

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

RECEIVED

FEB -2 PM 2:31

070 Farmington, NM

FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000

Lease Serial No.

SF-078213

6. If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.

Arnie #5

9. API Well No.

3004532167

10. Field and Pool, or Exploratory

Basin Fruitland Coal

11. Sec., T., R., M., or Blk, and Survey or Area

F Section 25, T30N, R13W

12. County or Parish

San Juan

13. State

NM

a. Type of Work: ☒ DRILL

☐ REENTER

b. Type of Well: ☐ Oil Well

☒ Gas Well

☐ Other

☒ Single Zone

☐ Multiple Zone

2. Name of Operator

Calpine Natural Gas Company

3A. Address

c/o Walsh Engineering, 7415 E. Main, Farmington, NM 87402

3b. Phone No. (include area code)

505.327.4892

4. Location of Well (Report location clearly and in accordance with any State requirements. *)

At surface 1770' FNL and 1545' FWL

At proposed prod. Zone

14. Distance in miles and direction from nearest town or post office*

In north Farmington, NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)

870'

16. No. of Acres in lease

800

17. Spacing Unit dedicated to this well

N/2 320 acres

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.

450'

19. Proposed Depth

1930' +/-

20. BLM/BIA Bond No. on file

21. Elevations (Show whether DF, KDB, RT, GL, etc.)

5734' GL

22. Approximate date work will start*

April 2004

23. Estimated duration

2 weeks

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

1. Well plat certified by a registered surveyor.

2. A Drilling Plan.

3. A Surface Use Plan (if the location is on National Forest System Lands, the

SUPO shall be filed with the appropriate Forest Service Office.

4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).

5. Operator certification.

6. Such other site specific information and/or plans as may be required by the authorized office.

25. Signature

Paul C. Thompson

Name (Printed/Typed)

Paul C. Thompson, P.E.

Date

1/30/2004

Title

Agent

Approved by (Signature)

David J. Menkiewicz

Name (Printed/Typed)

Date

MAY - 7 2004

Title

Office

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, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make 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.

*(Instructions on reverse)

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 30045-32167		*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL
*Property Code 30436	*Property Name ARNIE		*Well Number 5
*OGWID No. 194807	*Operator Name CALPINE NATURAL GAS L.P.		*Elevation 5734'

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
F	25	30N	13W		1770	NORTH	1545	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 320.0 Acres - (N/2)					¹³ Joint or Infill Y		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



¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Paul C. Thompson
Signature
Paul C. Thompson
Printed Name
AGENT
Title
1/30/04
Date

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: NOVEMBER 13, 2003

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

CALPINE NATURAL GAS CORP.
OPERATIONS PLAN
Arnie #5

- I. Location: 1770' FNL & 1545' FWL Date: January 30, 2004
 Sec 25 T30N R13W
 San Juan County, NM

Field: Basin Fruitland Coal
Surface: City of Farmington & BLM
Minerals: Federal SF 078213
Elev: GL 5734'

II. Geology: Surface formation _ Nacimiento

<u>Formation Tops</u>	<u>Depths</u>
Ojo Alamo	219'
Kirtland	369'
Fruitland	1279'
Pictured Cliffs	1769'
Total Depth	1930'

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

Water and gas - 1279' and 1769'.

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

C. No over pressured zones are expected in this well. No H₂S zones will be penetrated in this well. Max. BHP = 600 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 exhibits (#1 and #2) 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.

C. Cont.

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"	120' 383'	7"	20# K-55
6-1/4"	1930'	4-1/2"	10.5# K-55

B. Float Equipment:

a) Surface Casing: None

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 fifth joint from the top of the well.

V. Cementing:

Surface casing: 7" - Use 50 sx (59 cu. ft.) of C1 "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 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 165 sx (340 cu.ft) of C1 "B" with 2% metasilicate. (Yield = 2.06 cu.ft./sk; slurry weight = 12.5 PPG). Tail with 50 sx (59 cu.ft.) of C1 "B" with 2% CaCl₂ (Yield = 1.18 cu. ft./sk; slurry weight = 15.6 PPG) Total cement volume is 399 cu.ft. (100% excess to circulate cement to surface).


Paul C. Thompson, P.E.

Calone Natural Gas Company

Well Control Equipment Schematic for 2M Service

EXHIBIT #1

Date: July 11, 2001

By: Paul Thompson

Rotating Head (optional)

Fill Line

Mud Flow to Pit

Double Ram Preventer

Drilling Spool

Kill line (2" Min)

Choke line to Manifold (2" Min)

Ground Level

Casing Head

Bull Plug

Ball Valve 2000 psi WP

Surface Casing

Production Casing

Choke & Kill
Manifold

Positive Choke

Bypass to
Steel Pit
(Optional)

