field checks are an environmental check to ensure the well is not impacting the environment adversely (gas leaking from the wellhead or produced water over running the pit). BLM does not check for pipeline leaks; the gas company that owns the line would do this.
- d) Environmental monitoring will be performed yearly by BLM natural resource specialists in Great Falls or Lewistown. This monitoring will include inspecting interim reclamation, noxious weeds introduction, re-vegetation success, produced water pit overruns and any other environmental impacts due to the production of a gas well.
- e) Sage and sharp-tail larks are monitored annually, time allowing, and may show reductions in breeding birds over time if traffic is affecting breeding success.
- f) Water pits will be monitored for wildlife trapped or killed within the pit.
- g) Access road may be monitored during summer months, when employees are available, to look for reptiles killed by vehicle traffic.

4.3 Cumulative Impacts Analysis:

“Cumulative impacts” are those impacts resulting from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions.

4.3.1 Past and Present Actions:

Past or ongoing actions that affect the same components of the environment as the proposed action include existing, producing natural gas wells in the vicinity. Impacts from existing facilities are minimal, however, because the infrastructure is established, disturbances have been rehabilitated, and human activity is infrequent.

4.3.2 Reasonably Foreseeable Actions:

Future actions that could cumulatively affect the same resources as the proposed action and alternatives would also include reasonably foreseeable development (RFD) wells identified in the UMRBNM Record of Decision (ROD). Including the proposed well, the ROD identifies 33 RFD wells on existing leases north of the river within the monument and 1 RFD well on existing leases south of the river. Although the well was moved 700 feet to the east as compared to the RFD well location because of improved geotechnical data, it is still within the confines of what was analyzed within the Proposed RMP/Final EIS for the Upper Missouri River Breaks National Monument (Monument) (January 2008). All future oil & gas actions would be subject to NEPA and the NEPA review process, the APD process, oil & gas lease stipulations, and conditions of approval including appropriate mitigation measures.

4.3.3 Cumulative Impacts:

Per the Proposed RMP/Final EIS for the Monument (January 2008; Page 275), the impacts associated with future exploration and development on Monument lands would include 38.3 acres for the 34 RFD wells, 18.8 acres for 11.1 miles of access road to be built servicing the new wells, 14.2 acres for 3.9 miles of pipeline that would also service the wells for a total of 71.3 acres of total disturbed area. Per Alternative B – Proposed Action, the pad size is less than what was foreseen in the RFD (0.52 acres vs 1.15 acres), no new access road will be necessary to be constructed to gain access to the well location as was indicated in the RFD (0 acres vs 0 acres) and the new pipeline to be built servicing the well would be 1165 ft or 0.8 acres ($(1165 \text{ ft} \times 300 \text{ ft})/43560 = 0.8 \text{ acres}$). The RFD indicates a total of 3.9 miles (14.2 acres) of new pipeline would be necessary to service the 34 RFD wells. The total area of disturbance for the well, access road and pipeline are within the limits of what was analyzed in the RFD.

Surface disturbance associated with well development and its infrastructure could affect the quality and quantity of vegetation, wildlife habitat, and rangeland through fragmentation by creating new roads and pipelines, disturbance of livestock and wildlife species by traffic to well sites, loss of forage and habitat to well structures and associated roads, and the potential loss of forage and habitat from the possible introduction of invasive species on equipment and

by providing bare ground for invasive species establishment. The creation of new roads could lead to increased erosion potential and subsequent degradation of water quality. Sediment loads could be increased, particularly if roads crossing coulees, drainages, and ephemeral potholes are used during wet periods. Water quality could also be affected should water from producing wells seep from containment. Wildlife, particularly migratory birds and reptiles, might also be affected by interacting with water from producing wells. These impacts would be temporary, affecting resources only during the life span of wells in the area.

Appendix A. Conditions of Approval for Either Action Alternative

NFR Bear Paw Basin, LLC

**Federal 31-25-20B
SENW Section 31, T25N, R20E.
Blaine County, Montana
MTM 16461**

APPLICATION FOR PERMIT TO DRILL (APD)

CONDITIONS OF APPROVAL

A COPY OF THESE CONDITIONS SHALL BE FURNISHED TO YOUR FIELD REPRESENTATIVE TO ENSURE COMPLIANCE.

