

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

APJ# 30-059-20183

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

2. NAME OF OPERATOR  
 Amoco Production Company

3. ADDRESS OF OPERATOR  
 P. O. Box 68, Hobbs, New Mexico 88240

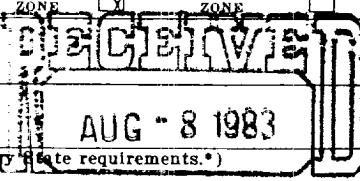
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)  
 At surface 1080.4' FNL X 1980' FEL  
 At proposed prod. zone (Unit G SW/4 NE/4)

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*  
 32 miles Southwest of Clayton, NM

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

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

21. ELEVATIONS (Show whether DF, RT, GR, etc.)  
 4905' GL



5. LEASE DESIGNATION AND SERIAL NO.  
 NM-14952

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME  
 Bravo Dome Carbon Dioxide Gas Ut.

8. FARM OR LEASE NAME  
 Bravo Dome Carbon Dioxide Gas Ut.

9. WELL NO.  
 2034 051G

10. FIELD AND POOL, OR WILDCAT  
 Und. Tubb

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA  
 5-20-34

12. COUNTY OR PARISH | 13. STATE  
 Union | NM

16. NO. OF ACRES IN LEASE

17. NO. OF ACRES ASSIGNED TO THIS WELL  
 160

19. PROPOSED DEPTH  
 2655'

20. ROTARY OR CABLE TOOLS  
 Rotary

22. APPROX. DATE WORK WILL START\*  
 3rd quarter-1983

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12-1/4"	9-5/8"	32.30#	700'	Circulate
8-3/4"	7"	20#	2655'	Tie back to 9-5/8"

Propose to drill and equip well in the Tubb formation. After reaching TD logs will be run and evaluated. Perforate and stimulate as necessary in attempting commercial production.

Mud Program: 0 -700' Native spud mud  
 700' -TD KCL-Salt water Gel-Starch

BOP Diagram attached  
 Archaeological Survey attached  
 Gas is not dedicated.

0+2-NMOCD,SF 1-HOU R. E. Ogden RM 21.150 1-SUSP 1-PJS 1-Amerada 1-Amerigas  
 1-Cities Service 1-Conoco 1-CO2 in Action 1-Excelsior 1-Sun. Tex. 1-Exxon  
 1-Jim Russell, Clayton 1-F. J. Nash, HOU RM 4.206

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 Peter J. Serna TITLE Assist. Admin. Analyst DATE 8-4-83  
 (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.

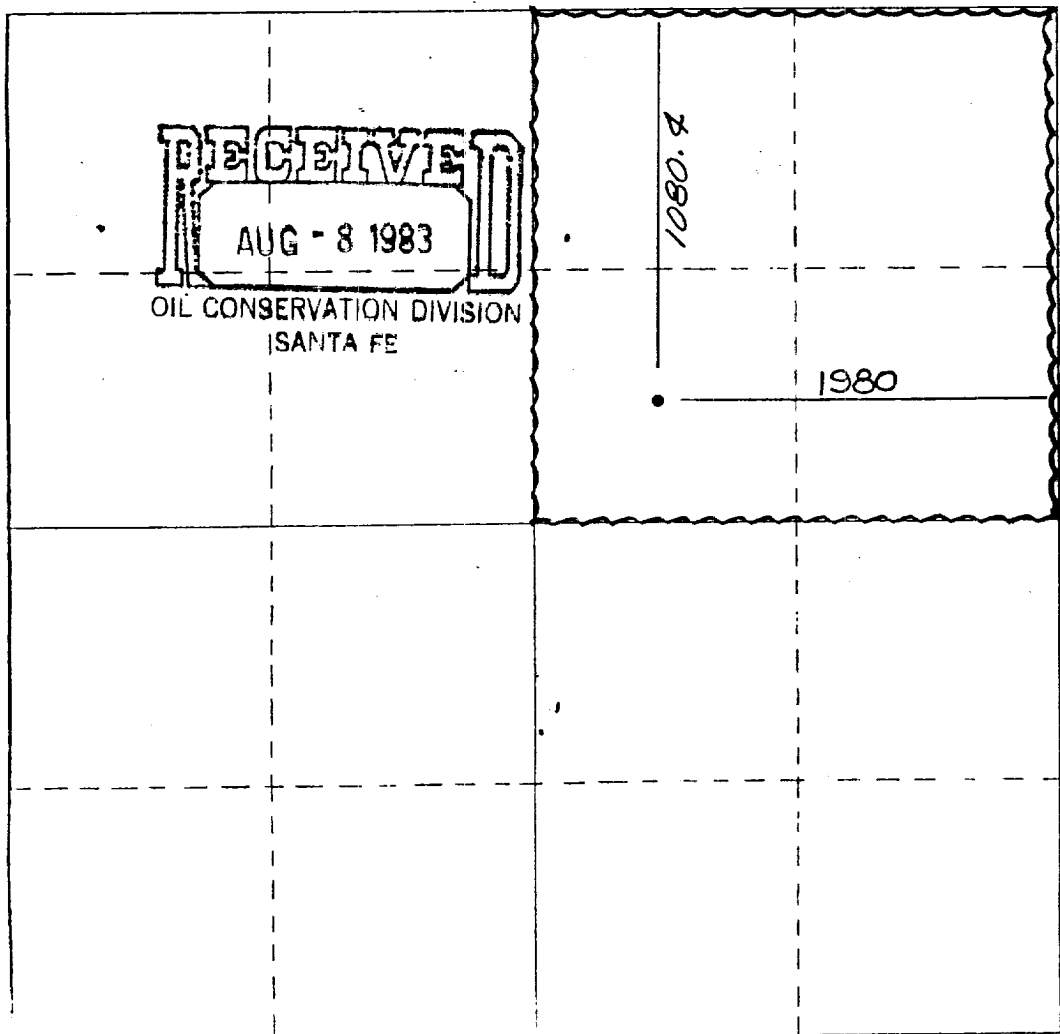
Operator <b>AMOCO PRODUCTION COMPANY</b>		Lease			Well No. <b>2034051G</b>
Unit Letter <b>G</b>	Section <b>5</b>	Township <b>T20N</b>	Range <b>R34E</b>	County <b>UNION</b>	
Actual Footage Location of Well: <b>1080.4</b> feet from the <b>NORTH</b> line and <b>1980</b> feet from the <b>EAST</b> line					
Ground Level Elev. <b>4905</b>	Producing Formation <b>Tubb</b>	Pool <b>Und. Tubb</b>		Dedicated Acreage: <b>160</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.



