

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

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

## 1a. TYPE OF WORK

DRILL ☒DEEPEN ☐PLUG BACK ☐

## b. TYPE OF WELL

OIL  
WELL ☐GAS  
WELL ☒

OTHER

SINGLE  
ZONE ☒MULTIPLE  
ZONE ☐

## 2. NAME OF OPERATOR

El Paso Natural Gas Company

## 3. ADDRESS OF OPERATOR

PO Box 990, Farmington, NM 87401

## 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)\*

At surface

830'S, 890'E

At proposed prod. zone

## 14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*

## 15. DISTANCE FROM PROPOSED\*

LOCATION TO NEAREST  
PROPERTY OR LEASE LINE, FT.  
(Also to nearest drlg. unit line, if any)

## 16. NO. OF ACRES IN LEASE

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

320.00

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

## 19. PROPOSED DEPTH

5870'

## 20. ROTARY OR CABLE TOOLS

Rotary

## 21. ELEVATIONS (Show whether DF, RT, GR, etc.)

6401'GL

## 22. APPROX. DATE WORK WILL START\*

## 23.

## PROPOSED CASING AND CEMENTING PROGRAM

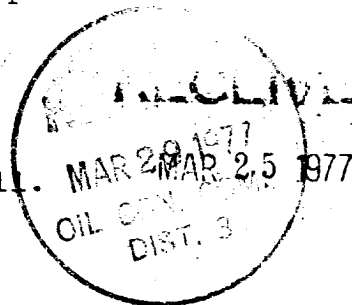
SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
13 3/4"	9 5/8"	32.3#	200'	224cu.ft.to circulate
8 3/4"	7"	20.0#	3525'	288cu.ft.to cover Ojo Alamo
6 1/4"	4 1/2"	10.5#	3375-5870'	435cu.ft. to fill to 3375'

Selectively perforate and sandwater fracture the Mesa Verde formation.

A 3000 psi WP and 6000 psi test double gate preventer equipped with blind and pipe rams will be used for blow out prevention on this well.

This gas is dedicated.

The E/2 of Section 30 is dedicated to this well.



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

*D. G. Buice*

TITLE

Drilling Clerk

DATE March 25, 1977

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

**NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT**

Form C-102  
Supersedes C-128  
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

Operator <b>EL PASO NATURAL GAS COMPANY</b>		Lease <b>KERNAGHAN (SF-078387-A)</b>		Well No. <b>4A</b>
Unit Letter <b>P</b>	Section <b>30</b>	Township <b>31-N</b>	Range <b>8-W</b>	County <b>SAN JUAN</b>
Actual Footage Location of Well: <div style="display: flex; justify-content: space-between;"> <span><b>830</b> feet from the <b>SOUTH</b> line and</span> <span><b>890</b> feet from the <b>EAST</b> line</span> </div>				
Ground Level Elev. <b>6401</b>	Producing Formation <b>MESA VERDE</b>	Pool <b>BLANCO MESA VERDE</b>	Dedicated Acreage: <b>320.00</b> Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes    ☐ No    If answer is "yes," type of consolidation \_\_\_\_\_

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.

	<b>CERTIFICATION</b>
	<p><i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</i>  Original Signed by:  <b>D. G. Briscoe</b></p>
	<p>Name <b>Drilling Clerk</b></p>
	<p>Position <b>El Paso Natural Gas Co.</b></p>
	<p>Company <b>March 24, 1977</b></p>
	<p>Date _____</p>
	<p><i>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 knowledge and belief.</i></p>
	<p>Date Surveyed <b>MARCH 14, 1977</b></p>
	<p>Registered Professional Engineer and/or Land Surveyor  </p>
	<p>Certificate No. <b>1760</b></p>

Multi-Point Surface Use Plan  
Kernaghan #4A

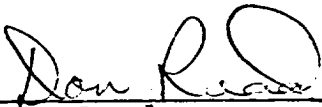
1. Existing Road - Please refer to Map No. 1 which shows the existing roads. New roads which will be required have been marked on this map. All existing and new roads will be properly maintained during the duration of this project.
2. Planned Access Roads - Please refer to Map No. 1. The grade of the access roads will be consistent with that of the local terrain. The road surface will not exceed thirty feet (30') in width. Upon completion of the project, the access road will be adequately drained to control soil erosion. Drainage facilities may include ditches, water bars, culverts or any other measure deemed necessary by trained Company personnel to insure proper drainage. Gates and/or cattleguards will be installed if necessary.
3. Location of Existing Wells - Please refer to Map No. 2
4. Location of Tank Batteries, Production Facilities, and Production Gathering and Service Lines - Please refer to Maps No. 1 and No. 2. Map No. 2 shows the existing gas gathering lines. Map No. 1 shows the existing roads and new proposed access roads. All known production facilities are shown on these two maps.
5. Location and Type of Water Supply - Water for the proposed project will be obtained from Pump Mesa Water Well.
6. Source of Construction Materials - No additional materials will be required to build either the access road or the proposed location.

