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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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## APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

ENTERED AFMSS
SEP 25 2001

| | | |
|---|---|---|
| 1a. | **Type of Work**<br>DRILL | **5. Lease Number**<br>SF-078138<br>**Unit Reporting Number** |
| 1b. | **Type of Well**<br>GAS | **6. If Indian, All. or Tribe** |
| 2. | **Operator**<br>BURLINGTON RESOURCES Oil & Gas Company BC | **7. Unit Agreement Name**<br>30617 |
| 3. | **Address & Phone No. of Operator**<br>PO Box 4289, Farmington, NM 87499<br>(505) 326-9700 | **8. Farm or Lease Name**<br>Hartman Com 23<br>**9. Well Number**<br>1M |
| 4. | **Location of Well**<br>1480'FNL, 660'FWL<br>Latitude 36° 48.1, Longitude 107° 58.0 | **10. Field, Pool, Wildcat**<br>Otero Chacra/Blanco MV/<br>Basin Dakota<br>**11. Sec., Twn, Rge, Mer. (NMPM)**<br>Sec.23, T-30-N, R-11-W<br>**API # 30-045-** 30839 |
| 14. | **Distance in Miles from Nearest Town**<br>4 miles from Aztec | **12. County** San Juan **13. State** NM |
| 15. | **Distance from Proposed Location to Nearest Property or Lease Line**<br>660' | |
| 16. | **Acres in Lease** | **17. Acres Assigned to Well**<br>Cha: NW/159.77, DK: W/~~320~~, 319.91<br>MV: N/318.63 |
| 18. | **Distance from Proposed Location to Nearest Well, Drlg, Compl, or Applied for on this Lease**<br>500' | |
| 19. | **Proposed Depth**<br>7008' | **20. Rotary or Cable Tools**<br>Rotary |
| 21. | **Elevations (DF, FT, GR, Etc.)**<br>5951'GR | **22. Approx. Date Work will Start** |
| 23. | **Proposed Casing and Cementing Program**<br>See Operations Plan attached | |

NOV 14 2001
BY

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS"

24. **Authorized by:** Regulatory/Compliance Supervisor — Date 9-10-01

**PERMIT NO.** _____ **APPROVAL DATE** 11/14/01

**APPROVED BY** _____ **TITLE** AFM **DATE** 11/14/01

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4.

**Archaeological Report to be submitted**
**Threatened and Endangered Species Report to be submitted**

NOTE: This format is issued in lieu of U.S. BLM Form 3160-3
Title 18 U.S.C. Section 1001, makes 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 presentations as to any matter within its jurisdiction.

**FARMINGTON COPY**

District I
PO Box 1980, Hobbs, NM 88241-1980

District II
PO Drawer DD, Artesia, NM 88211-0719

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-102
Revised February 21, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

| ¹API Number | ²Pool Code | ³Pool Name |
|---|---|---|
| 30-045- 30839 | 82329/72319/71599 | Otero Chacra/Blanco Mesaverde/Basin Dakota |

| ⁴Property Code | ⁵Property Name | ⁶Well Number |
|---|---|---|
| | HARTMAN COM 23 | 1M |

| ⁷OGRID No. | ⁸Operator Name | ⁹Elevation |
|---|---|---|
| 14538 | BURLINGTON RESOURCES OIL & GAS COMPANY LP | 5951' |

