

**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT**

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

1. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. <b>SF-078213</b>	
16. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME <b>NA</b>	
2. NAME OF OPERATOR <b>Calpine Natural Gas</b>		7. UNIT AGREEMENT NAME <b>NA</b>	
3. ADDRESS OF OPERATOR <b>1200 17th Street, Ste 770, Denver, Colorado 80202</b>		8. FARM OR LEASE NAME <b>Tiger</b> 28115	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.) At Surface <b>660' FNL &amp; 1540' FEL, NWNE</b> At proposed Prod. Zor <b>SAME AS ABOVE</b>		9. WELL NO. <b>#16</b>	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* <b>In the town of Farmington, New Mexico</b>		10. FIELD AND POOL OR WILDCAT <b>Basin Fruitland Coal Gas</b>	
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPE OR LEASE LINE. FT (Also to nearest drlg. unit line, if any) <b>660'</b>		11. SEC. T. R. M. OR BLK AND SURVEY OR AREA <b>B SEC 35-T30N-R13W</b> <b>30-045-31004</b>	
16. NO. OF ACRES IN LEASE <b>480</b>		12. COUNTY OR PARISH <b>San Juan</b>	
17. NO. OF ACRES ASSIGNED TO THIS WELL <b>320</b> N/2		13. STATE <b>NM</b>	
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR ON THIS LEASE. FT <b>465</b>		19. PROPOSED DEPTH <b>1855'</b>	
20. ROTARY OR CABLE TOOLS <b>ROTARY</b>		21. APPROX. DATE WORK WILL START* <b>4/15/2002</b>	
22. ELEVATIONS (Show whether DF, RT, GR, etc.) <b>5678' GL</b>			
23. PROPOSED CASING AND CEMENTING PROGRAM			
SIZE OF HOLE	SIZE OF CASING	WEIGHT/FOOT	SETTING DEPTH
<b>8 3/4"</b>	<b>7"</b>	<b>23</b>	<b>375</b>
<b>6 1/4"</b>	<b>4 1/2"</b>	<b>10.5</b>	<b>1855</b>
		QUANTITY OF CEMENT	
		<b>97 sx.</b>	
		<b>154 sx.</b>	

CALPINE NATURAL GAS WILL BE RESPONSIBLE FOR OPERATIONS UNDER THE TERMS AND CONDITIONS IN CONJUNCTION WITH THIS APPLICATION.

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

THE SUBJECT WELL WILL BE DRILLED TO TEST THE FRUITLAND COAL.

IF THE WELL PROVES TO BE NOT COMMERCIAL CEMENT PLUGS WILL BE SET AS DIRECTED BY O.S.O #2.

PRIOR APPROVAL WILL BE OBTAINED PRIOR TO ANY ABANDONMENT TAKING PLACE.

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

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 <u><i>John Cantage</i></u> TITLE <u>Production Mgr.</u> DATE <u>2/18/2002</u>	
(This space for Federal or State office use)	
PERMIT NO.	APPROVAL DATE <u>4/2/02</u>
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 <u>/s/ David J. Markiewicz</u> TITLE <u>DEM</u> DATE _____	

\*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 <b>30-045-31004</b>		*Pool Code <b>71629</b>	*Pool Name <b>BASIN FRUITLAND COAL</b>
*Property Code <b>28115</b>	*Property Name <b>TIGER</b>		*Well Number <b>16</b>
*GRID No. <b>194807</b>	*Operator Name <b>CALPINE NATURAL GAS COMPANY</b>		*Elevation <b>3678</b>