7.   Methods of Handling Waste Materials - All garbage and trash materials will be put into a burn pit shown on the attached Location Plat No. 1. When clean-up operations are begun on the proposed project, the burn pit with its refuse will be buried to a depth of at least three feet (3'). A latrine, the location of which is also shown on Plat No. 1 will be provided for human waste. If large amounts of liquids are left in the reserve pit after completion of the project, the pit will be fenced until the liquids have had adequate time to dry. The location clean-up will not take place until such time as the reserve pit can be properly covered over to prevent run-off from carrying any of these materials into the watershed. No earthen pit will be located on natural drainages; all earthen pits will be so constructed as to prevent leakage from occurring.
8.   Ancillary Facilities - No camps or airstrips will be associated with this project.
9.   Wellsite Layout - Please refer to the attached Plat No. 1.
10.  Plans for Restoration of the Surface - After completion of the proposed project, the location will be cleaned and leveled. The location will be left in such a condition that will enable reseeding operations to be carried out. Seed Mixture #1 will be used. The reseeding operation will be performed during the time period set forth by the regulatory body. The location production equipment will be painted green (Federal Standard #595-34127)
11.  Other Information - The terrain is rolling hills and sandstone ledges covered with cedar and pinon trees. There are some cattle and deer on the proposed project site.

12. Operator's Representative - W. D. Dawson, Post Office Box 990,  
Farmington, New Mexico 87401

13. Certification - I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by El Paso Natural Gas Company and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

March 24, 1977

  
\_\_\_\_\_  
D. R. Read  
Division Drilling Engineer

DRR:pb

March 25, 1977

Operations Plan  
Kernaghan #4A

I. Location: 830'S, 890'E, Section 30, T-31-N, R-8-W, San Juan County, NM

Field: Blanco Mesa Verde

Elevation: 6411'DF

II. Geology:

A. Formation Tops:	Surface	San Jose	Lewis	3327'
	Ojo Alamo	2245'	Mesa Verde	5077'
	Kirtland	2350'	Menefee	5139'
	Fruitland	2920'	Point Lookout	5471'
	Pic.Cliffs	3247'	Total Depth	5870'

B. Logging Program: GR-Ind. and GR-Density at Total Depth.

C. Coring Program: none

D. Natural Gauges: 5077', 5471' and at Total Depth.

Also gauge any noticeable increase in gas. Record all gauges in daily drilling report and on morning report.

III. Drilling:

A. Mud Program: mud from surface to 3525'. Gas from intermediate casing to Total Depth.

IV. Materials:

A. Casing Program:	<u>Hole Size</u>	<u>Depth</u>	<u>Casing Size</u>	<u>Wt.&amp;Grade</u>
	13 3/4"	200'	9 5/8"	32.3# H-40
	8 3/4"	3525'	7"	20.0# K-55
	6 1/4"	3375-5870'	4 1/2"	10.5# K-55

B. Float Equipment: 9 5/8" surface casing - Larkin guide shoe (fig. 102)

7" intermediate casing - Dowell guide shoe (fig. 50101) and Dowell self-fill insert float valve (fig. 53003), 5 B&W stabilizers (Prod. No. 637085) every other joint above shoe. Run float two joints above shoe.

4 1/2" liner - T.I.W. liner hanger with neoprene packoff. Larkin geyser shoe (fig. 222) and Larkin flapper type float collar (fig. 404 M&F).

C. Tubing: 5870' of 2 3/8", 4.7#, J-55 8rd EUE tubing with a common pump seating nipple above perforated pup joint with bull plugged full joint for mud anchor on bottom.

