

30-045-31008

FORM 3160-3
(December 1990)

SUBMIT IN TRIPLICATE*
(Other instructions on
reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires December 31, 1991

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK DRILL DEEPEN

1b. TYPE OF WELL
OIL WELL GAS WELL OTHER SINGLE ZONE MULTIPLE ZONE

5. LEASE DESIGNATION AND SERIAL NO.
SF-078213

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
NA

7. UNIT AGREEMENT NAME
NA

8. FARM OR LEASE NAME
Arnie

28103

2. NAME OF OPERATOR
Calpine Natural Gas

9. WELL NO.
#4

3. ADDRESS OF OPERATOR
1200 17th Street, Ste 770, Denver, Colorado 80202

10. FIELD AND POOL OR WILDCAT
Basin Fruitland Coal Gas

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*
At Surface **735' FNL & 660' FEL, NENE**
At proposed Prod. Zor **SAME AS ABOVE**
API 30-045-31008

11. SEC. T., R., M., OR BLK.
AND SURVEY OR AREA
A SEC 25-T30N-R13W

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
In the town of Farmington, New Mexico

12. COUNTY OR PARISH
San Juan

13. STATE
NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPEL OR LEASE LINE, FT (Also to nearest drlg. unit line, if any)
660'

16. NO. OF ACRES IN LEASE
800

17. NO. OF ACRES ASSIGNED TO THIS WELL
320 N/2

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR ON THIS LEASE, FT.
1500'

19. PROPOSED DEPTH
1,995

20. ROTARY OR CABLE TOOLS
ROTARY

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
5739' GL

22. APPROX. DATE WORK WILL START*
4/1/2002

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT/FOOT	SETTING DEPTH	QUANTITY OF CEMENT
8 3/4"	7"	23	455	117 sx.
6 1/4"	4 1/2"	10.5	1995	166 sx.

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

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 professional review pursuant to 43 CFR 216.4 and 216.5 pursuant to 43 CFR 216.4.

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED REGULATORY 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 *Jim Cortez* TITLE Production Mgr. DATE 2/28/2002

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE 4/3/02
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 *Jim Lovato* TITLE Patr Eng. DATE 4/3/02
*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 00, Artesia, NM 88211-0719

District III
1000 R:0 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 30-045-31008		*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL
*Property Code 28103	*Property Name ARNIE		*Well Number 4
*GRID NO. 194807	*Operator Name CALPINE NATURAL GAS COMPANY		*Elevation 5739'