#### 10 Surface Location

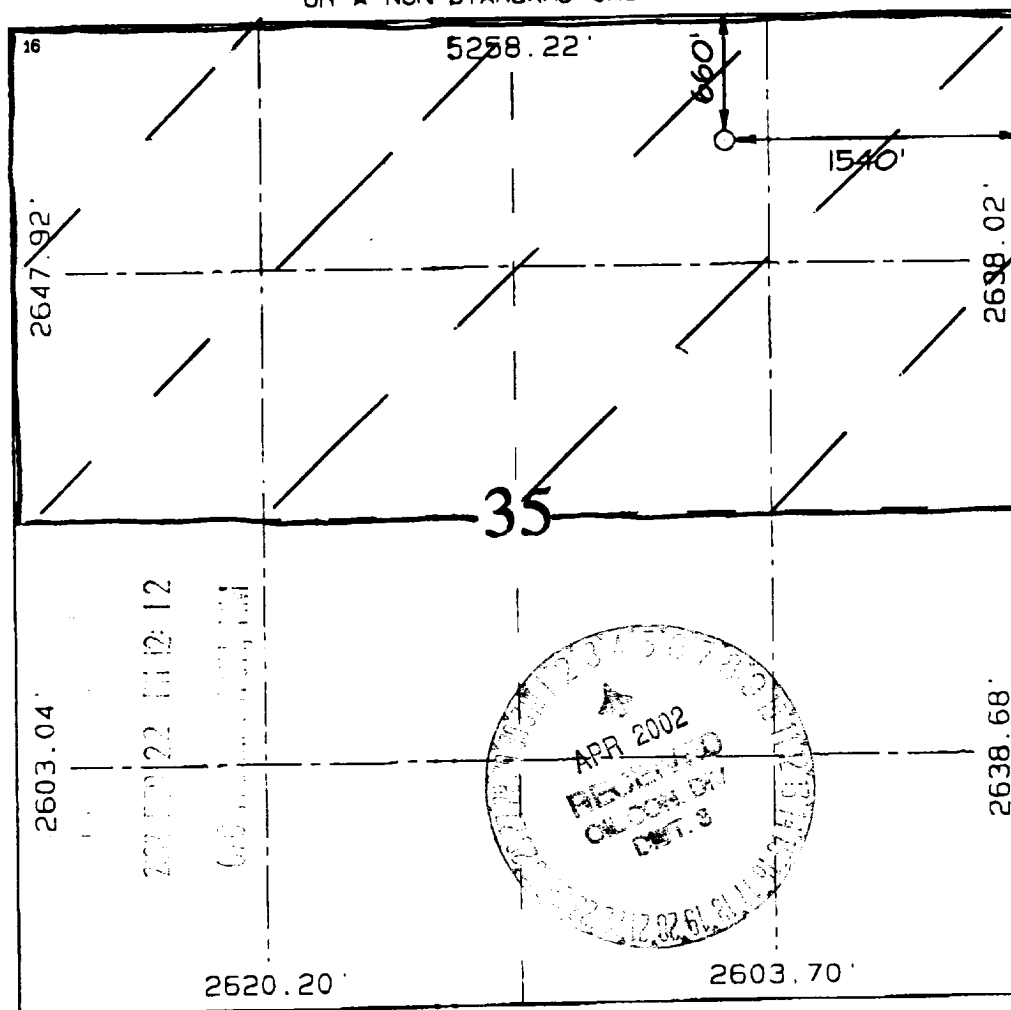

UL or lot no.	Section	Township	Range	Lot 10	Feet from the	North/South line	Feet from the	East/West line	County
B	35	30N	13W		660	NORTH	1540	EAST	SAN JUAN

#### 11 Bottom Hole Location If Different From Surface

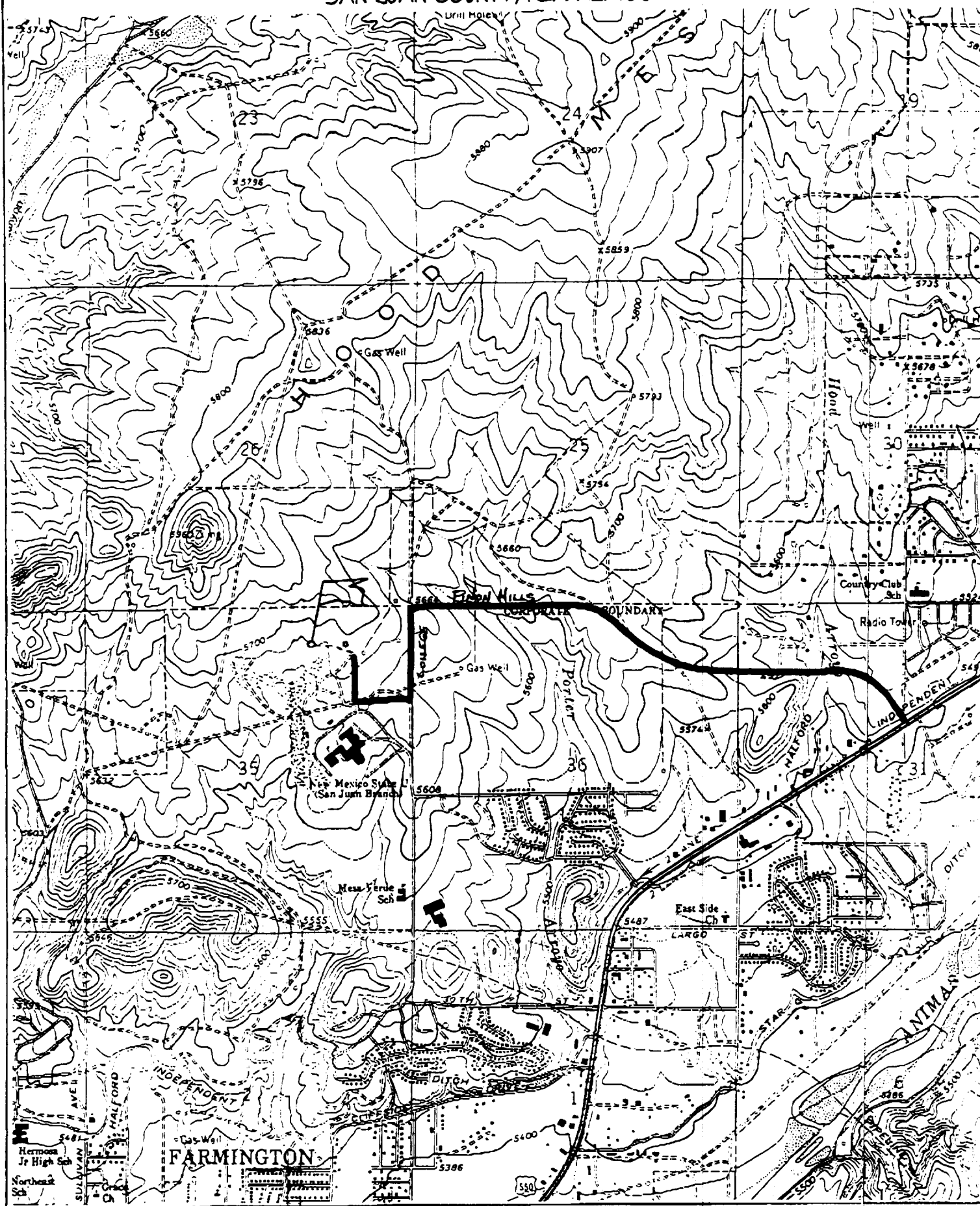
UL or lot no.	Section	Township	Range	Lot 10	Feet from the	North/South line	Feet from the	East/West line	County

