

## SUPPLEMENTAL DRILLING DATA

### POGO PRODUCING COMPANY SAND DUNES 34 FEDERAL WELL NO. 2

1. SURFACE FORMATION: Quaternary.

2. ESTIMATED TOPS OF GEOLOGIC MARKERS:

Rustler Anhydrite	750'
Base Salt	4200'
Delaware Lime	4440'
Bell Canyon	4480'
Cherry Canyon	5300'
Brushy Canyon	6650'

3. ANTICIPATED POSSIBLE HYDROCARBON BEARING ZONES:

Delaware	Oil
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4. PROPOSED CASING AND CEMENTING PROGRAM:

<u>CASING SIZE</u>	<u>SETTING DEPTH</u>		<u>WEIGHT</u>	<u>GRADE</u>	<u>JOINT</u>
	<u>FROM</u>	<u>TO</u>			
13-3/8"	0	800'	54.5#	J-55	STC
8-5/8"	0	1000'	32#	J-55	STC
"	1000'	2200'	24#	J-55	STC
"	2200'	4300'	32#	J-55	STC
5-1/2"	0	1000'	17#	J-55	LTC
"	1000'	6000'	15.5#	J-55	LTC
"	6000'	8500'	17#	N-80	LTC

MINIMUM DESIGN FACTORS: Collapse 1.125 Burst 1.1 Tension 1.7

13-3/8" casing to be cemented with 500 sacks of Lite cement tailed in with 200 sacks of Class "C" with 2% CaCl. Cement to circulate.

8-5/8" casing to be cemented with 1200 sacks of Lite cement with 10% salt tailed in with 200 sacks of Class "C" with 1 % CaCl. Cement to circulate.

5-1/2" casing is to be cemented with approximately 500 sacks of Light cement tailed in with 700 sacks of Class "H" with the top of the Class "H" calculated to be at or above the shoe of the intermediate casing. If need for a stage tool is indicated, it will be positioned to best suit hole conditions. Cement to circulate.

Cement may have lost circulation or other additives depending on hole conditions at the time casing is run.

5. PRESSURE CONTROL EQUIPMENT:

Blowout prevention equipment, while drilling the 11" hole, will be either a 3000 psi working pressure double ram type preventer or a 3000 psi working pressure annular type preventer.

Blow out prevention equipment, while drilling below the 8-5/8" casing seat, will be a 3000 psi working pressure BOP stack. A BOP sketch is attached.

6. CIRCULATING MEDIUM:

Surface to 800 feet: Fresh water spud mud. Viscosity 30 to 36 as required for hole cleaning.

800 feet to 4300 feet: Brine conditioned as necessary for control of viscosity. Weight 9.8 to 10. pH 9 to 10. Viscosity 32 to 36.

4300 feet to T.D.: Water base drilling fluid conditioned as necessary for control of weight, viscosity, pH and water-loss. Weight 9 to 10. Viscosity 38-45. pH 9 to 10. Filtrate while drilling pay zone 6 to 15.

7. AUXILIARY EQUIPMENT:

A mud logging trailer will be in use while drilling below the intermediate casing.

8. TESTING, LOGGING, AND CORING PROGRAMS:

Drill stem tests will be made when well data indicate a test is warranted.

It is planned that electric logs will include GR-CNL-Density logs and GR-DLL logs.

No coring is planned.