2" Minimum Size

Pressure Gauge

Straight-thru
to Tank or Pit

From BOP
Stack

2" Minimum Size

2" Minimum Size

Working Pressure for all equipment
is 2,000 psi or greater

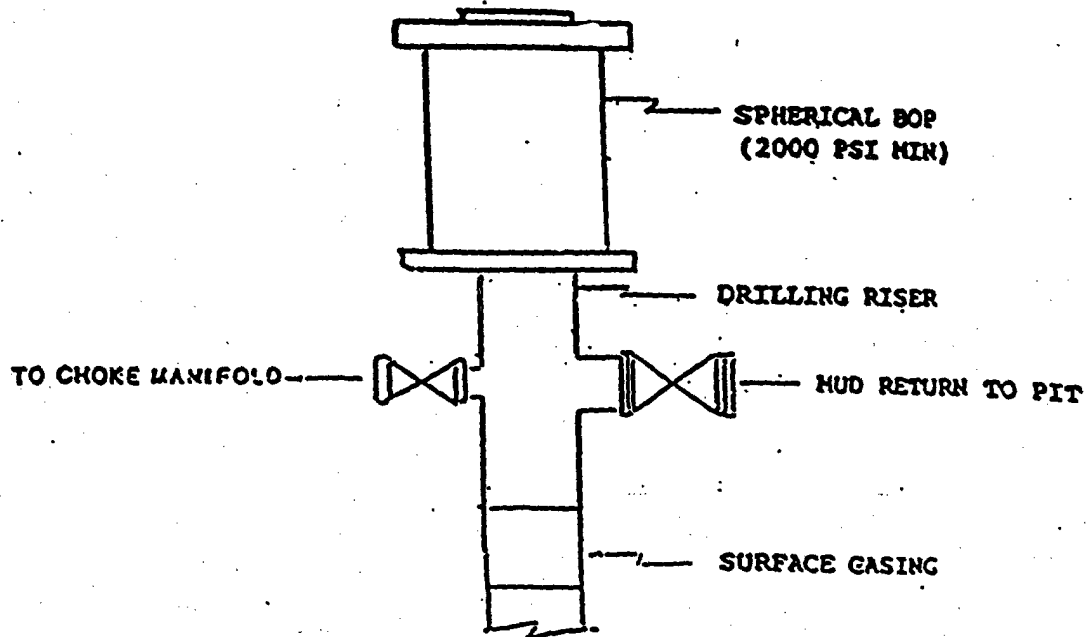
2" Minimum Size

To Tank or Pit

Adjustable
Choke

BOP Stack

ANNULAR PREVENTER

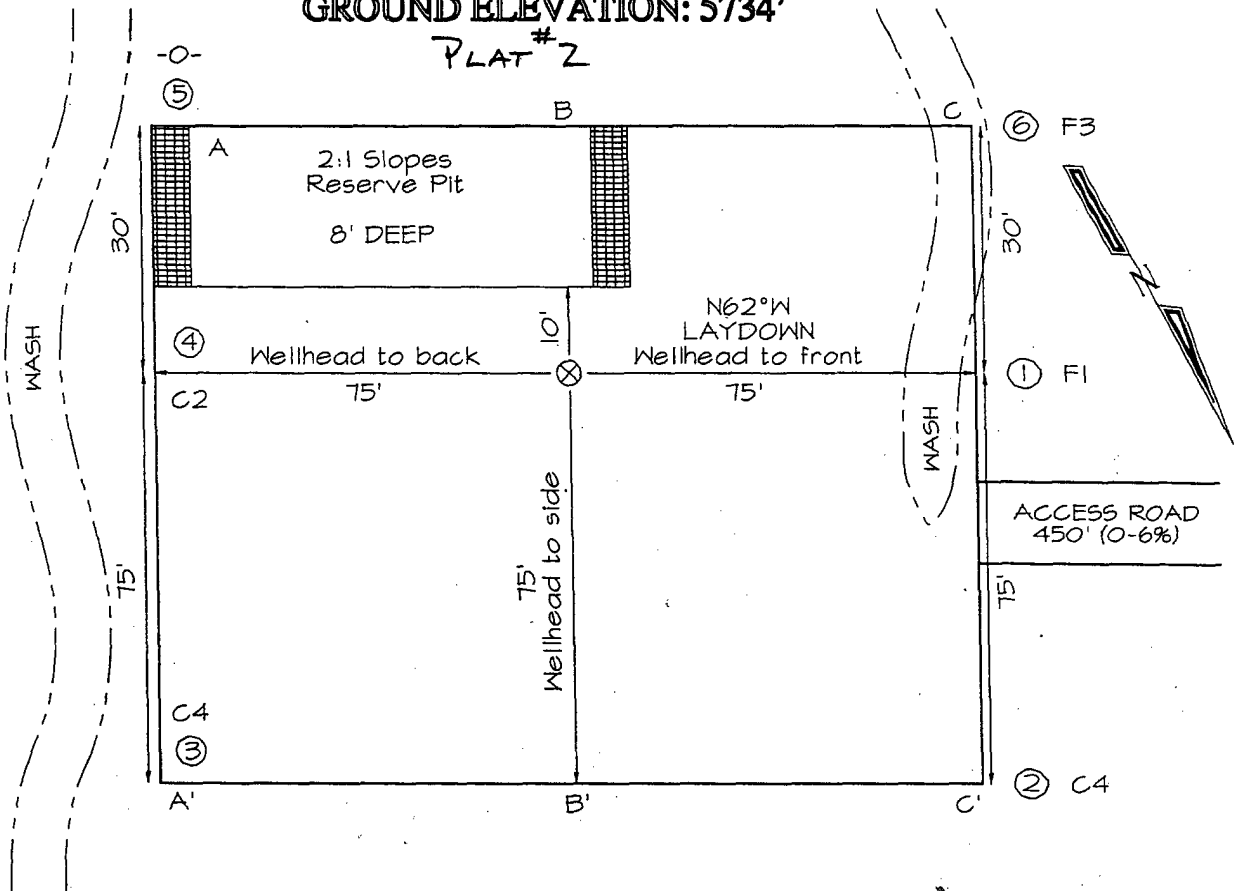


LATITUDE: 36°47'12"
LONGITUDE: 108°09'36"
DATUM: NAD1927

PLAT NOTE:


****SURFACE OWNER****
Bureau of Land
Management

PLAT # 2



A-A'						
5744'						
5734'						
5724'						

B-B'						
5744'						
5734'						
5724'						

C-C'						
5744'						
5734'						
5724'						

Note: Contractor should call One-Call for location of any marked or unmarked buried pipelines or cables on well pad and/or access road at least two (2) working days prior to construction