Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

30-045-24143

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: SF 078387

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

7. UNIT AGREEMENT NAME:

b. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] OTHER — SINGLE ZONE [X] MULTIPLE ZONE [ ]

8. FARM OR LEASE NAME: Howell D

2. NAME OF OPERATOR: El Paso Natural Gas Company

9. WELL NO.: 5

3. ADDRESS OF OPERATOR: PO Box 289, Farmington, NM 87401

10. FIELD AND POOL, OR WILDCAT: Basin Dakota

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1520'S, 1160'E
I
At proposed prod. zone: same

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec.31,T-31-N,R-8-W NMPM

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 10 miles north of Blanco, NM

12. COUNTY OR PARISH: San Juan | 13. STATE: NM

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
1160'	1280.0	E/ 320.00
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
800'	7789'	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 6359'GR

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"	36.0#	200'	224 cu.ft. to circulate
8 3/4"	7"	20.0#	3650'	366 cu.ft.to cover Ojo Alamo
6 1/4"	4 1/2"	10.5#&11.6#	7789'	637 cu.ft.to fill to inter.

Selectively perforate and sandwater fracture the Dakota 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.

RECEIVED
DEC 26 1979
OIL CON. COM.
DIST. 3

The E/2 of Section 31 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. Bruce TITLE Drilling Clerk DATE 12-13-79

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

ok Frank

*See Instructions On Reverse Side

NMOCC

C CONSERVATION DIVISION

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-102
Revised 10-1-78

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
EL PASO NATURAL GAS COMPANY	HOWELL "D" (SF-078387)	5

Unit Letter	Section	Township	Range	County
I	31	31N	8W	San Juan

Actual Footage Location of Well:
1520 feet from the South line and 1160 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
6359	DAKOTA	BASIN DAKOTA	320.00 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

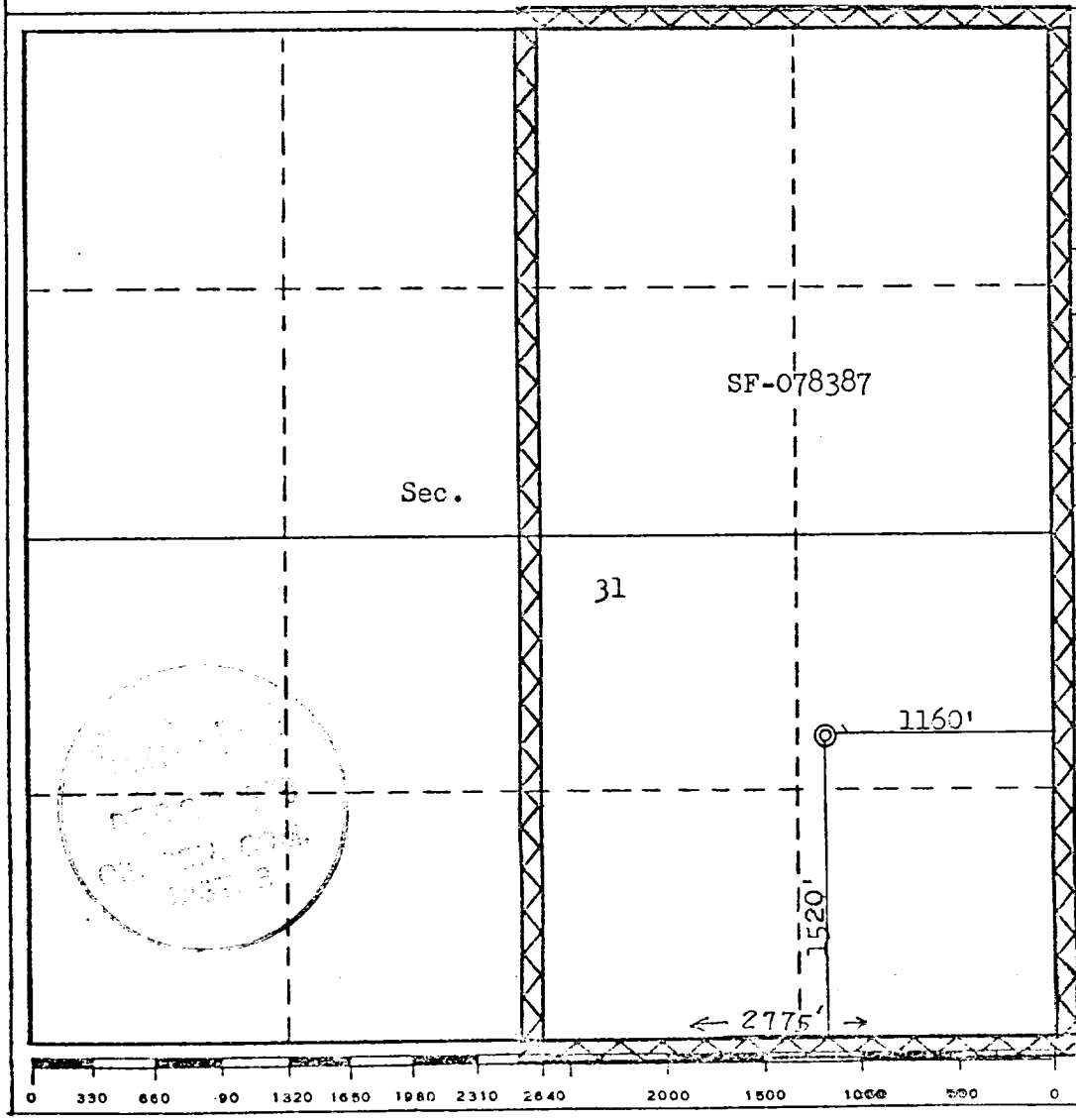
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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. NOTE: THIS PLAT IS REISSUED TO SHOW MOVED LOCATION. 12-5-79