**RECEIVED**  
**AUG - 8 1983**  
OIL CONSERVATION DIVISION  
SANTA FE

CERTIFICATION

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

*Peter J. Sena*

Name  
Assist. Admin. Analyst

Position  
Amoco Production Company

Company  
August 4, 1983

Date

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.

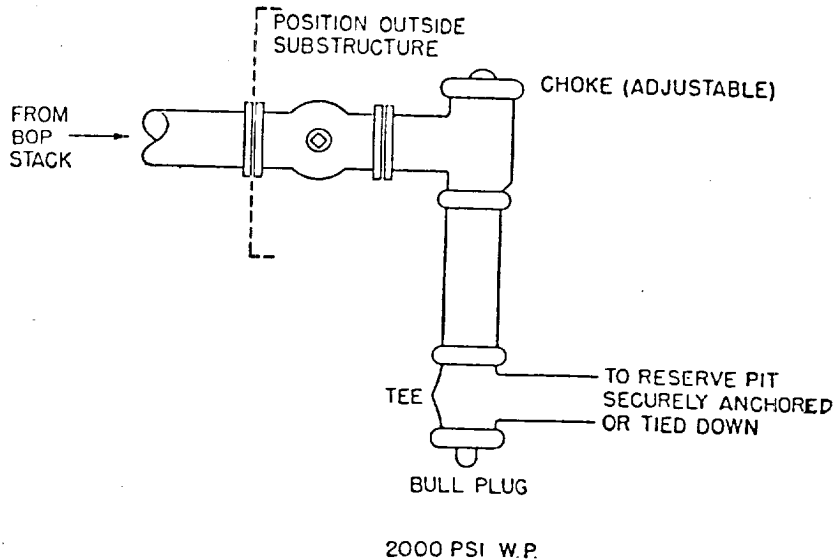
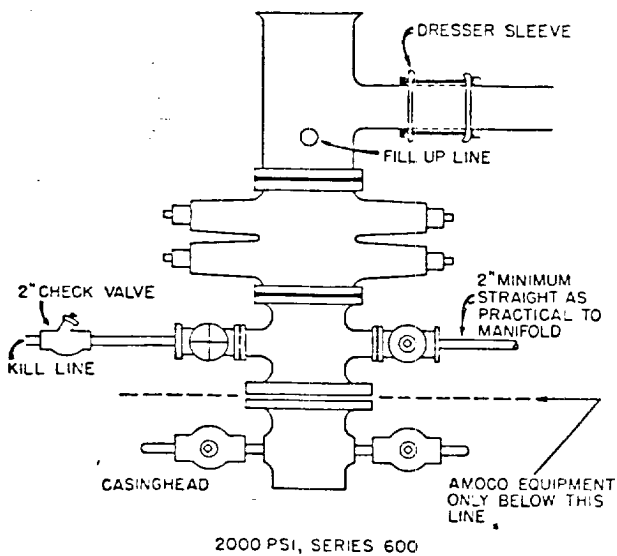
JUNE 20 1983

Date Surveyed  
*[Signature]*  
Registered Professional Engineer  
and Land Surveyor  
5103  
NEW MEXICO  
E. SHIELDS

STANDARD 2000 PSI W.P. BOP STACK

1. Blow-out preventers may be manually operated.
2. All equipment must be in good condition, 2,000 psi w.p. (4,000 psi test) minimum.
3. Bell nipple above blow-out preventer shall be same size as casing being drilled through.
4. Kelly cock to be installed on kelly.
5. Full opening safety valve 2,000 psi w.p. (4,000 psi test) minimum must be available on rig floor at all times with proper connection or subs to fit any tool joint in string.
6. Spool or cross may be eliminated if connections are available in the lower part of the blow-out preventer body.
7. Double or space saver type preventers may be used in lieu of two single preventers.
8. BOP rams to be installed as follows:
  - Top preventer - Drill pipe or casing rams
  - Bottom preventer - Blind rams

\*Amoco District Superintendent may reverse location of rams.
9. Extensions and hand wheels to be installed and braced at all times.
10. Manifold valves may be gate or plug metal to metal seal 2" minimum.



Attachment to "Application for Permit to Drill", Form 9-331 C

1. Location

See attached Form C-102

2. Elevation

See attached Form C-102

3. Geologic name of surface formation.

Ogallala

4. Type of drilling tools and associated equipment to be utilized.

See Form 9-331 C

5. Proposed drilling depth.

See Form 9-331 C

6. Estimated tops of important geologic markers.

Tubb 2310'  
Basement 2605'

7. Estimated depths at which anticipated water, oil, gas or other mineral-bearing formations are expected to be encountered.

