

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work DRILL	5. Lease Number SF-078499A Unit Reporting Number	
1b. Type of Well GAS	6. If Indian, All. or Tribe	
2. Operator BURLINGTON RESOURCES Oil & Gas Company	7. Unit Agreement Name	
3. Address & Phone No. of Operator PO Box 4289, Farmington, NM 87499 (505) 326-9700	8. Farm or Lease Name Hardie E 9. Well Number 1B	
4. Location of Well 1765' FSL, 2250' FEL Latitude 36° 39.5, Longitude 107° 41.1	10. Field, Pool, Wildcat, etc. Otero Cha/Blanco MV 11. Sec., Twn, Rge, Mer. (NMPM) J Sec. 16, T-28-N, R-8-W API # 30-045-30100	
14. Distance in Miles from Nearest Town 8 miles from Blanco	12. County San Juan	13. State NM
15. Distance from Proposed Location to Nearest Property or Lease Line 1765'		
16. Acres in Lease	17. Acres Assigned to Well Chacra - 160 Mesaverde - 320 E/2	
18. Distance from Proposed Location to Nearest Well, Drig, Compl, or Applied for on this Lease 500'	This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4.	
19. Proposed Depth 4857'	20. Rotary or Cable Tools Rotary	
21. Elevations (DF, FT, GR, Etc.) 5818' GR	22. Approx. Date Work will Start	
23. Proposed Casing and Cementing Program See Operations Plan attached	DRAWING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS"	
24. Authorized by: <u>Peggy Cole</u> Regulatory/Compliance Administrator	<u>12-20-99</u> Date	

PERMIT NO. _____ APPROVAL DATE 9/28/00
APPROVED BY _____ TITLE _____ DATE 9/28/00

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.

HOLD 0104 FOR NSL

NMCCD

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

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised February 21, 1994

District II
PO Drawer 00, Artesia, NM 88211-0719

Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-30100		*Pool Code 82329/72319	*Pool Name Otero Chacra/Blanco Mesaverde	
*Property Code 7089	*Property Name HARDIE E			*Well Number 1B
*GRID No. 14538	*Operator Name BURLINGTON RESOURCES OIL & GAS COMPANY			*Elevation 5818'

