

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

34-615-21077

5. LEASE DESIGNATION AND SERIAL NO.

NM - 0512668

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

South Caverns Unit A

9. WELL NO.

1

10. FIELD AND POOL, OR WILDCAT

Undes. Washington Ranch

11. SEC., T., R., M., OR BLK.
AND SURVEY OR AREA

Sec. 21-T25S-R24E

12. COUNTY OR PARISH

Eddy

13. STATE

New Mexico

1a. TYPE OF WORK

DRILL ☒DEEPEN ☐PLUG BACK ☐

b. TYPE OF WELL

OIL
WELL ☐GAS
WELL ☒

OTHER

RE SE ZONE ☒ E ZONE ☐ MULTIPLE ☐

2. NAME OF OPERATOR

Cities Service Oil Company

3. ADDRESS OF OPERATOR

Box 4906 - Midland, Texas 79701

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

At surface

1980' PSL & 1980' FWL of Sec. 21-T25S-R24E, Eddy Co., N. Mexico

At proposed prod. zone

Same as above

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

Approx. 10-1/2 miles SW of White City, New Mexico

15. DISTANCE FROM PROPOSED*

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

1980' S&W

16. NO. OF ACRES IN LEASE

320

17. NO. OF ACRES ASSIGNED
TO THIS WELL

320

18. DISTANCE FROM PROPOSED LOCATION*

TO NEAREST WELL, DRILLING, COMPLETED,
OR APPLIED FOR, ON THIS LEASE, FT.

-

19. PROPOSED DEPTH

7200'

20. ROTARY OR CABLE TOOLS

Rotary

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

3795' GR.

22. APPROX. DATE WORK WILL START*

Jan. 31, 1974

23.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
*				
17-1/2"	13-3/8"	48#	940'	1000 Sacks (Circulated)
7-7/8"	5-1/2"	14 & 15.5#	7200'	950 Sacks

It is proposed to drill to a T.D. of 7200' and test the Morrow Formation.

The blow out prevention program is as follows:

1. One set of Blind Rams.
2. One set of Drill Pipe Rams.
3. One Hydril.

* 20" csg. will be set and cemented @ 30' w/3 yards of Redi-Mix. This will be done with a Rat Hole Machine.

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

E. Spiller

TITLE Region Oper. Mgr.

DATE Jan. 7, 1974

(This space for Federal or State office use)

PERMITS NO.

SUBJECT TO ATTACHED DEEP WELL CONTROL

REQUIREMENTS DATED

JUN 22 1973

DECLARED WATER BASIN

APPROVED BY

CONDITIONS OF APPROVAL, IF ANY:

TITLE

DATE

133

LATED

THIS APPROVAL IS VALID FOR 3 MONTHS.
EXPIRES - APR 15 1974

*See Instructions On Reverse Side

APPROVED BY SUFFICIENT TIME TO
APPROVE THE CASING.

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form O-102
Supersedes O-101
Effective 1-1-68