Tubb 2310'

8. Proposed casing program, including size, grade, and weight of each string and whether it is new or used.

<u>Depth</u>	<u>Size</u>	<u>Weight</u>	<u>Grade</u>	<u>New or Used</u>
700'	9-5/8"	32.30#	H-40	New
2655'	7"	20#	K-55	New

9. Proposed cementing program.

9-5/8" Circulate to surface  
7" Tie back to 9-5/8"

10. Blowout Preventer Program is attached.
11. Type and characteristics of the proposed circulating medium or mediums to be employed for rotary drilling, and the quantities and types of mud and weighting material to be maintained.
  - 0- 700' Native spud mud
  - 700'-TD KCL-Salt water gel-Starch

12. Testing, logging and coring programs to be followed with provisions made for required flexibility.

- 700' - TD DLL-MSFL-GR-Caliper
- 700' - TD FDC-CNL-GR-Caliper

13. Any anticipated abnormal pressure or temperatures expected to be encountered or potential hazards, such as hydrogen sulfide gas, along with plans for mitigating such hazards.

None anticipated

14. Anticipated starting date and duration of operation.

- 3rd quarter-1983.
- Duration-14 days

15. Other facets of the proposed operation operator wishes to point out for the Geological Survey's consideration of the application.

Request exemptions from the painting stipulations of Sec. 102 (a) (8) of the "Federal Land Policy and Management Act of 1976" to paint any tanks, separators, and treaters required for the production of this well, Amoco's standard gray color. If a pumping unit is required for the continued production of this well, it will be painted black with orange safety color coding which conforms with your current painting guidelines.

## Proposed Development Plan for Surface Use

1. Existing roads including location of exit from main highway.

Detailed map showing drillsite location in relation to the nearest town and all existing roads within one mile of the wellsite are shown on Exhibit A. Go South from Clayton on highway 18 for 32 miles. Turn west on highway 102 and go 9 miles. Turn south of County road (which leads to Heimann ranch house) and go 2/10 of a mile. Turn back east on Amoco lease road and travel 1-1/10 mile to location.

2. Planned access roads.

Approximately 460' of access road is to be built:

3. Location of existing wells.

All existing well within one mile radius are shown on Exhibit C.

4. Location of tank batteries and flow lines

If the well is commercially productive, the production facilities (i.e. tanks, seperators, & treaters) will be located on existing pad.

5. Location and type of water supply.

Fresh & brine water to be hauled by commercial hauler.

6. Source of construction materials.

Caliche pit located in the SW/4SW/4, Sec. 32, T-21-N, R-34-E, Union County.

7. WASTE DISPOSAL

- a. Drill cuttings will be disposed of in the reserve pit.
- b. Drilling fluids will be allowed to evaporate in the reserve pit until the pit is dry.

- c. Trash, waste paper, garbage and junk will be burned or buried with a minimum of 24" cover. Waste material will be contained to prevent scattering by wind prior to ultimate disposal.
- d. Any produced water will be contained in tanks and be disposed of in an approved manner. Oil produced will be stored in tanks until sold, at which time it will be hauled from location.
- e. Current laws and regulations pertaining to disposal of human waste will be complied with.
- f. If productive, maintenance waste will be placed in special containers and buried or hauled away periodically.

8. ANCILLARY FACILITIES-

No camps, airstrips, etc. will be constructed.

9. WELLSITE LAYOUT-

- a. Size of Drilling Pad -190 ' x265 ' x 6"
- b. Compacted - Caliche
- c. Surfaced - No
- d. 400' square area around wellsite has been cleared by archaeologist.
- e. See Exhibit

10. RESTORATION OF SURFACE-

Producing Well - all pits will be cut, filled, and leveled as soon as practical to original condition with rehabilitation to commence following removal of drilling and completion equipment. Rehabilitation to be completed in 180 days if possible.

Dry Hole - same as above with dry hole marker to be installed and surface reseeded if required.

11. OTHER INFORMATION-

- a. Terrain - Plains and hills.
- b. Soil- Sandy loam
- c. Vegetation- Buffalo Grass, Engleman pricklypear, yucca, sunflower
- d. Surface Use- Grazing
- e. Ponds and Streams - Canadian River Drainage, North of Shields Lake
- f. Water Wells -None
- g. Residences and Building -None
- h. Arroyos, Canyons, etc. - None
- i. Well Sign - Posted at drill site
- j. Open Pits - All pits containing liquid or mud will be fenced
- k. Archaeological Resources - None

12. OPERATOR'S REPRESENTATIVE -

Field personnel responsible for compliance with development plan for surface use is:

H. C. Low, District Drilling Superintendent  
P. O. Box 68  
Hobbs, NM 88240  
Office Phone: (505) 393-1781



LEASE & WELL NUMBER Bravo Dome Carbon Dioxide Gas Unit Well No. 2034 051G

LOCATION 1080.4 FNL X 1980 FEL, Sec. 5, T-20-N, R-34-E, Union County, NM

Certification: The following statement is to be incorporated in the plan and must be signed by the lessee's or operator's field representative who is identified in Item No. 12 of the plan.