## ¹⁰ Surface Location

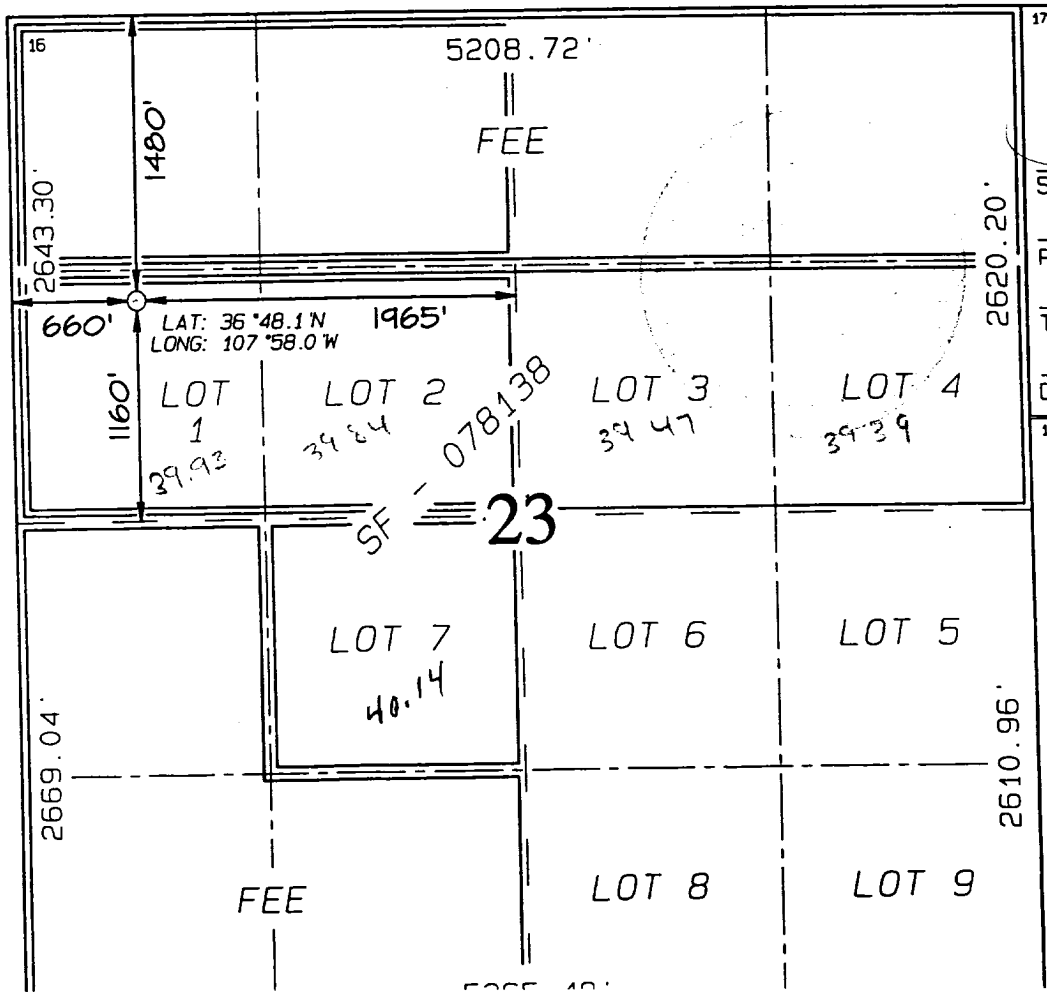
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| E | 23 | 30N | 11W | | 1480 | NORTH | 660 | WEST | SAN JUAN |

## ¹¹ Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

| ¹² Dedicated Acres | ¹³ Joint or Infill | ¹⁴ Consolidation Code | ¹⁵ Order No. |
|---|---|---|---|
| Cha: NW/159.77 DK: W/~~320~~ 319.91 MV: N/318.63 | | | |

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION




## ¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Peggy Cole

Signature

Peggy Cole

Printed Name

Regulatory Supervisor

Title

9-10-01

Date

## ¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey: AUGUST 1, 200

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS

Certificate Number

# OPERATIONS PLAN

***Well Name:*** Hartman Com 23 #1M
***Location:*** 1480'FNL, 660'FWL, Sec 23, T-30-N, R-11-W
San Juan County, NM
Latitude 36° 48.1, Longitude 107° 58.0
***Formation:*** Otero Chacra/Blanco Mesaverde/Basin Dakota
***Elevation:*** 5951'GL

