

U.S. Department of the Interior
Bureau of Land Management
Little Snake Field Office
455 Emerson Street
Craig, CO 81625-1129

ENVIRONMENTAL ASSESSMENT

EA-NUMBER: CO-100-2007-060 EA

CASEFILE/PROJECT NUMBER/LEASE NUMBER:

COC067189: Coffeepot Springs Unit Well # 31-33
COC069369: Yellow Cat Federal Unit Well # 32-4

PROJECT NAME: Two Julander Wells

LEGAL DESCRIPTION: Both wells in Moffat County, Colorado

Coffee Pot Springs Unit Well # 31-33: NWNE Sec. 33, T12N, R98W, 6th PM
Yellow Cat Federal Unit Well # 32-4: SWNE Sec. 4, T10N, R98W, 6th PM

APPLICANT: Julander Energy Company

PLAN CONFORMANCE REVIEW: The proposed action is subject to the following plan:

Name of Plans: Little Snake Resource Management Plan and Record of Decision (ROD) approved on April 26, 1989; and the Colorado Oil and Gas Leasing & Development Environmental Impact Statement (EIS) and the ROD signed on November 5, 1991.

Remarks: The proposed Coffeepot Springs Well # 31-33 and Yellow Cat Well # 32-4 would be located within Management Unit 3 (Little Snake Resource Management Plan). The objectives of Management Unit 3 are to improve soil and watershed values, increase forage production, and enhance livestock grazing. Public lands are open to oil and gas leasing and development consistent with the management objectives. The proposed action was reviewed for conformance with this plan (43 CFR 1610.5, BLM 1617.3). The proposed action is in conformance with the objectives for this management unit.

NEED FOR PROPOSED ACTION: To provide for the development of oil and gas resources and to supply energy resources to the American public.

PUBLIC SCOPING PROCESS: The Notices of Staking (NOSs) have been posted in the public room of the Little Snake Field Office for a 30-day public review period beginning March 19, 2007 when the NOSs were received, and may be viewed during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except holidays.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES: The proposed action is to approve two Applications for Permit to Drill (APDs) submitted by Julander Energy Company. This oil and gas lease operator proposes to drill two natural gas wells on BLM administered land located in T 10 & 12N, R98W. APDs have been filed for the Coffee Pot Springs Unit Well # 31-33 in the NWNE Section 33, T12N, R98W, and the Yellow Cat Federal Unit Well # 32-4 in the SWNE Section 4, T10N, R98W with the LSFO that includes drilling and surface use plans. The APDs cover mitigation of impacts to vegetation, soil, surface water, and other resources. Mitigation not incorporated by Julander Energy Company in the drilling and surface use plans would be attached by the BLM as Conditions of Approval (COA) to an approved APD.

The proposed wells would be located approximately 48 to 63 miles southwest of Baggs, Wyoming. The approximate date work would start is late summer or fall of 2007 and the estimated duration of construction and drilling of each well is one month. Moffat County Roads 4, 67, and 68 would be used to access the well sites. One new short access road on lease would be constructed for Coffeepot Springs Well # 31-33. One cattleguard would be installed to BLM and Moffat County specifications at BLM boundary fence crossing near MCR 4. Total surface disturbance for new road construction for the Coffeepot Well would be approximately 0.5 acre. Julander proposes to upgrade approximately 1 mile of existing two-track road and construct approximately 0.5 mile of new road access for the Yellow Cat Well. Total surface disturbance for road access for the Yellow Cat Well would be approximately 10 acres. Road construction would conform to BLM specifications for a “resource road”, with a 16-foot wide running surface. All new road construction and upgrading would occur on federally administered surface.

The proposed well pads would be cleared of all vegetation and leveled for drilling. Topsoil and native vegetation would be stockpiled for use in reclamation. Approximately 3 acres would be disturbed for each well pad during construction. This disturbance includes the 285’ by 400’ well pad, the topsoil pile, and subsoil piles to be constructed at the well site. A reserve pit would be constructed on the well pad to hold drill mud and cuttings. If a well is a producer, cut portions of the well site would be backfilled and unused portions of the well site would be stabilized and re-vegetated. If a gas well proves unproductive, the well would be properly plugged and the entire well pad and access road would be reclaimed.

Julander did not include plans for gas sales pipelines with the APDs. A detailed written statement of work (Sundry Notice) would be filed with the BLM before pipeline installation. This Sundry Notice would be assessed, when it is received, for environmental impacts of a gas sales pipeline.

NO ACTION ALTERNATIVE: The “no action” alternative is that the wells would not be permitted and therefore no wells would be drilled. Julander Energy Company holds valid and current oil and gas leases for the area where the proposed two Julander wells would be located.

Under leasing contracts, the BLM has an obligation to allow mineral development if the environmental consequences are not irreversible or too severe. The APD process is designed to overcome the no action situation of not accepting the APD through the mitigation of predicted environmental consequences. Since the proposed action is consistent with the ROD and the Oil and Gas Leasing EIS, rejecting the APDs for the wells was considered but will not be analyzed further in this EA.

**AFFECTED ENVIRONMENT/ENVIRONMENTAL CONSEQUENCES/MITIGATION
MEASURES**

CRITICAL RESOURCES

AIR QUALITY

Affected Environment: There are no special designation air sheds or non-attainment areas nearby that would be affected by the proposed action.

Environmental Consequences: Short term, local impacts to air quality from dust would result during and after well pad construction. Drilling operations produce air emissions such as exhaust from diesel engines that power drilling equipment. Air pollutants could include nitrogen oxides, particulates, ozone, volatile organic compounds, fugitive natural gas, and carbon monoxide. Gas flaring reduces the health and safety risks in the vicinity of the well by burning combustible and poisonous gases like methane and hydrogen sulfide. The proposed action will not adversely affect the regional air quality.

Mitigative Measures: None.

Name of specialist and date: Barb Blackstun 06/06/07

AREA OF CRITICAL ENVIRONMENTAL CONCERN

Affected Environment: Not present.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 06/11/07

CULTURAL RESOURCES

Affected Environment: Cultural resources, in this region of Colorado, range from late Paleo-Indian to Historic. For a general understanding of the cultural resources in this area of Colorado, see An Overview of Prehistoric Cultural Resources, Little Snake Resource

Area, Northwestern Colorado, Bureau of Land Management Colorado, Cultural Resources Series, Number 20, An Isolated Empire, A History of Northwestern Colorado, Bureau of Land Management Colorado, Cultural Resource Series, Number 2 and Colorado Prehistory: A Context for the Northern Colorado River Basin, Colorado Council of Professional Archaeologists.

Environmental Consequences: The proposed project, Julander Energy Coffee Pot and Yellowcat wells, has undergone a Class III cultural resource survey:

Davenport, Barb and Carl Conner
2007. Class III Cultural Resources Inventory for the proposed access road re-route to the proposed Yellow Cat Federal #32-4 well location in Moffat County, Colorado for Julander Energy Company (BLM#11.2.07).

Darnell, Nicole and Carl Conner
2007. Class III Cultural Resources Inventory for Two Proposed Well Locations (Coffee Pot Springs Unit #31-33 and Yellow Cat Federal #32-4) and Short Access (4250 feet) in the Powder Wash Area in Moffat County, Colorado for Julander Energy Company (BLM #11.1.07).

The survey identified no eligible to the National Register of Historic Places cultural resources. The proposed project may proceed as described in this EA with the following mitigative measures in place.

Mitigative Measures:

The following standard stipulations apply for this project:

1. The operator is responsible for informing all persons who are associated with the operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are encountered or uncovered during any project activities, the operator is to immediately stop activities in the immediate vicinity of the find and immediately contact the authorized officer (AO) at (970) 826-5000. Within five working days, the AO will inform the operator as to:

- Whether the materials appear eligible for the National Register of Historic Places;
- The mitigation measures the operator will likely have to undertake before the identified area can be used for project activities again; and
- Pursuant to 43 CFR 10.4(g) (Federal Register Notice, Monday, December 4, 1995, Vol. 60, No. 232) the holder of this authorization must notify the AO, by telephone at (970) 826-5000, and with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

2. If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation costs. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

Name of specialist and date: Robyn Watkins Morris 06/04/07

ENVIRONMENTAL JUSTICE

Affected Environment: The proposed action is located in an area devoid of year-round populations.

Environmental Consequences: The project area is relatively isolated from population centers, so no populations would be affected by physical or socioeconomic impacts from the project. The project would not directly affect the social, cultural, or economic well being and health of Native American, minority or low-income populations.

