

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

FORM APPROVED  
OMB No. 1004-0136  
Expires November 30, 2000

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. <b>COD-028942(a)</b>
b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name <b>NA</b>
2. Name of Operator <b>Nielson &amp; Associates, Inc.</b>		7. If Unit or CA Agreement, Name and No. <b>McCallum Unit</b>
3A. Address <b>P.O. Box 2850; Cody, WY; 82414</b>		8. Lease Name and Well No. <b>McCallum Unit #170</b>
3b. Phone No. (include area code) <b>(307) 587-2445</b>		9. API Well No.
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface <b>2406' FNL &amp; 1185' FWL</b>		10. Field and Pool, or Exploratory <b>McCallum - Pierre B</b>
At proposed prod. Zone		11. Sec., T., R., M., or Blk, and Survey or Area <b>SWNW Sec 12-T9N-R79W 6th PM</b>
14. Distance in miles and direction from nearest town or post office* <b>Approximately 5.5 miles Northeast of Walden, CO</b>		12. County or Parish <b>Jackson</b>
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) <b>1185'</b>		13. State <b>CO</b>
16. No. of Acres in lease <b>501.94</b>	17. Spacing Unit dedicated to this well <b>NA</b>	
18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft. <b>890'</b>	19. Proposed Depth <b>1241'</b>	20. BLM/BIA Bond No. on file <b>CO-1364</b>
21. Elevations (Show whether DF, KDB, RT, GL, etc.) <b>8181'</b>	22. Approximate date work will start* <b>09/01/02</b>	23. Estimated duration <b>2-3 Days</b>

**24. Attachments**

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

- |   |   |
|---|---|
| 1. Well plat certified by a registered surveyor.  | 4. Bond to cover the operations and on file (see Item 20 above).                                  |
| 2. A Drilling Plan.   | 5. Operator certification.  |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the authorized office. |



25. Signature <i>Teresa Muhic</i>	Name (Printed/Typed) <b>Teresa Muhic</b>	Date <b>7/23/2002</b>
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Title <b>Senior Engineer</b>		
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Approved by (Signature)	Name (Printed/Typed)	Date

Title	Office

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

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

\*(Instructions on reverse)

## DRILLING PROGNOSIS

### 1. ESTIMATED TOPS OF IMPORTANT GEOLOGIC MARKERS

<i>Formation</i>	<i>Depth</i>	<i>Subsea</i>
Gravel	Surface	8181'
Pierre A Sand	714'	7467'
Pierre B Sand	1141'	7040'
Total Depth	1241'	6940'

### 2. ESTIMATED DEPTHS OF ANTICIPATED WATER, OIL, GAS OR MINERAL FORMATIONS

<i>Substance</i>	<i>Formation</i>	<i>Depth</i>
Fresh Water	Gravel	Surface - 60'
Water or Oil	Pierre A Sand	714'
Oil	Pierre B Sand	1141'

Any usable fresh water zones encountered will be adequately protected and reported. All usable fresh water zones, potential hydrocarbon zones, and valuable mineral zones will be isolated.

### 3. PRESSURE CONTROL EQUIPMENT - Schematic Attached (Figure #4)

**A. Type:** An Annular Type Preventer will be used during the drilling phase of this well. A request for a variance for this equipment is attached.

- 1) Kill line (2 - inch minimum).
- 2) One (1) Kill Line Valve (2 - inch minimum).
- 3) One (1) choke line valve.
- 4) Two (2) adjustable chokes (2 - inch minimum).
- 5) Upper kelly cock valve with handle available.
- 6) Full opening internal blowout preventer or drill pipe safety valve able to fit all connections.
- 7) Choke line (2 - inch minimum).
- 8) Fill-up line.

**B. Pressure Rating:** 1000 psi

**C. Testing Procedure:**

At a minimum, the BOP, choke manifold, and related equipment will be pressure tested to the approved working pressure of the BOP stack (if isolated from the surface casing by a test plug) or to 70% of the internal yield strength of the surface casing (if the BOP is not isolated from the casing by a test plug).

Pressure will be maintained for a period of at least 10 minutes or until the requirements of the test are met, whichever is longer. At a minimum, the above pressure test will be performed.

- 1) When the BOP is initially installed;
- 2) Whenever any seal subject to pressure is broken;
- 3) Following related repairs;
- 4) At thirty (30) day intervals.

In addition to the above, the annular preventer will be activated each trip, but not more than once each day. All BOP drills will be recorded in the IADC driller's log.