All distances must be from the outer boundaries of the Section

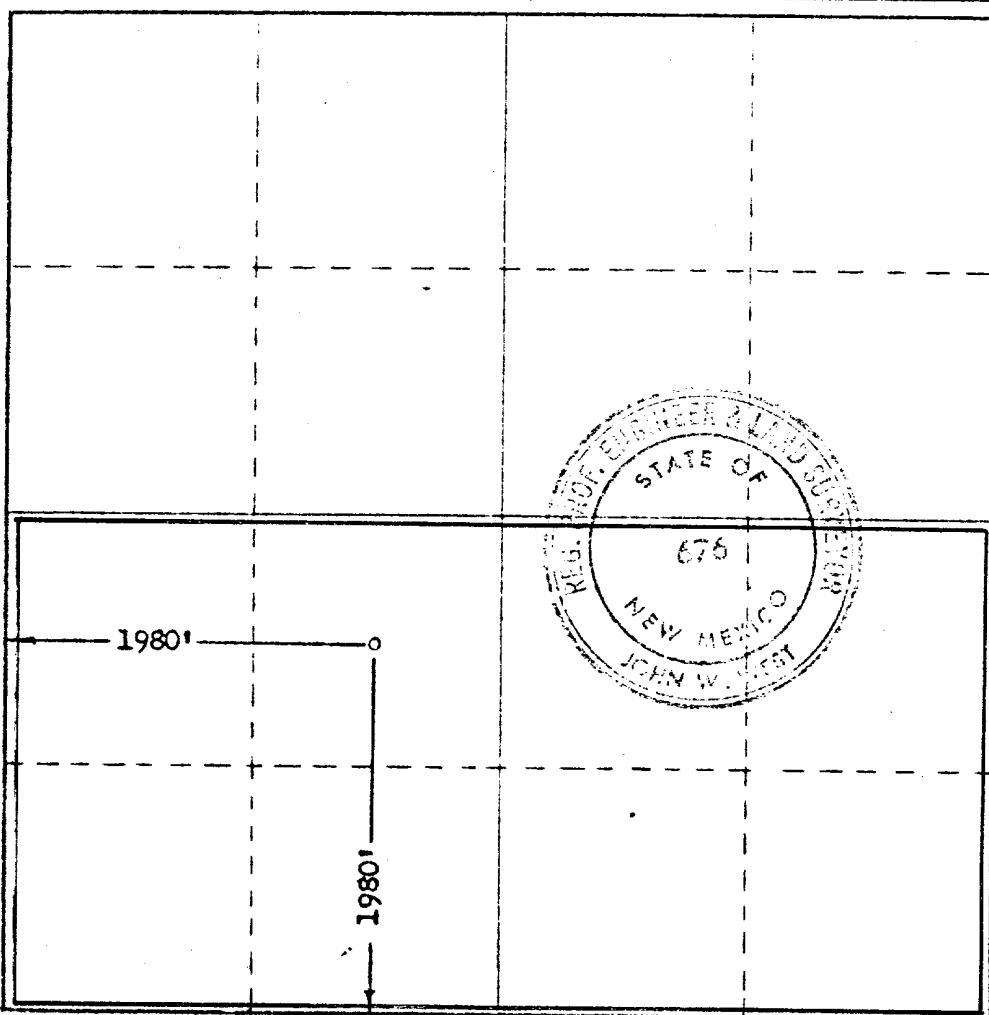
Operator CITIES SERVICE OIL COMPANY			Lease South Caverns Unit A		Well No. 1
Unit Letter K	Section 21	Township 25 South	Range 24 East	County Eddy	
Actual Footage Location of Well: 1980 feet from the south line and 1980 feet from the west line					
Ground Level Elev. 3795' EST.	Producing Formation MORROW		Pool UNDES. WASHINGTON RANCH MORROW		Dedicated Acreage 320

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure 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.



CERTIFICATION

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

Name E. J. Smith
Position Region Operation Manager
Company Cities Service Oil Company
Date January 8, 1974

U.S. GEOLOGICAL SURVEY

I hereby certify that the information 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
Jan. 8, 1974

Registered Professional Engineer
and/or Land Surveyor

John W. West
Certificate No. 676





CITIES SERVICE OIL COMPANY

Box 4906
Midland, Texas 79701
Telephone: 915 684-7131

January 4, 1974

United States Department of the Interior
Geological Survey
Artesia, New Mexico 88210

Re: Application to Drill South
Caverns Unit A No. 1,
Washington Ranch Pool, Eddy
County, New Mexico

Gentlemen:

Cities Service Oil Company respectfully requests permission to drill the South Caverns Unit A No. 1 located 1980' FSL, 1980' FWL, Section 21-25S-24E, Eddy County, New Mexico.

In support of this application, the following data is submitted:

1. Form S-3310, Application for Permit to Drill
2. Form C-102, Well Location and Acreage Dedication Plat
3. Development plan which includes the following information:
 - a. Plat showing the location of South Caverns Unit A No. 1 in relation to the surrounding area.
 - b. Plat showing existing roads, planned access road, marked in red, and distances from the South Caverns Unit A No. 1 to surrounding landmarks.
 - c. Plat showing location layout, including position of the rig, mud tanks, reserve pit, pipe racks, etc.
 - d. Blow out preventer diagram showing arrangement of BOP stack and components.
 - e. Schematic diagram of choke manifold.
 - f. Schematic diagram of hole sizes, formation tops and casing program.
 - g. Summary of mud program.

The location falls in rolling pasture land. It is planned to rig

RECEIVED

JAN - 9 1974

**U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO**

up with the V-door to the east and reserve pit to the north.

The primary objective of this well is the Morrow Sandstone. Secondary objectives are Wolfcamp, Canyon and Strawn.

The nearest inhabited dwelling is the home of Ralph Hood in Section 27. It is 8850' from the location to his dwelling.

Our access road and location are on the ranch of Mr. H. F. Ballard, Frijole Route, Carlsbad, New Mexico, telephone no. 505/785-2309. He has been notified of our intent to drill and an offer of damage settlement has been made. We are currently awaiting his reply to our offer.

The reserve pit will be lined when it is built. Upon completion of the well, the pits will be backfilled and levelled and debris removed.

If the well is completed as a producer, production equipment will be set no closer than 150' from the well with tanks set to collect both oil and water which will be trucked to sale or disposal. The gas purchaser will install necessary gas measuring equipment and pipeline.

