

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTBureau of Land Management  
Received

## APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK  
Drilled Field Office  
GAS WELL ☒ OIL WELL ☐ OTHER ☐  
2. NAME OF OPERATOR  
ARCH PETROLEUM, INC. (RICHARD WRIGHT 915-685-8140)  
3. ADDRESS AND TELEPHONE NO.  
P.O. BOX 10340 MIDLAND, TEXAS 79702-7340 (915-685-8100)  
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)  
At surface  
2310' FNL & 1310' FWL SEC. 27 T23S-R37E LEA CO. NM.  
At proposed prod. zone SAME  
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*  
Approximately 10 miles Southeast of Eunice New Mexico  
15. DISTANCE FROM PROPOSED\* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT.  
(Also to nearest drilg. unit line, if any) 1310'  
16. NO. OF ACRES IN LEASE  
1520  
17. NO. OF ACRES ASSIGNED TO THIS WELL  
40  
18. DISTANCE FROM PROPOSED LOCATION\* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.  
200'  
19. PROPOSED DEPTH  
9800'  
20. ROTARY OR CABLE TOOLS  
ROTARY  
21. ELEVATIONS (Show whether DF, RT, GR, etc.)  
3288' GR.

5. LEASE DESIGNATION AND SERIAL NO.  
LC-030187  
6. IF INDIAN, ALLOTTEE OR TRIBE NAME  
-----  
7. UNIT AGREEMENT NAME  
-----  
8. FARM OR LEASE NAME, WELL NO.  
C.E. LaMUNYON # 71  
9. API WELL NO.  
30-025-35058  
10. FIELD AND POOL, OR WILDCAT  
TEAGUE-SIMPSON  
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA  
SEC. 27 T23S-R37E  
12. COUNTY OR PARISH  
LEA CO.  
13. STATE  
NEW MEXICO

23.

## PROPOSED CASING AND CEMENTING PROGRAM

| SIZE OF HOLE | GRADE SIZE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | QUANTITY OF CEMENT               |
|--------------|----------------------|-----------------|---------------|----------------------------------|
| 25"          | Conductor            | NA              | 40'           | Cement to surface with Redi-mix. |
| 17½"         | H-40 13 3/8"         | 48              | 500'          | 600 Sx. Circulate to surface.    |
| 11"          | J-55 8 5/8"          | 32 & 24         | 3000'         | 1200 Sx. Circulate to surface.   |
| 7 7/8"       | N-80 5½"             | 17              | 9800'         | 1150 Sx. Top cement 2500'±       |

1. Drill 25" hole to 40'. Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
2. Drill 17½" hole to 500'. Run and set 500' of 13 3/8" H-40 48# ST&C casing. Cement with 600 Sx. of Class "C" cement + additives, circulate cement to surface.
3. Drill 11" hole to 3000'. Run and set 3000' of 8 5/8" J-55 32 & 24 # ST&C casing. Cement with 1200 Sx. of Class "C" cement + additives, circulate cement to surface. 800' of 32# 2200' of 24#.
4. Drill 7 7/8" hole to 9800'. Run and set 9800' of 5½" casing as follows: 2800' of 17# N-80 LT&C, 6000' of 17# J-55 LT&C, 1000' of 17# N-80 LT&C casing. Cement in two stages with DV tool at 5200'±. Cement with 1150 Sx. of Class "H" cement + additives, estimate top of cement 2500' from surface.