**D. Choke Manifold Equipment:**

All Choke lines will be straight, unless turns use tee blocks or are targeted with running tees, and will be anchored to prevent whip and vibration.

**E. Accumulator:**

The accumulator will have sufficient capacity to close all BOP's and retain 200 psi above precharge. Nitrogen bottles, which meet the manufacturer's specifications, will be used as the backup to the required independent power source. The accumulator precharge pressure test will be conducted prior to connecting the closing unit to the BOP stack and at least once every six (6) months thereafter. The accumulator pressure will be corrected if the measured precharge pressure is found to be above or below the maximum or minimum limits specified in *Onshore Oil and Gas Order Number 2*.

A manual locking device (i.e. hand wheels) or automatic locking device will be installed on all systems of 2M or greater. A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will be maintained in the open position and will be closed only when the power source for the accumulator system is inoperative.

**F. Miscellaneous Information:**

The Blow-Out Preventer and related pressure equipment will be installed, tested, and maintained in compliance with the specifications in and requirements of *Onshore Oil & Gas Order Number 2*.

The choke manifold and BOP extension rods with hand wheels will be located outside the rig sub-structure. The hydraulic BOP closing unit will be located at least twenty-five (25) feet from the well head but readily accessible to the driller. Exact locations and configurations of the hydraulic BOP closing unit will depend upon the particular rig contracted to drill this hole.

**4. THE PROPOSED CASING AND CEMENTING PROGRAM**

**A. Casing Program:** Used inspected casing will be used if available, otherwise new will be used.

Hole Size	Casing Size	Weight/Foot	Grade	Joint	Depth Set
11"	8-5/8"	24#	J-55	ST&C or LT &C	150'
7-7/8"	5-1/2"	15.5#	J-55	ST&C or LT&C	1241'

The surface casing will have centralizers on the bottom three (3) joints of casing, with a minimum of one (1) centralizer per joint starting with the shoe joint.

Casing string(s) will be pressure tested to 0.22 psi/foot of casing string length or 500 psi, whichever is greater (not to exceed 70% of the internal yield strength of casing), after cementing and prior to drilling out from under the casing shoe.

#### B. Cementing Program:

Surface Casing 75 sx Class G cement with 2% CaCl (Yield - 1.18 cuft/sx), which is the amount calculated to circulate plus 100% excess. If cement does not circulate to surface, the annulus will be topped off with Class G cement to surface.

Production Casing 125 sx Class G cement with 2% CaCl (Yield = 1.18 cuft/sx). Cement will be circulated 627 feet above the casing shoe with 25% excess. This is to ensure coverage of the Pierre A sandstone.

The above cement volumes are approximate and were calculated under the assumption that a gauge hole will be achieved. Actual cement volumes may vary due to variations in the actual hole gauge and will be determined by running a caliper log on the drill hole.

All waiting on cement (WOC) times will be adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

#### 5. MUD PROGRAM - Visual Monitoring

<i>Interval</i>	<i>Mud Type</i>	<i>Weight</i>	<i>Viscosity</i>	<i>Fluid Loss</i>
0' - 150'	Native Mud	8.3 - 9.0 ppg	35 - 40 cp	No Control
150' - TD	Native Mud w/ Gel & Polymer (as necessary)	8.3 - 9.2 ppg	35 - 45 cp	10 ±

Sufficient mud material(s) to maintain mud properties, control lost circulation, and contain a blowout will be available at the well site during drilling operations.

#### 6. EVALUATION PROGRAM

Logs Dual Induction, Gamma Ray, and Density logs will be run from Total Depth to the base of surface Casing. This will provide the open hole data to also evaluate the Pierre A if it is present.

DST's No drill stem tests are anticipated.

Cores No cores are anticipated.

The evaluation program may change at the discretion of the well site geologist, with prior approval from the Authorized Officer, Craig Field Office, Bureau of Land Management.

Stimulation No stimulation or frac treatment has been formulated for this well at this time. The drill site, as approved, will be of sufficient size to accommodate all completion activities.

Whether the well is completed as a dry hole or as a producer, *Well Completion and Recompletion Report and Log* (Form 3160-4) will be submitted to the Craig Field Office not later than thirty (30) days after the completion of the well or after completion operations being performed, in accordance with 43 CFR 3164.