If it is a dry hole, the well will be plugged according to United States Geological Survey requirements.

There is a possibility of lost returns and the proposed casing program is somewhat flexible depending upon hole conditions. The casing program consists of:

20" set at 30' with rat hole machine and cemented to base of cellar with Redi-Mix.

13-3/8" set at 940' in 17-1/2" hole with cement circulated to surface.

An 11" hole will be drilled out from under the 13-3/8" casing to 5000'. If lost circulation has not developed, the hole size will be reduced to 7-7/8" at 5000' and drilled to TD 7200'.

If lost circulation is a problem under the 13-3/8", the 11" hole will be drilled to 5000' and a string of 8-5/8" casing will be run to 5000' and cemented up to the loss zone. Below the 8-5/8", a 7-7/8" hole will be drilled to TD 7200' and a 5-1/2" liner will be run and cemented to tie back into the 8-5/8" casing.

RECEIVED
JAN - 9 1974
U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

The well will be drilled in accordance with USGS Well Control Requirements stated in Order 30 CFR 221.24, 221.36 and 221.37. After setting the 13-3/8" casing and before drilling into the Wolfcamp, the BOP's and related control equipment will be pressure tested to rated working

Application to Drill South Caverns Unit A No. 1
January 4, 1974

Page 3

pressure by Yellow Jacket Tools and Services, Inc.

The following equipment will be installed and operating before drilling into the Wolfcamp:

1. Pit volume totalizer.
2. Flow line sensor.

Please contact me at the above address if further information is needed to evaluate this request.

