

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 078707	
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.		7. UNIT AGREEMENT NAME	
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. Duke #1B	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. *) At Surface 690' FSL and 1515' FEL At proposed Prod. Zone Same		9. API WELL NO. 3004531062	
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) 690'		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA 0 Sec. 13, T31N, R13W	
16. NO. OF ACRES IN LEASE 320+		12. COUNTY OR PARISH San Juan	
17. NO. OF ACRES ASSIGNED TO THIS WELL E/2 320 acres		13. STATE NM	
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR ON THIS LEASE, FT. 1900'		19. PROPOSED DEPTH 6970'	
20. ROTARY OR CABLE TOOLS Rotary		21. APPROX. DATE WORK WILL START* June 2002	
22. ELEVATIONS (Show whether DF, RT, GR, etc.) 5851' GR		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	4080' +/-	1087 cu.ft. lead & 139 cu.ft. tail
6-1/4"	4-1/2"	11.6#, N-80	6970' +/-	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 5/15/02. 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 4/25/02.

This action is subject to technical and
approval 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.

SIGNED Paul C. Thompson TITLE Paul Thompson, Agent DATE 5/15/02

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE 6/17/02
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 David J. Mankiewicz TITLE _____ DATE JUN 17 2002

*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.

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

*API Number 30-045-31062		*Pool Code 72319 \ 71599	*Pool Name BLANCO MESAVERDE \ BASIN DAKOTA
*Property Code 24030	*Property Name DUKE		*Well Number 1B
*GRID No. 173252	*Operator Name CORDILLERA ENERGY, INC.		*Elevation 5851'

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
0	13	31N	13W		690	SOUTH	1515	EAST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

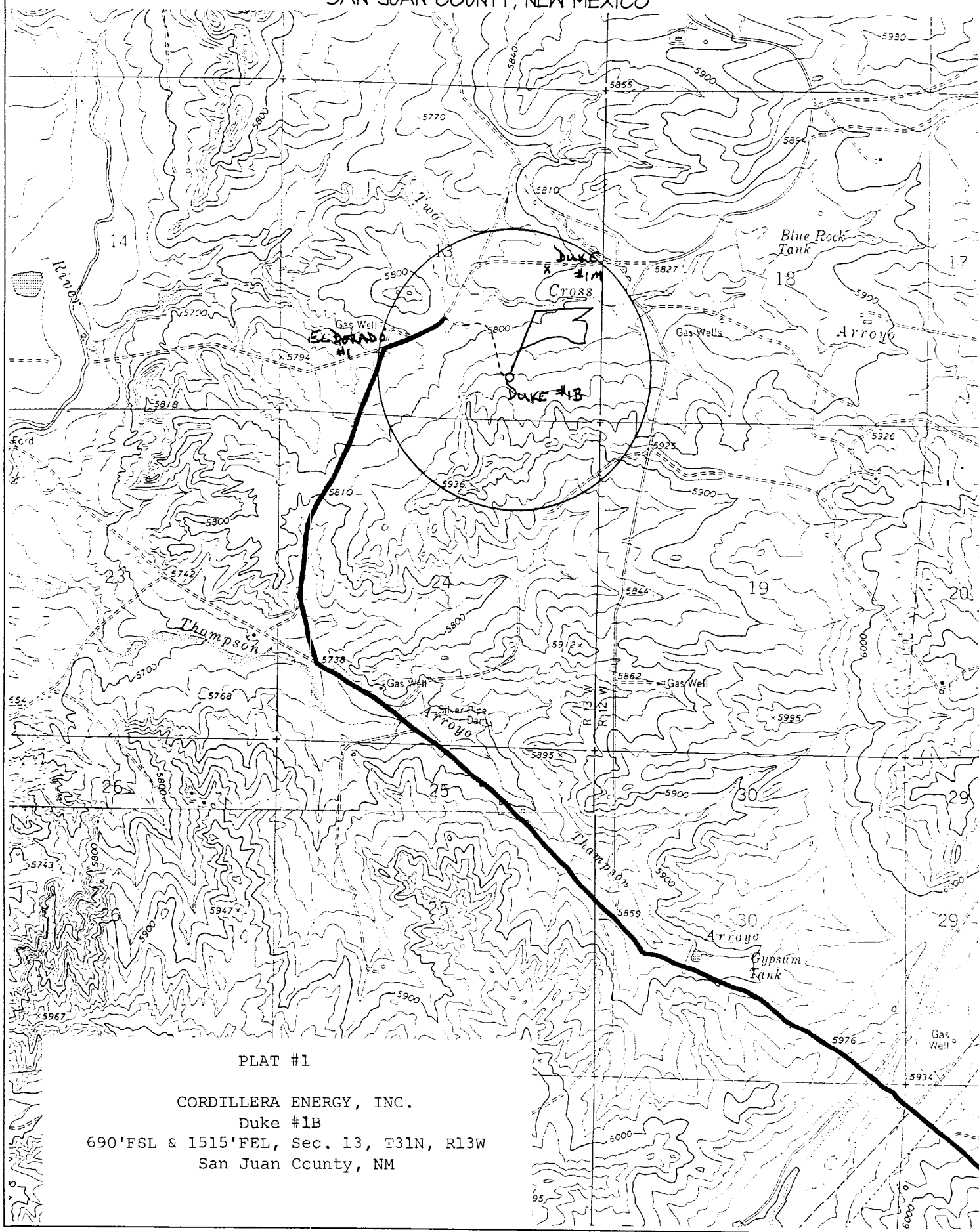
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