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 AMOCO PRODUCTION COMPANY and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

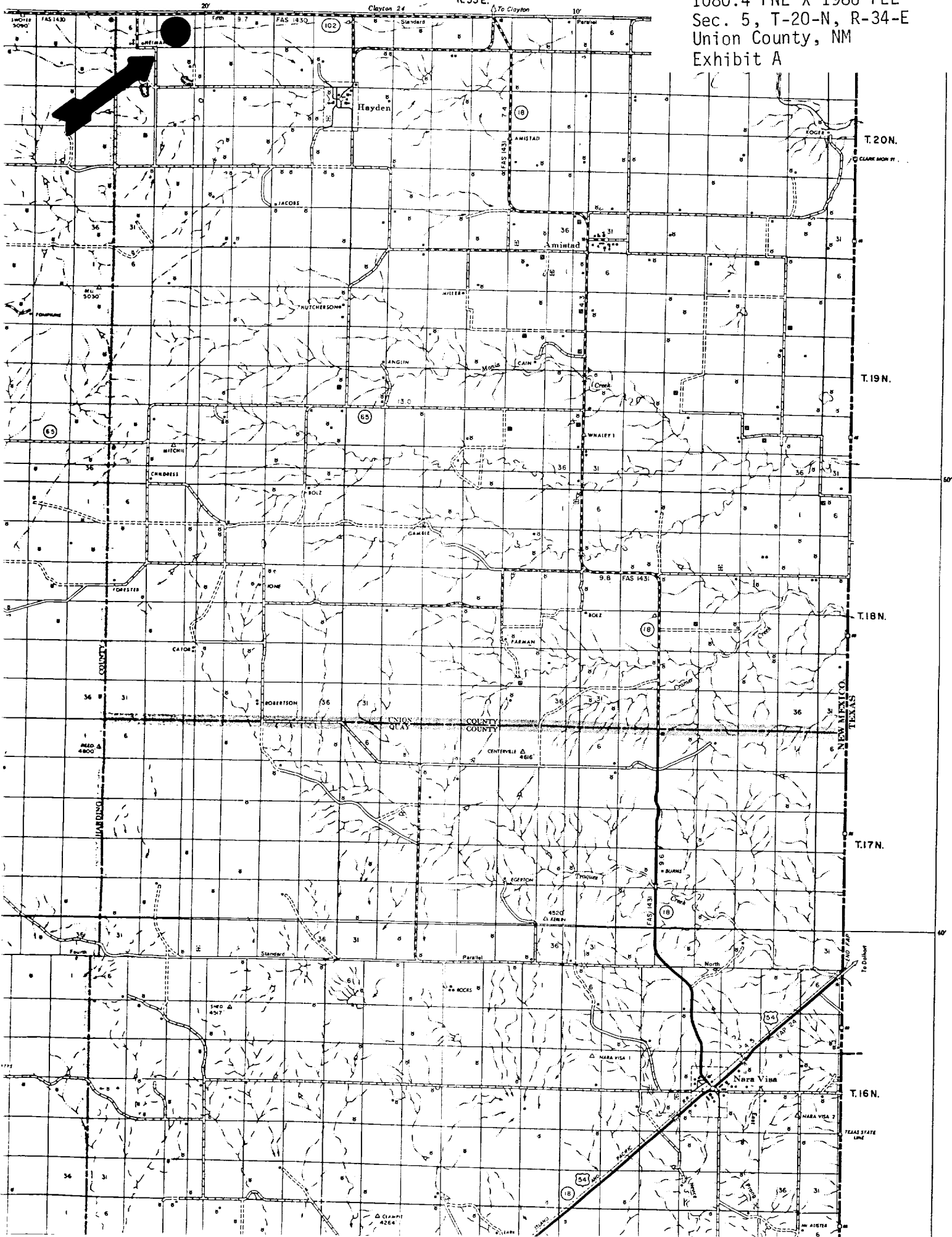