CERTIFICATION

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

Name: A. G. Bueco

Position: Drilling Clerk

Company: El Paso Natural Gas Co.

Date: December 13, 1979

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.

Date Surveyed: September 25, 1979

Registered Professional Engineer and/or Land Surveyor

Certificate No. 3950

Orthodox - Location is long.

El Paso NATURAL GAS COMPANY

P. O. BOX [illegible]
FARMINGTON, NEW MEXICO [illegible]
PHONE: [illegible]

Well Name Howell D #5

Location SE-31-31-8

Formation DK

We, the undersigned, have inspected this location and road.

U. S. Forest Service ______ Date ______

[signature] 10/ /79

Archaeologist Date

Bureau of Indian Affairs Representative ______ Date ______

[signature] 10/11/79

Bureau of Land Management Representative Date

Andy [signature] 10/11/79

U. S. Geological Survey Representative - AGREES TO THE FOOTAGE LOCATION OF THIS WELL. Date

REASON: location is ok to avoid artifacts to the north

Seed Mixture: ______

Equipment Color: BROWN

Road and Row: (Same) or (Separate)

Remarks: ______

C.C. to Dave Vilvin
Earl Mealer
John Ahlm

El Paso NATURAL GAS COMPANY

P. O. BOX 990
FARMINGTON, NEW MEXICO 87401

PHONE: 505-325-2841

Multi-Point Surface Use Plan

Howll D #5

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 twenty feet (20') 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,

7. cont'd. 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 as designated by the responsible government agency 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 as designated by the responsible government agency.

11. Other Information - The terrain is sagebrush plateau with sage, pinon and juniper growing. Cattle and deer are occasionally seen on the proposed project site.

12. Operator's Representative - W.D. Dawson, PO Box 990, Farmington, NM

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.

L. A. Aimes

L. A. Aimes
Project Drilling Engineer

Operations Plan
Howell D #5

I. Location: 1520'S, 1160'E, Section 31, T-31-N, R-8-W, San Juan County, NM

Field: Basin Dakota Elevation: 6359'GR

II. Geology:

A. Formation Tops:

Surface	San Jose	Menefee	5085'
Ojo Alamo	2030'	Point Lookout	5420'
Kirtland	2110'	Gallup	6570'
Fruitland	2880'	Greenhorn	7447'
Pic.Cliffs	3210'	Graneros	7494'
Lewis	3450'	Dakota	7637'
Mesa Verde	5005'	Total Depth	7789'

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

C. Coring Program: none

D. Natural Gauges: 4995', 5075', 5420', 6570', 7497', 7637' and at TD. 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 3650'Gas from intermediate casing to Total Depth.

IV. Materials:

A. Casing Program:

Hole Size	Depth	Casing Size	Wt.&Grade
13 3/4"	200'	9 5/8"	32.3# H-40
8 3/4"	3650'	7"	20.0# K-55
6 1/4"	6500'	4 1/2"	10.5# K-55
6 1/4"	7789'	4 1/2"	11.6# K-55

B. Float Equipment: 9 5/8" surface casing - B&W guide shoe (Prod.No. 06-09611-0200)

7" intermediate casing - Pathfinder guide shoe (Part No. 1003-1-007) and Howco self-fill insert float valve (Price Ref. 36A & 37)
5 Pathfinder stabilizers (Part No. 107-10) every other joint above shoe. Run float two joints above shoe.