Mitigative Measures: None.

Name of specialist and date: Louise McMinn 06/04/07

FLOOD PLAINS

Affected Environment: Active floodplains and flood prone zones are avoided.

Environmental Consequences: No threat to human safety, life, welfare, or property would result from the proposed action.

Mitigative Measures: None.

Name of specialist and date: Barb Blackstun 06/06/07

INVASIVE, NONNATIVE SPECIES

Affected Environment: Invasive species and noxious weeds occur within the affected area. Downy brome (cheatgrass), yellow alyssum, blue mustard, and other annual weeds are common along roadsides, on well pads and on other disturbed areas. Canada thistle and several species of biennial thistles are known to occur in this area. Halogeton, Russian knapweed, perennial pepperweed (tall whitetop), dalmation toadflax, and hoary cress (whitetop) exist in the vicinity of these proposed well pads. Other species of noxious weeds are not known to be a problem in this area, but could be introduced from other areas. The

BLM, Moffat County, livestock operators, pipeline companies, and oil and gas operators have formed the Northwest Colorado Weed Partnership to collaborate their efforts on controlling weeds and finding the best integrated approaches to achieve these results.

Environmental Consequences: The surface disturbing activities and associated traffic involved with drilling these 2 wells, constructing the access roads and other subsequent activities would create a favorable environment and provide a mode of transport for annual and noxious weeds to become established. These weeds can be spread through a variety of means including by vehicular travel, construction equipment, gravel applications on roads, wildlife and livestock movement, wind, and water. The annual invasive weed species (yellow alyssum, blue mustard and other annual weeds) occur on adjacent rangelands and would occupy the disturbed areas. The bare soils and the lack of competition from a perennial plant community would allow these weed species to grow unchecked and can affect the establishment of seeded plant species. Establishment of perennial grasses and other seeded plants is expected to provide the necessary control of invasive annual weeds within 2 or 3 years. Additional seeding treatments of the disturbed areas may be required in subsequent years if initial seeding efforts have failed.

Mitigation attached as Conditions of Approval to minimize disturbance and obtain successful interim reclamation of the unused areas of the well pads and the access roads, as well as weed control utilizing integrated practices, including herbicide applications would help to control the noxious weed species. All principles of Integrated Pest Management should be employed to control noxious and invasive weeds on public lands.

Mitigative Measures: None.

Name of specialist and date: Ole Olsen 06/04/07

MIGRATORY BIRDS

Affected Environment: The proposed location for the Coffeepot Springs #31-33 well is located approximately 1 mile from a historic ferruginous hawk nest. Records show this nest was active in 1997. No activity information exists for years after 1997. Significant topographic barriers exist between the nest location and the proposed well pad. Brewer's sparrows and sage sparrows may also be found within both proposed well location.

Environmental Consequences: Construction and drilling activities associated with the Coffeepot Springs Well location would not have a negative impact on nesting ferruginous hawks. Construction and drilling associated with both wells could have a negative impact on Brewer's Sparrows and sage sparrows if conducted during the nesting season (May – August). These activities could lead to nest destruction or abandonment if conducted during this time period. If these activities are conducted outside of the nesting season, there is little chance for take to occur.

Mitigative Measures: None.

Name of specialist and date: Timothy Novotny 06/07/07

NATIVE AMERICAN RELIGIOUS CONCERNS

A letter was sent to the Uinta and Ouray Tribal Council, Southern Ute Tribal Council, Ute Mountain Ute Tribal Council, and the Colorado Commission of Indian Affairs on January 21, 1999. The letter listed the projects that the BLM would notify them on and projects that would not require notification. No comments were received (Letter on file at the Little Snake Field Office). This project requires no additional notification.

Name of specialist and date: Robyn Watkins Morris 06/04/07

PRIME & UNIQUE FARMLANDS

Affected Environment: Not Present.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Barb Blackstun 06/06/07

T&E SPECIES – ANIMALS

Affected Environment: There are no threatened or endangered species or habitat for such species in or near either proposed well location. Both the Coffeepot Springs #31-33 well and the Yellow Cat #32-4 well are within nesting habitat for greater sage-grouse, a BLM special status species. The Coffeepot Springs #31-33 well is located over one mile from the Racetrack Flats lek. The Yellow Cat #32-4 well is located just over one quarter mile from a new lek site. This lek, which is currently unnamed, was first observed in 2003. Only two males were observed strutting at this site that year. Two checks of the lek site during 2004 did not result in finding any birds displaying. In the spring of 2007 three lek counts were conducted at this lek sit. One visit resulted in a high count of eight birds displaying. Seven were male and one was female. A second visit resulted in a high count of 13 birds, all were males. On the third count, a golden eagle flushed birds from lek site as biologists approached the lek. It was estimated between ten and twelve birds were flushed from the lek site. This lek location is right along an existing two track road.

Environmental Consequences: The proposed development of these two wells would not have any impact on threatened or endangered species or their habitats. The Coffeepot Springs #31-33 well would not impact the integrity of the racetrack Flats lek location. The Yellow Cat #32-4 could potentially have an impact on the newly found lek near this well location. Julander Energy has agreed to reclaim the existing two track road that travels through the center of this lek location. Reclaiming the road and making it impassible for

motor vehicles could benefit breeding sage grouse by reducing potential disturbances by motor vehicles during the strutting season. A new access road would be constructed to access the well location. There is potential that activities associated with a producing well could disrupt greater sage-grouse however, the existing road that travels through their lek site may cause a greater disturbance to the birds. Construction and drilling of the well should be conducted outside of the breeding and nesting season (March 1 June 30) to reduce potential for impacts to sage-grouse. Both wells would result in a loss of nesting habitat for greater sage-grouse. The Coffeepot Springs #31-33 Well would result in a loss of approximately three and a half acres of nesting habitat. The Yellow Cat #32-4 well would result in a loss of approximately 13 acres of nesting habitat. Ten acres of lost habitat would be the result of rerouting the existing road that travels through the lek site. Rerouting this road will benefit breeding greater sage-grouse. The loss of the thirteen acres of nesting habitat should not make the area unsuitable for nesting activities because undisturbed habit in the area would be sufficient for nesting activities.

Mitigative Measures: For Yellow Cat Well #32-4: CO-30, No surface disturbing activities between March 1 and June 30 in order to protect breeding and nesting sage-grouse.

Name of specialist and date: Timothy Novotny 06/07/07

T&E SPECIES – PLANTS

Affected Environment: There are no federally listed threatened or endangered plant species within or in the vicinity of either of the proposed wells or access roads.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Hunter Seim 06/01/07

T&E SPECIES - SENSITIVE PLANTS

Affected Environment: Coffeepot Springs 31-33- This proposed well lies within one mile of a known population of tufted cryptanth (*Oreocarya caespitosa*), a BLM sensitive species. However, habitat for this plant (sparsely vegetated shale knolls) is not present in areas that would be directly disturbed.

Yellowcat 32-1- There are no BLM sensitive plants within or in the vicinity of this proposed well.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Hunter Seim 06/01/07

WASTES, HAZARDOUS OR SOLID

Affected Environment: The operator has indicated in the APDs for the two Julander wells that some hazardous materials would be used during drilling, completion, and production of the proposed wells. The term hazardous materials as used here means: 1) any substance, pollutant, or contaminant (regardless of quantity) listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, 42 U.S.C. 9601 et seq., and the regulations issued under CERCLA, 2) any hazardous waste as defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, and 3) any nuclear or nuclear byproduct as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq.

The operator or any contracted company working for the operator would have Material Data Safety Sheets available for all chemicals, compounds, or substances which are used during the course of construction, drilling, completion, and production operations for this project. Additionally, all chemicals would be handled in an appropriate manner to minimize the potential for leaks or spills to the environment.

Environmental Consequences: Impacts to soils, surface and groundwater resources, wildlife, vegetation, and human health, could result from the accidental exposure of hazardous materials. Project operations should comply with all applicable federal and state laws concerning hazardous materials, the Hazardous Materials Management Summary for this project, and the operator's Spill Prevention Control and Countermeasure Plan.

Mitigative Measures: None.

Name of specialist and date: Barb Blackstun 06/06/07

WATER QUALITY/HYDROLOGY – GROUND

Affected Environment: The surface formation is the Brown's Park Formation, overlying the Wasatch Formation. The Brown's Park Formation has high potential for production of near surface useable water and water-bearing zones to be encountered. The Wasatch Formation has strong vertical fracturing and is known to produce useable groundwater. The water producing zones are ephemeral as the groundwater producing sandstones thicken and thin laterally. The operator needs to have enough mud on hand to control the well. The operator shall inform the LSFO of any shows of useable groundwater.

