Form 3160-3

SUBMIT IN TRIPLICATE*

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK
DRILL ☑ DEEPEN ☐

b. TYPE OF WELL
OIL WELL ☐ GAS WELL ☑ OTHER SINGLE ZONE ☑ MULTIPLE ZONE ☐

2. NAME OF OPERATOR
Jicarilla Apache Energy Corporation

3. ADDRESS AND TELEPHONE NO.
P.O. Box 710, Dulce, New Mexico 87528 Mr. Jesse Evans (505)759-3224

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface
852' FSL & 1745' FEL, Sec 5, T23N, R3W, NMPM
At proposed prod. zone
A/A

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
10 miles WSW of Lindrith, New Mexico

5. LEASE DESIGNATION AND SERIAL NO.
Joint Venture Agreement

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Jicarilla Apache Tribe

7. UNIT AGREEMENT NAME
Joint Venture Agreement

8. FARM OR LEASE NAME, WELL NO.
Jicarilla Apache JV5 #6

9. API WELL NO.
30-039-27094

10. FIELD AND POOL, OR WILDCAT
West Lindrith Gallup-Dakota

11. SEC., T., R., M., OR BLK AND SURVEY OR AREA
Sec 5, T23N, R3W, NMPM

12. COUNTY
Rio Arriba

13. STATE
New Mexico

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 852'

16. NO. OF ACRES IN LEASE

17. NO. OF ACRES ASSIGNED TO THIS WELL 160 SE/4

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 1367'

19. PROPOSED DEPTH 7760'

20. ROTARY OR CABLE TOOLS
Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
7361' GL

22. APPROX. DATE WORK WILL START*
July, 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"	J-55, 8 5/8"	24	320'	225 sks (266cf) - Circ to surface
7 7/8"	J-55/N-80 4.5"	10.5, 11.6	7760'	1714 sks (3240 cf) - 2 stg - Circ to surface

Jicarilla Energy Corporation will spud this well in the San Jose formation. A 12 1/4" hole will be drilled to 320' using a fresh water base gel mud. 8 5/8" surface casing will be run and cemented with sufficient volume to circulate cement to surface. WOC 12 hours. Nipple up 11" 2000# BOPE and test to a minimum of 600 psi for 30 minutes. A 7 7/8" hole will be drilled to TD using a fresh water non-dispersed mud. Run Induction and Density/Neutron logs at TD. All Gal/DK zones will be analyzed to total depth, and if potentially comercial, a 4 1/2" production casing will be set to TD. The casing will be cemented in stages with sufficient cement volume to circulate to surface. Release drilling rig. Move in completion unit. Run cased hole correlation logs. Pressure test casing to 3000 psi for 30 minutes. Perforate selected Gal/DK intervals and fracture stimulate, if necessary.

Jicarilla Apache Reservation.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, 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 [signature] TITLE Agent DATE 5/30/02

(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/ W Anderson TITLE Act. Field Mgr. DATE OCT 22 2002

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 15, 2000
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-039-27094	39189	West Lindrith Gallup-Dakota