4 1/2" production casing - Larkin geyser shoe (fig. 222) and Larkin flapper type float collar (fig. 404 M&F)

C. Tubing: 7789'of 1 1/2", 2.9#, J-55 10rd 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: 3000 psi test tree. Wellhead representative to set all slips and cut off casing.

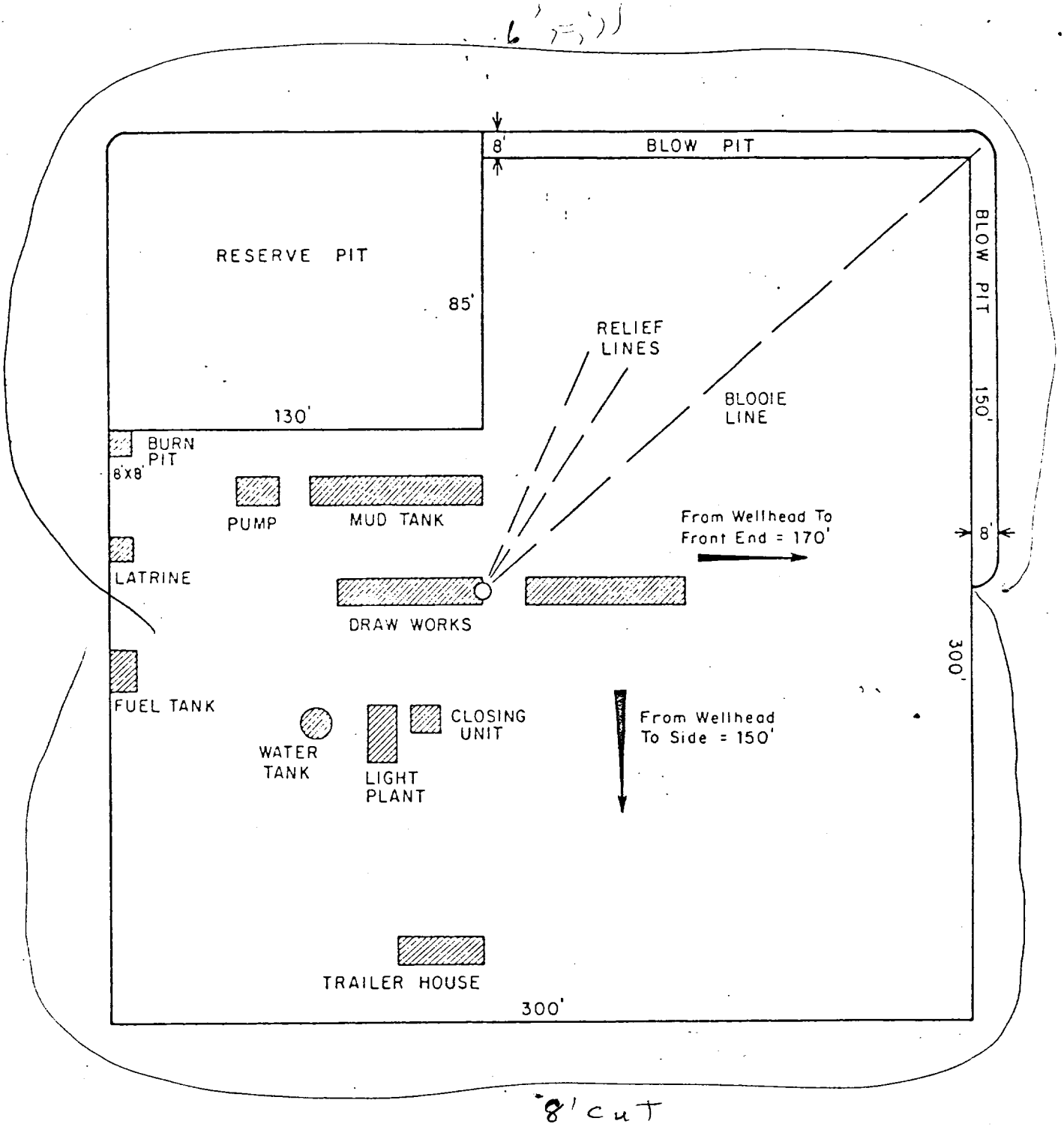
Operations Plan - Howell D #5

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 153 sks. of 65/35 Class "B" Poz with 6% gel and 2% calcium chloride (8.3 gallons of water per sack) followed by 100 sks. of Class "B" with 2% calcium chloride (366cu.