D. Wellhead Equipment: 10" 900 x 9 5/8" casing head. 10" 900 x 6" 900 xmas tree.

## Operations Plan - Kernaghan #4A

### V. Cementing:

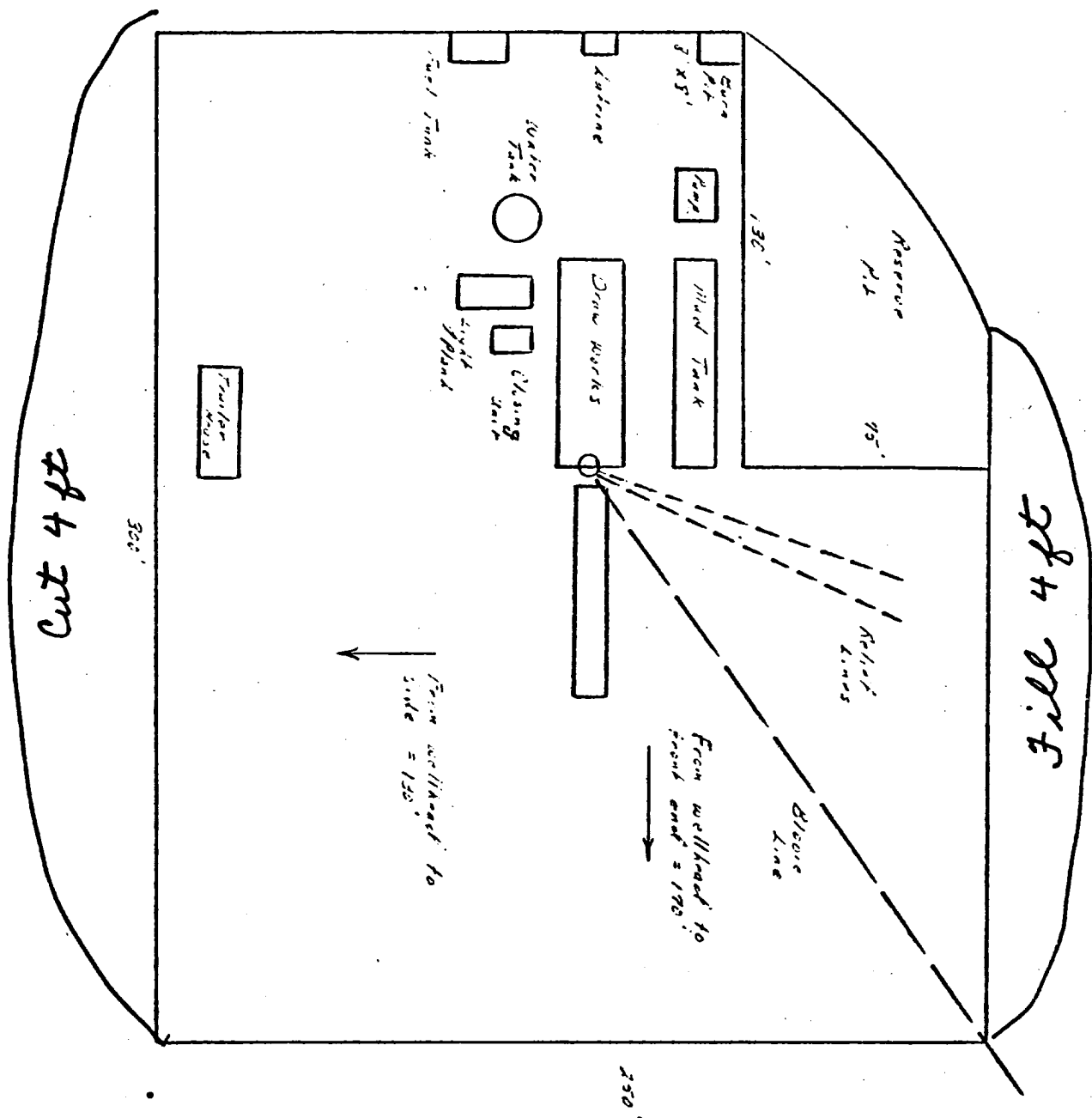
9 5/8" surface casing - use 190 sks. of Class "B" cement with 1/4# gel-flake per sack and 3% calcium chloride (224 cu.ft. of slurry, 100% excess to circulate to surface). WOC 12 hours. Test casing to 600#/30 minutes.

7" intermediate casing - use 65 sks. of 65/35 Class "B" Poz with 12% gel (15.52 gallons of water per sack) followed by 100 sks. of Class "B" with 2% calcium chloride (288 cu.ft. of slurry, 50% excess to cover Ojo Alamo). Run temperature survey at 8 hours. WOC 12 hours. Test casing to 1200#/30 minutes.

4 1/2" liner - precede cement with 20 barrels of gel water (2 sks. gel) Cement with 242 sks. of Class "B" cement with 4% gel, 1/4 cu.ft. of fine gilsonite per sack and 0.6% Halad-9 (435 cu.ft. of slurry, 70% excess to circulate liner).