4 Property Code	5 Property Name	6 Well Number
15646	JIC Apache JV 5	6

7 OGRID No.	8 Operator Name	9 Elevation
11859	Jicarilla Apache Energy Corporation	7367'

10 Surface Location

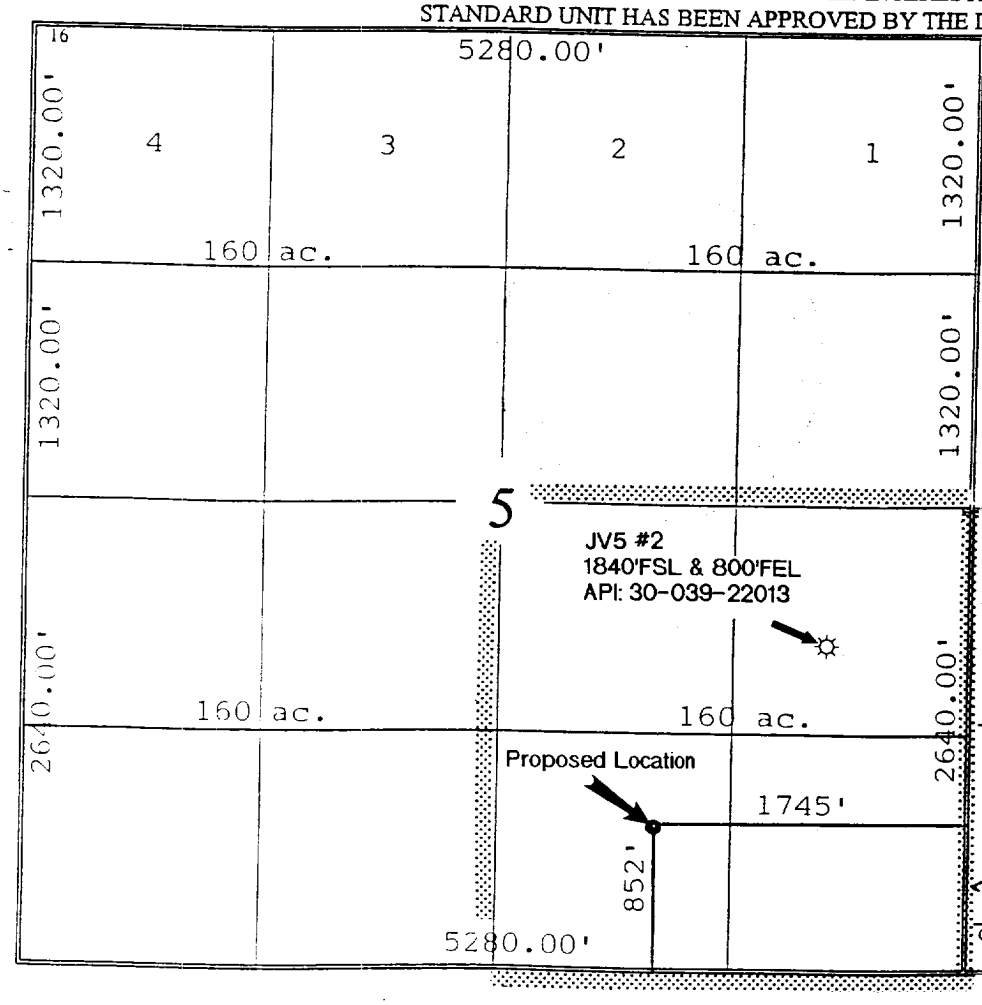
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	5	23N	3W		852	South	1745	East	Rio Arriba

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	13 Joint or Infill	14 Consolidation Code	15 Order No.
160	Y		

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.

Signature

Charles Neeley
Printed Name

Agent
Title

05/28/02
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.