9. ABNORMAL PRESSURES, TEMPERATURES, OR HYDROGEN SULFIDE GAS:

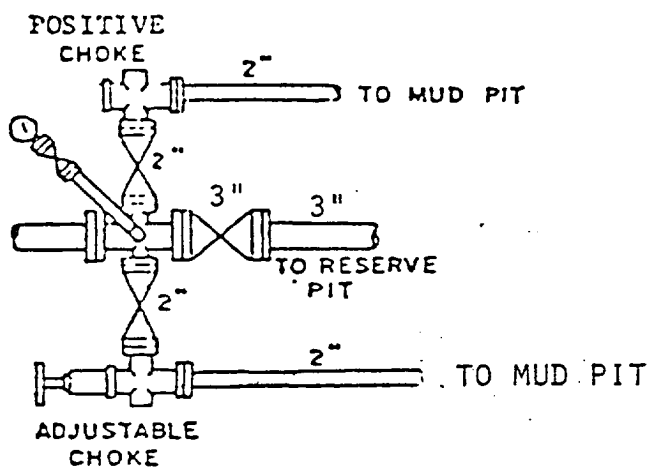
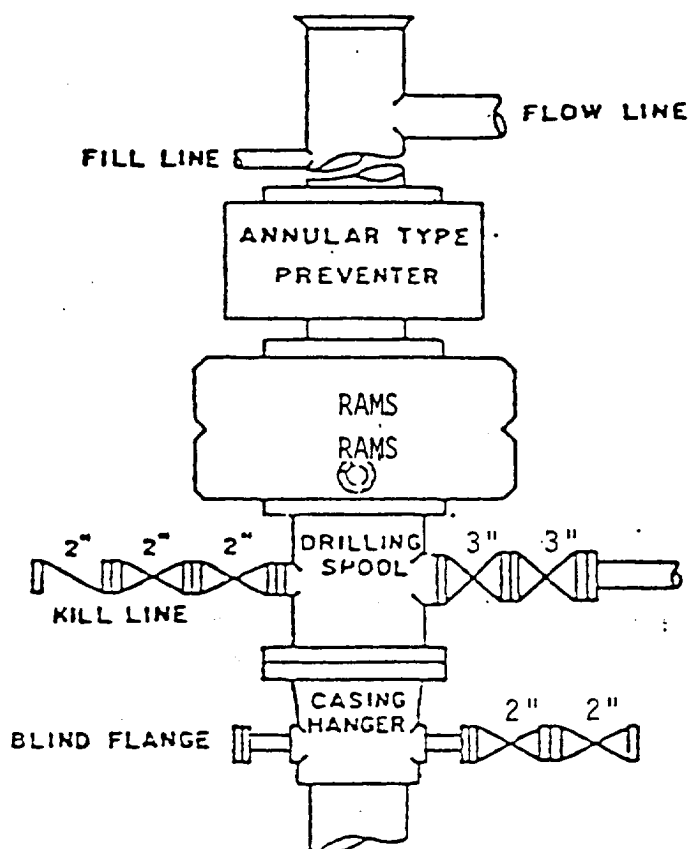
None anticipated.

Expected bottom hole pressure is about 3700 psi.

Expected bottom hole temperature is about 130 degrees Fahr.

10. ANTICIPATED STARTING DATE:

It is planned that operations will commence upon approval of this application, with drilling and completion operations lasting about 30 days.



BOP STACK

3000 PSI WORKING PRESSURE

BOP ARRANGEMENT

SURFACE USE AND OPERATIONS PLAN

FOR

POGO PRODUCING COMPANY  
SAND DUNES 34 FEDERAL WELL NO. 2  
2310' FNL & 660' FEL SEC. 34, T. 23 S., R. 31 E.  
EDDY COUNTY, NEW MEXICO

LOCATED: 20 miles east of Loving, New Mexico.

FEDERAL LEASE NUMBER: NM-43744

LEASE DATE: May 1, 1981. Lease is in producing status.

ACRES IN LEASE: 640.

LESSEE: Pogo Producing Company et al.

SURFACE OWNERSHIP: Federal.

GRAZING PERMITTEE: Charles F. James (505-885-3938)  
1207 W. Riverside Drive  
Carlsbad, New Mexico 88220

POOL: Undesignated Ingle Wells Delaware

POOL RULES: Statewide Rules. 40 acre spacing for oil.

EXHIBITS: A. Road Map  
B. Plat Showing Existing Wells and Existing Roads  
C. Drilling Rig Layout  
D. Topo Plat

### 1. EXISTING ROADS:

A. Exhibit "A" is a portion of a road map showing the location of the proposed well as staked. Point "A" on the plat is on State highway 128 at Milepost 16.6, approximately 20 miles east of Loving, New Mexico, where a caliche road goes southwest through a cattle guard. This point is about 0.2 mile west of the west end of the roadside park. Also see Exhibits "A" and "B". To go to the proposed well site from this point, go southwest 200 feet and then northwest 500 feet to arrive at Pogo's Cal-Mon well No. 8. The proposed well site is 990' west of this well.