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" production casing - precede cement with 40 bbls. of gel water (4 sks. gel) cement with 238 sks. of Class "B" with 8% gel, 1/4 cu.ft. fine gilsonite per sack and 0.4% HR-7, followed by 100 sks. of Class "B" with 1/4# fine tuf-plug per sack and 0.4% HR-7 (637 cu.ft. of slurry, 50% excess to fill to intermediate casing). Run temperature survey at 8 hours. WOC 18 hours.



8' cut

PRT.	SEP.	DATE	TO	W.O.

ENG. REC.		DATE
DRAWN	J.L.H	8-16-78
CHECKED		
CHECKED		
PROJ. APP.		
DESIGN		

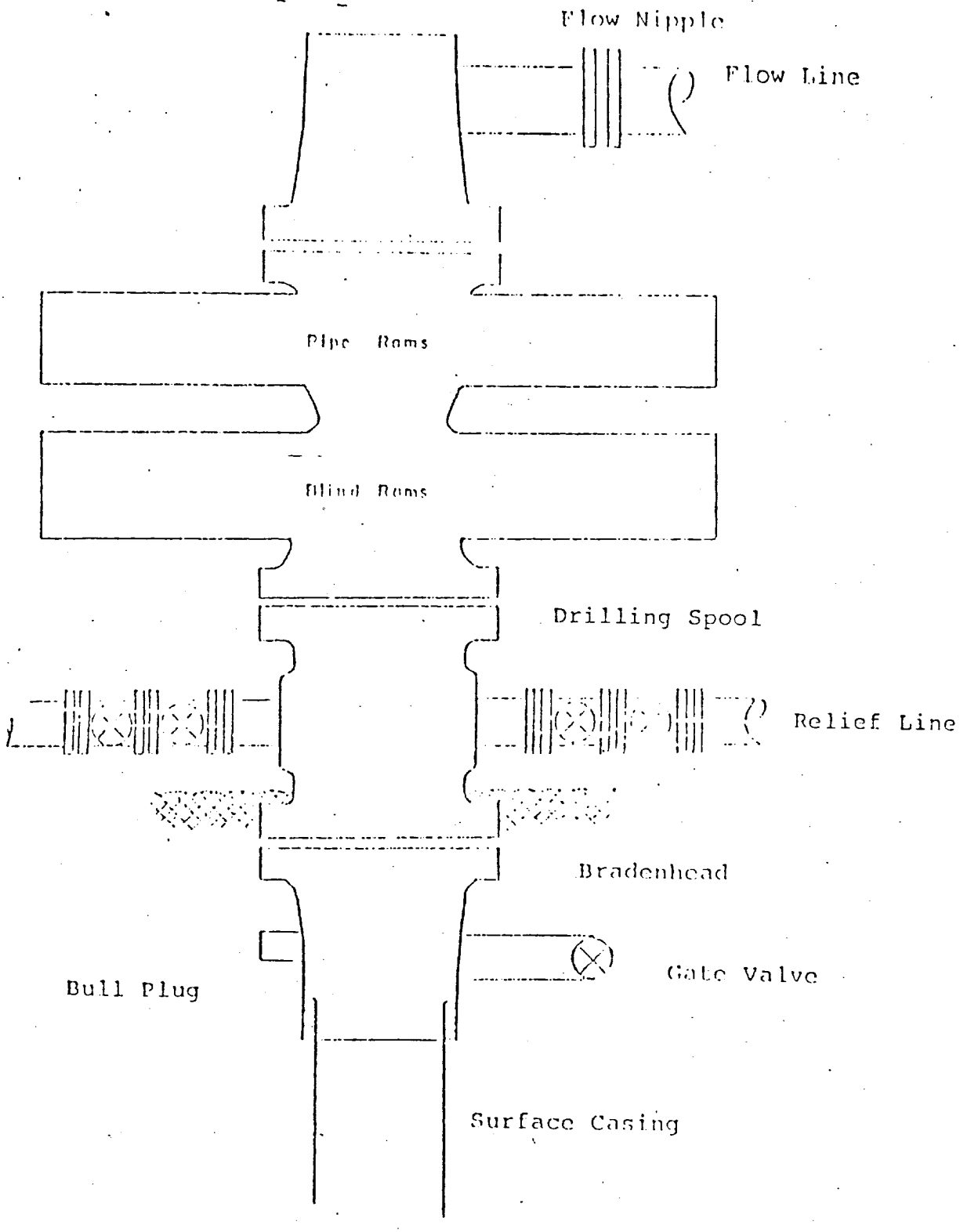
El Paso Natural Gas Company

TYPICAL LOCATION PLAT FOR MESAVERDE OR DAKOTA DRILL SITE

SCALE: 1" = 50'