Environmental Consequences: Downhole procedures follow that of Onshore Order #2, and the operator will bring cement back to surface. Proper construction practices following Onshore Order #2 coupled with best management practices should result in no significant adverse impact to groundwater aquifers. Minor runoff from construction activities could result in sediment input in to nearby drainages.

Mitigative Measures: None specified.

Name of specialist and date: Marilyn D. Wegweiser 06/05/07

WATER QUALITY/HYDROLOGY – SURFACE

Affected Environment: No springs would be affected by the well projects. The Coffeepot Springs Well #31-33 would be located on level terrain just south of Beaver Slide Draw, which drains into Powder Wash. The Yellow Cat Well #32-4 is situated in the north central portion of the Sand Wash Basin HMA. All stream segments near the well pad locations are presently supporting classified beneficial uses. No impaired stream segments occur in the vicinity of the proposed action.

Environmental Consequences: Runoff water from the Coffeepot Springs Well #31-33 would drain towards Powder Wash, which is an ephemeral tributary to the Little Snake River. Runoff water affected from the Yellow Cat Well #32-4 project would flow into the ephemeral Lake Draw which drains into Yellow Cat Wash. Increased sedimentation to Powder Wash, Yellow Cat Wash, Sand Wash, and the Little Snake River during spring runoff or from high intensity summer/fall rainstorms would be the greatest potential impact to water quality.

The well locations would require new construction of two short access roads. New road construction would conform to BLM specifications for a “resource road,” with a 14-foot wide running surface. Construction of the road, well pad, and installation of drainage features should follow the guidelines provided in the Surface Operating Standards for Oil and Gas Development, 4th Edition. Although some sediment, salts, and other non-point source contaminants may be transported off site and eventually reach perennial waters, the mitigation provided in the Surface Use Plan and the Conditions of Approval would reduce the potential to have excessive sediments and salts in runoff water from the site.

Mitigative Measures: None.

Name of specialist and date: Barb Blackstun 06/06/07

WETLANDS/RIPARIAN ZONES

Affected Environment: There are no wetlands or riparian zones near either proposed well location.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Timothy Novotny 06/07/07

WILD & SCENIC RIVERS

Affected Environment: Not present.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 06/11/07

WILDERNESS, WSAs

Affected Environment: Not present.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Roy McKinstry 06/11/07

NON-CRITICAL ELEMENTS

FLUID MINERALS

Affected Environment: The proposed action is in favorability zone 4 (highest for oil and gas potential). This well would penetrate the Browns Park Formation, the Green River Formation, and then potentially all of the following downhole in stratigraphic sequence: the Wasatch, Fort Union, Lance, Lewis Shale, and Mesaverde Formations.

Summary:

The Browns Park and Green River Formations both have the potential to yield fresh water. The main body of the Wasatch consists of claystone, shale, mudstone, and sandstone. Samples from lower part of the Fort Union Formation at two localities in Rio Blanco Co, Colorado contained pollen that yielded Paleocene ages (Hail, 1990; 1993). Bituminous coal beds and stringers are found throughout the Wasatch (Tschudy, 1971), Fort Union, Lewis Shale, and Mesaverde Formations. These coal seams have little value as a mineable commodity, but could contribute to the production of coal bed methane (CBM) and therefore must be isolated and protected from communication. The Lewis Shale is of Campanian age based on Ammonite biostratigraphy and is coeval to the Meeteetse Formation of Wyoming (Roehler, 1993). The Mesaverde is considered to be of Campanian age based on palynomorphs (Scott, 1990). It consists of white and brown soft sandstone, gray sandy shale, coal, and carbonaceous shale (Love et al., 1995). The Mesaverde Formation overlies the Ericson Sandstone and underlies the Lewis shale, which is coeval to the Fox Hills Sandstone. It should be noted that the hydrology for coal bed methane

production within the Sand Wash geologic basin is unfavorable even though the gas resource is large (Scott, et al., 1995). The Mesaverde (Almond) in this area is mainly coastal swamp and lagoon deposits with two transgressive shoreline deposits pinching out in a northwesterly direction near the top of the formation. It can be field identified, by the frequent presence of Ophiomorpha ichnofossils indicating a nearshore depositional environment, often conducive to hydrocarbon reservoir characteristics.

Environmental Consequences: None. The Drilling Plan follows Onshore Order #2. Operator committed measures in the Eight Point Drilling Plan will bring cement back to surface and cementing the production casing should prevent communication and commingling.

Mitigative Measures: None.

Name of specialist and date: Marilyn D. Wegweiser 06/05/07

References:

Hail, W.J., Jr., and Barnum, B.E., 1993, Geologic map of the Divide Creek quadrangle, Rio Blanco and Moffat Counties, Colorado: U.S. Geological Survey Miscellaneous Field Studies Map, MF-2232, 1 sheet, scale 1:24,000

Hail, W.J., Jr., 1990, Geology of the lower Yellow Creek area, northwestern Colorado, IN Evolution of sedimentary basins; Uinta and Piceance basins: U.S. Geological Survey Bulletin, 1787-O, p. O1-O45.

Love, J.D., Weitz, J.L., and Hose, R.K., 1955, Geologic map of Wyoming: U.S. Geological Survey, scale 1:500,000

Roehler, H.W., 1993, Stratigraphy of the Upper Cretaceous Fox Hills Sandstone and adjacent parts of the Lewis Shale and Lance Formation, east flank of the Rock Springs uplift, southwest Wyoming: U.S. Geological Survey Professional Paper, 1532, 57 p., 5 pl., (incl. geologic maps, scale 1:100,000)
[http://ngmdb.usgs.gov/Prodesc/proddesc_4923.htm]

Scott, R.W., Jr., and Pantea, M.P., 1990, Geologic map of the Texas Creek quadrangle, Rio Blanco County, Colorado: U.S. Geological Survey Miscellaneous Field Studies Map, MF-2134, 1 sheet, scale 1:24,000

Tschudy, R.H., 1976, Pollen changes near the Fort Union-Wasatch boundary, Powder River basin, IN Geology and energy resources of the Powder River [basin]: Wyoming Geological Association Field Conference Guidebook, no. 28, p. 73-81.

PALEONTOLOGY

Affected Environment: Paleontological resources in Sec. 33, T12N, R98W and Sec. 4, T10N, R98W are comprised of rocks of the Browns Park Formation and the Cathedral Bluffs Tongue of the Wasatch Formation overlain by Quaternary alluvium.

The Browns Park Formation has produced significant vertebrate fossils (Honey and Izett, 1988) as well as insect tracks (Lockley, pc. 2007). Vertebrate fauna known from the Browns Park Formation in Moffat County include the following genera: Tomarctus, Megahippus, Parahippus, Blickomylus, Protolabis, Michenia, Procamelus, and Meryceros.

Environmental Consequences: PYFC: Class 3b – Unknown Potential. The Browns Park Formation is known to produce significant paleontological resources. In the area of the proposed action those resources have not been well studied. Wasatch Formation stratigraphic units have produced significant vertebrate fauna in the nearby Uintah Basin. These Wasatch Formation Units, primarily the “Uintah A, B, and C” members, exhibit geologic features and have preservational conditions that suggest significant vertebrate fossils and potentially invertebrate fossils could be present in northwestern Colorado as well, but little information about the paleontological resources of the area of the proposed is known. This may indicate the unit or area is poorly studied and field surveys may uncover significant finds. The unknown potential of the units in this Class should be carefully considered when developing any mitigation or management approaches.

(1) Management concern for paleontological resources is moderate; or cannot be determined from existing data.

(2) Surface-disturbing activities may require field assessment to determine appropriate course of action.

Unusual occurrences of plant and invertebrate fossils should be recorded, and representative examples may be collected if appropriate. Concentrations of common plant or invertebrate fossils that may be suitable for public hobby collection areas should also be noted and reported to the Field Office paleontology program coordinator or paleontology program lead. Additional mitigation measures may be appropriate in some cases for these types of localities.

If vertebrate fossil material is discovered during construction activities, surface disturbing actions shall halt until an assessment of the find is completed and appropriate protection measures taken. The Authorized Officer should be notified as soon as possible of the discovery and any mitigation efforts that were undertaken. If the find cannot be mitigated within a reasonable time, the concurrence of the Authorized Officer or official representative for a longer work stoppage must be obtained. Work may not resume until approval is granted from both the PI or Field Agent and the Authorized Officer.