Yours very truly,



E. Y. Wilder
Region Operations Manager
Southwest Region
E & P Division

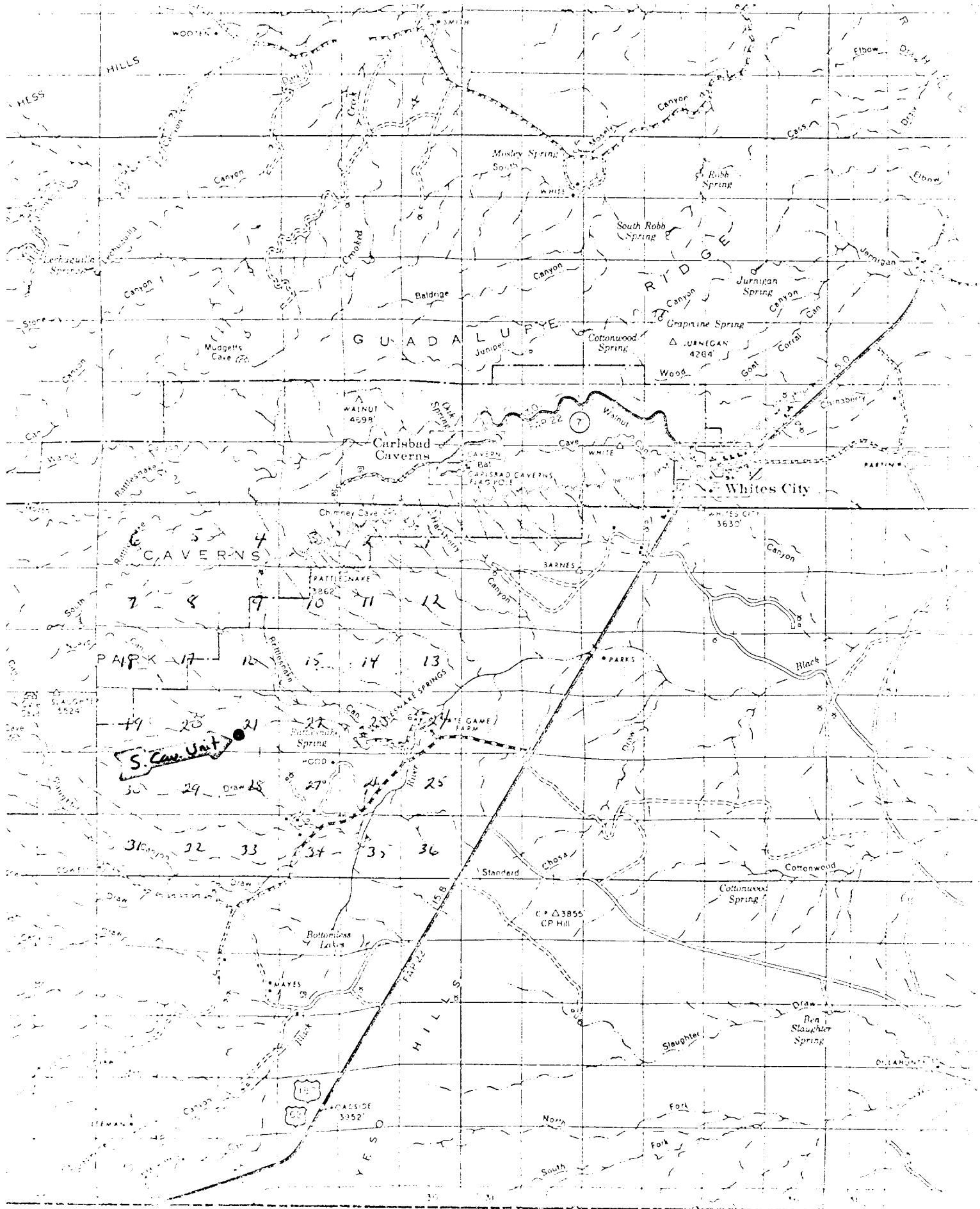
EYW/ljs

Attachments

RECEIVED

JAN 10 1974

U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

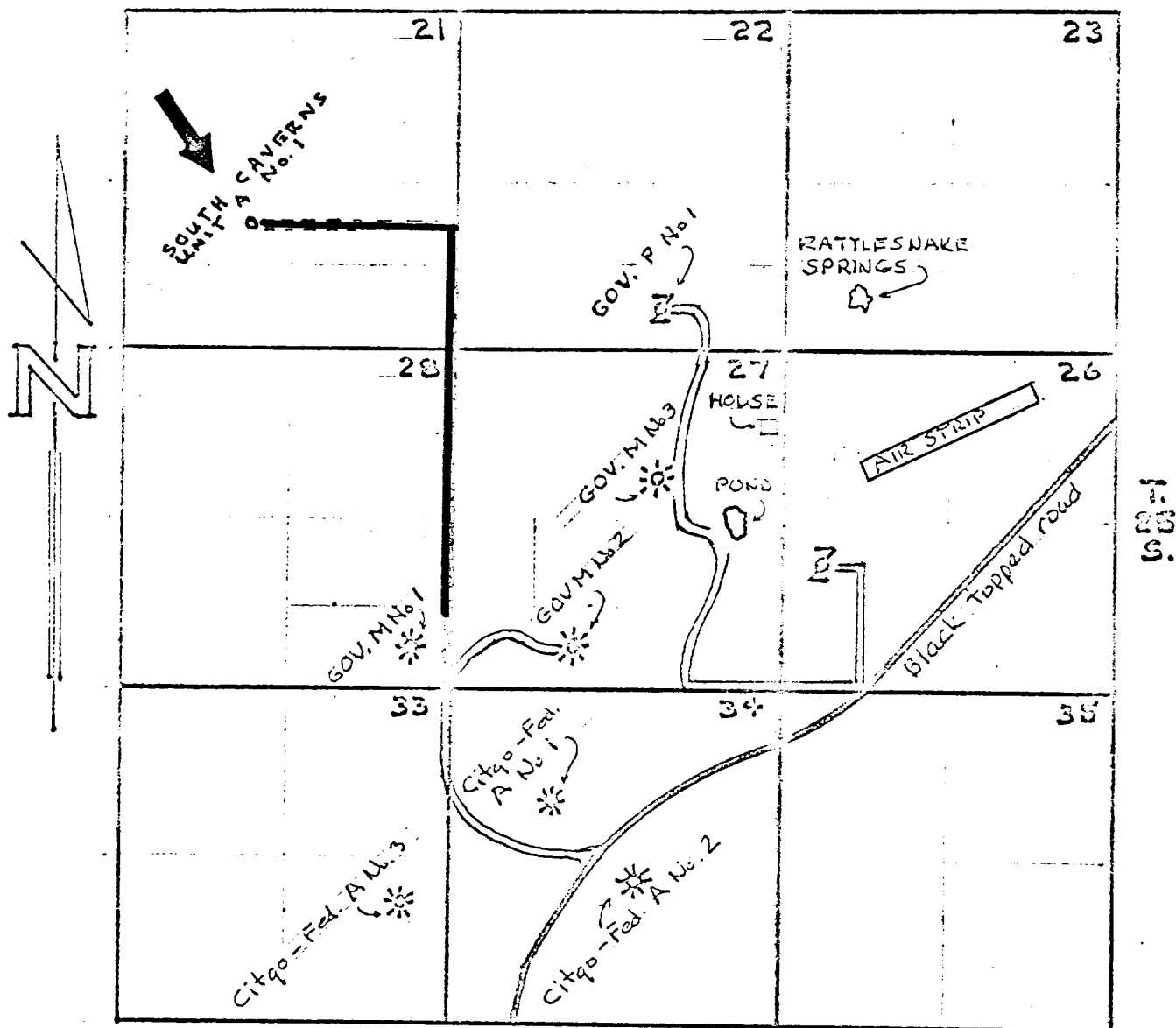


— SOUTH CAVERNS UNIT ,. No.1 —

1980 FSL, 1980 FWL, SEC. 21-25S-24E

EDDY COUNTY NEW MEXICO

R. 24 E.



Distance from S. Caverns Unit A No. 1 to:

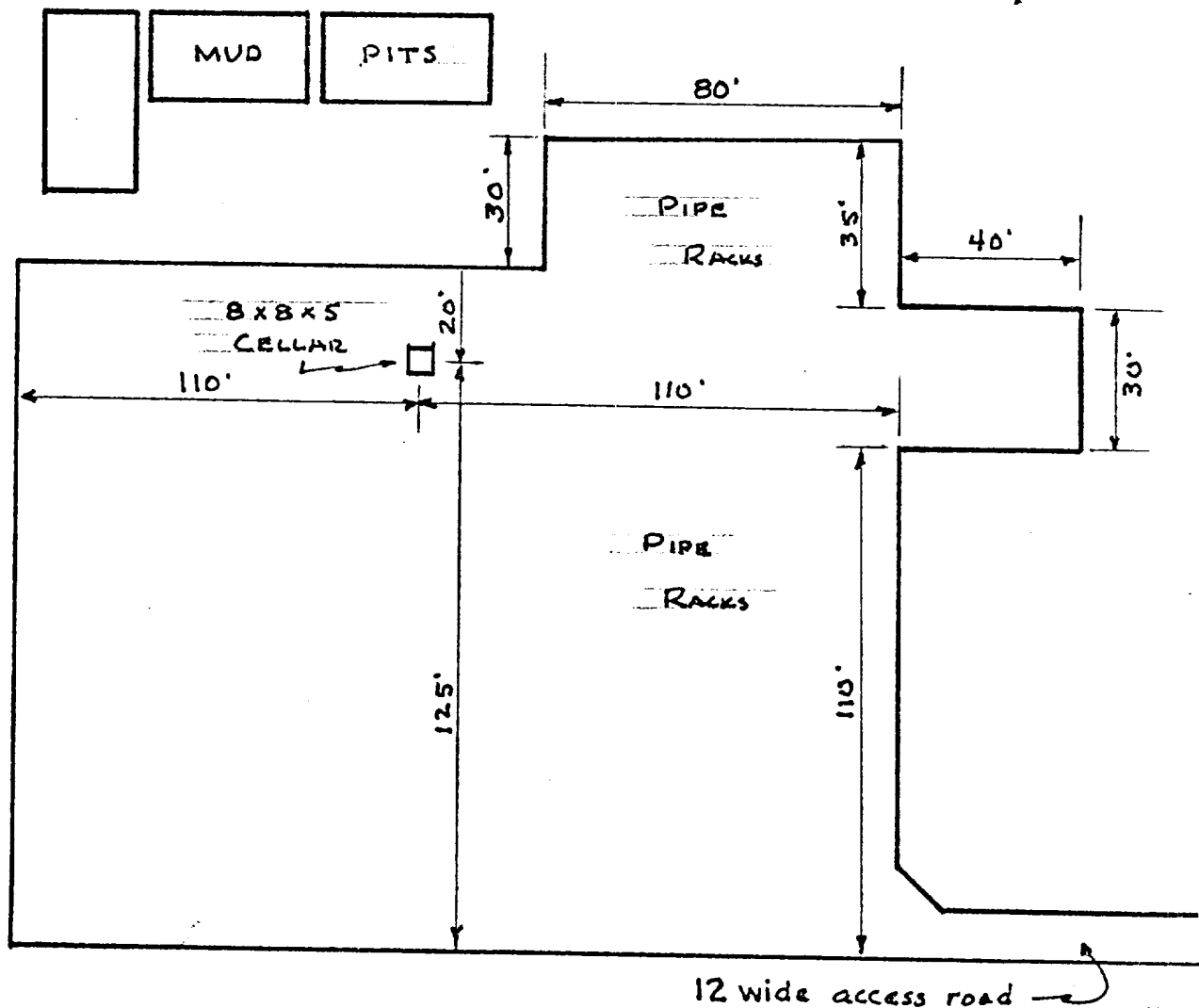
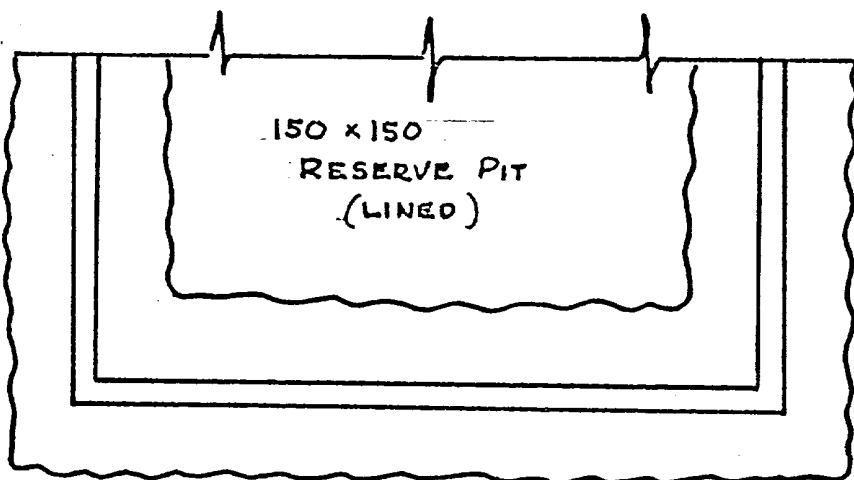
Rattlesnake Springs	9700'
Air Strip	10540'
Ralph Hoods House	8850'
Ralph Hoods Pond	9000'
Government P. No. 1 (dry hole)	6700'