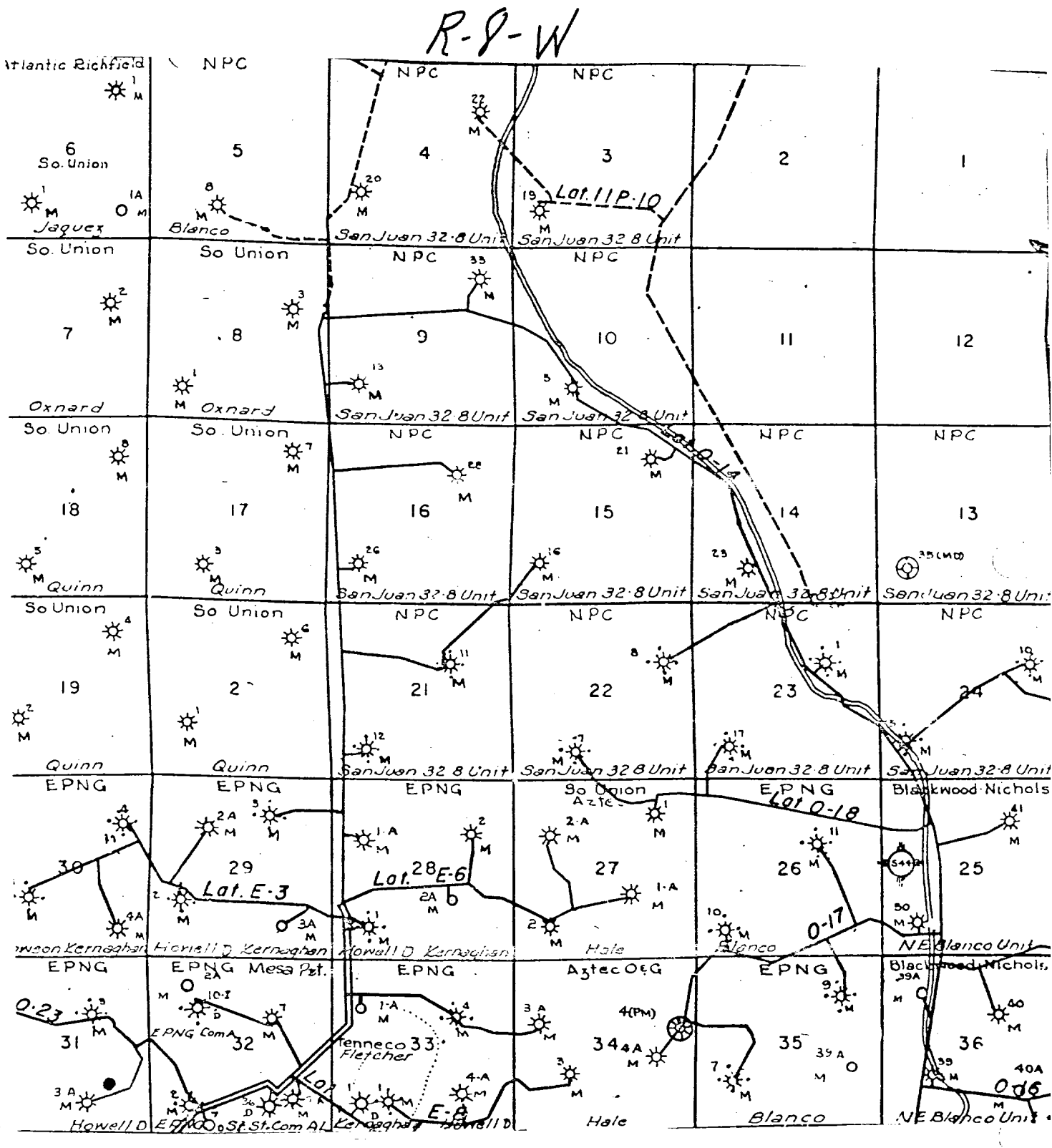
DWG.