Two (2) copies of all logs, core descriptions, core analysis, well test data, geologic summaries, sample descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or

completion operations, will be filed with Form 3160-4. Samples (cuttings, fluids, and/or gases) will be submitted when requested by the Authorized Officer, Craig Field Office, Bureau of Land Management, 455 Emerson Street, Craig, Colorado 81625-1129, telephone (970) 826-5000.

## 7. ABNORMAL CONDITIONS

No H2S has been encountered in or known to exist from previous wells drilled to similar depths in the general area. The well is to be drilled within an area under active waterflood. The maximum anticipated bottom hole pressure equals approximately 782 psi based on a possible pressure gradient of 0.63 psi/ft in the area. The maximum anticipated surface pressure equals approximately 509 psi (bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/ft). If abnormal pressures are encountered, a BOP will be used for control while drilling with mud. Mud weight will be increased if necessary to insure adequate control.

## 8. ANTICIPATED STARTING DATES AND NOTIFICATION OF OPERATIONS

### A. Anticipated Start Dates:

Anticipated Commencement Date : September 1, 2002  
Drilling Days : Approximately 2 to 3 days  
Completion Days : Approximately 1 to 3 days.

### B. Notification of Operations:

Bureau of Land Management  
Craig Field Office  
455 Emerson Street  
Craig Colorado 81625-1129  
Phone: (970) 826-5000

*Contacts for the Craig Field Office are:*

<u>Contact Title</u>	<u>Contact Name</u>	<u>Telephone</u>
Petroleum Engineer	Stanley Eng	Office (970) 826-5075
Geologist	Fred Conrath	Office (970) 826-5098 Home (970) 870-9148

*Contacts for the Kremmling Field Office are:*

<u>Contact Title</u>	<u>Contact Name</u>	<u>Telephone</u>
Geologist	John Morrone	Office (970) 724-3015
Resource Specialist	Dennis Gale	Office (970) 724-3437 Home (970) 724-9629

**C. General Conditions of Approval:**

1. 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 Orders, Notices to Lessees, and the approved plan of operations.
2. The spud date will be reported orally to the Craig Field Office **24 HOURS PRIOR TO SPUDDING**, unless otherwise required in the site specific conditions of approval.
3. All wells, whether drilling, producing, suspended or abandoned, shall be identified in accordance with 43 CFR 3162.6. There shall be a sign or marker with the name of the operator, the lease serial number, the well number and the surveyed description of the well.
4. In accordance with *Onshore oil & Gas Order Number 1*, this well will be reported on MMS Form 3160-6, *Monthly Report of Operations and Production*, starting with the month in which operations commence, and continuing each month until the well is physically plugged and abandoned. This report will be filed directly with the Royalty Management Program, Minerals Management Service, P.O. Box 17110, Denver, Colorado 80217.
5. All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in NTL-3A will be reported to the Craig Field Office. Major events will be reported verbally within twenty-four (24) hours and will be followed with a written report within fifteen (15) days. Other than major events will be reported in writing within fifteen (15) days. Minor events will be reported on the *Monthly Report of Operations and Production* (Form 3160-6).
6. No well abandonment operations will be commenced without the prior approval of the Authorized Officer. In the case of newly drilled dry holes or failures, and in emergency situations, oral approval will be obtained from the Field Office Petroleum Engineer. A *Notice of Intention to Abandon* (Form 3160-5) will be filed with the Authorized Officer within fifteen (15) days following the granting of oral approval to plug and abandon.
7. Upon completion of approved plugging, a regulation marker will be erected in accordance with 43 CFR 3162.6. The following information will be permanently placed on the marker with a plate, cap, or beaded-on with a welding torch: Company Name, Well Name and Number, Location by Quarter/Quarter, Section, Township, Range, and federal Lease Number.
8. A *Subsequent Report of Abandonment* (Form 3160-5) will be submitted within thirty (30) days following the actual plugging of the well bore. This report will indicate where plugs were placed and the current status of surface restoration operations. If surface restoration has not been completed at that time, a follow-up report on Form 3160-5 will be filed when all surface restoration has been completed and the location is considered ready for final inspection.
9. Pursuant to NTL-4A, lessees and operators are authorized to vent/flare gas during initial well evaluation test, not exceeding a period of thirty (30) days or the production of fifty (50) MMCF of gas, whichever comes first. An application must be filed with the Authorized Officer, and approval received, for any venting/flaring of gas beyond the thirty (30) days or otherwise authorized test period.
10. Not later than the 5<sup>th</sup> 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 ninety (90) days, the operator shall notify

the authorized Officer be letter or sundry notice, of the date on which such production has begun or resumed. The notification shall provide at a minimum, the following informational items.