Mitigative measures: During operations, if any vertebrate paleontological resources are discovered, in accordance with Section 6 of Form 3100-11 and 43 CFR 3162.1, all operations affecting such sites shall be immediately suspended, and all discoveries shall be left intact until authorized to proceed by the Authorized Officer. The appropriate Authorized Officer of the Craig BLM office shall be notified within 48 hrs of the discovery, and a decision as to the preferred alternative/course of action will be rendered.

Name of specialist and date: Marilyn D. Wegweiser 06/05/07

References:

Honey, J. G. and Izett, G. A. 1988. Paleontology, Taphonomy, and Stratigraphy of the Browns Park Formation, (Oligocene and Miocene) Near Maybell, Moffat County, Colorado. U.S. Geological Survey Professional Paper 1358, 52 p.

Sears, J.D., and Bradley, W.H., 1924, Relations of the Wasatch and Green River formations in northwestern Colorado and southern Wyoming, with notes on oil shales in the Green River formation, IN Shorter contributions to general geology, 1923-24: U.S. Geological Survey Professional Paper, 132-F, p. F93-F107.

Roehler, H.W., 1991, Revised stratigraphic nomenclature for the Wasatch and Green River Formations, IN Geology of the Eocene Wasatch, Green River, and Bridger (Washakie) Formations, greater Green River basin, Wyoming, Utah, and Colorado: U.S. Geological Survey Professional Paper, 1506-B, p. B1-B38.

REALTY AUTHORIZATIONS

Affected Environment: The project route for the Coffeepot Well #31-33 crosses or is adjacent to existing realty authorization COC0128058 (pipeline).

Environmental Consequences: Existing pipelines could be accidentally damaged during construction activities. Impacts would be temporary until the damage is repaired.

Mitigative Measures: Damage to existing pipelines would be minimized by:

- Utilize the “One Call” system to locate and stake the centerline and limits of all underground facilities in the area of proposed excavations.
- Provide 48 hour notification to the owner/operator of facilities prior to performing any work within 10 feet of buried or above ground pipelines.

Name of specialist and date: Louise McMinn 06/04/07

SOILS

Affected Environment: The proposed Coffeepot well site and access road are found within the Vermillion-Landspring complex soil mapping unit. Slopes within this unit average 3 to 25 percent. These soils are moderately deep and well drained. They are formed in residuum derived from sandstone and siltstone. Runoff is rated as medium to high.

The proposed Yellow Cat well site is found within the Fenster-Thenipel complex soil mapping unit. Slopes within this unit average 3 to 12 percent. They are found on the footslope and toeslope of hills and fans. These well drained soils are formed in alluvium and loess derived from siltstone. Runoff is rated as medium. The access road to the Yellow Cat well crosses through both the Fenster-Thenipel complex and the Vermillion-Landspring complex.

Environmental Consequences: The construction and operation of the two Julander wells would affect soils within and immediately adjacent to the proposed areas of disturbance. Road and well pad construction should follow the design standards and recommendations outlined in the Surface Operating Standards for Oil and Gas Development, 4th Edition.

Increased soil erosion from wind and water would occur during construction of the well pads and access roads. Erosion would continue throughout the operational life of the wells. Loss of topsoil, soil compaction, and possible increases in sediment loads to drainages are impacts most likely to occur. Vegetation and soil would be removed from approximately 17 acres of land. Soil productivity would decline due to reduced soil microbial activity, impaired water infiltration, mixing of soil horizons, top soil loss, and introduction of weeds.

Soil erosion would be reduced to an acceptable level with the mitigation described in the Surface Use Plan, and Conditions of Approval in the approved APDs. Soil loss from construction would be greatest shortly after project start and would decrease in time as a result of stabilization through revegetation and reclamation of disturbed areas.

Mitigative Measures: None

Name of specialist and date: Barb Blackstun 06/06/07

VEGETATION

Affected Environment: Coffee Pot Springs Unit Well # 31-33: The proposed well would be located in a loamy 7-10" precipitation range site. This range site typically supports a sagebrush/perennial grass plant community. Dominant species present include Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), bluebunch wheatgrass (*Pseudoroegneria spicata*), western wheatgrass (*Pascopyrum smithii*), Indian ricegrass (*Oryzopsis hymenoides*), and bottlebrush squirreltail (*Sitanion hystrix*). Shrubs present on the site were shadscale (*Atriplex confertifolia*), white sage (*Krascheninnikovia lanata*), and green rabbitbrush (*Chrysothamnus vicidiflorus*). Forbs were comprised of Hood's phlox

(*Phlox hoodii*), longleaf phlox (*P. longifolia*), various *Aster* spp., desert parsley (*Lomatium* spp.), scarlet globemallow (*Sphaeralcea coccinea*), desert buckwheat (*Eriogonum* spp.), and prickly pear cactus (*Opuntia fragilis*). The vegetation on this site exhibited good vigor.

Yellowcat Federal Unit Well # 32-4: The proposed well would also be located in a loamy 7-10" precipitation range site. This range site typically supports a sagebrush/perennial grass plant community. Dominant species present include Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), western wheatgrass (*Pascopyrum smithii*), Indian ricegrass (*Oryzopsis hymenoides*), and Sandberg bluegrass (*Poa sandbergii*). Shrubs present on the site were shadscale (*Atriplex confertifolia*), budsage (*Artemisia spinescens*), spiny horsebrush (*Tetradymia spinosa*) and green rabbitbrush (*Chrysothamnus vicidiflorus*). Forbs were comprised of Hood's phlox (*Phlox hoodii*), longleaf phlox (*P. longifolia*), various *Aster* spp., desert parsley (*Lomatium* spp.), scarlet globemallow (*Sphaeralcea coccinea*), desert buckwheat (*Eriogonum* spp.), and prickly pear cactus (*Opuntia fragilis*). The proposed well pad appeared to have been previously disturbed from a sheep bedding ground. There was evidence of heavy sheep use on the budsage and the proposed well pad site was covered in sheep manure. The site was becoming weedy with tansymustard.

Environmental Consequences: The proposed action would remove approximately 16.5 acres of native vegetation for the wells and access roads. This removal would be minor in the larger plant community. All or part of the area disturbed could be reclaimed in the short term if the well fails to produce, but if the well produces, a portion of the total disturbance would be reclaimed as the drilling pad would be shrunk down after well completion. The developed access road would remain if the well is a producing well. In the long term, after the life of the producing well has ended, all disturbances would be reseeded to native vegetation per the drilling and surface use plans. It would be imperative that all COAs regarding weed control and revegetation are followed to avoid increasing cheatgrass (*Bromus tectorum*) and halogeton (*Halogeton glomeratus*) presence on and in areas surrounding the Proposed Action. As long as weeds are controlled and all disturbed areas are reseeded to prescribed mixes of native plant species and establishment is ensured as required, the negative impacts to the native plant communities would be effectively mitigated.

Mitigative Measures: None.

Name of specialist and date: Kathy McKinstry 06/04/07

WILD HORSE & BURRO MANAGEMENT

Affected Environment: One of the proposed wells, the Yellowcat Federal Unit Well # 32-4 would be in the Sand Wash wild horse herd management area (HMA). The Sand Wash HMA currently supports a population of 277 adult wild horses and 34 foals.

The majority of wild horse mares in the Sand Wash herd foal between March and the end of June. Mares that are soon-to-foal often leave their band and isolate themselves during

foaling, and for a number of hours following foaling. Newly born foals are on their feet within a few hours after birth but are unable to travel any distance for at least 48 hours. Newborn foals are vulnerable to human disturbance. Mares vary in their maternal instincts. While the majority of mares cannot easily be separated from their foals, young mares, and mares with less maternal instinct may leave their foals if the rest of their band is spooked and runs, or if the mare is spooked when she is alone with a newborn foal. Newborn foals less than 2 months of age will not survive without their mare. Foals between 2 and 4 months rarely survive when separated from their mare.

Environmental Consequences: The highest likelihood of impacts to the herd would occur during foaling season (March through June), and during the dry summer and early fall months (mid-July through September). Foals could become separated from their mares when bands are spooked by human presence associated with the proposed action, or could be trampled by other horses in the band when the band runs from human disturbance.