10 Surface Location

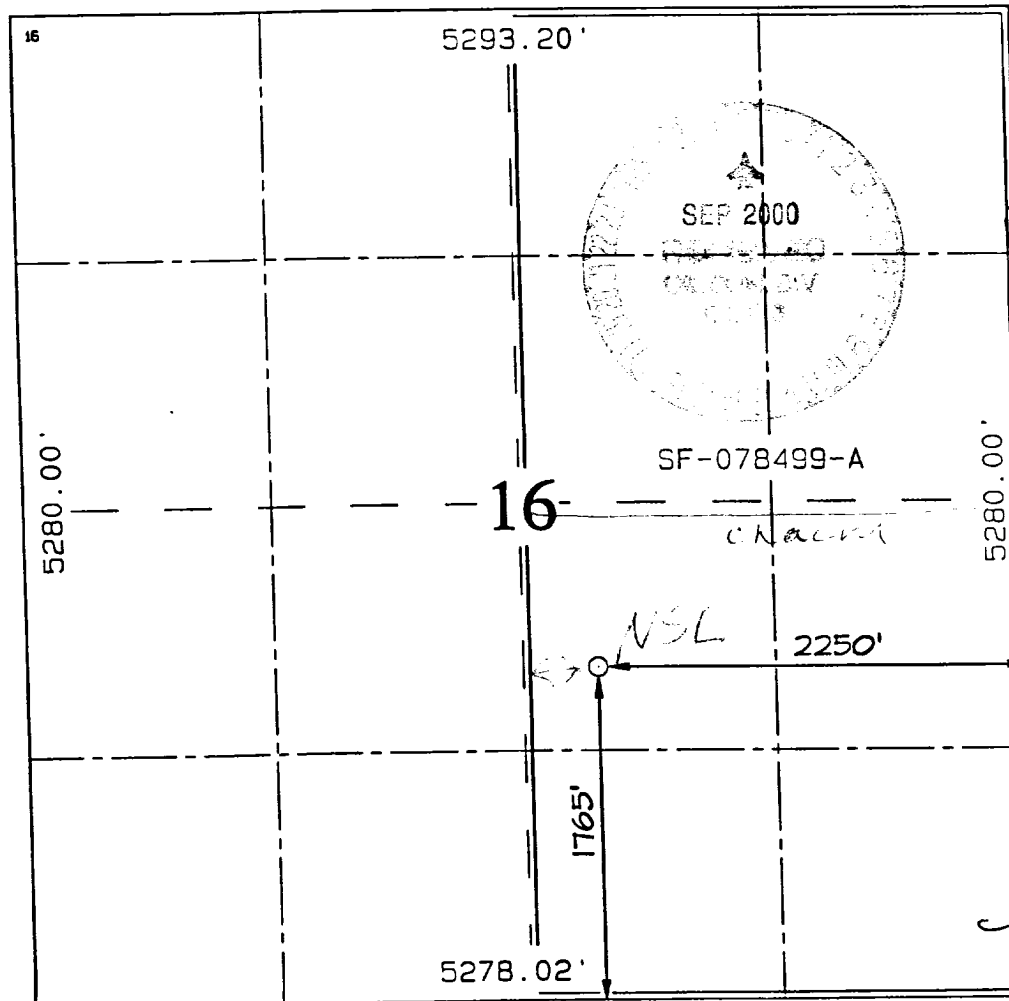

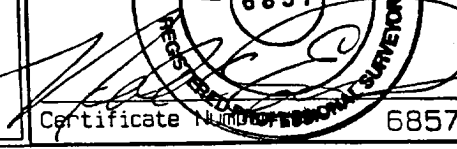
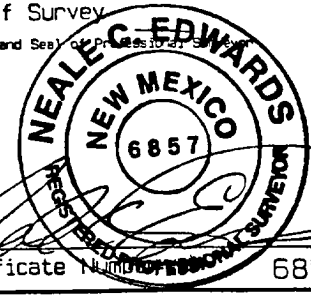
UL or lot no.	Section	Township	Range	Lot 10n	Feet from the	North/South line	Feet from the	East/West line	County
J	16	28N	8W		1765	SOUTH	2250	EAST	SAN JUAN

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot 10n	Feet from the	North/South line	Feet from the	East/West line	County

*Dedicated Acres Cha-160 MV-E/320	*Joint or Infill	*Consolidation Code	*Order No.
---	------------------	---------------------	------------

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

<div>16</div> 	<div>17</div> OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.  Signature Peggy Cole Printed Name Regulatory Administrator Title 12-20-99 Date
	<div>18</div> 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. NOVEMBER 18, 1999 Date of Survey  Signature and Seal of Professional Surveyor  Certificate Number 6857

OPERATIONS PLAN

Well Name: Hardie E #1B
Surface Location: 1765' FSL, 2250' FEL, Section 16, T-28-N, R-8-W
San Juan County, New Mexico
Latitude 36° 39.5, Longitude 107° 41.1
Formation: Otero Chacra/Blanco Mesa Verde
Elevation: 5818' GL

<u>Formation Tops:</u>	<u>Top</u>	<u>Bottom</u>	<u>Contents</u>
Surface	San Jose	1265'	aquifer
Ojo Alamo	1265'	1387'	aquifer
Kirtland	1387'	1750'	gas
Intermediate TD	1500'		
Fruitland	1750'	2220'	gas
Pictured Cliffs	2220'	2369'	gas
Lewis	2369'	2827'	gas
Mesa Verde	2827'	3192'	gas
Chacra	3192'	3890'	gas
Massive Cliff House	3890'	3976'	gas
Menefee	3976'	4457'	gas
Point Lookout	4457'		gas
Total Depth	4857'		