- a. Operator name, address, and telephone number.
  - b. Well name and number.
  - c. Well location  $\frac{1}{4}$   $\frac{1}{4}$  . Section, Township, Range and Principal Meridian.
  - d. Date the well was placed in a producing status.
  - e. The nature of the wells production (i.e. crude oil casing gas, or natural gas and entrained liquid hydrocarbons).
  - f. The OCS, Federal or Indian lease prefix and number on which the well is located. Otherwise, the non-federal or non-Indian land category (i.e. state or private).
  - g. As appropriate, the communitization agreement number, the unit agreement name, number, and participating area name.
11. Within sixty (60) days following construction of a new tank battery, a site facility diagram of the battery showing actual conditions and piping must be submitted to the Craig Field Office. Facility diagrams shall be filed within sixty (60) days after existing facilities are modified. For complete information as to what is required on these diagrams, please refer to 43 CFR 3162.7-4(d).
12. Pursuant to *Onshore Oil & Gas Order Number 1*, Lessees and operators have the responsibility to see that their exploration, development, production, and construction operations are conducted in such a manner which conforms with applicable federal laws and regulations and with the state and local laws and regulations to the extent that such state and local laws are applicable to operations.

**MULTI-POINT SURFACE USE & OPERATIONS PLAN**

1. **EXISTING ROADS** - Refer to Maps "A-1", "B-1" and "C-13". The map of roads that was previously submitted to BLM Craig and Kremmling Field Offices should be referenced also.
  - A. The proposed well site is staked and reference stakes are present. Map "A-1" indicates the general vicinity and relative location to key reference points. Map "A-1" includes all locations that have been staked in the past year in the McCallum and South McCallum Units.
  - B. To reach the field office from Walden, Colorado, proceed north on Highway 14 for 4.1 miles. Turn right on the paved County Road 10. Proceed east two miles to the McCallum Field Office on the left hand side of the road.
  - C. To reach the well location, turn right onto County Road 10 and proceed east for 3.65 miles. Turn right at the dirt lease road and travel in a southerly direction for about 800 feet to the access road. Travel 400 feet southwest to the #170 well location. See Map "C-13" for visual details.
  - D. Existing roads within the immediate vicinity of this proposed well are also shown on Map "B-1", as well as on total field maps previously submitted to the BLM Craig and Kremmling Offices.
  - E. Improvements to existing roads will not be required.
  - F. Existing roads will be maintained and kept in good repair during all drilling and completion operations associated with the well.
  - G. Existing roads and newly constructed roads, on surface under the jurisdiction of any Surface Management Agency (SMA), shall be maintained in accordance with the standards of the SMA.
  
2. **PLANNED ACCESS ROADS** - Refer to Maps "B-1", and "C-13"
  - A. Approximately 400 feet of new road construction will be required for access to the proposed well location.
  - B. To reduce disturbance, only spur (overland two-track type) roads will be utilized into most of the proposed well pads. The access route will be staked and all vehicles will remain within a twenty-foot corridor. The access will be rocked if it becomes muddy and/or ruts deeper than four inches are created. In the event that any access road need be rocked, sagebrush will be removed to a width not to exceed twenty-feet and gravel will be placed along the access, but only where necessary.
  - C. The road will be left as a two-track road unless drainage conditions dictate otherwise. Drainage/water turnouts will be installed where necessary.
  - D. No cattle guards will be necessary.
  - E. No culverts or low water crossings will be necessary.
  - F. The need for road turnouts is not anticipated.
  - G. Surface disturbance and vehicular traffic will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.
  - H. The use of surface material on the access roads is not anticipated, however, it may be necessary depending on weather conditions at the time of drilling.
  - I. A road Right-of-way will not be required since all the construction is contained within the McCallum and South McCallum Units.