DURING PERIODS OF DECLARED FIRE DANGER OR SEASON, OPERATOR IS REQUIRED TO COMPLY WITH ALL APPLICABLE STATE LAWS RELATING TO FIRE PREVENTION AND WITH ALL SPECIAL CONDITIONS OF WORK AS DIRECTED BY THE AUTHORIZED OFFICER.

THE DRILLING, COMPLETION, FRACTURING AND PIPELINE INSTALLATION HAS THE FOLLOWING WILDLIFE TIMING LIMITS: GREATER SAGE-GROUSE WINTER RANGE AND BIG GAME WINTER RANGE DECEMBER 1 – MARCH 31 (ROD, Ch 2, pg 74); GREATER SAGE-GROUSE BREEDING AND NESTING REQUIRES NO DISRUPTIVE ACTIVITIES ALLOWED BETWEEN MARCH 1 – JUNE 15 (ROD, Ch 2, pg 74). DISRUPTIVE ACTIVITIES ARE DEFINED IN THE MONUMENT RMP GLOSSARY PAGE 1257. EXCEPTIONS TO THIS CONDITION MAY BE GRANTED ON AN INDIVIDUAL BASIS AFTER CONSULTATION WITH MONUMENT WILDLIFE BIOLOGIST JODY PETERS. PLEASE CONTACT JODY AT 406-262-2832 AT LEAST 4 BUSINESS DAYS AHEAD OF SCHEDULED WORK.

PRIOR APPROVAL WILL BE REQUIRED FOR PIPELINE INSTALLATION, COMPRESSOR INSTALLATION, WATER DISPOSAL PITS INCLUDING ANY FUTURE INCREASE IN SIZE, PUMPING UNIT INSTALLATION, WELL WORKOVERS THAT INCLUDE, BUT ARE NOT LIMITED TO, REDRILLING, DEEPENING A WELL AND PERFORMING CASING REPAIRS OR PLUGBACKS, PORTABLE TANKS FOR WELL TESTING OR OTHER SURFACE DISTURBANCE. PRIOR NOTIFICATION WILL BE REQUIRED FOR WELL CLEANOUT, TO REPLACE OR REPAIR TUBING, RECOMPLETE THE WELL IN THE SAME INTERVAL, AND/OR ROUTINE WELL STIMULATION. (ROD, Ch 2, pg 76)

PORTABLE TANKS FOR WELL TESTING, AS REQUIRED BY THE BLM, WILL BE TEMPORARY (60 TO 90 DAYS) AND DESIGNED TO MEET VRM OBJECTIVES IN THE AREA INCLUDING PAINTING AND CAMOUFLAGE TO BLEND WITH THE NATURAL SURROUNDINGS. (ROD, Ch 2, pg 76)

TRAVEL ON IDENTIFIED DESIGNATED ROADS WILL BE RESTRICTED TO THE MINIMAL VEHICLE SIZE AND TYPE NEEDED FOR THE JOB. DUE TO RESOURCE ISSUES, TIMING RESTRICTIONS MAY BE APPLIED TO SITE VISITS. FOR CONSTRUCTION AND HEAVY TRUCKS RELATED TO PRODUCTION, EQUIPMENT THAT EXCEEDS 49 dBa WILL BE RESTRICTED FROM BEING WITHIN 2 MILES OF GREATER SAGE-GROUSE LEKS BETWEEN 4 AM AND 8 AM AND FROM 7 PM TO 10 PM BETWEEN MARCH 1 AND JUNE 15. (ROD, Ch 2, pg 76-77)

