

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

| | | | |
|---|--|---|--|
| 1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> | | 5. LEASE DESIGNATION AND SERIAL NO. SF 078243 | |
| 1b. TYPE OF WELL OIL <input type="checkbox"/> WELL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input type="checkbox"/> MULTIPLE ZONE <input checked="" type="checkbox"/> | | 6. IF INDIAN, ALLOTTEE OR TRIBE NAME | |
| 2. NAME OF OPERATOR Cordillera Energy, Inc. 173252 | | 7. UNIT AGREEMENT NAME 24019 | |
| 3. ADDRESS OF OPERATOR c/o Walsh Engineering, 7415 E. Main St. Farmington, NM 87402 (505) 327-4892 | | 8. FARM OR LEASE NAME, WELL NO. Arnstein #1Y | |
| 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.) At Surface 660' FNL and 1315' FWL At proposed Prod. Zone Same | | 9. API WELL NO. 30 045 31218 | |
| 14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 6 miles northwest of Aztec, NM | | 10. FIELD AND POOL OR WILDCAT Blanco Mesa Verde/ Basin Dakota | |
| 15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 660' | | 11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA C Sec. 18, T31N, R12W | |
| 16. NO. OF ACRES IN LEASE 320 | | 12. COUNTY OR PARISH San Juan | |
| 17. NO. OF ACRES ASSIGNED TO THIS WELL W/2 314.48 acres OK | | 13. STATE NM | |
| 18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR ON THIS LEASE, FT. 600' | | 19. PROPOSED DEPTH 6975' | |
| 20. ROTARY OR CABLE TOOLS Rotary | | 21. ELEVATIONS (Show whether DF, RT, GR, etc.) 5916' GR | |
| 22. APPROX. DATE WORK WILL START* November 2002 | | 23. PROPOSED CASING AND CEMENTING PROGRAM | |

| SIZE OF HOLE | GRADE, SIZE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | QUANTITY OF CEMENT |
|--------------|-----------------------|-----------------|---------------|--|
| 12-1/4" | 9-5/8" | 36# J-55 | 250' +/- | 165 cu. ft. Cl "B" w/ 2% CaCl ₂ |
| 8-3/4" | 7" | 20# J-55 | 4115' +/- | 1108 cu. ft. lead & 139 cu. ft. tail |
| 6-1/4" | 4-1/2" | 11.6# N-80 | 6975' +/- | 327 cu. ft. lead & 196 cu. ft. tail |

Cordillera Energy, Inc. proposes to drill a vertical well to develop the Blanco Mesa Verde and Basin Dakota formations at the above described location in accordance with the attached drilling and surface use plans.

This location has been archaeologically surveyed by La Plata Archeological Service. Copies of their report have been submitted directly to your office. Nelson Consulting performed a T&E survey 7/19/02. Copies of their report have been submitted directly to your office.

The wellpad, access road, and pipeline will be located on BLM surface land. An on-site inspection was held with the BLM on 9/10/02.

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

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

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED Paul C. Thompson TITLE Paul Thompson, Agent DATE 9/18/02

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

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:

APPROVED BY /s/ David J. Markiewicz TITLE _____ DATE JAN 27 2003

*See Instructions On Reverse Side

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 representations as to any matter within its jurisdiction.

NMOC

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

| | | | |
|--|--|--|--|
| ¹ API Number 30-045-31218 | | ² Pool Code 72319 \ 71599 | ³ Pool Name BLANCO MESAVERDE \ BASIN DAKOTA |
| ⁴ Property Code 24019 | ⁵ Property Name ARNSTEIN | | ⁶ Well Number 1Y |
| ⁷ GRID No. 173252 | ⁸ Operator Name CORDILLERA ENERGY, INC. | | ⁹ Elevation 5916' |

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 |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|----------|
| C | 18 | 31N | 12W | | 660 | NORTH | 1315 | 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 314.48 Acres - (W/2) | ¹³ Joint or Infill | ¹⁴ Consolidation Code | ¹⁵ Order No. R-6760-MV |
|--|-------------------------------|----------------------------------|---|