B. Exhibit "B" shows existing pertinent roads in the vicinity of the proposed well site. Existing roads are color coded.

### 2. PLANNED ACCESS ROAD:

A. Length and Width: The new road will be 12 feet wide and about 800 feet long, and is shown labeled and color coded red on Exhibit "B". The centerline of the proposed new road is staked and flagged.

B. Surfacing Material: Caliche. Watered, compacted and graded.

C. Maximum Grade: One percent.

D. Turnouts: Probably one.

E. Drainage Design: The new road will be crowned with drainage to the side.

F. Culverts: None needed.

G. Cuts and Fills: None necessary.

H. Gates and Cattle Guards: None necessary. No fences involved.

### 3. LOCATION OF EXISTING WELLS:

A. Existing wells in the immediate area are shown on Exhibit "B".

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

A. Necessary production facilities for this well will be located on the well pad.

5. LOCATION AND TYPE OF WATER SUPPLY:

A. It is not planned that a water well will be drilled. Water necessary for drilling operations will be purchased and trucked to the well site, or will be moved to the well site by temporary pipeline laid on the ground alongside existing and proposed roads.

6. SOURCE OF CONSTRUCTION MATERIALS:

A. Caliche needed for construction work will be taken, if present, from a pit opened on-site within the 400'x 450' archaeologically cleared work area adjacent to the reserve pit. Otherwise, caliche will be taken from the existing pit on Federal land in the NE $\frac{1}{4}$ NE $\frac{1}{4}$  of Section 4, T.24 S., R.31 E., Eddy County, New Mexico, and will be trucked to the well site over existing and proposed roads.

7. METHODS OF HANDLING WASTE MATERIAL:

A. Drill cuttings will be disposed of in the drilling pits.

B. Drilling fluids will be allowed to evaporate in the drilling pits until the pits are dry.

C. Water produced during tests will be disposed of in the drilling pits or will be stored in tanks for disposal in an approved disposal system.

D. Oil produced during tests will be stored in test tanks until sold.

E. All trash, junk, and other waste material will be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary land fill.

8. ANCILLARY FACILITIES:

A. None necessary.

9. WELL SITE LAYOUT:

A. Exhibit "C" shows the relative location and dimensions of the well pad, mud pits, and reserve pits, and the location of major drilling rig components.

B. Clearing and levelling of the pad and pit area will be required.

C. The pad and pit area is staked and flagged.

10. PLANS FOR RESTORATION OF THE SURFACE:

A. After completion of drilling and/or completion operations, all equipment and other material not needed for operations will be removed from the well site. Pits will be filled and the location will be cleaned of all trash and junk to leave the well site in an as aesthetically pleasing condition as possible.

B. Any unguarded pits containing fluids will be fenced.

C. After abandonment, all equipment, trash, and junk will be removed and the well site will be cleaned. Any special rehabilitation requirements of the surface management agency will be complied with and accomplished as rapidly as possible.

11. OTHER INFORMATION:

A. Topography: The land surface in the general area is gently undulating and dunny. In the immediate area of the well site, the land surface slopes gently to the northwest. Regionally, drainage is to the west and southwest.

B. Soil: Top soil at the well site is sand.

C. Flora and Fauna: The vegetative cover is moderate and includes mesquite, shinnery oak, sand sage, yucca, weeds, and range grasses. Wildlife in the area is that typical of semi-arid desert land and includes coyotes, rabbits, rodents, reptiles, dove and quail.

D. Ponds and Streams: There are no rivers, lakes, ponds, or streams in the area.

E. Residences and Other Structures: There are no occupied dwellings or other structures within a mile of the proposed well site.



F. Archaeological, Historical, and Cultural Sites: None observed. However, an archaeological reconnaissance is to be accomplished and a report furnished.