Typical B.O.P. Installation
for Dakota 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.

El Paso Natural Gas Company
Howell D #5
SE 31-31-8



MAP 1

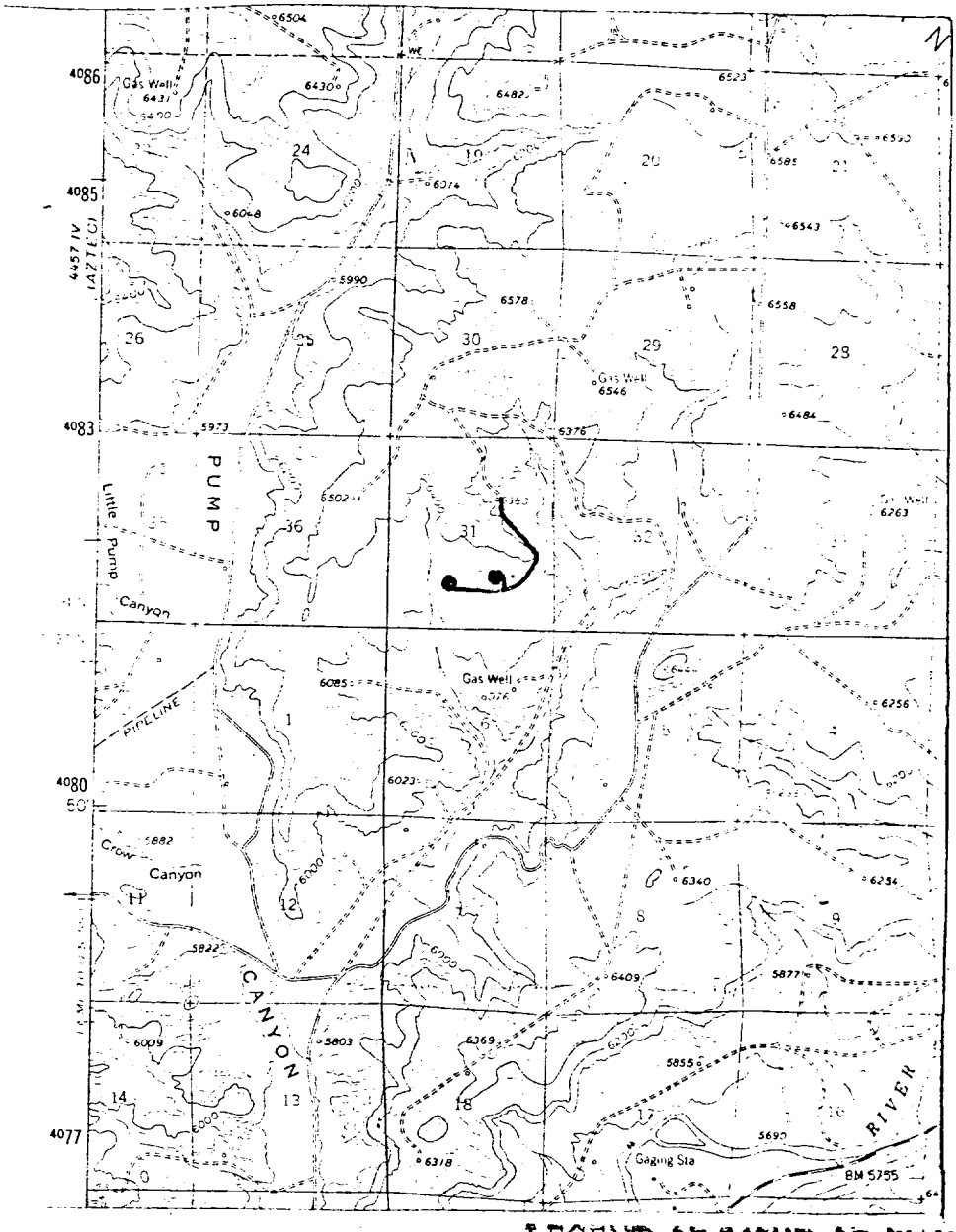
Proposed Location ●

El Paso Natural Gas Company
Howell D #5
SE 31-31-8

R-9-W R-8-W

T 31 N

T 30 N



MAP 1

LEGEND OF RIGHT-OF-WAYS

EXISTING ROADS
EXISTING PIPELINES
EXISTING ROAD & PIPELINE
PROPOSED ROADS
PROPOSED PIPELINES
PROPOSED ROAD & PIPELINE