**3. LOCATION OF EXISTING WELLS WITHIN A 1-MILE RADIUS** - Existing wells are shown on Map"E-1". The existing wells within a 1-mile radius are as follows:

A. Water Wells	-	0
B. Injection Wells	-	9
C. Disposal Wells	-	0
D. Producing Wells	-	14
E. Drilling Wells	-	0
F. Shut-In Wells	-	4
G. Abandoned Wells	-	18

**4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES**

**A. Existing Facilities and Flow lines**

1. Existing power lines are shown on Map "F".
2. An existing production header building and test facility will be utilized for the production from this well. Produced fluids will be transported to the existing, East #2 Header building as shown in Map "G".
3. Existing pipelines are shown in Map "H"

**B. New Facilities and Flow lines.**

1. As agreed during the onsite visit, production lines for this well will follow the existing and new road disturbances northeast toward the #94 well, then west to the existing East #2 header building. Individual well lines will be 2" ID. Revegetation of the old and new pipeline disturbances will occur immediately after flow line is run, and will entail micro-pits on slope to discourage riling and gully erosion.
2. No new batteries will be required for the production of this well.
3. Proposed power lines are shown on Map "F". Power lines will be a minimum of twenty-five (25) feet above ground and spans will be approximately three hundred (300) feet.
4. Portions of the pad not required for production operations will be reclaimed. Only a pumping unit and graveled turnaround area (80 foot radius) will be left at each individual well site.
5. All permanent structures constructed or installed will be painted a flat, non-reflective earth tone color (Juniper Green) to match the standard environmental colors, as determined by the Rocky Mountain Five-State Interagency Committee.
6. All new facilities will be painted within six (6) months of installation. Portions of facilities required to comply with Occupational Safety and Health Act (OSHA) will be excluded
7. The reserve pit will be fenced on three sides during drilling operations. The fourth side will be fenced within twenty-four (24) hours after the drilling rig moves off the location.
8. The reserve pit will be properly backfilled and will not be used for production operations. No fluids, other than drilling fluids, will be placed in the reserve pit. Oil and oily substances escaping into the pit shall be removed within 24 hours.
9. All off-lease storage, off-lease measurement, or commingling on-lease or off-lease will have prior written approval from the Authorized Officer, BLM - Craig Field Office.

**5. LOCATION AND TYPE OF WATER SUPPLY**

- A. Water from existing Pierre B water source wells and Pierre B producers will be utilized in all drilling operations.
- B. Water will either be hauled to the locations along approved access roads, or temporary water lines will be laid from the Pierre B waterflood facility to the drilling locations.

- C. No water wells will be drilled.
- D. In order to minimize water consumption during the drilling and to reduce reclamation time for the reserve pits, water will be hauled (when possible) from the reserve pits of recently completed wells, into the reserve pits of proposed wells throughout the field.

#### **6. SOURCE OF CONSTRUCTION MATERIALS**

- A. Any construction materials that may be required for surfacing of the drill pad will be obtained from a private contractor having a previously approved source of materials within the general area.
- B. No construction materials will be taken from federal or Indian lands without the prior approval from the appropriate Surface Management Agency.
- C. If production is established, any construction materials which may be required for surfacing of the access road and/or installation of producing facilities will be purchased from a local supplier having a permitted source of materials within the general area.
- D. No new access roads for transportation of these construction materials will be required.

#### **7. METHODS FOR HANDLING WASTE MATERIALS**

- A. Cuttings - the drilled cuttings will remain in the reserve pit.
- B. Drilling fluids - including any salts and/or chemicals utilized in the mud system will be contained in the reserve pit. The reserve pit will be designed to prevent the collection of surface runoff and will be constructed entirely in cut of the proposed well location.
- C. At the end of drilling and completion operations, any reserve pit fluids still remaining will be allowed to evaporate and the pit will be backfilled.
- D. Produced fluids - liquid hydrocarbons produced during the completion operations will be placed in test tanks on location
- E. Sewage - portable self-contained chemical toilets will be provided for human waste disposal. Upon completion of operations, or as required, the toilet holdings will be pumped and the contents thereof disposed of in an approved sewage disposal facility in strict accordance with the Colorado Department of Public Health and Environment (CDPHE) rules and regulations regarding sewage treatment and disposal.
- F. Garbage and other waste material - all garbage and non-flammable waste materials will be contained in a self contained, portable dumpster or trash cage. Upon completion of operations, or as needed, the accumulated trash will be hauled off-site to an approved sanitary landfill. No trash will be placed in the reserve pits
- G. Immediately after removal of the drilling rig, all debris and other waste materials not contained in the trash cage will be cleaned up and removed from the well location. No potentially adverse materials or substances will be left on the location. Any open pits will be fenced during the drilling operation and said fencing will be maintained until such time as the pits have been backfilled.
- H. Hazardous Materials - materials which may be found at the site include drilling mud and cementing products which are primarily inhalation hazards, fuels (flammable and/or combustible), materials that may be necessary for well completion/stimulation activities, such as flammable or combustible substances and acids/gels (corrosive).
- I. All hazardous and extremely hazardous substances and commercial preparation will be handled in a manner to minimize the potential for leaks or spills to the environment.