G. Land Use: Grazing and wildlife habitat.

H. Surface Ownership: Federal.

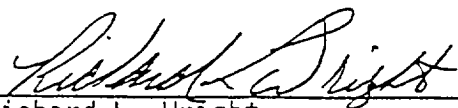
12. OPERATOR's REPRESENTATIVE:

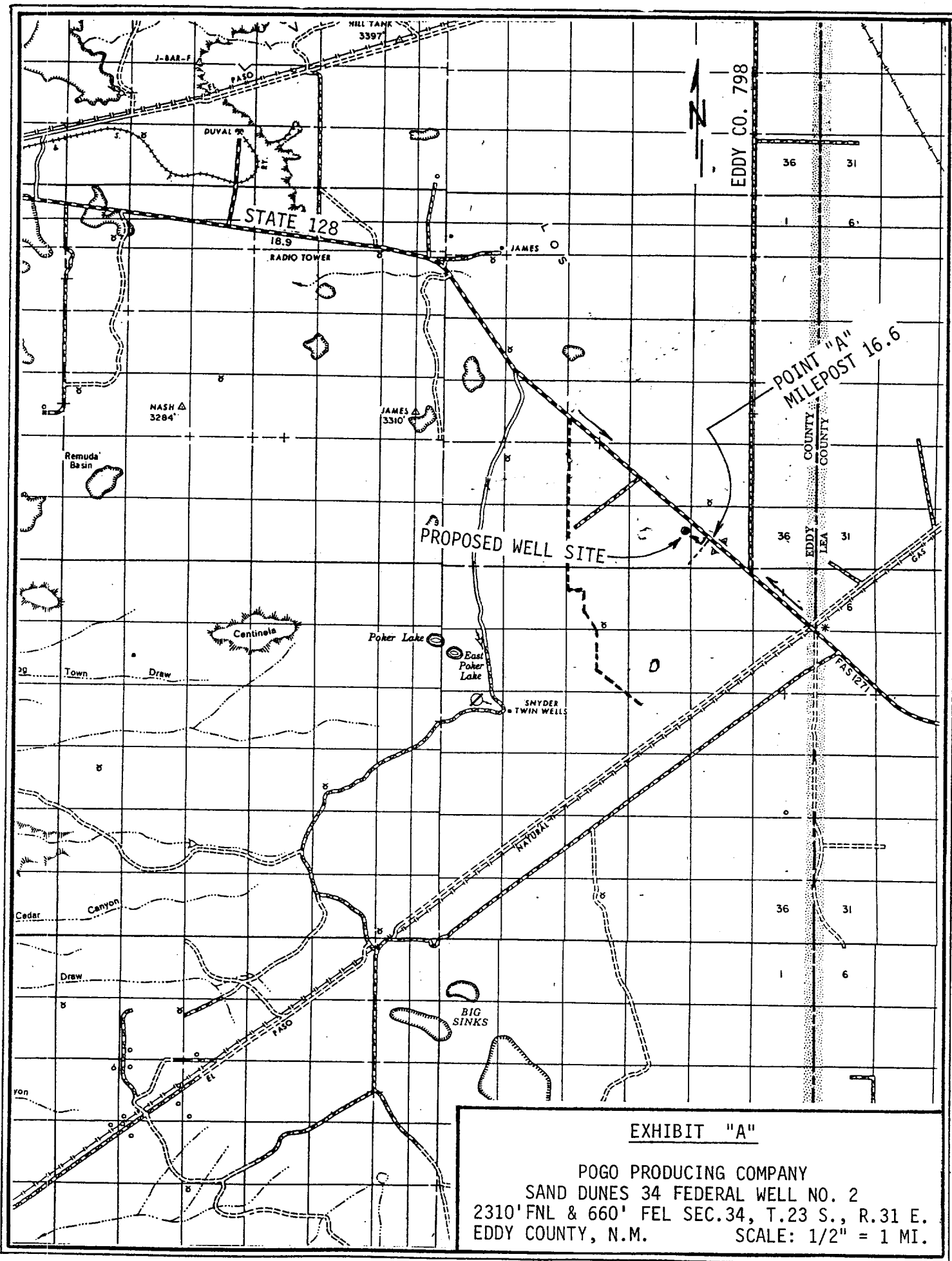
Richard L. Wright  
Division Operations Supervisor  
Pogo Producing Company  
P. O. Box 10340  
Midland, Texas 79702  
Office Phone: 915-682-6822