Increased human and motorized activity associated with the proposed action could disrupt and displace wild horses. Wild horses try to avoid motor vehicle movement and human activities within their range. Oil and gas activities within the Sand Wash HMA may cause wild horses to alter their distribution patterns and concentrate in areas with less human disturbance which may lead to over utilization of forage in these areas. Energy development in the HMA may lead to an overall reduction in the quantity and quality of wild horse forage and habitat. As the forage and habitat is reduced, competition for remaining habitat may increase between wild horses, livestock, and wildlife.

Traffic adjacent to established wild horse and big game trails leading to water, or traffic crossing over preferred wild horse/big game trails, as well as human presence in close proximity to water sources could result in undue stress to the horse bands, particularly to wet mares, young foals, and old horses. Bands would either have to wait for human disturbance to leave the water sources, or they would be forced to travel to other available water locations. Horse bands at unfamiliar water sources would be forced to compete with resident bands. The result of increased fighting between bands could result in heightened foal mortality, adult injury, and disruption of band integrity.

If the Yellow Cat Federal Unit Well does not produce, direct impacts would cease following reclamation of the well site, and the departure of humans and equipment. Horses may benefit from increased forage resulting from the disturbed areas being successfully reclaimed after drilling completion.

Mitigative Measures:

1. To protect wild horses during foaling season no helicopter or motor vehicle use is allowed for construction or drilling operations in the wild horse herd management area between March 2 and June 30.

2. To decrease the likelihood of wild horses being displaced from dependable water sources, employees will not camp or leave vehicles parked on developed or undeveloped water sources in the HMA.

Name of specialist and date: Kathy McKinstry 06/04/07

WILDLIFE, TERRESTRIAL

Affected Environment: The proposed well sites provide year round habitat for mule deer and pronghorn antelope in all but the most severe winters. Elk might occasionally be found around the proposed well locations. A variety of small mammals, reptiles, and songbirds may also be found in the project area.

Environmental Consequences: Construction and drilling activities associated with the development of these two wells is likely to displace big game animals from the project area. Undisturbed habitat surrounding the project area would be capable of supporting displaced animals. A loss of approximately 16.5 acres of habitat is expected as a result of the development of these two wells.

Small mammals such as rabbits do not appear to have been impacted by the development which has occurred in the project area. Construction activities associated with access roads and well pad development could result in the entrapment and death of burrowing mammals and reptiles. If conducted during the nesting period (February – August) these activities could result in nest abandonment or destruction. This would not result in any negative impacts to any species populations.

Mitigative Measures: None.

Name of specialist and date: Timothy Novotny 06/07/07

OTHER NON-CRITICAL ELEMENTS:

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Forest Management	BB 06/01/07		
Hydrology/Ground		MW 06/05/07	
Hydrology/Surface		BB 06/06/07	
Paleontology			See Paleontology
Range Management		KM 06/04/07	
Realty Authorizations			See Realty
Recreation/Transportation	RM 06/11/07		
Socio-Economics		LM 06/04/07	
Solid Minerals		JAM 06/06/07	

Visual Resources		RM 06/11/07	
Wild Horse & Burro Mgmt			See Wild Horse
Wildlife, Aquatic	TN 06/07/07		

CUMULATIVE IMPACTS SUMMARY: Cumulative impacts may result from the development of the Yellow Cat Well # 32-4 when added to non-project impacts that result from past, present, and reasonably foreseeable future actions. The potential exists for future oil and gas development throughout the Sand Wash area. Currently no producing wells exist within a one-mile radius of the proposed well. Other past or existing actions near the project area that could have influence on the landscape include wildfire, recreation, wild horses, hunting, grazing, and ranching activities. Continued exploration activity and successful drilling has the strong potential to disrupt the natural behavior of wild horses in the HMA. Increased exploration and mining activity, when coupled with increases in recreational activity, has the potential of critically displacing and disrupting the behavior of horses in the herd. Continued increases in drilling and recreational activity could be mitigated through completion of an Environmental Impact Statement analyzing the long term effects of human pressure on wild horses in this HMA.

Cumulative impacts may result from the development of the Coffepot Springs Well # 31-33 when added to non-project impacts that result from past, present, and reasonably foreseeable future actions. The potential exists for future oil and gas development throughout the area. Currently one producing well exists within a one-mile radius of the proposed well. One plugged and abandoned well is located within a one-mile radius. Past or existing actions near the project area that would influence the landscape include wildfire, recreation, wild horses, hunting, grazing, and ranching activities.

Surface disturbance associated with oil and gas activity would increase the potential for erosion and sedimentation. Only a small reduction in available forage would be anticipated. Some wildlife species and wild horses may be temporarily displaced by construction at the well site, access road, and future pipeline routes, but should return once construction is completed. Displacement of hunters and recreationists during the short-term construction and drilling periods would occur. Contrasts in line, form, color, and texture from development would impact the visual qualities on the landscape.

The cumulative effects of projected oil and gas development are minimized through Best Management Practices identified in the Surface Use Plan of the APD and the BLM required mitigation in the Conditions of Approval for the APD. Proper construction and drilling practices must comply with federal and state environmental regulations. All oil and gas wells in the area would be completed in accordance with Onshore Order No. 2. Reasonably foreseeable mineral development would occur under the guidelines of the Little Snake Resource Management Plan and the Colorado Oil and Gas Leasing and Development EIS.

STANDARDS:

PLANT AND ANIMAL COMMUNITY (animal) STANDARD: The proposed project area provides productive habitat for a variety of wildlife species. As mitigated, this project will not negatively impact any species populations. This standard is currently being met and will continue to be met in the future.

Name of specialist and date: Timothy Novotny 06/07/07

SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (animal) STANDARD: There are no threatened, endangered species or habitat for such species present within the project area. The project does contain breeding and nesting habitat for greater sage-grouse, a BLM special status species. The Yellow Cat # 32-4 well could have an impact on the sage-grouse lek located approximately ¼ mile west of the well pad. Rerouting an existing road that traveled through the lek site should benefit this lek site by reducing disturbances during the breeding season. This standard will continue to be met in the future.

Name of specialist and date: Timothy Novotny 06/07/07

PLANT AND ANIMAL COMMUNITY (plant) STANDARD: The proposed action would completely remove 16.5 acres of native vegetation. As long as the COAs concerning revegetation and weed control are faithfully adhered to, the native plant community would eventually return and weeds such as halogeton would be kept in check, and thus meet this standard.

Name of specialist and date: Kathy McKinstry 06/04/07

SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (plant) STANDARD: There are no federally listed threatened or endangered or BLM sensitive plant species, or their habitats, that would be affected by the proposed action. This standard does not apply.

Name of specialist and date: Hunter Seim 06/01/07

RIPARIAN SYSTEMS STANDARD: There are no wetlands or riparian zones near either proposed well location. This standard does not apply.

Name of specialist and date: Timothy Novotny 06/07/07

WATER QUALITY STANDARD: The proposed action will meet the public land health standard for water quality. Interim reclamation of the unused area on the well pads will be completed to minimize sheet and rill erosion from the well sites. When the well pads and access roads are no longer needed for production operations, the disturbed area will be reclaimed. No stream segments near this project are listed as impaired.

Name of specialist and date: Barb Blackstun 06/06/07

UPLAND SOILS STANDARD: The proposed action would not meet the upland soil standard for public land health, and it is not expected to while the well pads and access roads are used for drilling and production operations. The disturbed area will not exhibit characteristics of a healthy soil. Mitigation detailed in the APD and standards from the “Gold Book” will help to reduce erosion. Upland soil health will return to the well pads and access roads after the project areas have been successfully reclaimed.

Name of specialist and date: Barb Blackstun 06/06/07

PERSONS/AGENCIES CONSULTED: Uintah and Ouray Tribal Council, Colorado Native American Commission, Colorado State Historic Preservation Office.

FINDING OF NO SIGNIFICANT IMPACT (FONSI)
EA CO-100-2007-060

Based on the analysis of potential environmental impacts contained in the EA and all other available information, I have determined that the proposal and the alternatives analyzed do not constitute a major Federal action that would adversely impact the quality of the human environment. Therefore, an EIS is unnecessary and will not be prepared. This determination is based on the following factors:

1. Beneficial, adverse, direct, indirect, and cumulative environmental impacts have been disclosed in the EA. Analysis indicated no significant impacts on society as a whole, the affected region, the affected interests, or the locality. The physical and biological effects are limited to the Little Snake Resource Area and adjacent land.
2. Public health and safety would not be adversely impacted. There are no known or anticipated concerns with project waste or hazardous materials.
3. There would be no adverse impacts to regional or local air quality, prime or unique farmlands, known paleontological resources on public land within the area, wetlands, floodplain, areas with unique characteristics, ecologically critical areas, or designated Areas of Critical Environmental Concern.
4. There are no highly controversial effects on the environment.
5. There are no effects that are highly uncertain or involve unique or unknown risk. Sufficient information on risk is available based on information in the EA and other past actions of a similar nature.
6. This alternative does not set a precedent for other actions that may be implemented in the future to meet the goals and objectives of adopted Federal, State, or local natural resource related plans, policies, or programs.
7. No cumulative impacts related to other actions that would have a significant adverse impact were identified or are anticipated.
8. Based on previous and ongoing cultural surveys, and through mitigation by avoidance, no adverse impacts to cultural resources were identified or anticipated. There are no known American Indian religious concerns or persons or groups who might be disproportionately and adversely affected as anticipated by the Environmental Justice Policy.