August 4, 1983

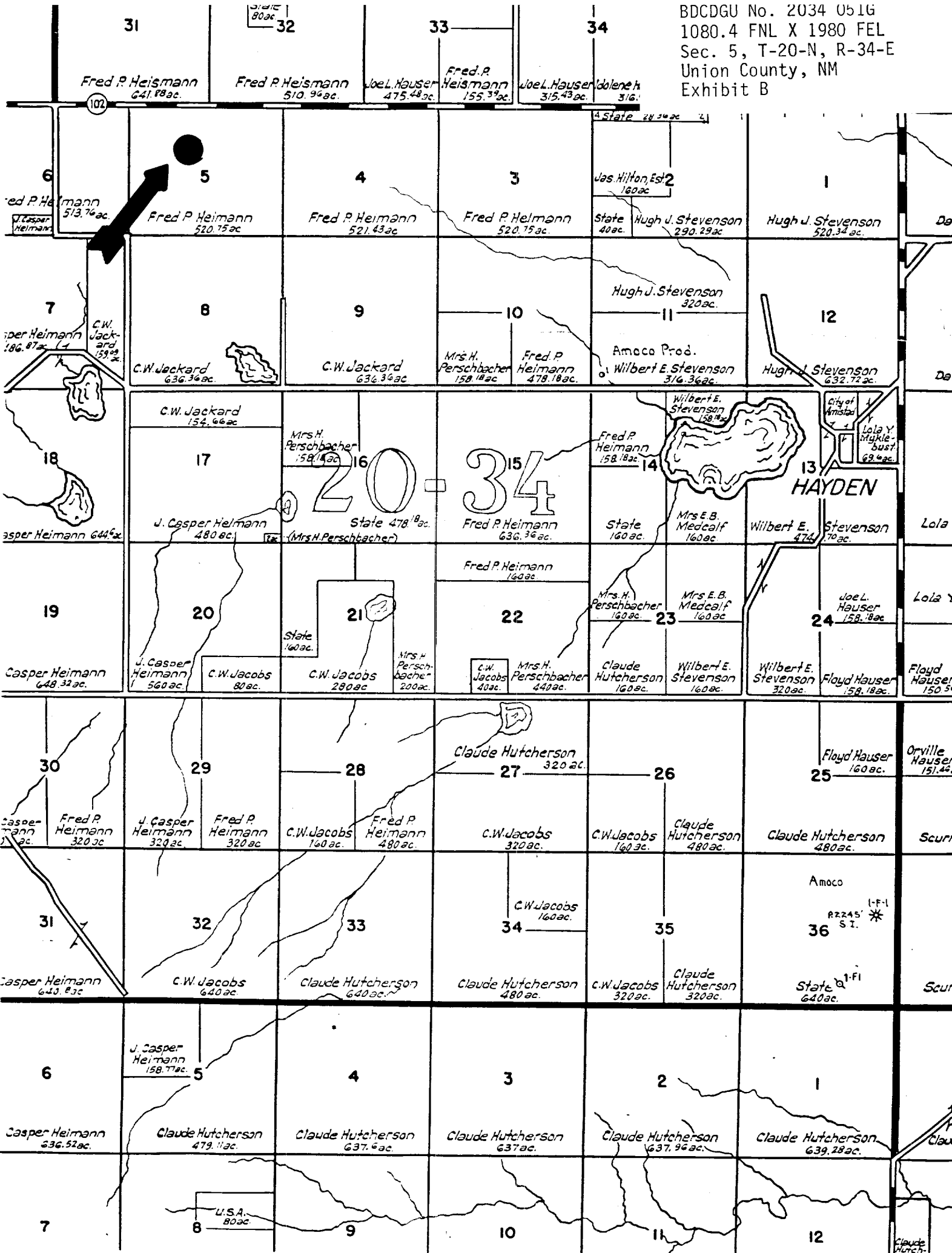
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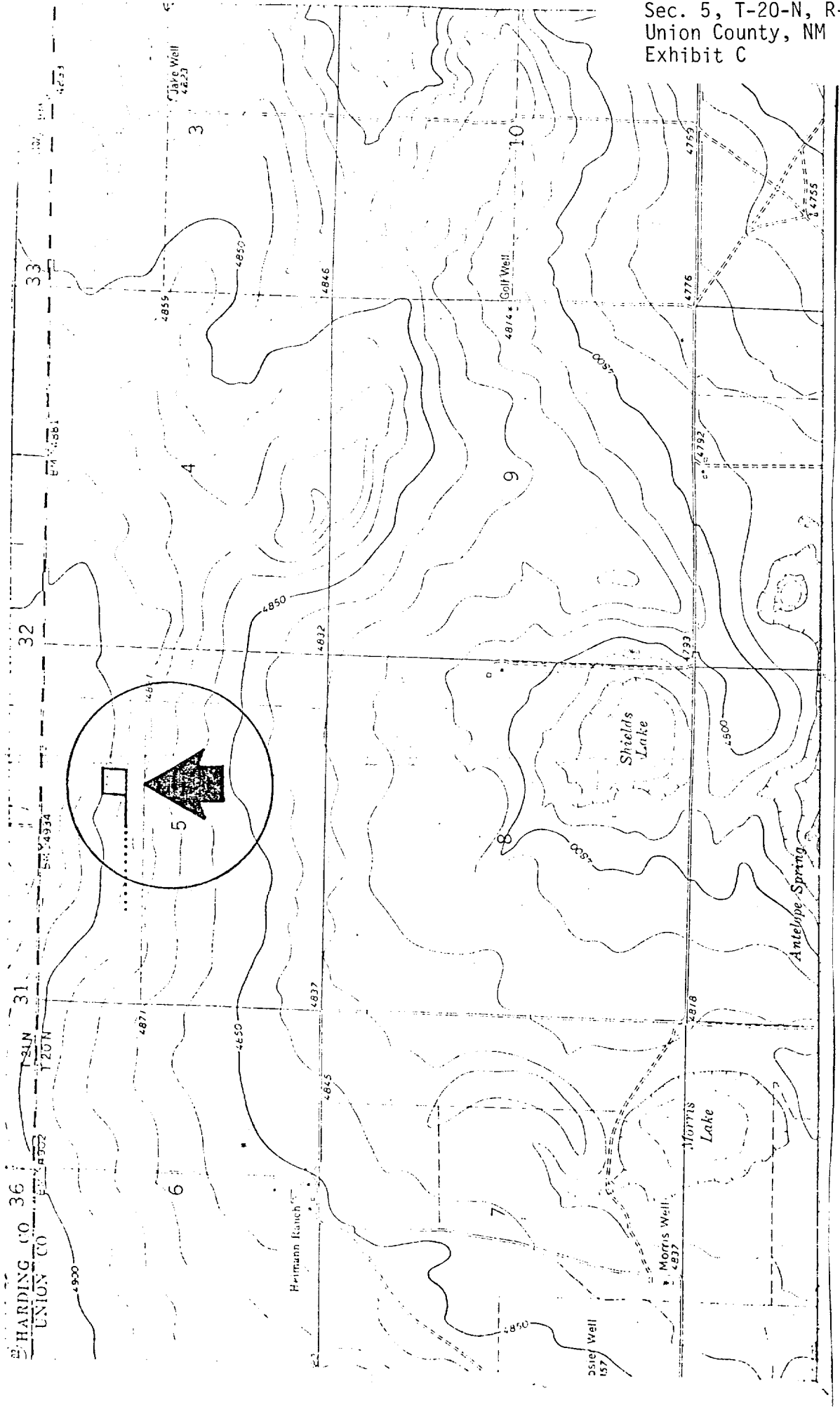
  