SOUTH CAVERNS UNIT "A" No. 1

1980 FSL, 1980 FWL, Sec 21-25 S-24 E

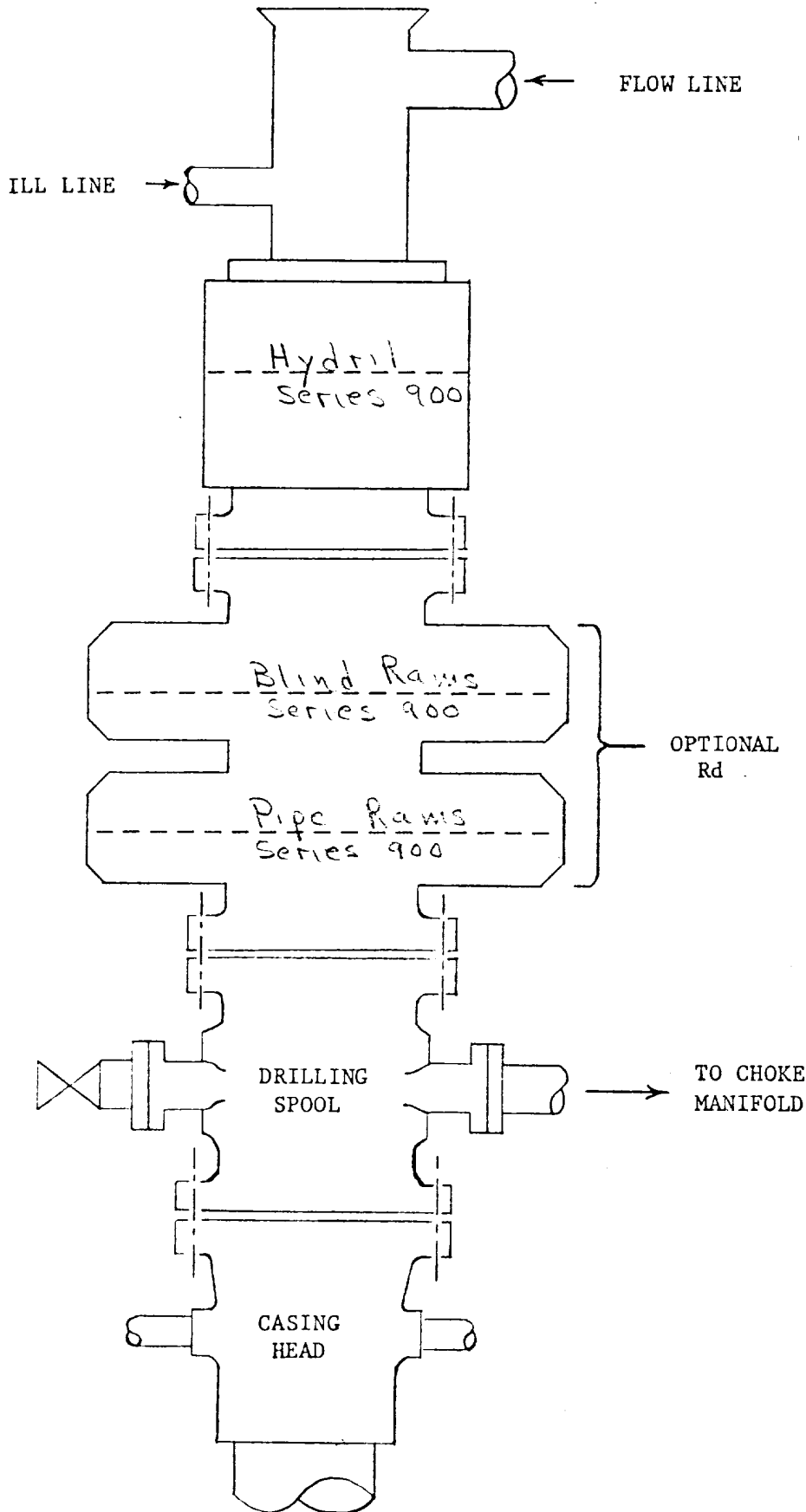
EDDY COUNTY NEW MEXICO

RIG UP WITH V-DOOR TO EAST AND
RESERVE PIT TO NORTH —



OWOUT PREVENTER REQUIREMENTS

API _____ M- _____ -SRRA
SRdA

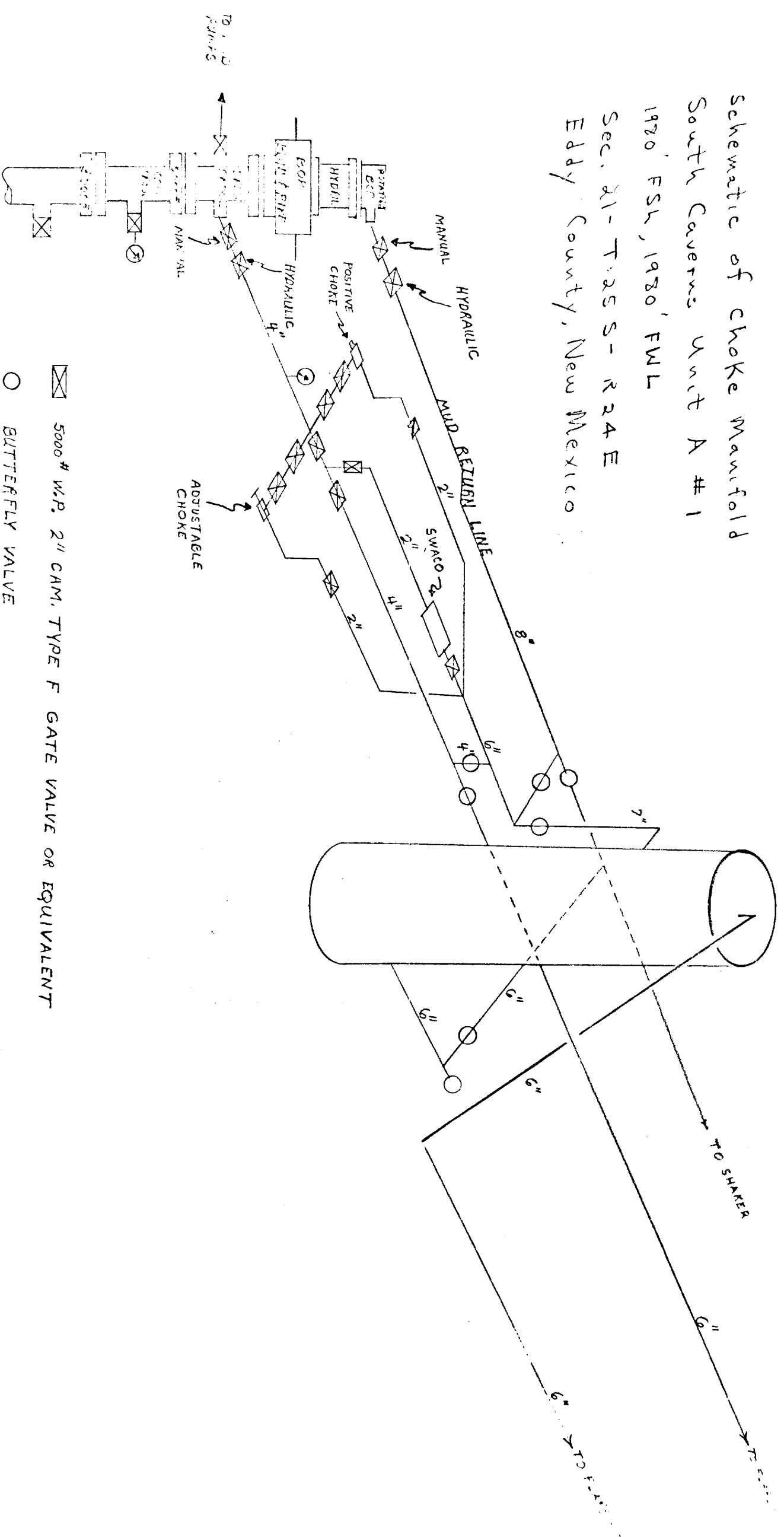


South Caverns Unit A #1
1980' FSL, 1980' FWL
Sec. 21-T25 S-R24 E
Eddy County, New Mexico

CLOSING METHOD

Sufficient accumulator volume shall be available to operate both the bag type preventer and pipe ram preventer with a snap-action through the following steps: close-open-close.