9. No adverse impacts to any threatened or endangered species or their habitat that was determined to be critical under the Endangered Species Act were identified. If, at a future time, there could be the potential for adverse impacts, treatments would be modified or mitigated not to have an adverse effect or new analysis would be conducted.

10. This alternative is in compliance with relevant Federal, State, and local laws, regulations, and requirements for the protection of the environment.

DECISION AND RATIONALE:

I have determined that approving this APD is in conformance with the approved land use plan. It is my decision to implement the project with the mitigation measures provided in the Application for Permit to Drill and the Conditions of Approval. The project will be monitored as stated in the Compliance Plan outlined below.

MITIGATION MEASURES: The mitigation measures for this project are found in the file room of the Little Snake Field Office. The APD 13-point surface use plan, well location maps, and the Conditions of Approval are found in the well case file labeled COC067189, Well # 31-33 and COC069369, Well # 32-4.

COMPLIANCE PLAN(S):

Compliance Schedule

Compliance will be conducted during the construction phase and drilling phase to insure that all terms and conditions specified in the lease and the approved APD are followed. In the event a producing well is established, periodic inspections as identified through the Inspection and Enforcement Strategy and independent well observations will be conducted. File inspections will include a review of all required reports and the Monthly Report of Operations will be evaluated for accuracy.

Monitoring Plan

The well location and access road will be monitored during the term of the lease for compliance with pertinent Regulations, Onshore Orders, Notices to Lessees, or subsequent COAs until final abandonment is granted; monitoring will help determine the effectiveness of mitigation and document the need for additional mitigative measures.

Assignment of Responsibility

Responsibility for implementation of the compliance schedule and monitoring plan will be assigned to the Fluid Mineral staff in the Little Snake Field Office. The primary inspector will be the Petroleum Engineering Technician, but the Petroleum Engineer, Natural Resource Specialist, Realty Specialist, and Land Law Examiner will also be involved.

SIGNATURE OF PREPARER:

DATE SIGNED:

SIGNATURE OF ENVIRONMENTAL REVIEWER:

DATE SIGNED:

SIGNATURE OF AUTHORIZED OFFICIAL:

DATE SIGNED:

ADVISORY NARRATIVES AND CONDITIONS OF APPROVAL FOR APPLICATIONS

FOR PERMIT TO DRILL (APDs)

Operator: Well No.:

Location: NESW Sec., TN, RW Lease No.: COC

Little Snake Field Office

The Bureau of Land Management, Little Snake Field Office, address and telephone contacts are:

Address:	455 Emerson Street, Craig, CO 81625
Office Phone:	(970) 826-5000 Fax: (970) 826-5002
Petroleum Engineer:	Stanley Eng, Office Phone (970) 826-5075
Natural Resource Specialist:	Barb Blackstun Office Phone (970) 826-5097
Geologist:	Fred Conrath, Office Phone (970) 826-5098 Home Phone (970) 870-9148
Assistant Field Manager:	Jerry Strahan, Office Phone (970) 826-5099

All lease and/or unit operations are to be conducted in such a manner to ensure full compliance with the applicable laws, regulations (43 CFR Part 3160), Onshore Oil and Gas Orders No. 1, 2, 3, 4, 5, 6 and 7, Notice to Lessees, and the approved plan of operations. Approval of this application does not relieve you of your responsibility to obtain other required federal, state, or local permits. A copy of the approved Form 3160-3 and the pertinent drilling plan, along with any advisory narratives and conditions of approval, shall be available at the drill site to authorized representatives at all times. The operator is considered fully responsible for the actions of his subcontractors.

Your review and appeal rights are contained in 43 CFR 3165.3 and 3165.4.

CONDITIONS OF APPROVAL

STANDARD CONDITIONS

1. The Little Snake Field Office will be given 48-hour notification prior to commencing construction and/or reclamation work. Contact the Little Snake Field Office (970) 826-5000 to report work, which will commence.
2. Notify Little Snake Field Office at (970) 826-5000 at least **48** hours in advance to witness running and cementing of surface casing and testing of the BOPE.
3. The notice of spud will be reported orally to the Little Snake Field Office (970) 826-5000 at least **24** hours after spudding. This notice shall include spud date, time, details of spud (hole, casing, cement, etc.), API well number, and date the rotary rig was moved on location. If the spudding occurs on a weekend or holiday, wait until the following regular workday to make this report. The oral notice shall be followed by written notification within 5 working days.
4. No hazardous materials, hazardous wastes, or trash will be disposed of on public lands or on private surface overlying the oil and gas lease. If a release does occur, it will be reported to the Little Snake Field Office immediately at (970) 826-5000.
5. The area to be utilized for storage of the reserve pit overburden will have the brush cleared and the topsoil salvaged before excavation of the reserve pit commences.

6. All survey stakes representing the leveled drill pad, the crest of excavations, the toe of embankments, the reserve pit, and the access road will be in place prior to construction. Staking shall include the well location, two 200-foot directional reference stakes, the exterior dimensions of the drill pad, reserve pit and other areas of surface disturbance, cuts and fills, and centerline flagging of new roads with road flagging being visible from one to the next.
7. Construction activities will not be allowed to commence if the topsoil cannot be separated from the subsoil during adverse environmental conditions (i.e. when soils are frozen or muddy).
8. Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.
9. Drainage for runoff water will be provided to divert runoff water away from the reserve pit, cut portions of the well location and the topsoil stockpile. Runoff water that concentrates and forms channels on the well location will be diverted and/or dispersed to prevent erosion of the fill slopes. Any ditches designed to provide runoff drainage will be constructed on a minimal grade and will release water onto undisturbed ground without causing accelerated erosion. The operator will take additional measures if erosion is occurring within the runoff water drainage system.
10. If fossils are discovered during construction or other operations, all activity in the area will cease and the Field Office Manager will be notified immediately. An assessment of significance will be made within an agreed timeframe. Operations will resume only upon written notification by the Authorized Officer.
11. STANDARD STIPULATION: If cultural or paleontological resources are discovered during exploration operations under this license, the licensee shall immediately notify the Field Officer Manager and shall not disturb such discovered resources until the Field Officer Manager issues specific instructions.
 - a. Within 5 working days after notification, the Field Office Manager shall evaluate any cultural resources discovered and shall determine whether any action may be required to protect or to preserve such discoveries.
 - b. The cost of data recovery for cultural resources discovered during exploration operations shall be borne by the licensee, if the licensee is ordered to take any protective measures. Ownership of cultural resources discovered shall be determined in accordance with applicable law.
 - c. The operator is responsible for informing all persons who are associated with the operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are encountered or uncovered during any project activities, the operator is to immediately stop activities in the immediate vicinity of the find and immediately contact the Authorized Officer (970) 826-5087. Within five working days the Authorized Officer will inform the operator as to:
 1. Whether the materials appear eligible for the National Register of Historic Places;
 2. The mitigation measures the operator will likely have to undertake before the identified area can be used for project activities again and,
 - d. If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the Authorized Officer will assume responsibility for whatever recordation, and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation costs. 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, the operator will then be allowed to resume construction.
 - e. Pursuant to 43 CFR 10.4(g) (Federal Register Notice: Monday December 4, 1995, Vol 60, No. 232) the

holder of this authorization must notify the Authorized Officer, by telephone (970) 826- 5087, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the Authorized Officer.