NAME (AND TITLE)

District Drilling Superintendent

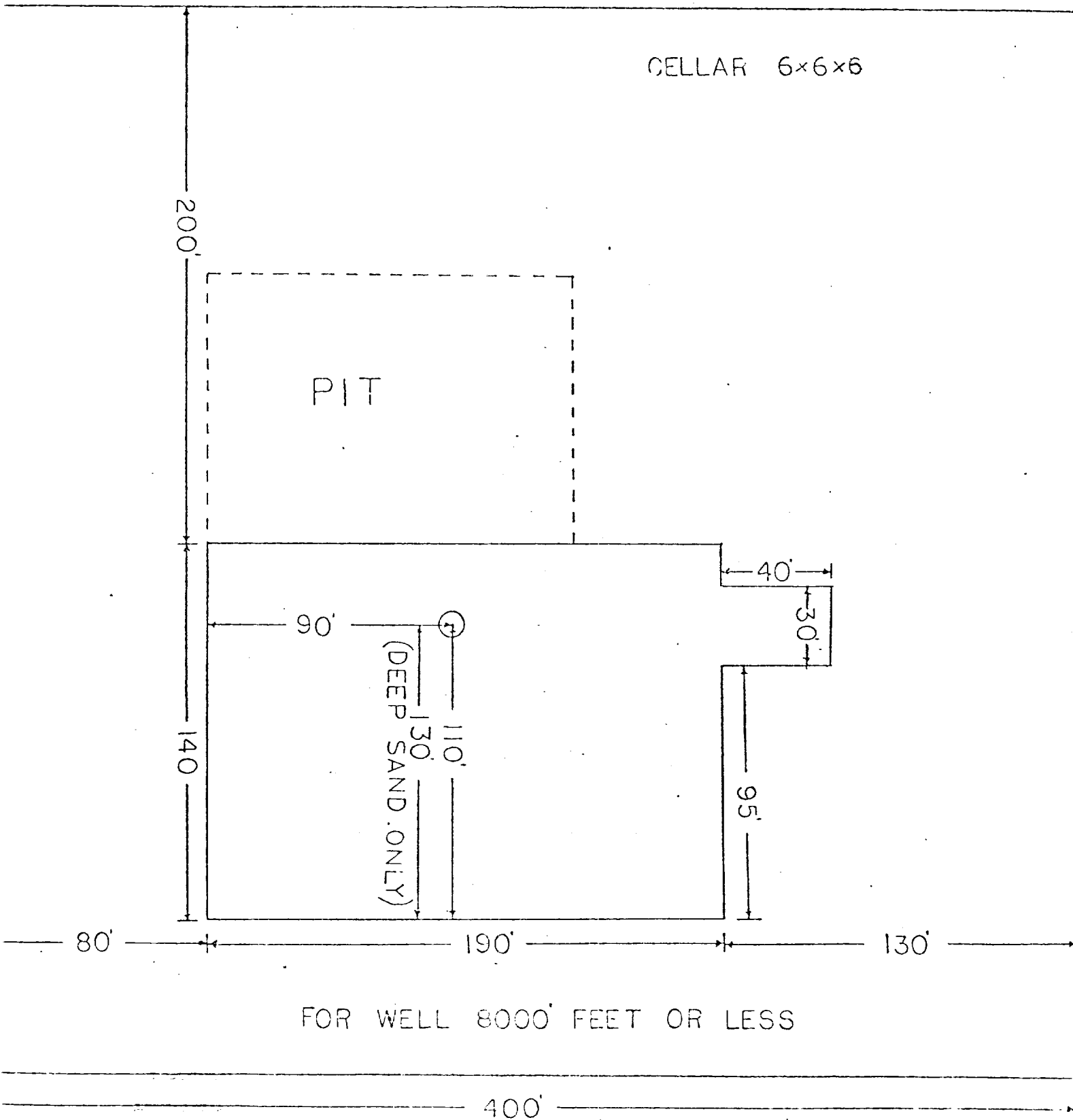
BDCDGU No. 2034 051G  
1080.4 FNL X 1980 FEL  
Sec. 5, T-20-N, R-34-E  
Union County, NM  
Exhibit A





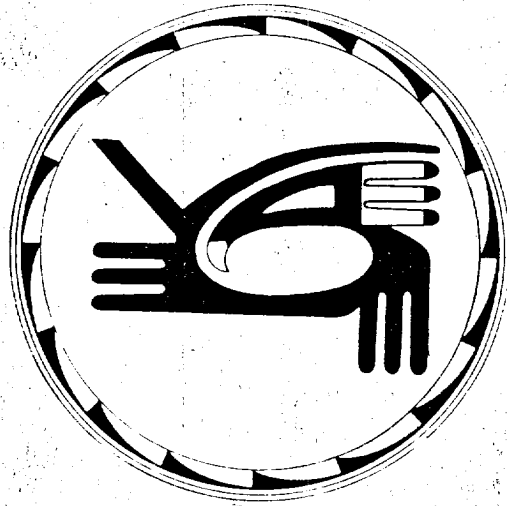


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# A C A

Llano Estacado Center for Advanced  
Professional Studies and Research  
Eastern New Mexico University  
Portales, New Mexico 88130



Archaeological Clearance Report  
for  
Amoco Production Company.