#### **8. ANCILLARY FACILITIES**

None are anticipated. It is anticipated that all crews will be housed at local motels in the town of Walden.

## 9. WELL SITE LAYOUT

- A. Figure #1 shows the drill site layout as staked. Cross-sections have been drafted to visualize the planned cuts and fills across the proposed well location (refer to Figure #2). A minimum of six (6) inches will be stripped from the location and stockpiled for future reclamation of the well site. The location will be constructed where the ground surface is almost level. The total pad area would be approximately 125 feet x 225 feet for a surface disturbance of approximately 1/4 acre. Blading of an area (approximately 100 feet x 125 feet) would be done in order to set up the drilling rig and construct a small reserve pit. If heavy vegetation exists on the well pad, the area around the rig well will be stripped of vegetation and it will be stockpiled outside the perimeter of the well pad area.
- B. Topsoil to a depth of 6 to 12 inches will be removed from the well pad in the areas where surface disturbance is to occur. This topsoil will be stockpiled near the location for use in reclamation.
- C. All equipment and vehicles will be confined to the approved areas in this Application for Permit to Drill (i.e., access road, well pad, spoil and topsoil storage areas).
- D. Due to the shallow depth of the Pierre "B" and the use of fresh water muds, a reserve pit liner will not be required. If porous subsoil materials (i.e., gravel, scoria, sand, faulted rock structures, etc.) are encountered during reserve pit construction, an impervious (plastic/vinyl) liner will be installed in order to prevent drilling water loss through seepage.
- E. Prior to the commencement of drilling, the reserve pit will be fenced on three sides with orange snow fence and will be "stock" tight. Corner "H" braces will be constructed to ensure stability. The fourth side will be fenced when the rig moves out. The fence will be kept in good repair until the reserve pit has been backfilled and the location reclaimed.
- F. Any hydrocarbons on the pit will be removed as soon as possible after drilling operations are completed.
- G. Figure #3 is a diagram showing a typical rig layout. No permanent living facilities are planned on the well location; however, the toolpusher may set up a trailer near the McCallum field office during drilling operations.

## 10. PLANS FOR RECLAMATION OF THE SURFACE

- A. Rat and mouse holes will be backfilled immediately upon release of the drilling rig from the well location. Also, all trash and debris will be collected from the location, access roads and surrounding area and properly disposed of. This includes, but is not limited to surface cable and pipe, fences, signs, concrete, culverts, trash and junk.
- B. The operator shall place temporary fencing around all temporary pits that are greater than two feet deep.
- C. If any oil is on the pits and is not immediately removed after operations cease, the pit containing the oil or other adverse substance(s) will be flagged overhead or covered with wire mesh to protect migrating waterfowl.
- D. When possible, the reserve pit fluids will be reused at other drilling locations within the McCallum Unit. At the end of drilling operations, the reserve pits muds 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 requirements:
  - Backfilling will be done in such a manner that the muds and associated solids will be confined to the pit and not squeezed out and incorporated in the surface materials.
  - There will be a minimum of 3 to 5 feet of cover (overburden) on the pit.
  - When the work is completed, the pit area will support the weight of heavy equipment without sinking and over time shall not subside over 6-inch depth.

E. Producing Operations:

1. Backfilling, leveling, and re-contouring are planned as soon as possible after cessation of drilling and completion operations. Waste and spoil materials will be disposed of upon cessation of drilling and completion activities.
2. Upon completion of backfilling, leveling, and recontouring, all disturbed surfaces (access roads and pad areas) will be scarified to a depth of one (1) foot.
3. All disturbed areas, including roads, ditches, flow lines, and the well location will be recontoured to the original natural contours.
4. For old locations, topsoil will be re-stripped, or for new locations, the stockpiled topsoil will be distributed evenly over all disturbed areas. All berms and trenches will be eliminated.
5. Prior to commencement of seeding operations, the seedbed will be prepared by disking on the contour to a depth of four (4) to six (6) inches. The entire disturbed area will be uniformly covered with depressions constructed perpendicular to the natural flow of water to facilitate the capture of moisture and subsequent promotion of revegetation success. All disturbed surfaces (including the access road and well pad areas) will be reseeded using the following seed mixture (or a different mixture to be recommended by the Authorized Officer, Bureau of Land Management):