¹² Dedicated Acres 320.0 Acres - (E/2)	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ 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

¹⁵ 2660.46'	¹⁶ 2626.14'	¹⁷ 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 Paul C. Thompson Printed Name Agent Title 5/16/02 Date	
5243.70'	5258.88'		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: MARCH 27, 2002 Signature and Seal of Professional Surveyor  <i>JASON C. EDWARDS</i> Certificate Number 15269
13	SF-078707		
2653.86'	2595.12'		

CORDILLERA ENERGY, INC. DUKE #1B
690' FSL & 1515' FEL, SECTION 13, T31N, R13W, N.M.P.M.
SAN JUAN COUNTY, NEW MEXICO



PLAT #1

CORDILLERA ENERGY, INC.
Duke #1B
690' FSL & 1515' FEL, Sec. 13, T31N, R13W
San Juan County, NM

CORDILLERA ENERGY, INC.
OPERATIONS PLAN
Duke #1B

I. Location: 690' FSL & 1515' FEL Date: May 15, 2002
 Sec 13 T31N R13W
 San Juan County, NM

Field: Blanco MV & Basin DK Elev: GL 5851'
Surface: BLM
Minerals: SF 078707

II. Geology: Surface formation _ Nacimiento

A. Formation Tops	Depths
Ojo Alamo	445'
Kirtland	1455'
Pictured Cliffs	2215'
Cliff House	3770'
Menefee	4070'
Point Lookout	4500'
Dakota	6670'
Total Depth	6970'

Estimated depths of anticipated water, oil, gas, and other mineral bearing formations which are expected to be encountered:

Water and gas - 3770'; gas - 2215', 4070', 4500', 6670'.

B. Logging Program: Induction/GR and density logs at TD.

C. No over pressured zones are expected in this well. No H₂S zones will be penetrated in this well. Max. BHP = 2500 psig.

III. Drilling

A. Contractor: Key Energy

B. Mud Program:

The surface hole will be drilled with a fresh water mud.

The intermediate hole will be drilled with a fresh water polymer mud. The weighting material will be drill solids or if conditions dictate, barite. The maximum mud weight expected is 8.5 ppg.

The production hole will be drilled with air or air/mist.

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"	4080'	7"	20# J-55
6-1/4"	6970'	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'.

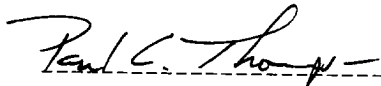
c) Production Casing: 4-1/2" whirler type cement nosed guide shoe and a float collar on top of the bottom joint.

V. Cementing:

Surface casing: 9-5/8" - Use 140 sx (165 cu. ft.) of Cl "B" with 2% CaCl₂ (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 520 x (1087 cu.ft) of Type III 65/35 poz with 8% gel, 1% CaCl₂, ¼#/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% CaCl₂, ¼#/sk. Celloflake. (Yield = 1.39 cu. ft./sk; slurry weight = 14.5 PPG). Total cement volume is 1226 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, ¼ #/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.