| ***Formation Tops:*** | ***Top*** | ***Bottom*** | ***Contents*** |
|---|---|---|---|
| Surface | San Jose | 1023' | |
| Ojo Alamo | 1023' | 1108' | aquifer |
| Kirtland | 1108' | 1833' | gas |
| Fruitland | 1833' | 2363' | gas |
| Pictured Cliffs | 2363' | 2525' | gas |
| Lewis | 2525' | 3123' | gas |
| **Intermediate TD** | **2625'** | | |
| Mesa Verde | 3123' | 3383' | gas |
| Chacra | 3383' | 4033' | gas |
| Massive Cliff House | 4033' | 4168' | gas |
| Menefee | 4168' | 4678' | gas |
| Massive Point Lookout | 4678' | 5033' | gas |
| Mancos | 5033' | 5920' | gas |
| Gallup | 5920' | 6663' | gas |
| Greenhorn | 6663' | 6718' | gas |
| Graneros | 6718' | 6778' | gas |
| Dakota | 6778' | | gas |
| **TD** | **7008'** | | |

***Logging Program:***
Cased hole - CBL-CCL-GR - TD to surface
Open hole - none
Cores - none

***Mud Program:***

| Interval | Type | Weight | Vis. | Fluid Loss |
|---|---|---|---|---|
| 0- 200' | Spud | 8.4-9.0 | 40-50 | no control |
| 200- 2625' | LSND | 8.4-9.0 | 30-60 | no control |
| 2625- 7008' | Air/N2 | n/a | n/a | n/a |

Pit levels will be visually monitored to detect gain or loss of fluid control.

***Casing Program (as listed, the equivalent, or better):***

| Hole Size | Depth Interval | Csg.Size | Wt. | Grade |
|---|---|---|---|---|
| 12 1/4" | 0' - 200' | 9 5/8" | 32.3# | H-40 |
| 8 3/4" | 0' - 2625' | 7" | 20.0# | J-55 |
| 6 1/4" | 2525' - 7008' | 4 1/2" | 10.5# | J-55 |

***Tubing Program:***

| | | | |
|---|---|---|---|
| 0' - 7008' | 2 3/8" | 4.7# | J-55 |

***BOP Specifications, Wellhead and Tests:***

**Surface to Intermediate TD -**
11" 3000 psi minimum double gate BOP stack (Reference Figure #1). After nipple-up prior to drilling out surface casing, rams and casing will be tested to 600 psi for 30 minutes.

**Intermediate TD to Total Depth -**
11" 3000 psi minimum double gate BOP stack (Reference Figure #1). After nipple-up prior to drilling out intermediate casing, rams and casing will be tested to 1500 psi for 30 minutes.

**Surface to Total Depth -**
2" nominal, 3000 psi minimum choke manifold (Reference Figure #3).

**Completion Operations -**
7 1/16" 3000 psi double gate BOP stack (Reference Figure #2). After nipple-up prior to completion, pipe rams, casing and liner top will be tested to 2000 psi for 15 minutes.

**Wellhead -**
9 5/8" x 7" x 2 3/8" x 3000 psi tree assembly.

**General -**
- Pipe rams will be actuated once each day and blind rams will be actuated once each trip to test proper functioning.
- An upper kelly cock valve with handle available and drill string valves to fit each drill string will be available on the rig floors at all times.
- BOP pit level drill will be conducted weekly for each drilling crew.
- All BOP tests and drills will be recorded in daily drilling reports.
- Blind and pipe rams will be equipped with extension hand wheels.

***Cementing:***

9 5/8" surface casing - cement with 159 sx Class "B" cement with 1/4# celloflake/sx and 3% calcium chloride (188 cu.ft. of slurry, 200% excess to circulate to surface). WOC 8 hrs. Test casing to 600 psi for 30 minutes.

Saw tooth guide shoe on bottom. Bowspring centralizers will be run in accordance with Onshore Order #2.