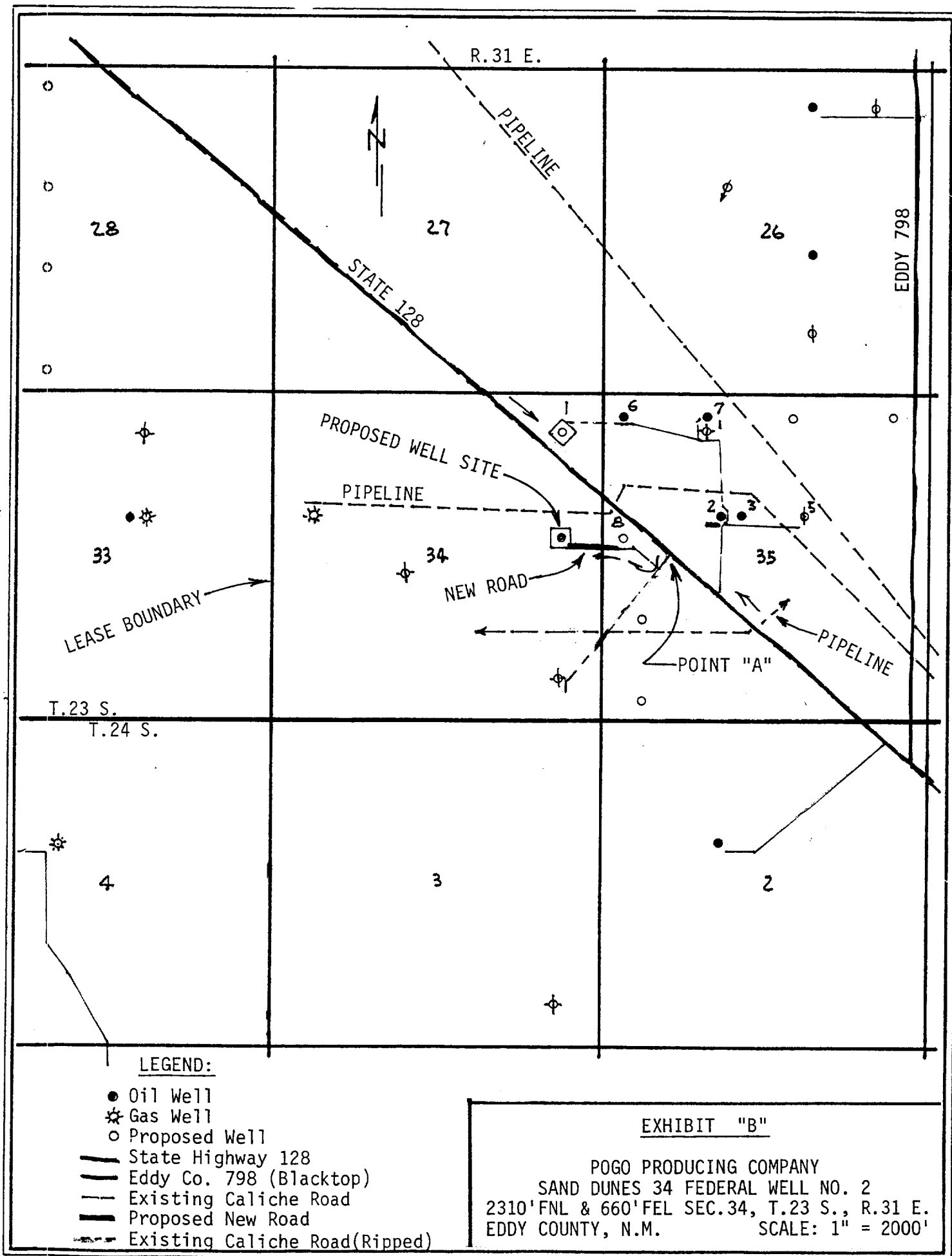
13. CERTIFICATION:

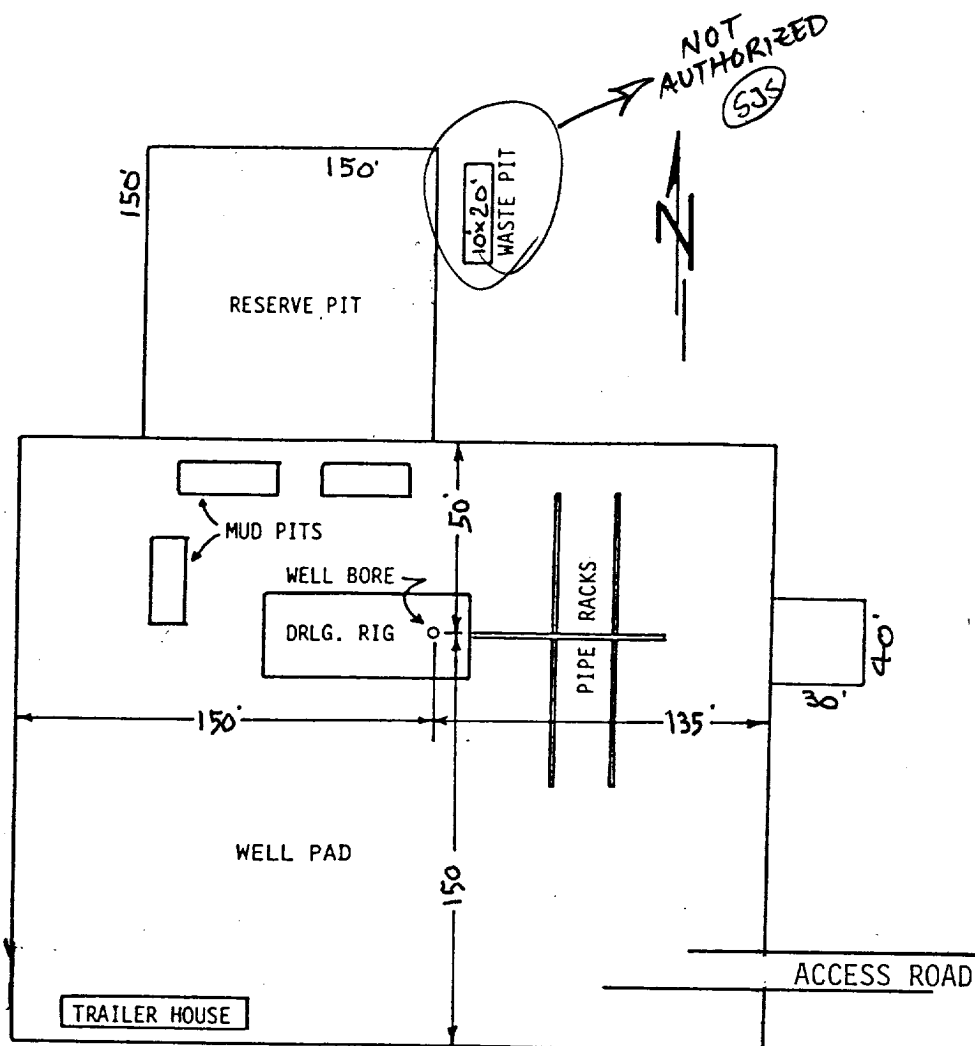
I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Pogo Producing Company and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

October 7, 1992  
Date:

  
\_\_\_\_\_  
Richard L. Wright  
Division Operations Supervisor



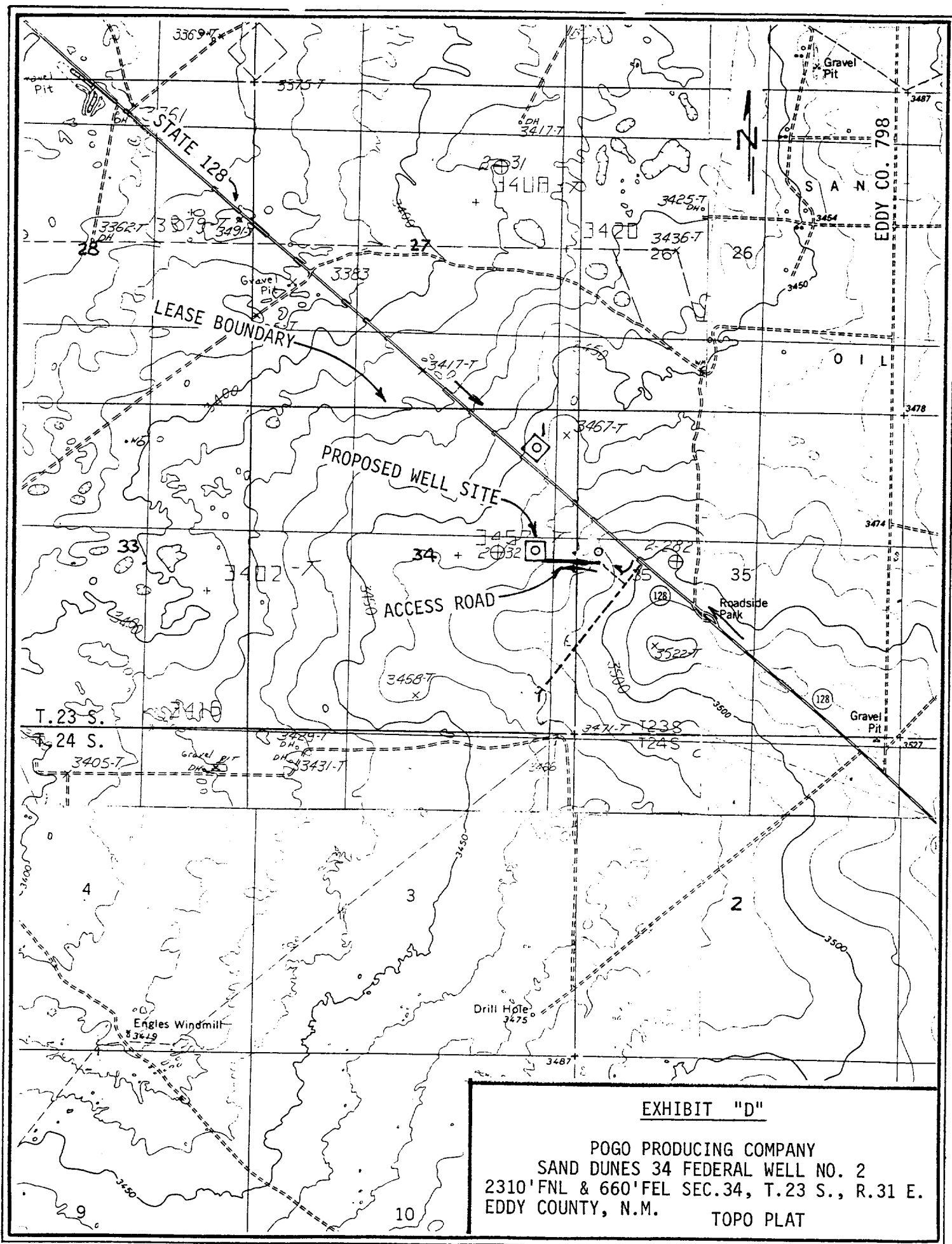




### EXHIBIT "C"

POGO PRODUCING COMPANY  
SAND DUNES 34 FEDERAL WELL NO. 2

DRILLING RIG LAYOUT  
SCALE: None



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DEC 3 1992

3160(067)  
NM-43744

COC-11-16-92

Rem 11/27/92

Asky 11/30/92  
J. Ferguson 11/30/92

CERTIFIED--RETURN RECEIPT REQUESTED  
P 696 486 664

RECEIVED  
1-6-11 1992  
O. C. D.  
OFFICIAL COPY

Pogo Producing Company  
Attention: Richard L. Wright  
P.O. Box 10340  
Midland, TX 79702

RE: Sand Dunes 34 Federal Well No. 2  
NM-43744  
2310' FNL & 660' FEL, Sec. 34, T23S, R31E  
Eddy County, New Mexico

Dear Mr. Wright:

On October 19, 1992, Pogo Producing Company filed an Application for Permit to Drill (APD) at the above referenced location. I am pleased to approve your APD at the present location. Your copy of the APD, with attached stipulations, is enclosed.

Through our analysis of the APD, we have determined that the well site is located a sufficient distance from the ore zones that potash resources should not be impacted.

If you need any additional information, please contact Tony Herrell in the Carlsbad Resource Area at (505) 887-6544.

Sincerely,

Larry L. Woodard

Larry L. Woodard  
State Director

1 Enclosure

bcc:  
NM (910, L. Woodard)  
NM (920, R. Smith)  
NM (060, A. Lopez)  
NM (060, L. Cone)  
NM (067, T. Herrell)

067:CCranston:mlt:11/4/92:A:\34sand2.AL