Species	Lbs./Acre (Pure Live Seed)
Big Sagebrush	1.2
Western Wheatgrass	12
Thickspike Wheatgrass	6
Bluebunch Wheatgrass	10
Sheep Fescue	2
Alfalfa Fescue	4

6. Seed tags to be submitted to BLM after seeding.
7. Seed will be drilled on the contour with a seed drill equipped with a depth regulator in order to ensure even depths of planting. Seed will be planted between one-quarter (1/4) to one-half (1/2) inches deep. Fall seeding will be completed after September 1<sup>st</sup> and prior to ground frost. If applicable, spring seeding will be completed after the frost has left the ground and prior to June 15<sup>th</sup>.
8. Seeding will be repeated until a satisfactory stand, as determined by the Authorized Officer, is achieved. The first evaluation of growth will be made following the completion of the first growing season.
9. Re-seeding activities are considered best in the fall of 2003, unless otherwise requested by the Authorized Officer, Bureau of Land Management, or the private surface owner.
10. All material that will be stockpiled for ten (10) months or longer will be signed and stabilized with vegetation. These soil stockpiles will be seeded with annual ryegrass (*Lolium multiflorum*) at a rate of ten (10) pounds per acre.

F. Abandoned well location:

1. Upon final abandonment of the location, gravel will be removed from the access road surface and well location (as directed by the Authorized Officer), water diversion installed as needed, and both the access road and well location will be restored to approximately the original ground contour(s) by pushing the fill material back into the cut and up over the backslope.
2. Prior to commencement of seeding operations, the seedbed will be prepared by disking on the contour to a depth of four (4) to six (6) inches. The entire disturbed area will be uniformly covered with depressions constructed perpendicular to the natural flow of water to facilitate

the capture of moisture and subsequent promotion of revegetation success. All disturbed surfaces (including the access road and well pad areas) will be reclaimed and reseeded as recommended above.

## 11. SURFACE OWNERSHIP

The well location and proposed access road route are situated on surface estate that is owned by the United States of America and administered in trust by:

Field Manager  
Craig Field Office  
Bureau of Land Management  
455 Emerson Street  
Craig, Colorado 81625-1129  
Telephone: (970) 826-5000

## 12. OTHER INFORMATION

### A. General Description of the Project Area:

The project area is located in the northeastern end of North Park. North Park is a large synclinal trough occupied by several sedimentary geologic units ranging in age from the Permian to the Quaternary. The geological formations in the park include Chugwater, Morrison, Dakota Sandstone, Benton Shale, Niobrara, Coalmont, and Pierre Shale. The latter two are found exposed in the project area.

The North Park River, the primary drainage of North Park, flows from its headwaters in the Park Range northward into Wyoming. Its tributaries, the Michigan River and the Canadian River, bound the long northwest to southeast trending ridge on which the project area is located.

The area has a continental-type climate that is characterized by short, cool summers and long, cold winters. There is low to moderate amount of precipitation, a wide range of daily and seasonal temperatures, and a short growing season. Climatic conditions across North Park vary by elevation and aspect. Annual precipitation is lowest at the center of the Park and increases towards the margins. Near the center of the Park, the average annual precipitation is nine (9) inches and snowfall generally averages less than twelve (12) inches. Seventy (70) percent of the precipitation falls as snow. Along the Park's edges near the foot of the mountains, the annual precipitation is between fifteen (15) and twenty (20) inches. The growing season at Walden is usually under sixty-five (65) days with an average daily temperature of fifteen (15) degrees for January and fifty-nine (59) degrees for July (USDA 1981).

The average elevation within the project area is 8200 feet. The vegetation cover is referred to as the Canadian Life Zone and consists of sagebrush shrubland and assorted grasses. Fauna consists of mule deer, elk, antelope, sage grouse, coyotes, rabbits, and several other small mammals.

There are no known threatened or endangered species that would be affected by construction, drilling, completion, and production operations on the well location.

### B. Surface Use Activities:

The primary surface use is energy development and livestock grazing.

**C. Proximity of Water, Archaeological, Historical, or Cultural Sites:**

1. The closest source of permanent water is the Canadian River, located approximately one (1) mile north of the northern most edge of the project area.
2. A Class III archaeological study has been conducted by Grand River Institute. No significant cultural resources will be impacted by the construction of the access road or well location and clearance has been recommended. A copy of this report has been previously submitted.
3. Nielson & Associates, Inc. (NAI) will be responsible for informing all persons associated with this project that they will be subject to prosecution for damaging, altering, excavating or removing archaeological, historical, vertebrate fossil materials or objects or sites. If archaeological, historical or vertebrate fossil materials are discovered, NAI will suspend all operations that further disturb such materials and immediately contact the Authorized Officer. Operations will not resume until written authorization to proceed is issued by the Authorized Officer.