OPEN. CORRID NO. 962  
PROPERTY NO. 14908  
POOL CODE 58900  
E&F. DATE 6-19-00  
API NO. 30-025-35058

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on deepening directionally, give pertinent data on subsurface locations and measured and true vertical.

ic. If proposal is to drill or

SIGNED Joel GarciaTITLE AgentDATE 05/04/00

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
CONDITIONS OF APPROVAL, IF ANY:

/S/LARRY D. BRAY

Assistant Field Manager,  
Lands And Minerals

APPROVED BY

TITLE

DATE

JUN 09 2000

APPROVED FOR 1 YEAR

\*See Instructions On Reverse Side

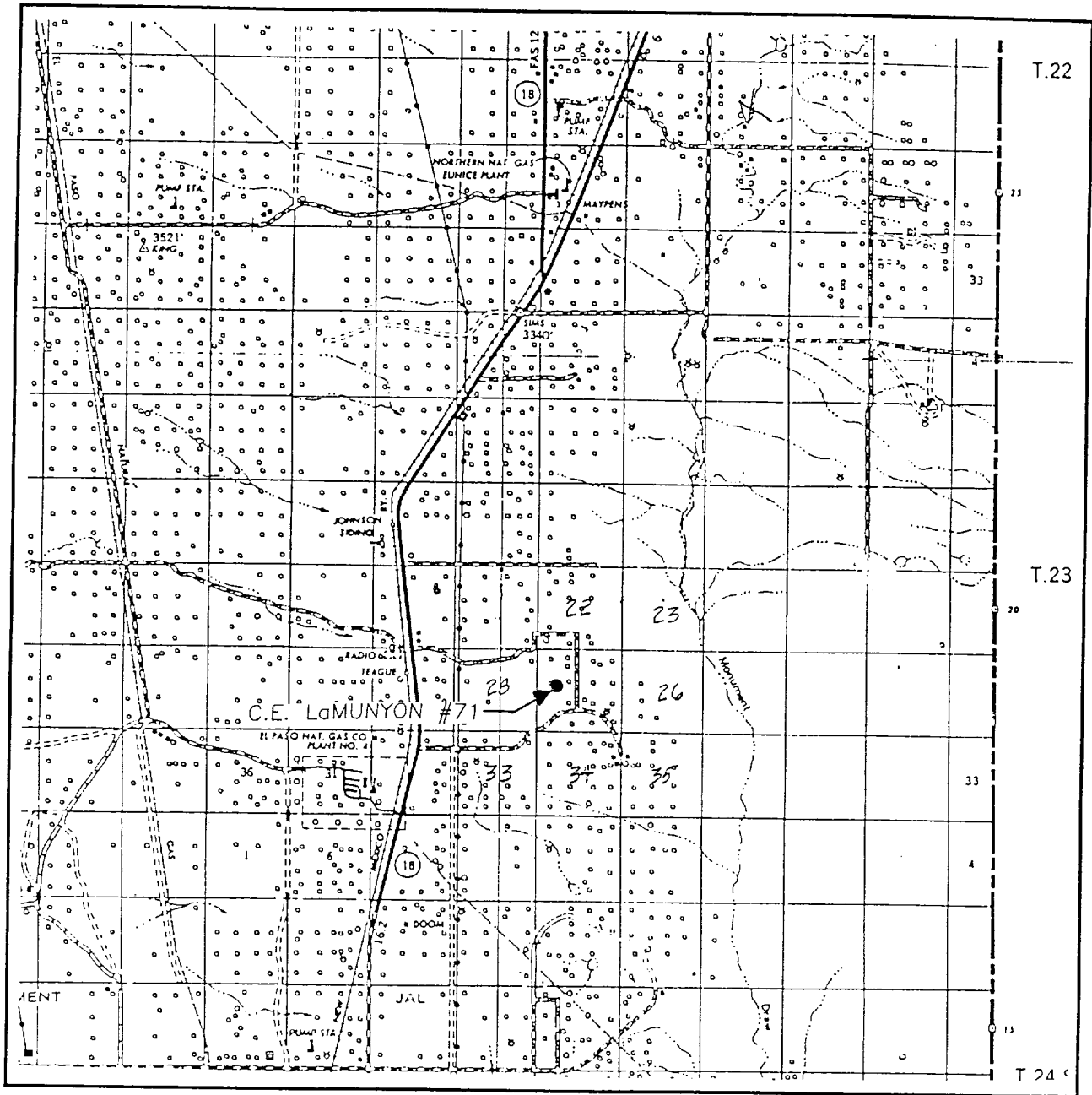
Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.