¹⁰ Surface Location

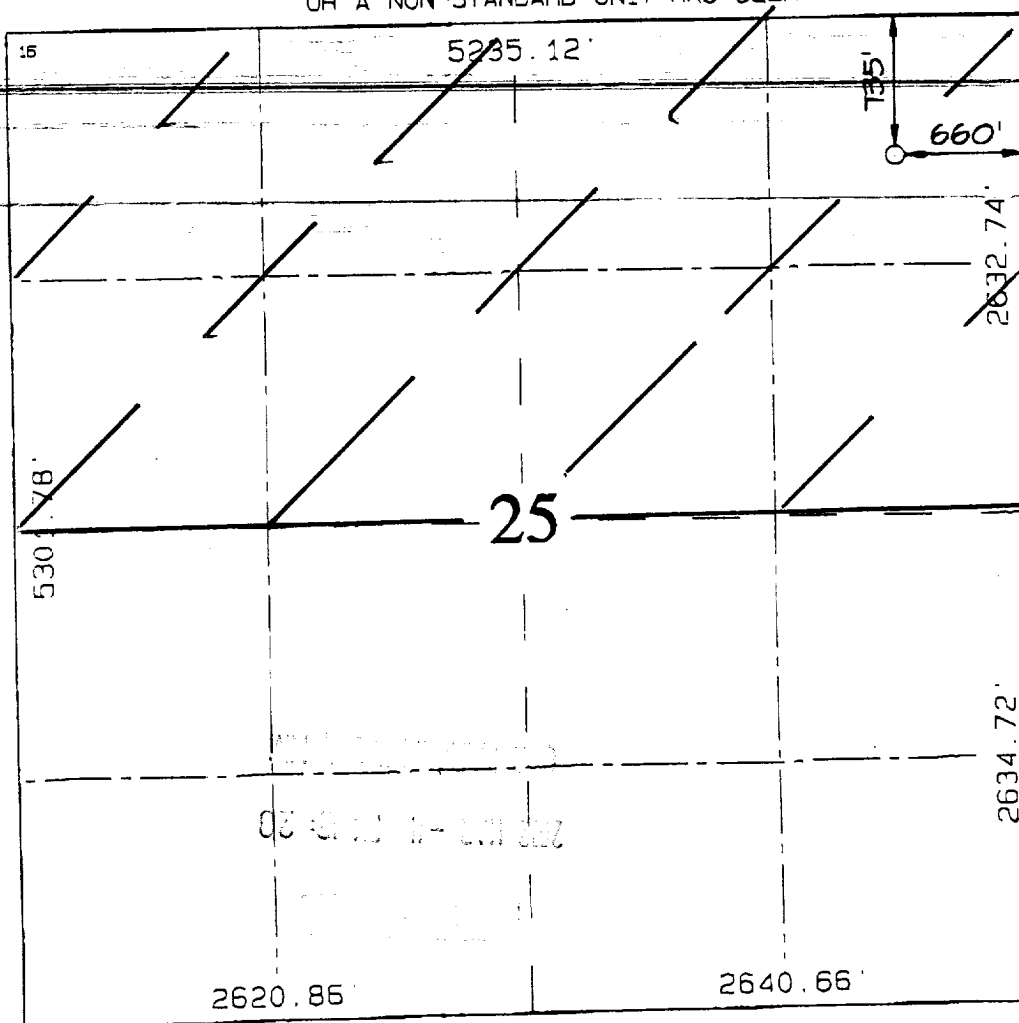
UL or lot no.	Section	Township	Range	Lot Ion	Feet from the	North/South line	Feet from the	East/West line	County
A	25	30N	13W		735	NORTH	660	EAST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

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

¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ 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



¹⁷ OPERATOR CERTIFICATION
I hereby certify that the information contained herein is true and correct to the best of my knowledge and belief.

Signature: *Huaco Cartaya*
Printed Name: **Huaco Cartaya**
Title: **Production Manager**
Date: **2/28/02**

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.