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

NAI will be responsible for the cost of any mitigation required by the Authorized Officer. The Authorized Officer will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the Authorized Officer that the mitigation has been completed, NAI will be allowed to resume operations.

**D. Additional Requirements for Operations on Lands Administered by the Bureau of Land Management:**

1. Construction activities, reclamation, and/or routine maintenance activities will not be conducted during periods when the soil is frozen or saturated, or when watershed damage is likely to occur as a result of these activities.
2. NAI will be responsible for weed control on disturbed areas within the exterior limits of this permit, and will consult with the Authorized Officer and/or local authorities for acceptable weed control measures.

**13. LESSEE'S OR OPERATORS REPRESENTATIVE AND CERTIFICATION**

**Representative**

Nielson & Associates, Inc.  
P.O. Box 2850  
Cody, Wyoming 82414  
Teresa J. Muhic – Senior Engineer  
Telephone - Office (307) 587-2445

Nielson & Associates, Inc.  
McCallum #170  
2406' FNL & 1185' FWL  
SW NW Sec 12-T9N-R79W  
Jackson County, Colorado

CONFIDENTIAL - TIGHT HOLE  
Lease No.D-028942 (a)

Surface Use and Operations Plan  
Page 8

**Certification**

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Nielson & Associates, Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C 1001 for the filing of a false statement.

8/22/02  
Date:

Teresa J. Muhic  
Teresa J. Muhic – Senior Engineer  
Nielson & Associates, Inc.

Nielson & Associates, Inc.

Limited Space Blow Out Preventer and Choke Manifold

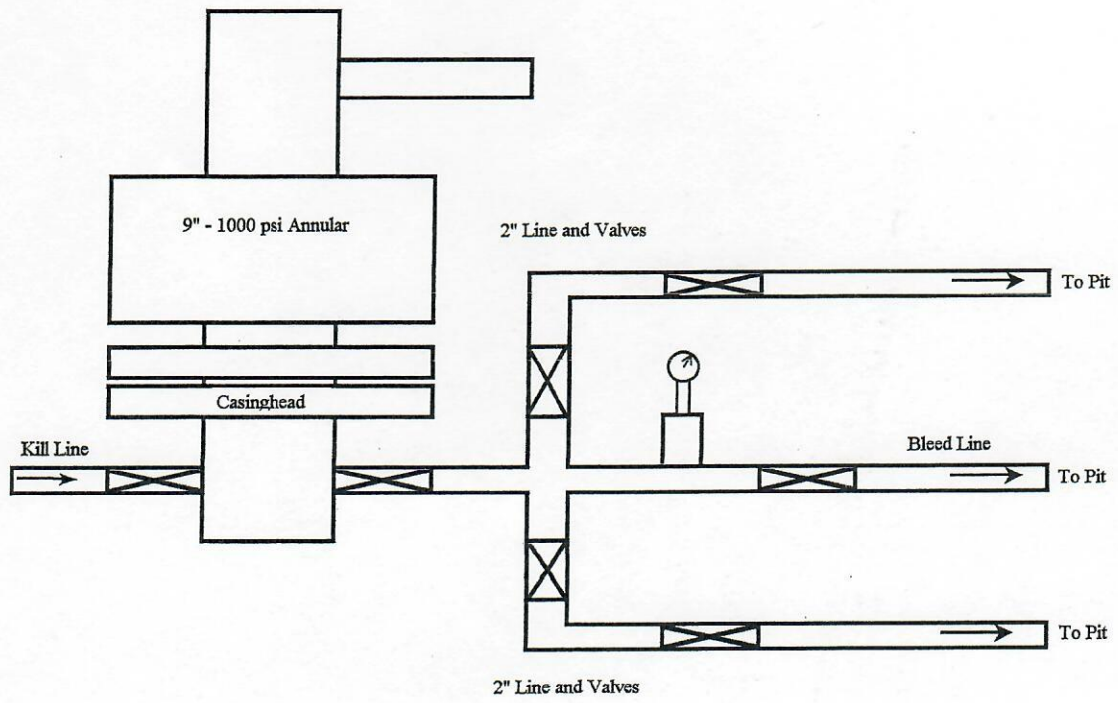


Figure #4