May 17, 2002
Date of Survey

Signature and Seal of Professional Surveyor

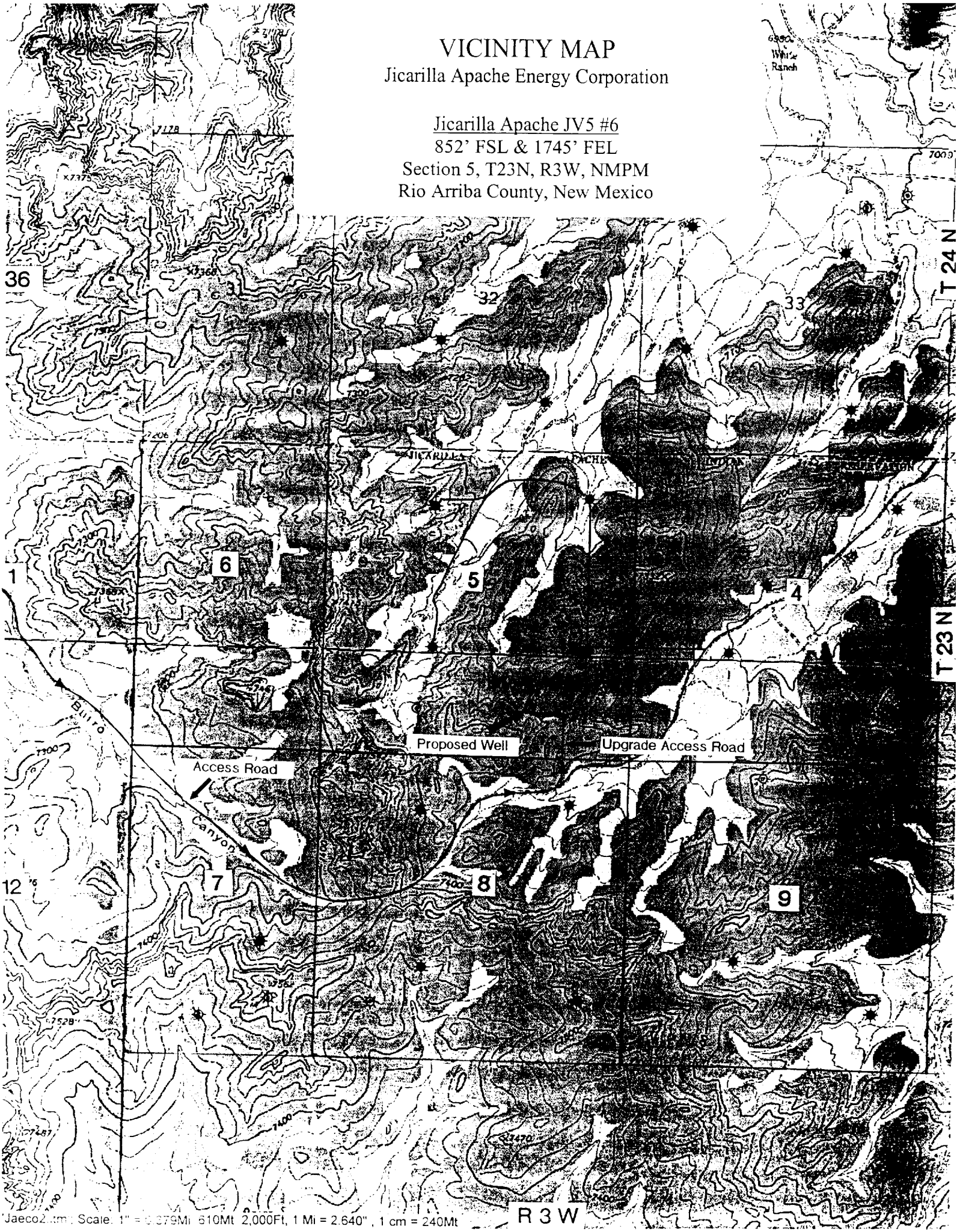
DOUGLAS CRITCHFIELD 11222 NEW MEXICO REGISTERED SURVEYOR

Certificate Number
11222

VICINITY MAP

Jicarilla Apache Energy Corporation

Jicarilla Apache JV5 #6
852' FSL & 1745' FEL
Section 5, T23N, R3W, NMPM
Rio Arriba County, New Mexico



JICARILLA APACHE ENERGY CORPORATION
APACHE JV 5-6
852' FSL & 1745' FEL
Section 5, T23N, R3W, NMPM
Rio Arriba County, New Mexico

TEN POINT DRILLING PROGRAM

1. **Surface Formation:** San Jose

2. **Surface Elevation:** 7367' GL.

3. **Estimated Formation Tops:**

Formation	Top - feet	Expected Production
Nacimiento	1510'	
Ojo Alamo	2785'	
Fruitland	3120'	GAS
Pictured Cliffs	3225'	GAS
Lewis	3390'	
Huerfanito	3560'	
Chacra	4035'	GAS
Mesa Verde (OCD Top)	4310'	
Cliff House	4770'	GAS
Menefee	4850'	GAS
Pt. Lookout	5315'	GAS
Upper Mancos	5540'	
Gallup	6385'	GAS / OIL
Lower Mancos	7130'	
Greenhorn	7310'	
Graneros	7380'	
Dakota:	7390'	GAS / OIL
Burro Canyon	7670'	
Morrison	7760'	
TOTAL DEPTH	7760'	

4. **Casing and Cementing Program:**

- Drill a 12 1/4" Hole to 320'. A string of 8 5/8" 24# J-55 ST&C casing will be set and cemented to the surface in a single stage with 225 sacks (266 cf) of Class "B" cement (yield = 1.18 cf/sk) containing 3% $CaCl_2$ and 1/4 lb/sack celloflake. Slurry volume assumes 100% excess over calculated hole volume. If cement does not circulate to surface, cement will be topped off using 1" pipe down the 12 1/4" by 8 5/8" annulus. Minimum clearance between couplings and hole is 2.625". Prior to drilling out the shoe, casing and BOPE will be tested to a minimum of 600 psig. Safety factors utilized in the design of this casing string were: burst = 1.1; collapse = 1.125; and tension = 1.8 or 100,000 lb over pull, whichever is greater.

4. **Casing and Cementing Program:** - Continued

- WOC 12 HOURS. Nipple up 11" 2000# BOPE. Pressure test surface casing and BOPE to 600 psi for 30 minutes.