12. The reserve pit will be designed to exclude runoff water and maintain a 2-foot freeboard between the maximum fluid level and the lowest point of containment. The reserve pit will not be used for disposal of any materials or fluids, except for materials or fluids specifically addressed in the drilling program or having a subsurface origin. If oil or oily substance is in the reserve pit, it must be removed within 30 days after the drilling rig is removed. Netting will be installed if oily substance is present in the reserve pit.
13. The perimeter of the reserve pit and production pits, if any, will be fenced with woven wire with 2 strands of barbed wire, properly spaced, on the top and all held in place by side posts and corner H-braces to inhibit entry by livestock and wildlife. The fence will be maintained until backfilling or removal of facilities occurs.
14. In the event downhole operations threaten to exceed the required 2-foot freeboard, regarding reserve pit fluids, immediate notification will be provided to the Authorized Officer with concurrent steps taken to minimize the introduction of additional fluids, until alternative containment methods can be approved.
15. Reserve pit fluids will be allowed to evaporate through one entire summer season (June-August) after drilling is completed, unless an alternative method of disposal is approved. After the fluids disappear, the reserve pit mud will be allowed to dry sufficiently to allow backfilling. The backfilling of the reserve pit will be completed within 30 days after dry conditions exist and will meet the following minimum requirements:
 - a. Backfilling will be done in such a manner that the mud and associated solids will be confined to the pit and not squeezed out and incorporated in the surface materials.
 - b. There will be a minimum of 5 feet of cover (overburden) on the pit.
 - c. When the work is completed, the pit areas will support the weight of heavy equipment without sinking and over time shall not subside over 6-inch depth.
16. If installed, production facilities will be located on cut portions of the existing drill pad.
17. In the event production is established, all land surfaces that are to remain free of vegetation (roads and well location) will be monitored for and protected from wind erosion; dry powdery soil will be treated to minimize wind erosion. The unused disturbed areas surrounding the well location will be re-contoured to appropriate confirmation as soon as possible. Some or all of the stockpiled topsoil will be evenly distributed over these re-contoured areas. Brush cleared prior to construction of the well site shall be scattered back over the re-contoured area.
18. Prior approval is required to remove reserve pit fluids from the reserve pit; a request of this type will need to include the destination of the fluids and if the destination is not a State approved facility, the request will include State approval of the destination.
19. All pits, cellars, rat holes and other bore holes unnecessary for further lease operations, excluding the reserve pit, will be backfilled immediately after the drilling rig is released. Pits, cellars and/or bore holes that remain on location must be fenced as specified for the reserve pit in the applicant's Surface Use Plan.
20. In the event a producing well is established, all new production equipment, which has open-vent exhaust systems, will have these exhaust systems constructed in such a way to prevent the entry and perching of birds and bats.
21. All permanent structures (on-site for six months or longer) constructed or installed (including oil well pumpjacks) will be painted a flat, non-reflective, earthtone color to match the standard environmental colors, as

determined by the Rocky Mountain Five-State Interagency Committee. All facilities will be painted within six months of installation. Facilities required to comply with OSHA (Occupational Safety and Health Act) will be excluded.

22. Surface facilities should appear to blend in to the existing landscape to the greatest possible extent. Facilities should not be located on ridgelines or extend above them. Facilities should be minimal in size (or located underground) and colored and texture to blend in with the surroundings.
23. A containment berm must be installed around all storage tanks, including temporary tanks. Compaction and construction of the berm surrounding the tank or tank battery will be designed to prevent lateral movement of fluids through the utilized materials, prior to storage of fluids. The berm must be constructed to contain at minimum 110 percent of the storage capacity of the largest tank within the berm. All loading lines will be placed inside the berm.
24. Control of noxious weeds will be required through successful vegetation establishment and/or herbicide application. It is the responsibility of the lease operator to insure compliance with all local, state, and federal laws and regulations, as well as labeling directions specific to the use of any given herbicide.
25. Reclamation Performance Standard

The lessee is required to use the reclamation practices necessary to reclaim all disturbed areas. Reclamation will ensure surface and subsurface stability, growth of a self-regenerating permanent vegetative cover and compatibility with post land use. The vegetation will be diverse and of the same seasonal growth as adjoining vegetation. Post land use will be determined by the Authorized Officer but normally will be the same as adjoining uses.

Reclamation practices which must be applied or accomplished are: re-grading to the approximate original contour, effectively controlling noxious weeds, separating, storing and protecting topsoil for redistribution during final abandonment, seeding and controlling erosion. If topsoil is not present, or quantities are insufficient to achieve reclamation goals, a suitable plant growth media will be separated, stored and protected for later use. Reclamation will begin with the salvaging of topsoil and continue

until the required standards are met. If use of the disturbed area is for a short time (less than one year), practices, which ensure stability, will be used as necessary during the project, and practices needed to achieve final abandonment will commence immediately upon completion of the approved activity use and be completed, with the exception of vegetative establishment, within one year.

If use of the area is for longer periods of time (greater than one year), interim reclamation is required on the unused areas. Interim reclamation of the unused areas will begin immediately upon completion of the permanent facility(s) and be completed, with exception of vegetative establishment, within one year. For both short and long term projects vegetative establishment will be monitored annually. If the desired vegetation is not established by the end of the second growing season, cultural practices necessary for establishment will be implemented prior to the beginning of the next growing season. Interim reclamation, unless otherwise approved, will require meeting the same standards as final abandonment with the exception of original contour, which may be only partially achievable.

Annual reports consisting of reclamation practices completed and the effectiveness of the reclamation will be provided to the Little Snake Field Office. The first report will be due in January following initiation of reclamation practices and annually thereafter until final abandonment is approved.

There are numerous reclamation practices and techniques that increase the success rate of reclamation and stabilization. With the exception of those stated above, it is the lessee's prerogative to use those (s)he chooses to accomplish the objective. However, it is recommended that state-of-the-art reclamation, stabilization, and management practices be used to achieve the desired objective in a timely and cost-effective manner.

The following definitions and measurements will be used to accomplish and determine if reclamation has been achieved:

Permanent vegetative cover will be accomplished if the basal cover of perennial species, adapted to the area, is at least ninety (90) percent of the basal cover of the undisturbed vegetation of adjoining land or the potential basal cover as defined in the Soil Conservation Service Range Site(s) for the area.

Diverse will be accomplished if at least two (2) perennial genera and three (3) perennial species, adapted to the area, make up the basal cover of the reclaimed area in precipitation zones thirteen (13) inches or less and three (3) perennial genera and four (4) perennial species in precipitation zones greater than thirteen (13) inches. One species will not make up more than fifty (50) percent of the perennial vegetation by basal cover.

Self-regenerating and adapted to the area will be evident if the plant community is in good vigor, there is evidence of successful reproduction, and the species are those commonly used and accepted in the area.

Surface stability will be accomplished if soil movement, as measured by deposits around obstacles, depths of truncated areas, and height of pedestalling, is not greater than three tenths (0.3) of an inch and if erosion channels (rills, gullies, etc.) are less than one (1) inch in depth and at intervals greater than ten (10) feet.

If this standard is not met by the end of the second growing season, two alternatives exist depending on the severity of the erosion:

If erosion were greater than two (2) times the allowable amount, corrective action would have to be taken by the responsible company at that time.

If erosion is less than or equal to two (2) times the allowable amount, and it is determined the erosion occurred during vegetative establishment and the site may become stable, no corrective action would be required at that time. Another check (and measurement) would be performed a year later to determine if stability standards had been met. If the original measurements have not increased by more than the allowed standard, the standard would be considered met. However, if the increase were greater than the allowed standard, corrective action would be required.

Subsurface stability (mass wasting event) is of concern if disturbance has included excavation over four (4) feet in depth and greater than 10,000 square feet in area on slopes thirty five (35) percent and greater, or on any erosion-prone slope (Danforth Hills, Vermillion Bluffs, and badland areas). When these conditions occur, length of liability for reclamation and final abandonment will continue for ten (10) years following re-contouring to original contour or for such time that climatic patterns provide two (2) consecutive years in which measurable precipitation totals at least 120 percent of average from October 1 through September 30, as measured by data averaged from nearby regional weather stations.

The Authorized Officer may waive this stipulation, or portions of it. Such waiver will be documented and justified when not applicable, or when objectives are accomplished through another method.

SITE SPECIFIC CONDITIONS

26. A Pesticide Use Proposal (PUP) will be approved prior to application of herbicides and/or other pesticides on Federal surface; contact the Little Snake Field Office to obtain a PUP form to request this authorization. Submit the PUP two (2) months in advance of planned application. In the event you elect to apply herbicide or other pesticide as described and authorized on the approved PUP, you must report this use within 24 hours on Bureau of Land Management form titled Pesticide Application Record.