Bravo Dome Carbon Dioxide Gas Unit Well #2034-051G and Access Road

F84-113

by  
Michael Kyte

Edited and Submitted by  
Mr. Scott C. Schenmer  
Acting Director

July 29, 1983

## Introduction

An archaeological reconnaissance was recently completed by the Agency for Conservation Archaeology (A.C.A.) at Eastern New Mexico University for Amoco Production Company in Union County, New Mexico on land administered by the Bureau of Land Management. The reconnoitered area will be impacted by the construction of a well pad and an access road. The project was administered by Steve Hardin for Amoco Production Company and Mr. Scott C. Schermer, Acting Director of ACA. This report was prepared by the Portales office of ACA.

The field work was conducted on July 29, 1983 by Michael Kyte. Excellent field and weather conditions prevailed throughout the course of this reconnaissance. This survey was conducted under Federal Antiquities Permit number 82-NM-375. A search of the National Register has been made and properties within this area are not listed on the Register.

## Survey Technique

Visual inspection of the pad was completed by walking a series of parallel transects. Each transect was covered in a tightly spaced zigzag pattern. The access road was examined as two transects, with tightly spaced zigzag patterns covering the length and breadth. The distance between transects was 25 feet (7.6 meters). This method maximized the opportunity of observing any cultural resources within or near the proposed area of impact.

## Bravo Dome Carbon Dioxide Gas Unit Well #2034-051G and Access Road

### Location

The proposed well pad and access road are located 32 miles south of Clayton, New Mexico, in the Canadian River Drainage. The pad covers 3.67 acres and measures 400 X 400 feet (121.9 X 121.9 meters) and the access road covers 0.52 acres and measures 50 X 460 feet (15.2 X 140.2 meters). They are situated as follows:

#### Well Pad:

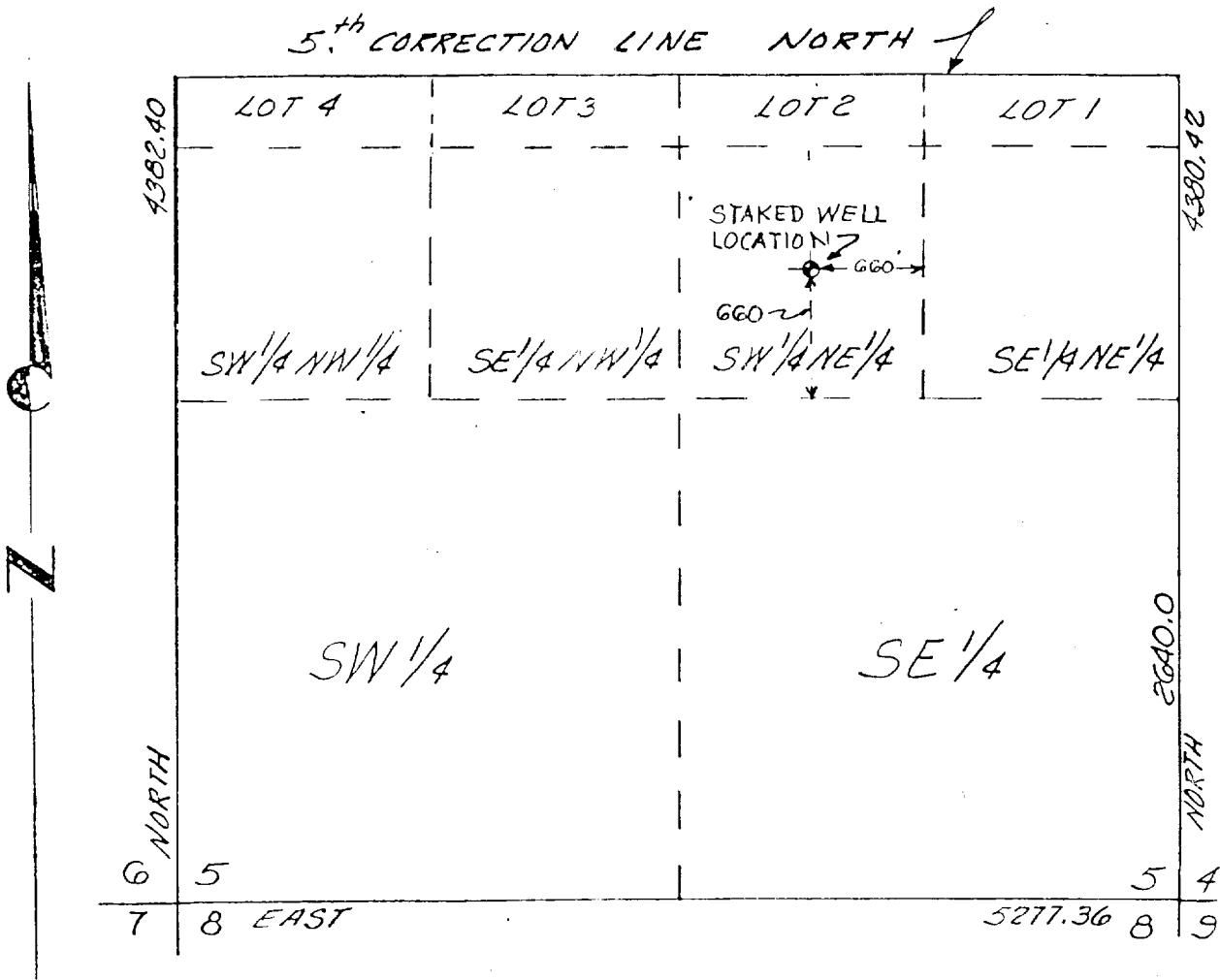
SW 1/4 NE 1/4, Section 05, T20N R34E, NMPM, Union County, NM (BLM)

#### Access Road:

SW 1/4 NE 1/4, Section 05, T20N R34E, NMPM, Union County, NM (BLM)

Plat: Figure 1

Figure 1



SECTION 5 T20N R34E  
N.M.P.M.,

WELL LOCATION 1980' FROM THE EAST LINE



Map Reference: USGS Hayden Quadrangle 7.5 minute series, 1966 (figure 2)

#### Terrain

The proposed well pad and access road are located in the Canadian River Drainage, 1.5 miles north of Shields Lake. It is situated on a south facing hill slope. The surrounding area consists of rolling plains and hills, with a drainage to the southeast. The elevation varies from 4890 to 4900 feet (1490.4 to 1493.5 meters). The soil encountered in the area is predominantly a sandy loam. Taxonomically it can be classified as a paleustoll. Lithic inclusions consist of caliche and sandstone fragments.