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>5258.88'</div> <div>LOT 1 LOT 2 LOT 3 LOT 4</div> <div>1260.60' 1320.66' 2640.66' 1315' 660' 5287.92' 1284.36' 1316.70' 2633.40'</div> <div>SF-078243</div> <div>18</div> | <div>¹⁶ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief <i>Paul C. Thompson</i> Signature Printed Name Title Date</div> <div>¹⁷ 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: JULY 12, 2002 Signature and Seal of Professional Surveyor  <i>JASON C. EDWARDS</i> Certificate Number 15269</div> |
|--|--|

C. Minimum Blowout Control Specifications:

Double ram type 2000 psi working pressure BOP with a rotating head. See the attached Exhibit #1 for details on the BOP equipment. All ram type preventers and related equipment will be hydraulically tested at nipple-up and after any use under pressure to 1000 psi.

The blind rams will be hydraulically activated and checked for operational readiness each time pipe is pulled out of the hole. All checks of the BOP stack and equipment will be noted on the daily drilling report. The BOP equipment will include a kelly cock, floor safety valve, and choke manifold all rated to 2000 psi.

IV. Materials

A. Casing Program:

| Hole Size | Depth | Casing Size | Wt. & Grade |
|-----------|-------|-------------|-------------|
| 12-1/4" | 250' | 9-5/8" | 36# J-55 |
| 8-3/4" | 4115' | 7" | 20# J-55 |
| 6-1/4" | 6975' | 4-1/2" | 11.6# N-80 |

B. Float Equipment:

a) Surface Casing: Notched collar on bottom and 3 centralizers on the bottom 3 joints.

b) Intermediate Casing: 7" cement guide shoe and self fill insert float collar. Place float one joint above shoe. Ten centralizers spaced every other joint above shoe and ten turbolizers every other joint from 1500'.

c) Production Casing: 4-1/2" whirler type cement nosed guide shoe and a float collar on top of the bottom joint.

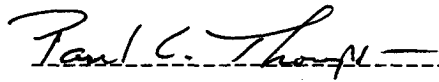
Arnstein #1Y
Operations Plan
Pg #3

V. Cementing:

Surface casing: 9-5/8" - Use 140 sx (165 cu. ft.) of Cl "B" with 2% CaCl_2 (Yield = 1.18 cu. ft./sk; slurry weight = 15.6 PPG). 100% excess to circulate cement to surface. WOC 12 hours. Pressure test surface casing to 1000 psi for 30 min.

Intermediate Casing: 7" - Before cementing circulate hole with at least 1-1/2 hole volumes of mud. Precede cement with 30 bbls of fresh water. **Lead** with 535 x (1108 cu.ft) of Type III 65/35 poz with 8% gel, 1% CaCl_2 , 1/4#/sk. Celloflake. (Yield = 2.09 cu.ft./sk; slurry weight = 12.1 PPG). **Tail** with 100 sx (139 cu.ft.) of Type III with 1% CaCl_2 , 1/4#/sk. Celloflake. (Yield = 1.39 cu. ft./sk; slurry weight = 14.5 PPG). Total cement volume is 1246 cu.ft. (100% excess to circulate cement to surface). WOC for 12 hrs. Pressure test the BOP and casing to 1500 psi.

Production Casing: 4-1/2" - Blow hole clean. Precede cement with 20 bbls of gel water and 10 bbls of water. **Lead** with 165 sx (327 cu.ft.) of Premium Lite HS with 0.65% FL-52, 0.32% CD-32, 1/4 #/sk celloflake, and 4% phenoseal. (Yield = 1.98 cu.ft./sk; slurry weight = 12.5 PPG). **Tail** with 100 sx (196 cu.ft.) of Premium Lite HS with 0.65% FL-52, and 0.32% CD-32. (Yield = 1.96 cu.ft./sk; slurry weight = 12.5 PPG). Total cement volume is 523 cu.ft. (70% excess to circulate 100' above the intermediate casing shoe).


Paul C. Thompson, P.E.