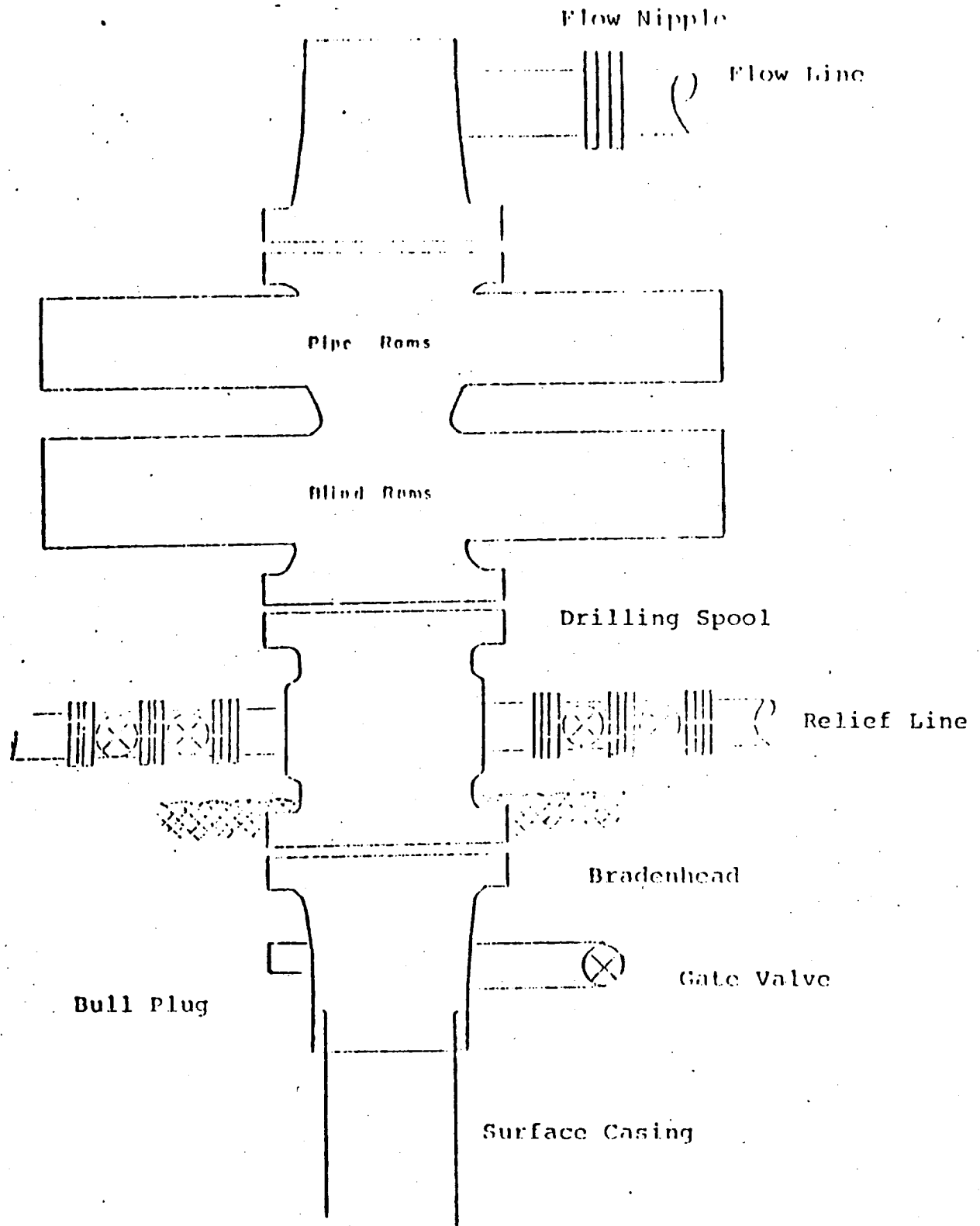
DRR:pb

# El Paso Natural Gas Company Typical location plat for mesa vends and Dakota wells





# Typical B.O.P. Installation for Mesa Verde Well



Series 900 Double Gate BOP, rated  
at 3000 psi Working Pressure  
When gas drilling operations begin a Shaffer type 50  
or equivalent rotating head is installed on top of the  
flow nipple and the flow line is converted into a blowie line

EXISTING ROADS	_____
EXISTING PIPELINES	+ + +
EXISTING ROAD & PIPELINE	+ + +
PROPOSED ROADS	_____
PROPOSED PIPELINES	+ + +
PROPOSED ROAD & PIPELINE	+ + +