1. Informational Notice:

- a. Approval of this APD 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.
- b. The lessee shall comply with applicable laws and regulation; with the lease terms, Onshore Oil and Gas Orders; NTL's; and with other orders and instructions of the Authorized Officer.
- c. A complete copy of the approved APD must be on the well site and available for reference during the construction and drilling phase.
- d. Any deviation from the terms of this APD requires prior approval.
- e. This drilling permit is valid for either two (2) years from the approval date or until lease expiration, whichever occurs first.
- f. Each drilling, producing or abandoned well shall be identified with the Operator's name, the lease serial number, the well number, and the surveyed description of the well (either footages or the quarter section, the section, township and range). All markings must be legible and in a conspicuous place.
- g. Pursuant to Onshore Oil and Gas Order No. 1, Section IV, General Operating Requirements, Operator Responsibilities, paragraph (e), Completion Reports, you are encouraged to submit all well logs in an electronic format, such as ".LAS" format, in lieu of providing the BLM with two (2) paper copies of all well logs, as currently required.

2. Notification Requirements:

The Bureau of Land Management, Great Falls Field Office, 1101 15th Street North, shall be notified in advance of actual work so that a representative may have an opportunity to witness the operation. Our office hours are 8:00 a.m. to 4:30 p.m. Monday through Friday. The BLM's office telephone number is (406) 791-7700.

- a. Notify this office at least 12 hours before beginning dirt work.*

- b. Notify this office verbally at least 6 hours before the well is spudded.
- c. Notify this office verbally at least 6 hours prior to running/cementing casing.
- d. Notify this office verbally at least 6 hours prior to conducting BOP tests.
- e. Notify this office at least 6 hours prior to plugging for verbal plugging orders.**

After hours and weekends contacts are*:

**Barney Whiteman	Petroleum Engineer
*Andrea Parrott	Environmental Specialist
Dale Manchester	Petroleum Engineer
Don Judice	Field Manager
Donna Mitchell	Petroleum Engineering Technician
Lisa-Marrie Whiteman	Petroleum Engineering Technician
Steven McCracken	Petroleum Engineering Technician

*Telephone numbers were removed from public review to protect privacy of BLM employees.

3. **Surface Stipulations:**

- a. The Operator will be responsible for weed control on the access road, well location, and pipeline for the life of the well, plus five years. The Operator will clean the undercarriage of all rigs prior to entering onto the leasehold to reduce the chances for noxious weed infestations. The Operator will be responsible for consultation with the Authorized Officer for acceptable weed control methods and materials and will be subject to submittal and approval of a pesticide use proposal on BLM land (ROD, Ch 2, pg 73).
- b. Operator will be required to send the seed bag tags to the Great Falls office within one week of seeding the location (interim reclamation).
- c. Operator will identify soil types and depth of topsoil/surface layer (usually 4-6 inches) for removal and clearly separate and stockpile topsoil from excess spoil material. Topsoil will be stored and protected from erosion for use in reclamation on all areas of surface disturbance. Topsoil that is not re-spread within 10 days will be covered with a tackifier, mulch, or other approved cover.
- d. Construction, drilling, completion, interim or final reclamation activities will not be performed during periods when the soil is too wet to adequately support equipment/vehicles. If equipment/vehicles create ruts in excess of 3 inches deep, operations must cease as the soil will be deemed too wet to adequately support equipment/vehicles.
- e. To prevent improper settling of soil material, interim or final reclamation activities will not be conducted using frozen or saturated soil material.
- f. Site reclamation will initiate with the ripping of any compacted areas and grading to blend with the adjacent site characteristics and topography. In no instances will

grading material and/or subsoil be placed over topsoil. The order of soil replacement will be the reverse of removal (first off, last on).

- g. The Operator will be responsible for erosion control and sediment containment until final reclamation standards have been met. Appropriate erosion control and sediment containment devices shall be installed by the Operator and the Operator shall be responsible for maintaining those devices for their intended function. This would apply to the well location, facility area, pipeline and access road.
- h. The Operator shall seed all disturbed areas with the seed mixture listed below. The seed mixture should be planted in the amounts specified in pounds of pure live seed (PLS)/acre. All seed shall be State of Montana Certified or Registered seed (or certified/registered by the state of origin); certification tags shall be made available to the Authorized Officer for inspection before seed is planted.