Schematic of Choke Manifold
 South Caverni Unit A #1
 1920' FSL, 1920' FWL
 Sec. 21-T25S-R24E
 Eddy County, New Mexico



- 5000# W.P. 2\"/>
- BUTTERFLY VALVE

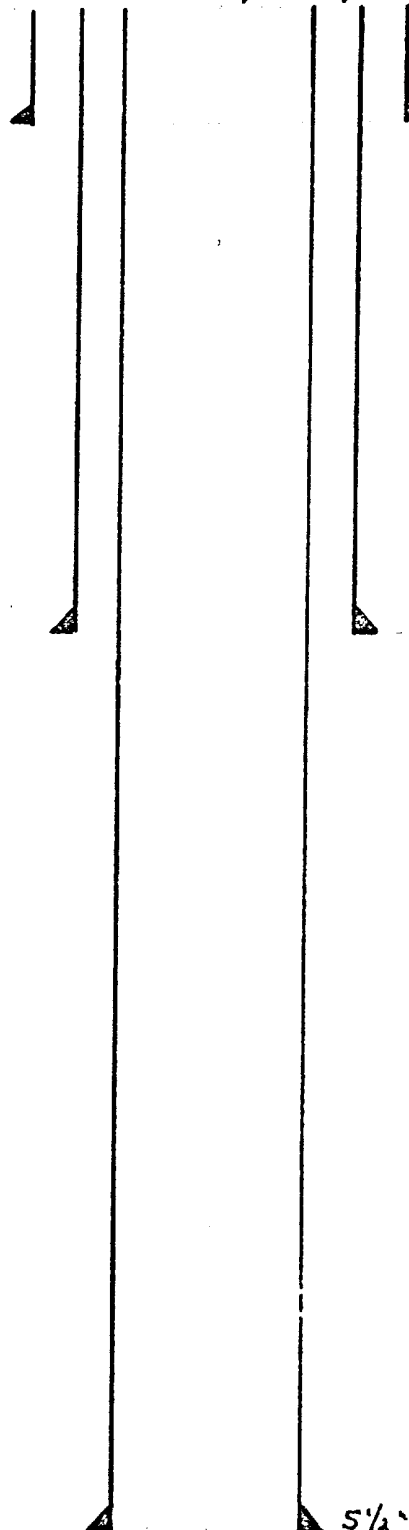
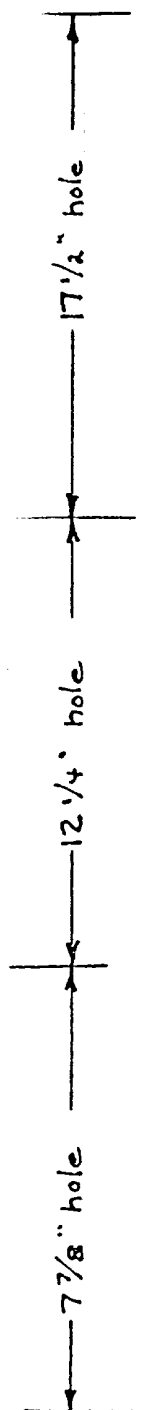
— SOUTH CAVERNS UNIT A No. 1 —

1980 FSL, 1980 FWL, SEC. 21-25S-24E

EDDY COUNTY NEW MEXICO

Proposed Casing Program

Hole Size



20" at 30' w/ rat hole machine
cemented w/ Redi-mix.

13 3/8" @ 940 (cement circulated)

— 3750' Bone Springs

— 5800 Wolfcamp

— 5950 Strawn

— 6800 Morrow

— 7100 Chester

5 1/2" @ 7200' — T.D.

MUD PROGRAM

South Caverns Unit A No. 1
1980' FSL, 1980' FWL, Sec. 21-25S-24E
Eddy County, New Mexico

0' - 940'	Drill with fresh water spud mud 8.5 - 9.0 PPG.
940' - 5600'	Drill with fresh water, mud weight 8.5 - 9.0 PPG, Vis. 28 - 35 sec./qt. Add lost circulation material as needed.
5600' - 6700'	Drill with fresh water mud, mud weight 8.5 - 9.5 PPG, Vis. 30 - 35 sec./qt.
6700' - 7200' T.D.	Fresh water mud with water loss control, mud weight 8.5 - 9.5 PPG, Vis. 30 - 35 sec./qt., water loss 6 - 9 cc.