Logging Program:

Cased hole Gamma Ray, Cement bond - surface to TD
Mud Logs/Coring/DST - none

Mud Program:

<u>Interval- MD</u>	<u>Type</u>	<u>Weight</u>	<u>Vis.</u>	<u>Fluid Loss</u>
0- 120'	Spud	8.4-9.0	40-50	no control
120- 1500'	LSND	8.4-9.0	30-60	no control
1500- 4857'	Air/Mist	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):

<u>Hole Size</u>	<u>Measured Depth</u>	<u>Csg Size</u>	<u>Weight</u>	<u>Grade</u>
12 1/4"	0' - 120'	9 5/8"	32.3#	H-40
8 3/4"	0' - 1500'	7"	20.0#	J-55
6 1/4"	0' - 4857'	4 1/2"	10.5#	J-55

Tubing Program: 0' -4857' 2 3/8" 4.7# J-55

BOP Specifications, Wellhead and Tests:

Surface to Intermediate TD -

11" 2000 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" 2000 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, 2000 psi minimum choke manifold (Reference Figure #3).

Completion Operations -

7 1/16" 2000 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 2000 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 drill crew.
- All BOP tests & 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 96 sx Class "B" cement with 1/4# flocele/sx and 3% calcium chloride (113 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/112 sx Class "B" w/3% sodium metasilicate, 7# gilsonite/sx and 0.5# flocele/sx. Tail w/90 sx 50/50 Class "B" Poz w/2% gel, 2% calcium chloride, 7# gilsonite/sx and 0.5# flocele/sx (451 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 to determine TOC. Test casing to 1500 psi for 30 minutes.

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 1387'. Two turbulating centralizers at the base of the Ojo Alamo at 1387'. Bowspring centralizers spaced every fourth joint from the base of the Ojo Alamo to the base of the surface casing.

4 1/2" Production ~~Liner~~ -

Cement to circulate ~~liner top~~. Pump 391 sx 50/50 Class "B" Poz w/1/4# flocele/sx, 2% gel, 0.1% retardant, 5# gilsonite/sx and 0.4% fluid loss additive (497 cu.ft., 40% excess to circulate liner top). WOC a minimum of 18 hrs prior to completing.

Cement nose guide shoe on bottom with float collar spaced on top of shoe joint. The liner hanger will have a rubber packoff.

- 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 (Air/Mist Drilling):

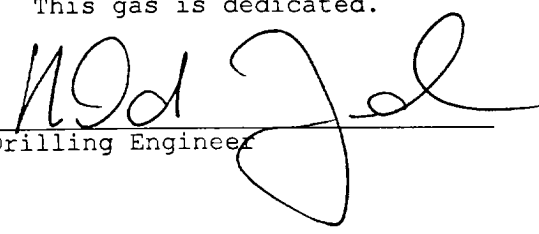
The following equipment will be operational while gas/mist drilling:

- 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.
- 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.

Additional Information:

- The Chacra and Mesa Verde formations will be completed and commingled.
- No abnormal temperatures or hazards are anticipated.
- Anticipated pore pressures are as follows:

Fruitland Coal	300 psi
Pictured Cliffs	600 psi
Mesa Verde	700 psi
- Sufficient LCM will be added to the mud system to maintain well control, if lost circulation is encountered below the top of the Pictured Cliffs.
- The east half of Section 11 is dedicated to the Mesa Verde and the SE/4 of Section 11 is dedicated to the Chacra.
- This gas is dedicated.


Drilling Engineer

12/27/99
Date

BURLINGTON RESOURCES OIL & GAS COMPANY HARDIE E #1B

1765' FSL & 2250' FEL, SECTION 16, T28N, R8W, N.M.P.M.
SAN JUAN COUNTY, NEW MEXICO

APD MAP #1

300' NEW FEE CONSTRUCTION
NWSE SECTION 16, T28N, R8W.