27. For Yellow Cat Well #32-4 only: No helicopter or motor vehicle use is allowed in the wild horse herd management area between March 2 and June 30 to protect wild horse foaling in the wild horse herd management area. This does not apply to operation and maintenance of production facilities.

28. For Yellow Cat Well #32-4 only: The operator and all employees will be made aware of the boundaries of the Sand Wash HMA and will be alerted that wild horses may be present anywhere within these boundaries. (See attached map of the Sand Wash HMA) Wild horses will not be harassed by chasing or any other invasive activity. Horses that are alone, mares alone with foals, or bands with foals will be avoided.
29. For Yellow Cat Well #32-4 only: Equipment operators will be aware that wild horses will be in the project area and will drive in a manner that minimizes the risk of displacement, injury, or mortality to wild horses. If the operator or any employees observe circumstances out of the ordinary such as injured animals or wild horse foals that appear to be without a mare, the operator and employees are encouraged to contact the LSFO.
30. For Yellow Cat Well #32-4 only: No drilling or development activities are permitted within a one mile radius of wild horse water sources (Shepherd Spring), from March 1 to December 1. (????? – Ask Kathy to elaborate)
31. For Yellow Cat Well #32-4: No surface disturbing activities between March 1 and June 30 in order to protect breeding and nesting sage-grouse
31. The water haul route will coincide with the proposed access road. Any changes in the water source or haul route must have written approval before the changes take place. Routes of travel by all contractors and operators to and from the project areas will utilize only the routes identified in Surface Use Plan for the APD. Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.
32. During periods of adverse conditions such as thawing, heavy rains, snow, or flooding, all construction activities off existing maintained roads that create excessive surface rutting will be suspended.
33. The access road constructed will be crowned, ditched, and maintained to provide a 14 to 16 foot travel way. Total width of authorized disturbance is 40 feet. Water turnouts need to provide additional drainage from the road ditch will be constructed not to exceed 2 percent slope to minimize soil erosion.
34. The operator shall maintain all roads used for access to the lease operation. This shall include installation of additional surfacing and surface drainage control structures whose need was not foreseen during construction.
35. Culverts will be installed keeping the inlet and the outlet on original grade and sized to adequately drain the surface runoff. (18" minimum)
36. Additional mitigative measures will be employed to prevent or reduce accelerated erosion if it begins to occur within or on constructed drainage and diversion ditches or surface drainages affected by the road, well pad, or well pad embankments.
37. Installed pit liners must be impermeable and must be resistant to weather, sunlight, hydrocarbons, aqueous acids, alkalis, salt, fungi, or other substances likely to be contained in the drilling fluids or produced water. The liner will be of sufficient strength and construction to ensure impermeability. Suitable bedding material will be utilized to protect the integrity of the liner.
38. Shale Green from the Standard Environmental Color Chart will be the authorized paint color for permanent well facilities.
39. Prior to beginning any operation for this well, which will result in additional surface disturbance, the operator will submit a proposal on Form 3160-5 (Sundry Notice) to the LSFO.

REGULATORY REMINDERS

- A. This permit is valid for a period of one year from the date of approval. Any requests for extensions must be submitted prior to the end of the one-year period. If the permit terminates, any surface disturbance created under the permit must be rehabilitated in accordance with the approved plan within 90 days of termination, unless otherwise approved by the Authorized Officer. An expired permit may be reinstated at the Authorized Officer's discretion, however, future operations may require a new application be filed for approval.
- B. All drilling operations, unless otherwise specifically approved in the APD, must be conducted in accordance with Onshore Oil and Gas Order No. 2; Drilling Operations.
- C. All 7-Day Requirement responses are made part of this APD.
- D. There shall be no deviation from the proposed drilling and/or workover program as approved, without prior approval from the Little Snake Field Office. Safe drilling and operating practices must be observed.
- E. Approval of this application 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.
- F. No location will be constructed or moved, no well will be plugged, and no drilling or workover equipment will be removed from a well to be placed in a suspended status without prior approval of the Little Snake Field Office. If operations are to be suspended for more than 30 days, prior approval for certain well operations must be obtained and notification given before resumption of operations in accordance with 43 CFR 3162.3-2 and 3162.3-4.
- G. In the case of newly drilled dry holes or failures, and in emergency situations, oral approval for subsurface abandonment operations may be granted by the Little Snake Field Office. Oral approvals must be confirmed in writing (Notice of Intention to Abandon (Form 3160-5)) within 15 days. Unless the plugging is to take place immediately upon receipt of oral approval, the appropriate resource area must be notified at least 48 hours in advance of the plugging of the well, in order to provide a representative the opportunity to witness plugging operations.
- H. Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (Form 3160-4) must be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with Onshore Oil and Gas Order No. 1. Daily drilling reports, a copy of all logs, core descriptions, core analyses, well-test data, geologic summaries, sample descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations (with Form 3160-4) will be filed and sent to the Little Snake Field Office, 455 Emerson Street, Craig, Colorado 81625. Samples (cuttings, fluid, and/or gas) will be submitted only when requested by the Authorized Officer.
- I. Section 102 (b) (3) of the Federal Oil and Gas Royalty Management Act of 1982, as implemented by the applicable provisions of the operating regulations at Title 43 CFR 3162.4-1 (c), requires that "not later than the fifth 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, or the date on which such production has begun or resumed."

The date on which a well commences production, or resumes production after having been off production for more than 90 days is to be construed as follows:

- 1. For an oil well, the date on which liquid hydrocarbons are first sold or shipped from a temporary storage facility, such as a test tank or the date on which liquid hydrocarbons are first produced into a permanent storage facility, whichever occurs first;

2. For a gas well, that date on which gas is first measured through sales metering facilities or the date on which associated liquid hydrocarbons are first sold or shipped from a temporary storage facility, whichever occurs first. For purposes of this provision, a gas well shall not be considered to have been off production unless it is incapable of production.

If you fail to comply with this requirement in the manner and time allowed, you shall be liable for a civil penalty of up to \$10,000 per violation for each day such violation continues, not to exceed a maximum of 20 days. See Section 109(c) (3) of the Federal Oil and Gas Royalty Management Act of 1982 and the implementing regulations at Title 43 CFR 3163.2(e) (2).

- J. This APD is approved subject to the requirement that, should the well be successful (completed for production or recompleted for production in a new interval), the Little Snake Field Office must be notified when it is placed in a producing status. Such notification may be provided orally if confirmed in writing, and must be received in the Little Snake Field Office by not later than the 5th business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following information items:
 1. Operator name
 2. Well name, number, and location
 3. Date well was placed on production
 4. The lease, or communitized tract, or unit participating area to which the well's production is attributable.
- K. A separate Monthly Report of Operations, Form 3160-6, shall be submitted for each lease, unit participating area, or communitization agreement, beginning with the month in which drilling operation commence, in accordance with 43 CFR 3162.4-3. This report shall be sent to Minerals Management Service, Production Accounting Division, P.O. Box 17110, Denver, Colorado 80217.
- L. If at any time the facilities located on public lands authorized by the terms of the lease are no longer included in the lease (due to contraction in the unit or other lease or unit boundary change) the BLM will process a change in authorization to the appropriate statute. The authorization will be subject to appropriate rental, or other financial obligation determined by the Authorized Officer.
- M. All produced liquids must be contained, including the dehydrator vent/condensate line effluent. All production pits must be bermed and fenced.
- N. Gas produced from this well may not be vented or flared beyond an initial, authorized test period of 30 days or 50 MMCF following completion, whichever comes first, without the prior written approval of the authorized officer. Should gas be vented or flared without approval beyond the authorized test period, you may be directed to shut the well in until the gas can be captured or approval to continue venting or flaring is granted and you may be required to compensate the lessor for that portion of the gas that was vented or flared without approval which is determined to have been avoidably lost.
- O. Produced water from newly completed wells may be temporarily disposed of into the reserve pit for a period of up to 90 days. During the 90-day periods, an application for approval of a permanent disposal method and location will be submitted according to Onshore Order No. 7 for approval.
- P. A schematic facilities diagram as required by CFR 43, Part 3162.7-5, shall be submitted to the Little Snake Field Office within 60 days of installation or first production, whichever occurs first. All site security regulations as specified in Onshore Order No. 3 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with 3162.7-5(b).
- Q. The permit holder is required to use certified weed free hay, straw and mulch on BLM lands in Colorado should the use or storage of hay, straw or mulch be necessary. Any person who knowingly and willfully violates this regulation may be subject to a fine of not more than \$1,000 or imprisonment of not more than 12 months, or both as defined in 43 USC 1733 (a).