Form C-102  
Revised February 10, 1994  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

EXHIBIT "A"

# VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 27 TWP. 23-S RGE. 37-E

SURVEY N.M.P.M.

COUNTY LEA

DESCRIPTION 2310' FNL & 1310' FWL

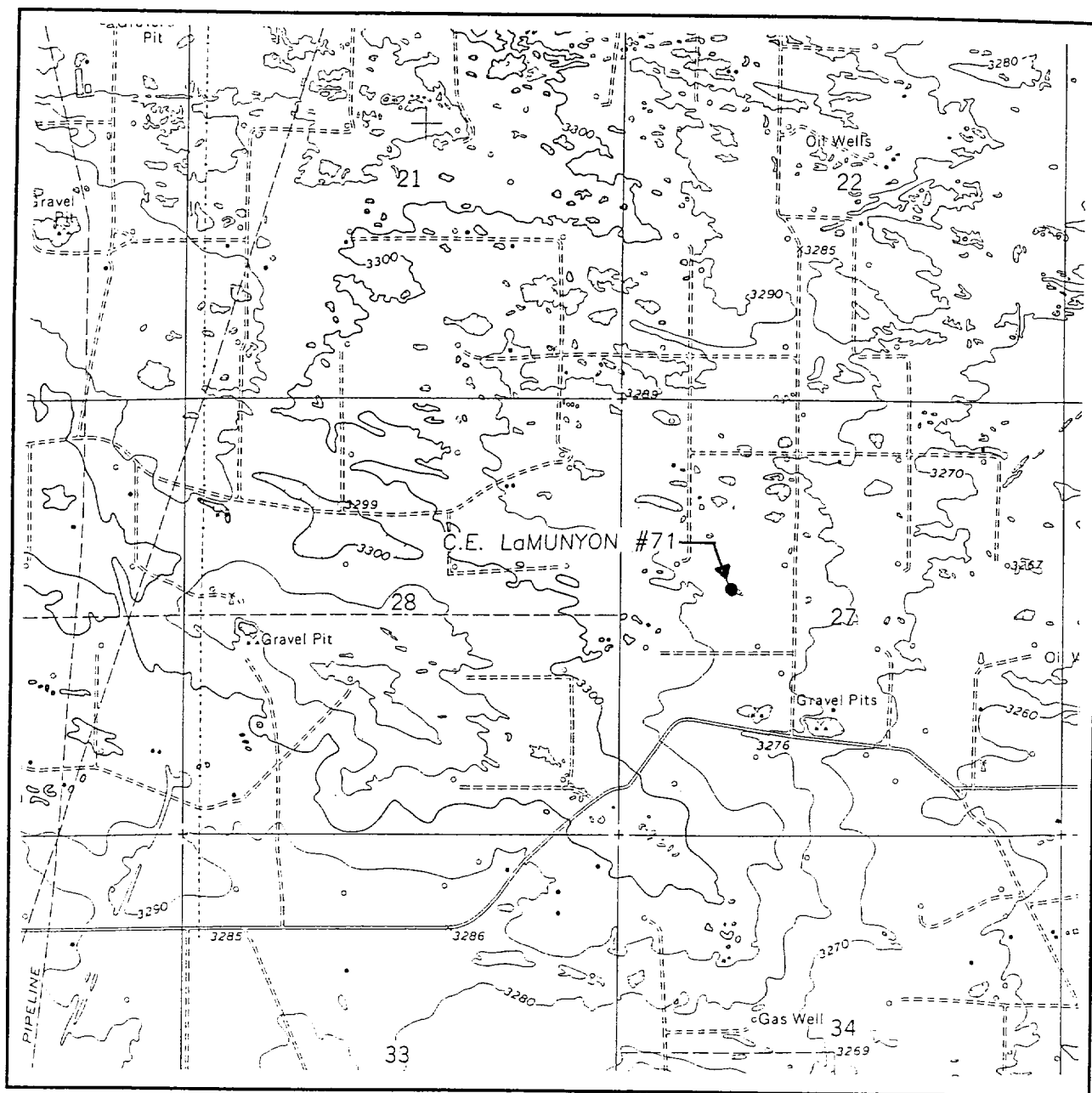
ELEVATION 3288

OPERATOR ARCH PETROLEUM, INC.