*Dedicated Acres <b>320</b>	*Joint or Infill	*Consolidation Code	*Order No.
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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

	<b>17 OPERATOR CERTIFICATION</b> I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. <b>Hugo Cartaya</b> Signature <b>Hugo Cartaya</b> Printed Name <b>Production Manager</b> Title <b>2/18/02</b> Date
	<b>18 SURVEYOR CERTIFICATION</b> 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. Survey Date: <b>NOVEMBER 22, 2001</b> Signature and Seal of Professional Surveyor  <b>JASON C. EDWARDS</b> Certificate Number <b>15269</b>

CALPINE NATURAL GAS COMPANY TIGER #16  
660' FNL & 1540' FEL, SECTION 35, T30N, R13W, N.M.P.M.  
SAN JUAN COUNTY, NEW MEXICO



Calpine Natural Gas  
OPERATIONS PLAN  
Tiger #16

I. Location: 660' FNL & 1830' FEL                      Date: February 18, 2002  
                    Sec 35 T30N R13W  
                    San Juan County, NM

Field: Basin Fruitland Coal Gas                      Elev: GL 5678'  
Surface: San Juan College  
Minerals: SF-078213

II. Geology: Surface formation \_ Kirkland

A. Formation Tops	Depths
Ojo Alamo	Surface
Kirkland	335'
Fruitland	1370'
Pictured Cliffs	1665'
Total Depth	1855'

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

Water and gas - 1370'; gas - 1665'.

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

C. No over pressured zones are expected in this well. No H<sub>2</sub>S zones will be penetrated in this well. Max. BHP = 500 psig.

III. Drilling

A. Contractor:

B. Mud Program:

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

The production 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.

C. Minimum Blowout Control Specifications:

Double ram type or annular type 2000 psi working pressure BOP with a rotating head. See the attached exhibit 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
8-3/4"	375'	7"	23# K-55
6-1/4"	1855'	4-1/2"	10.5# K-55

B. Float Equipment:

a) Surface Casing: 7" cement guide shoe and self-fill insert float collar. Place float one joint above shoe. A total of five centralizers spaced evenly will be used.

b) Production Casing: 4-1/2" cement guide shoe and self-fill insert float collar. Place float one joint above shoe. Five centralizers spaced every other joint above shoe and five turbolizers every other joint from the top of the well.

V. Cementing:

Surface casing: 7" - Use 97 sx (113 cu. ft.) of Cl "B" with 2% CaCl<sub>2</sub> (Yield = 1.17 cu. ft./sk; slurry weight = 15.6 PPG). 100% excess to circulate cement to surface. WOC 12 hours. Pressure test surface casing to 600 psi for 30 min.

Production Casing: 4-1/2" - Before cementing circulate hole with at least 1-1/2 hole volumes of mud. Precede cement with 30 bbls of fresh water. Lead with 76 sx (156 cu.ft) of Cl "B" with 2% metasilicate. (Yield = 2.06 cu.ft./sk; slurry weight = 12.5 PPG). Tail with 77 sx (84 cu.ft.) of Cl "B" with 2% CaCl<sub>2</sub> (Yield = 1.18 cu. ft./sk; slurry weight = 15.6 PPG) Total cement volume is 240 cu.ft. (30% excess to circulate cement to surface).

  
Hugo Cartaya