- Drill an 7 7/8" hole through the Dakota formation.

- Run Induction and Compensated density/neutron logs from TD to surface casing shoe.

- Run 4 ½" 10.5/11.6# K-55 & 11.6# N - 80 production casing from surface to Total Depth and cement in 2 stages with DV tool installed at 4064'. **Stage 1** (TD - 4064') will be cemented with 650sacks (1255cf) 65/35 Class "B"/Poz containing 6% gel, 0.6% Halad 9 and ½ cf Perlite/sack - mixed at 12.7 PPG, 1.93 yield. Followed with 100 sks 50/50 Class "B"/Poz with 2% gel, 10 ¼ #/sk Gilsonite and 10% NaCl mixed at 13.4 PPG, 1.24 yield (Total: 1379 cf of slurry; 70% excess to 4064'). Circulate with mud for 4 hours. **Stage 2** (4064' - 0') will be cemented with 964 sacks (1861 cf) 65/35 Class "B"/Poz containing 6% gel, 2% CaCl, 1/2 cf Perlite/sack – mixed at 12.7 PPG, 1.93 yield (1861 cf of slurry, 100% excess to Surface).
- Run temperature survey after 12 hours if cement does not circulate to surface.
- WOC 18 hours.

Cement volume is subject to change after review of open hole caliper log to caliper volume + 30%. Minimum clearance between couplings and hole is 2.875". Safety factors utilized in the design of this casing string were: burst = 1.1; collapse = 1.125; and tension = 1.8 or 100,000 lb over pull, whichever is greater.

Bits: 12 1/4" surface hole - MT class 115 or 116 to ~ 320'.
7 7/8" production hole - PDC to ~ 7510' – top of DK "B" Sand.
7 7/8" production hole – TCI class 637 - 7510' to 7760' TD

Centralizers:
Surface string: 3 – 8 5/8" x 12 ¼": One centralizers run in middle of shoe joint with lock ring and two centralizers spaced evenly between shoe joint and 100'.

Production string: 25 - 4 ½" x 7 7/8" centralizers will be run across all prospective pays in the Dakota and Mesa Verde formations. 1 – 4 ½" x 7 7/8" centralizer will run below the DV tool and 5 – 4 ½" x 7 7/8" centralizers will be run every other joint above DV tool. In addition 5 – 4 1/2" x 7 7/8" turbolizers will be spaced such that one (1)is just below the Basal Fruitland Coal, three (3) across the Fruitland and one (1)into the Ojo Alamo

4. **Casing and Cementing Program:** - Continued

Float Equipment:
Surface string: Saw tooth guide shoe w/insert float,1 jt above shoe.

Production string: Cement nose float shoe, 1 jt 4 ½"" csg, float collar, and DV tool set at 4064' with 2 cement baskets below DV.

5. **Pressure Control Equipment:**

A 2M psi BOP well control system will be utilized. BOP's and choke manifold will be installed and pressure tested to a minimum of 600 psig before drilling out from under surface casing. The mechanical operating condition of the BOP will be checked daily. 4 1/2" rams will be installed before running production casing. Full opening drill string safety valves to fit all pipe in the drill string will be maintained on the rig floor during drilling operations.

6. **Mud Program:**

The well will be spudded and drilled to surface casing depth with a high viscosity slurry of bentonite, lime and fresh water. A fresh water PHPA polymer, low solids, non-dispersed mud system will be utilized to drill the well from surface casing to total depth. Sufficient mud materials will be on location at all times to maintain mud properties and to control any lost circulation problem or unforeseen abnormal pressures. The mud volume will be visually monitored and recorded on a routine basis.

Mud Property Guidelines:

Interval (ft)	Weight (ppg)	Vis (sec/qt)	pH	Fluid Loss (cc/30 min)
0 – 320'	8.6 – 9.2	40 - 35	9 – 9.5	No Control
320' - 4720'	8.6 – 9.0	30 – 35	9 – 9.5	15 – 20
4720' – 7760'	8.8 – 9.0	40 – 45	9 – 9.5	8 – 10

Note: Raise mud viscosity to 45 – 60 for logging. Thin mud viscosity to 40 – 45 to run casing.

Mud pH: to be maintained with lime or caustic soda at the recommended levels to assure drill pipe corrosion protection and gel hydration.

Lost Circulation: can occur anywhere from the Pictured Cliffs formation to TD. Mud weights should be controlled as low as possible with solids control equipment then as low as practical with water dilution.