LEASE C.E. LaMUNYON

JOHN WEST SURVEYING  
HOBBS, NEW MEXICO  
(505) 393-3117

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
RATTLESNAKE CANYON, N.M. - 10'

SEC. 27 TWP. 23-S RGE. 37-E

SURVEY N.M.P.M.

COUNTY LEA

DESCRIPTION 2310' FNL & 1310' FWL

ELEVATION 3288

OPERATOR ARCH PETROLEUM, INC.

LEASE C.E. LaMUNYON

U.S.G.S. TOPOGRAPHIC MAP

RATTLESNAKE CANYON, N.M.

JOHN WEST SURVEYING  
HOBBS, NEW MEXICO  
(505) 393-3117

## APPLICATION TO DRILL

ARCH PETROLEUM, INC.  
 C.E. LaMUNYON # 71  
 UNIT "E" SECTION 27  
 T23S-R37E LEA CO. NM

In response to questions asked under Section II of Bulletin NTL-6 the following information on the above well is provided for your consideration.

1. Location: 2310' FNL & 1310' FWL SEC. 27 T23S-R37E LEA CO. NM.
2. Elevation above Sea Level: 3288' GR.
3. Geologic name of surface formation: Quaternary Aeolian Deposits.
4. Drilling tools and associated equipment: Conventional rotary drilling rig using drilling mud as a circulating medium for solids removal from hole.
5. Proposed drilling depth: 9800'
6. Estimated tops of geological markers:

|                   |       |            |       |
|-------------------|-------|------------|-------|
| Rustler Anhydrite | 1040' | San Andres | 3790' |
| Yates             | 2550' | Devonian   | 7510' |
| Queen             | 3255' | Simpson    | 9600' |
| Glorieta          | 4970' | McKee      | 9775' |
7. Possible mineral bearing formations:

|            |     |          |     |
|------------|-----|----------|-----|
| San Andres | Oil | Devonian | Oil |
| Glorieta   | Oil | Simpson  | Oil |
8. Casing program:

| Hole size | Interval | OD of casing | Weight  | Thread | Collar | Grade        |
|-----------|----------|--------------|---------|--------|--------|--------------|
| 25"       | 0-40     | 20"          | NA      | NA     | NA     | Conductor    |
| 17½"      | 0-500'   | 13 3/8"      | 48      | 8-R    | ST&C   | H-40         |
| 11"       | 0-3000'  | 8 5/8"       | 32 & 24 | 8-R    | ST&C   | J-55         |
| 7 7/8"    | 0-9800'  | 5½"          | 17      | 8-R    | LT&C   | N-80<br>J-55 |

## APPLICATION TO DRILL

ARCH PETROLEUM, INC.  
C.E. LaMUNYON # 71  
UNIT "E" SECTION 27  
T23S-R37E LEA CO. NM

9. CEMENTING & SETTING DEPTH:

|         |               |                                                                                                                                                                                                                                                                                                        |
|---------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20"     | Conductor     | Set 40' of 20" conductor pipe and cement to surface with Redi-mix.                                                                                                                                                                                                                                     |
| 13 3/8" | Surface       | Set 500' of 13 3/8" 48# H-40 ST&C casing. Cement with 600 Sx. of Class "C" cement + additives, circulate cement to Surface.                                                                                                                                                                            |
| 8 5/8"  | Intermedicate | Set 3000' of 8 5/8" 32 & 24# J-55 ST&C casing. Cement with 1200 Sx. of Class "C" cement + additives, circulate cement to surface.                                                                                                                                                                      |
| 5 1/2"  | Production    | Set 9800' of 5 1/2" 17# N-80 & J-55 LT&C casing as follows: 2800' of 5 1/2" 17# N-80 LT&C, 6000' of 5 1/2" 17# J-55 LT&C, 1000' of 5 1/2" 17# N-80 LT&C. Cement in two stages with DV tool at 5200'±. Cement with 1150 Sx. of Class "H" cement + additives, estimate top of cement 2500' from surface. |