Common Name	Scientific Name	Cultivar	PLS lbs. Per acre	% species composition	PLS lbs/acre
western wheatgrass	<i>Psascopyrum smithii</i>	Rosana	6	40	2.4
bluebunch wheatgrass	<i>Pseudoroegneria spicata</i>	Goldar	7	15	1.0
blue grama	<i>Bouteloua gracillis</i>	Bad River	3	20	.6
purple prairie clover	<i>Petalostemon purpureum</i>	Kaneb	3.8	5	.2
scarlet globemallow	<i>Sphaeralcea coccinea</i>		2.2	5	.1

The seeding will be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth will not be made before completion of the first growing season following seeding.

- i. All permanent structures will be painted the neutral color of Beetle as displayed in the Supplemental Environmental Color chart (available at the BLM office) except where a warning or other color is required by OSHA (ROD, Ch 2, pg 74).
- j. After seeding, straw mulch shall be applied over and crimped into the soil on all disturbed areas. Stem length of straw used shall average 10 inches or longer. Straw material shall be free from noxious weeds. Straw mulch shall be applied at a rate of 1.5 tons per acre. All straw mulch must be obtained from a certified noxious weed seed source and must show to BLM, upon request, tags indicating the source of straw mulch.
- k. If safety, disrepair, erosion and/or rutting problems are discovered, the Operator will be responsible to repair, improve and/or maintain the access road to assure safety, stability, and to limit soil erosion/rutting.
- l. If desired reclamation standards are not being achieved, soil testing will be required to determine if soil chemistry is the causal factor and to determine appropriate soil remediation actions to be taken.
- m. Operator will fence the entire disturbed area, stock tight, following drill rig removal. This fence will remain until BLM Authorized Officer determines it can be removed. Operator is responsible to maintain this fence for its intended purpose.

4. Downhole Stipulations:

- a. The surface casing shoe will not be drilled out until a minimum of 500 psi compressive strength is achieved at the shoe.
- b. The surface casing will be required to be cemented to surface, either through the primary cement job or a remedial cement job (i.e. one-inching).
- c. The production casing shall be cemented back to surface either by primary cementing or by remedial cementing. A best attempt shall be made to assure that all productive intervals are isolated with good cement coverage around the pipe. This shall be accomplished by placing centralizers on the bottom three joints of the production casing and then every 120' to surface.
- d. Remedial cementing (if needed) will be performed as follows: If the cement does not return to the surface during the primary cement job (production casing), a cement bond log will need to be run to determine the top of cement (TOC). After the TOC has been determined, NFR would need to contact the BLM Petroleum Engineer for further instruction.
- e. Fresh water will be required for cementing. If the fresh water source is from a reservoir, a water quality analysis will need to be performed and submitted to the BLM to ensure that the quality of the water will not degrade the cement.
- f. The request for a variance to use a float valve above the bit in lieu of a Kelly Cock Valve is approved. This is a common drilling practice in Northern Montana and has proven to be safe.
- g. BOP system shall be consistent with Onshore Oil and Gas Order No. 2, 2M system. The proposed 2000 psi BOP and BOPE is acceptable since bottom hole pressures are not expected to be more than 615 psi. The BOP, BOPE, and casing head assembly will be pressure tested to **1000** psi upon installation prior to drilling cement from surface casing. Annular preventors shall be inspected and operated weekly to ensure good mechanical working order. BOP controls will be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned. These inspections and tests shall be recorded on the daily drilling report (IADC Report).

5. Plugging Requirements:

- a. Prior approval for abandonment must be obtained. Initial approval for abandonment during drilling operations may be verbal, but must be followed by written notification on Form 3160-5, in triplicate.
- b. Upon completion of the approved plugging, the Operator will cut the well off four (4) feet below reclaimed ground level and a ¼" x 12" x 12" plate (with a

1/8" weep hole) shall be welded onto a fitting to be screwed into a collar either welded or screwed to the production casing. **The standard above-ground dry-hole marker in accordance with 43 CFR 3162.6(d) has been waived by the Great Falls Field Office.** Pits must be fenced until dry or pumped and then filled in and re-contoured unless otherwise approved by the Field Office Supervisor.