#### Floristics

ACA encountered a dense floral assemblage at this location. The density of the vegetation in the area is approximately 80 percent, consisting primarily of grasses. The dominant species is buffalo grass (Buchloe dactyloides). Among other species present are Englemann pricklypear (Opuntia phaeacantha), plains yucca (Yucca campestris), nightshade (Solanum eleagnifolium), sunflower (Helianthus petiolaris), broom snakeweed (Gutierrezia sarothrae), and various forbs and grasses.

#### Cultural Resources

ACA did not encounter any archaeological sites or isolated manifestations, either within or near the proposed facilities.

A review of the National Register did not find any properties listed for this location.

#### Recommendations

ACA recommends clearance for the proposed well pad and access road and suggests that construction be allowed to proceed as currently planned.

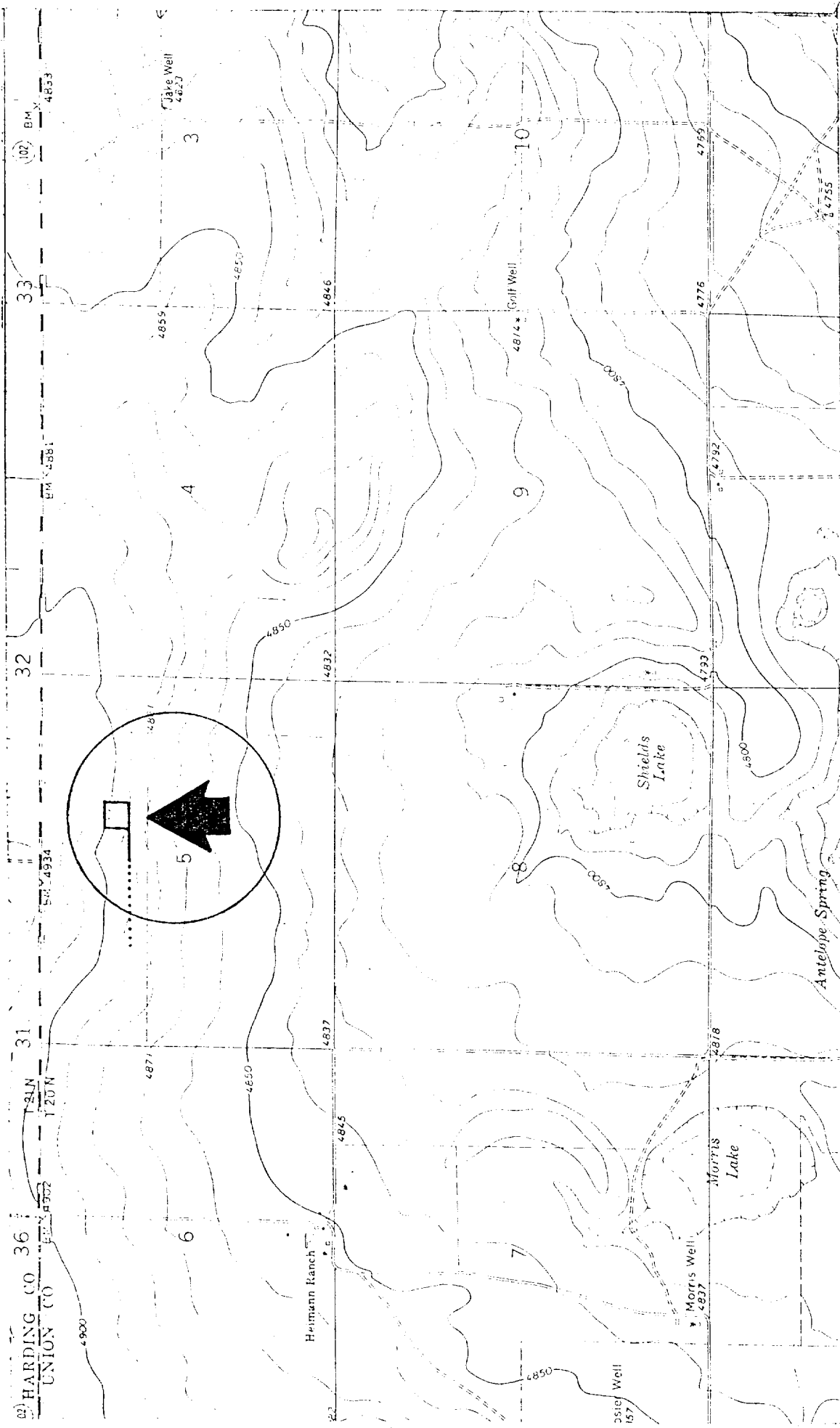


Figure 2: Location of Bravo Dome CO<sub>2</sub> Gas Unit Well #2034-051G and Access Road  
 Sec. 5, T20N R34E, Union County, NM

Map: USGS Hayden Quadrangle  
 1966

SCALE 1:24,000