10. PRESSURE CONTROL EQUIPMENT: Exhibit "E". A Series 900 3000 PSI working pressure B.O.P. consisting of a double ram type preventor with a bag type annular preventor. The B.O.P. unit will be hydraulically operated. Exhibit "E-1". Choke manifold and closing unit. The B.O.P. will be nipped up on 13 3/8" casing and will be operated at least once each 24 hour period while drilling and blind rams will be operated when out of hole on trips. Full opening stabbing valve and upper kelly cock will be utilized. No abnormal pressure or temperature is expected while drilling.

11. PROPOSED MUD CIRCULATING SYSTEM:

| Depth      | Mud Wt.   | Visc. | Fluid Loss    | Type Mud System                                                                       |
|------------|-----------|-------|---------------|---------------------------------------------------------------------------------------|
| 40-500'    | 8.6-8.8   | 30-36 | NC            | Fresh water spud mud add paper if necessary to control seepage.                       |
| 500-3000'  | 10.5-10.8 | 32-38 | NC            | Brine water add paper to control seepage and use high viscosity sweeps to Clean hole. |
| 3000-8600' | 8.6-8.8   | 32-38 | NC            | Fresh water add Gel for viscosity and paper to control seepage                        |
| 8600-9800- | 8.6-8.8   | 32-40 | 10 cc or less | Fresh water Dris-Pac System.                                                          |

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run DST's, open hole logs, and casing the viscosity and/or water loss may have to be adjusted to meet these needs.

APPLICATION TO DRILL

ARCH PETROLEUM, INC.  
C.E. LaMUNYON # 71  
UNIT "E" SECTION 27  
T23S-R37E LEA CO. NM

12. TESTING, LOGGING, & COREING PROGRAM:

- A. Open hole logs: Dual Induction, CNL, Density, Gamma Ray, Caliper from TD to 3000'.
- B. Run Gamma Ray, Neutron from 3000' to surface.
- C. Place mud logger on hole at 3000' and continue to TD.
- D. No cores of DST's are planned at this time, but may be run at the discretion of Geologist.

13. POTENTIAL HAZARDS:

No abnormal pressures or temperatures are expected. Hydrogen Sulfide gas may be encountered, H<sub>2</sub>S detectors will be in place to detect any presence of unsafe levels of H<sub>2</sub>S. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operations of all equipment that will be used. Estimated BHP 4500 PSI & estimated BHT 165°.

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

Roads and location construction will begin after the BLM approves the APD. Anticipated spud date will be as soon as pad & road construction has been completed. Drilling time for the well is estimated to take 30 days. If production casing is run an additional 25 days will be required to complete well and construct surface facilities.

15. OTHER FACETS OF OPERATION:

After running production casing, cased hole Gamma-Neutron & Collar logs will be run over all possible pay intervals. If commercial production from the Simpson pay is indicated it will be perforated and stimulated. Then if necessary the pay will be swab tested and completed as an Oil well.



## HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

1. All Company and Contract personnel admitted on location must be trained by a qualified H<sub>2</sub>S safety instructor to the following:
  - A. Characteristics of H<sub>2</sub>S
  - B. Physical effects and hazards
  - C. Proper use of safety equipment and life support systems.
  - D. Principle and operation of H<sub>2</sub>S detectors, warning system and briefing areas.
  - E. Evacuation procedure, routes and first aid.
  - F. Proper use of 30 minute pressure demand air pack.
2. H<sub>2</sub>S Detection and Alarm Systems
  - A. H<sub>2</sub>S detectors and audio alarm system to be located at bell nipple, end of blooie line (mud pit) and on derrick floor or doghouse.
3. Windsock and/or wind streamers
  - A. Windsock at mudpit area should be high enough to be visible.
  - B. Windsock at briefing area should be high enough to be visible.
  - C. There should be a windsock at entrance to location.
4. Condition Flags and Signs
  - A. Warning sign on access road to location.
  - B. Flags to be displayed on sign at entrance to location. Green flag, normal safe condition. Yellow flag indicates potential pressure and danger. Red flag, danger, H<sub>2</sub>S present in dangerous concentration. Only emergency personnel admitted to location.
5. Well control equipment
  - A. See exhibit "E"
6. Communication
  - A. While working under masks chalkboards will be used for communication.
  - B. Hand signals will be used where chalk board is inappropriate.
  - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephoned will be available at most drilling foreman's trailer or living quarters.
7. Drillstem Testing
  - A. Exhausts will be watered.
  - B. Flare line will be equipped with an electric ignitor or a propane pilot light in case gas reaches the surface.
  - C. If location is near any dwelling a closed D.S.T. will be performed.

## HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

8. Drilling contractor supervisor will be required to be familiar with the effects  $H_2S$  has on tubular goods and other mechanical equipment.
9. If  $H_2S$  is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with  $H_2S$  scavengers if necessary.

ARCH PETROLEUM, INC.  
 C.E. LaMUNYON # 71  
 UNIT "E" SECTION 27  
 T23S-R37E LEA CO. NM

1. EXISTING ROADS: Area maps, Exhibit "B" is a reproduction of a County General Highway Map. Exhibit "C" is a reproduction of a USGS Topographic Map, showing existing roads and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. Any new roads will be constructed to BLM specifications.
  - A. Exhibit "A" shows the proposed well site as staked.
  - B. From junction of State Hi-way 176 & State Hi-way 18 two miles East of Eunice New Mexico go South 13 miles to Mile Post 19 turn East follow Caliche Road 1 mile bear Northeast for .75 miles turn East go .25 miles, turn North go .65 miles turn West go .25 miles turn south go .25 miles turn Southeast go 500' to location.
  - C. Lay necessary pipelines and construct powerlines along existing roads or existing R-O-W's in order to produce this well. w/ prior BLM approval TSD
2. PLANNED ACCESS ROADS: No additional road required.
  - A. The access road will be crowned and ditched to a 12'00" wide travel surface with a 40' right-of-way.
  - B. Gradient on all roads will be less than 5.00%.
  - C. No turnouts will be necessary.
  - D. If needed, road will be surfaced with a minimum of 4" of caliche. This material will be obtained from a local source.
  - E. Centerline for the new access road has been flagged. Earthwork will be as required by field conditions.
  - F. Culverts in the access road will not be used. The road will be constructed to utilize low water crossings for drainage as required by the Topography.
3. LOCATION OF EXISTING WELLS IN A ONE-MILE RADIUS EXHIBIT "A-1"

|                    |   |                           |
|--------------------|---|---------------------------|
| A. Water wells     | - | None known                |
| B. Disposal wells  | - | None known                |
| C. Drilling wells  | - | None Known                |
| D. Producing wells | - | As shown on Exhibit "A-1" |
| E. Abandoned wells | - | As shown on Exhibit "A-1" |

SURFACE USE PLAN

ARCH PETROLEUM, INC.  
C.E. LaMUNYON # 71  
UNIT "E" SECTION 27  
T23S-R37E LEA CO. NM

4. If on completion this well is a producer Arch Petroleum, Inc. will furnish Maps and/or plats showing on location surface facilities. If facilities are required off location this will be accompanied with a Sundry Report.

5. LOCATION AND TYPE OF WATER SUPPLY:

Water will be purchased locally from a commercial source and trucked over the access roads or piped in flexible lines laid on top of the ground.