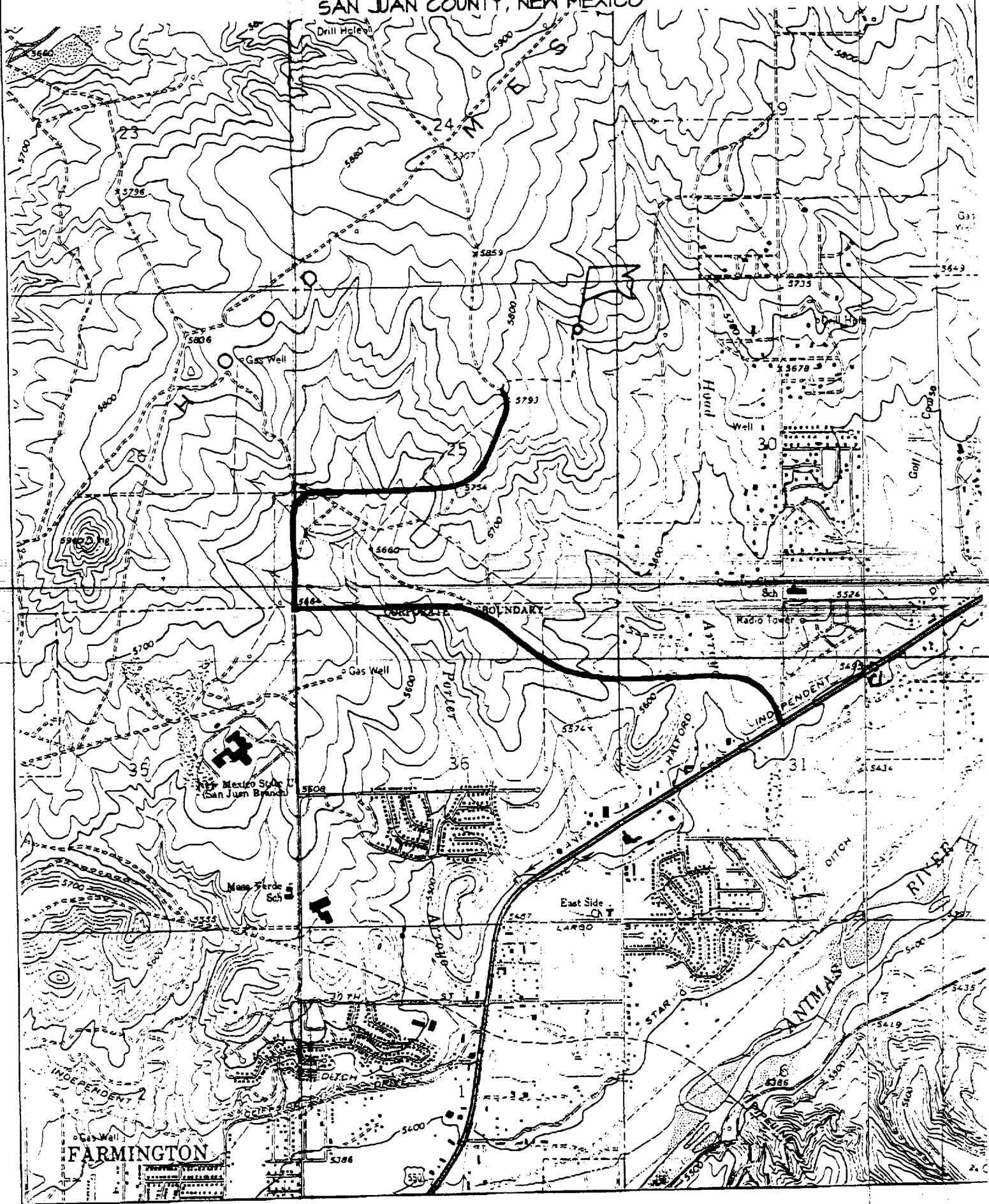
Survey Date: **DECEMBER 3, 2001**

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
Certificate Number 15269

CALPINE NATURAL GAS COMPANY ARNIE #4

735' FNL & 660' FEL, SECTION 25, T30N, R13W, N.M.P.M.
SAN JUAN COUNTY, NEW MEXICO



Calpine Natural Gas
OPERATIONS PLAN
Arnie #4

I. Location: 735' FNL & 660' FEL Date: February 28, 2002
Sec 25 T30N R13W
San Juan County, NM

Field: Basin Fruitland Coal Gas Elev: GL 5739'
Surface: United States of America
Minerals: SF-078213

II. Geology: Surface formation _ Kirkland

A. Formation Tops	Depths
Ojo Alamo	Surface
Kirkland	415'
Fruitland	1445'
Pictured Cliffs	1795'
Total Depth	1995'

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

Water and gas - 1445'; gas - 1795'.

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 = 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"	455'	7"	23# K-55
6-1/4"	1995'	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 117 sx (137 cu. ft.) of Cl "B" with 2% CaCl₂ (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 81 sx (166 cu.ft.) of Cl "B" with 2% metasilicate. (Yield = 2.06 cu.ft./sk; slurry weight = 12.5 PPG). Tail with 85 sx (100 cu.ft.) of Cl "B" with 2% CaCl₂ (Yield = 1.18 cu. ft./sk; slurry weight = 15.6 PPG)
Total cement volume is 266 cu.ft. (30% excess to circulate cement to surface).


Hugo Cartaya