7" intermediate casing -
Lead w/261 sx 50/50 Class G/TXI lightweight w/2.5% sodium metasilicate, 2% calcium chloride, 10# gilsonite/sx and 1/2# celloflake/sx. Tail w/90 sx 50/50 Class "G" Poz w/2% calcium chloride, 2% gel, 1/4 pps celloflake, 5 pps gilsonite, 0.1% antifoam agent (789 cu.ft. of slurry, 100% excess to circulate to surface.) WOC minimum of 8 hours before drilling out intermediate casing. If cement does not circulate to surface, a CBL will be run during completion operations to determine TOC. Test casing to 1500 psi for 30 minutes.

**See attached alternative intermediate lead slurry.**

7" intermediate casing alternative two stage: Stage collar at 1733'. First stage: cement with 209 sx 50/50 Class "G" Poz w/2% calcium chloride, 2% gel, 1/4 pps celloflake, 5 pps gilsonite, 0.1% antifoam agent. Second stage: 202 sx 50/50 Class G/TXI lightweight w/2.5% sodium metasilicate, 2% calcium chloride, 10# gilsonite/sx and 1/2# celloflake/sx (789 cu.ft., 100% excess to circulate to surface).

Cement nose guide shoe on bottom with float collar spaced on top of shoe joint. Bowspring centralizers spaced every other joint off bottom, to the base of the Ojo Alamo at 1108'. Two turbolating centralizers at the base of the Ojo Alamo at 1108'. Bowspring centralizers spaced every fourth joint from the base of the Ojo Alamo to the base of the surface casing.

4 1/2" Production Casing -
Cement to cover minimum of 100' of 4 1/2" x 7" overlap. Lead with 447 sx 50/50 Class "G" Poz with 5% gel, 0.25# celloflake/sx, 5# gilsonite/sx, 0.1% retardant and 0.25% fluid loss additive, 0.15% dispersant, 0.1% antifoam agent (644 cu.ft.), 40% excess to cement 4 1/2" x 7" overlap). WOC a minimum of 18 hrs prior to completing.

4 1/2" production casing alternative: Lead w/184 sx 9.5 PPG Litecrete Blend w/0.11% dispersant, 0.5% fluid loss. Tail w/158 sx Class G 50/50 poz w/5% gel, 0.25 pps celloflake, 5 pps gilsonite, 0.25% fluid loss, 0.15% dispersant, 0.1% retarder, 0.1% antifoam (689 cu.ft., 50% excess to cement 4 ½" x 7" overlap).

Note: If open hole logs are run, cement volumes will be based on 25% excess over caliper volumes.

Cement float shoe on bottom with float collar spaced on top of float shoe.

Note: To facilitate higher hydraulic stimulation completion work, no liner hanger will be used. In its place, a long string of 4 1/2" casing will be run and cemented with a minimum of 100' of cement overlap between the 4 1/2" x 7" casing strings. After completion of the well, a 4 1/2" retrievable bridge plug will be set below the top of cement in the 4 1/2" x 7" overlap. The 4 1/2" casing will then be backed off above the top of cement in the 4 1/2" x 7" overlap and laid down. The 4 1/2" bridge plug will then be retrieved and the production tubing will be run to produce the well.

- If hole conditions permit, an adequate water spacer will be pumped ahead of each cement job to prevent cement/ mud contamination or cement hydration.

***Special Drilling Operations (Gas/Mist Drilling):***
The following equipment will be operational while gas/mist drilling:

- An anchored blooie line will be utilized to discharge all cuttings and circulating medium to the blow pit a minimum of 100' from the wellhead.
- The blooie line will be equipped with an automatic igniter or pilot light.
- Compressors will be located a minimum of 100' from the wellhead in the opposite direction from the blooie line.
- Engines will have spark arresters or water cooled exhaust.
- Deduster equipment will be utilized.
- The rotating head will be properly lubricated and maintained.
- A float valve will be utilized above the bit.
- Mud circulating equipment, water, and mud materials will be sufficient to maintain control of the well.

BURLINGTON RESOURCES OIL & GAS COMPANY, HARTMAN COM 23 #1M

1480' FNL & 660' FWL, SECTION 23, T30N, R11W, N.M.P.M.
SAN JUAN COUNTY, NEW MEXICO