- c. The following minimum information shall be permanently placed on the plate: "Fed" or "Ind" as applicable; "Lease Number, Operator, Well Number, Location by quarter/quarter, Section, Township, and Range."

6. Reports and Notifications:

- a. All submitted information not marked "CONFIDENTIAL INFORMATION" will be available for public inspection upon request. The exception is Indian lease information, which is always considered confidential.
- b. Production Startup Notification is required no later than the 5th business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site, or resumes production in the case of a well which has been off production for more than 90 days. The Operator shall notify the Authorized Officer by letter or sundry notice, Form 3160-5, or orally to be followed by a letter or sundry notice, of the date on which such production has begun or resumed.

7. Hazardous Materials:

- a. Operators and their contractors are to ensure all production, use, storage, transport, and disposal of hazardous materials resulting from the proposed project is in accordance with all applicable Federal, State and local laws, regulations and guidelines, existing or hereafter enacted or promulgated that effect the management of hazardous material, as defined in this paragraph. Hazardous material means any substance, pollutant, or contaminant listed as a hazardous substance under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended, 42 USC 9601 et seq., and its regulations (found at 40 CFR 302). The definition of hazardous substances under CERCLA includes "hazardous waste" defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 USC 6901 et seq., and its regulations. The term also includes any extremely hazardous substances defined by 40 CFR 355, and any nuclear or byproduct material defined by the Atomic Energy Act of 1954, as amended, 42 USC 2011 et seq. The term does not include petroleum, including crude oil or any fraction thereof not otherwise listed or designated as a hazardous substance under CERCLA section 101 (14), 42 USC 9601 (14), or natural gas.
- b. Only drilling muds, drilling fluids, cuttings, native soils, cementing materials and/or approved pit solidifying materials will be placed in the reserve or working pits.

- c. Nonexempt wastes will not be mixed with exempt wastes.
- d. No hazardous materials will be used in the drilling and construction of well sites and access roads. Commercial preparations, which may contain hazardous materials may be used in production operations and will be transported with the project area. These materials will be handled in an appropriate manner to minimize potential for leaks or spills to the environment. Other waste disposal methods and locations should be described on the APD or SN and approved by the BLM prior to disposal.

8. Environmental Obligations and Disposal of Produced Water:

- a. You are required to take all necessary steps to prevent any death of a migratory bird in pits or open vessels associated with the drilling, testing, completion, or production of this well. The death of any migratory bird found in such a pit or open vessel is a violation of the Migratory Bird Treaty Act and is considered a criminal act. Any deaths of migratory birds attributable to pits or open vessels associated with drilling, testing, completing, or production operations must be reported to this office and the United States Fish and Wildlife Service within 24 hours.
- b. We may require that the pit be designed or the open vessel be covered to deter the entry of birds in any facility associated with drilling, testing, completing, or production of this well. Fencing, screening, and netting of pits may be required as a means to deter bird entry. These conditions would most likely be imposed to prevent the entry of migratory birds if oil is left in pits or open vessels after the cessation of drilling or completion operations, if water disposal pits consistently receive oil, or if pits or open vessels are used repeatedly for emergency situations which result in the accumulation of oil.
- c. Voluntary pit fencing, screening, and netting, or sealing vessels is encouraged, thus avoiding potential instances that may result in the death of a migratory bird.
- d. With BLM approval, water produced from newly completed wells may be temporarily disposed of into unlined pits for up to 90 days. During this initial period, application for the permanent disposal method must be made in accordance with Onshore Order No. 7.

9. Paleontological/Cultural Stipulations:

Paleontological and archaeological field checks by BLM personnel or other authorized personnel will occur prior to disturbance as deemed appropriate by the BLM. A BLM approved archaeologist or paleontologist will conduct monitoring during surface disturbing activities. Paleontological or cultural resource sites will be avoided or mitigated as necessary prior to disturbance. Any cultural or paleontological resource discovered by an Operator or any person working on his/her behalf will be reported immediately to the BLM, and all operations that may further disturb such resources will be suspended until written authorization to proceed is issued by the BLM Authorizing Officer. An evaluation of the discovery will be made by the BLM to determine appropriate actions to prevent the loss of significant resources.