✓ prior BLM approval  
TSD

6. SOURCE OF CONSTRUCTION MATERIAL:

If possible construction will be obtained from the excavation of drill site, if additional material is needed it will be purchased from a local source and transported over the access route as shown on Exhibit "C".

7. METHODS OF HANDLING WASTE MATERIAL:

- A. Drill cuttings will be disposed of in the reserve pit.
- B. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed all contents will be removed and disposed of in a approved sanitary land fill.
- C. Salts remaining after completion of well will be picked up by supplier including broken sacks.
- D. Sewage from living quarters will drain into holes with a minium depth of 10'. These holes will be covered during drilling and will be back filled upon completion. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of the well.
- E. Remaining drilling fluids will be allowed to evaporate in the reserve pit until the pit is dry enough for breaking out. In the event that drilling fluids do not evaporate in a reasonable time they will be hauled off by transports and be disposed of at a state approved disposal facility. Later pits will be broken out to speed drying. Water produced during testing will be put in reserve pits. Any oil or condensate produced will be stored in test tanks until sold and hauled from the site.

8. ANCILLARY FACILITIES:

- A. No camps or airstrips to be constructed.

## SURFACE USE PLAN

ARCH PETROLEUM, INC.  
C.E. LaMUNYON # 71  
UNIT "E" SECTION 27  
T23S-R37E LEA CO. NM

### 9. WELL SITE LAYOUT

- A. Exhibit "D" shows the proposed well site layout.
- B. This exhibit indicated proposed location of reserve and sump pits and living facilities.
- C. Mud pits in the active circulating system will be steel pits & the reserve pit is proposed to be unlined unless subsurface condition encountered during pit construction indicate that lining is needed for lateral containment of fluids.
- D. If needed, the reserve pit is to be lined with polyethelene. The pit liner will be 6 mils thick. Pit liner will extend a minimum 2'00" over the reserve pits dikes where the liner will be anchored down.
- E. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion phases. The fourth side will be fenced after all drilling operations have ceased. If the well is a producer, the reserve pit fence will be torn down. The reserve pit and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

### 10. PLANS FOR RESTORATION OF SURFACE

Rehabilitation of the location and reserve pit will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

However, in either event, the reserve pit will be allowed to dry properly, and fluid removed and disposed of in accordance with Article 7.B as previously noted. The pit area will then be leveled and contoured to conform to the original and surrounding area. Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be contoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.

Should the well be a producer, the previously noted procedures will apply to those areas which are not required for production facilities.

SURFACE USE PLAN

ARCH PETROLEUM, INC.  
C.E. LaMUNYON # 71  
UNIT "E" SECTION 27  
T23S-R37E LEA CO. NM

11. Other Information:

- A. Topography as shown on the topographic map shows a very slight dip to the West. Soil is loose sand and the vegetation consists of native grasses Yucca, and occasional Shinnery Oak.
- B. The surface is owned by D. K. Boyd of Midland Texas, and the minerals are owned by the U.S. Department of Interior and are administered by the Bureau of Land Management.
- C. An archaeological survey will be conducted on the proposed roads and location, this report will be submitted to the Bureau of Land Management Carlsbad Field Office when it is completed.
- D. There are no dwellings within one mile of this location.

12. Operator's Representative:

Field representative for contact regarding compliance with the surface use plan is:

Before Construction.

TIERRA EXPLORATION INC.  
P.O. BOX 2188  
HOBBS, NEW MEXICO 88241  
OFFICE PHONE  
JOE T. JANICA

After and during construction.

ARCH PETROLEUM, INC.  
P.O. BOX 10340  
MIDLAND, TEXAS 79702-7340  
OFFICE PHONE 915-685-8100  
Mr. RICHARD WRIGHT 915-685-8140

13. Certification: I hereby certify that I, or persons under my direct supervision, have inspected the proposed drilling site and access route, and 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. The work associated with the operations proposed herein will be performed by Arch Petroleum, Inc. its contractors / sub-contractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provision of 18 U.S.C. 1001 for the filing of a false statement.

NAME

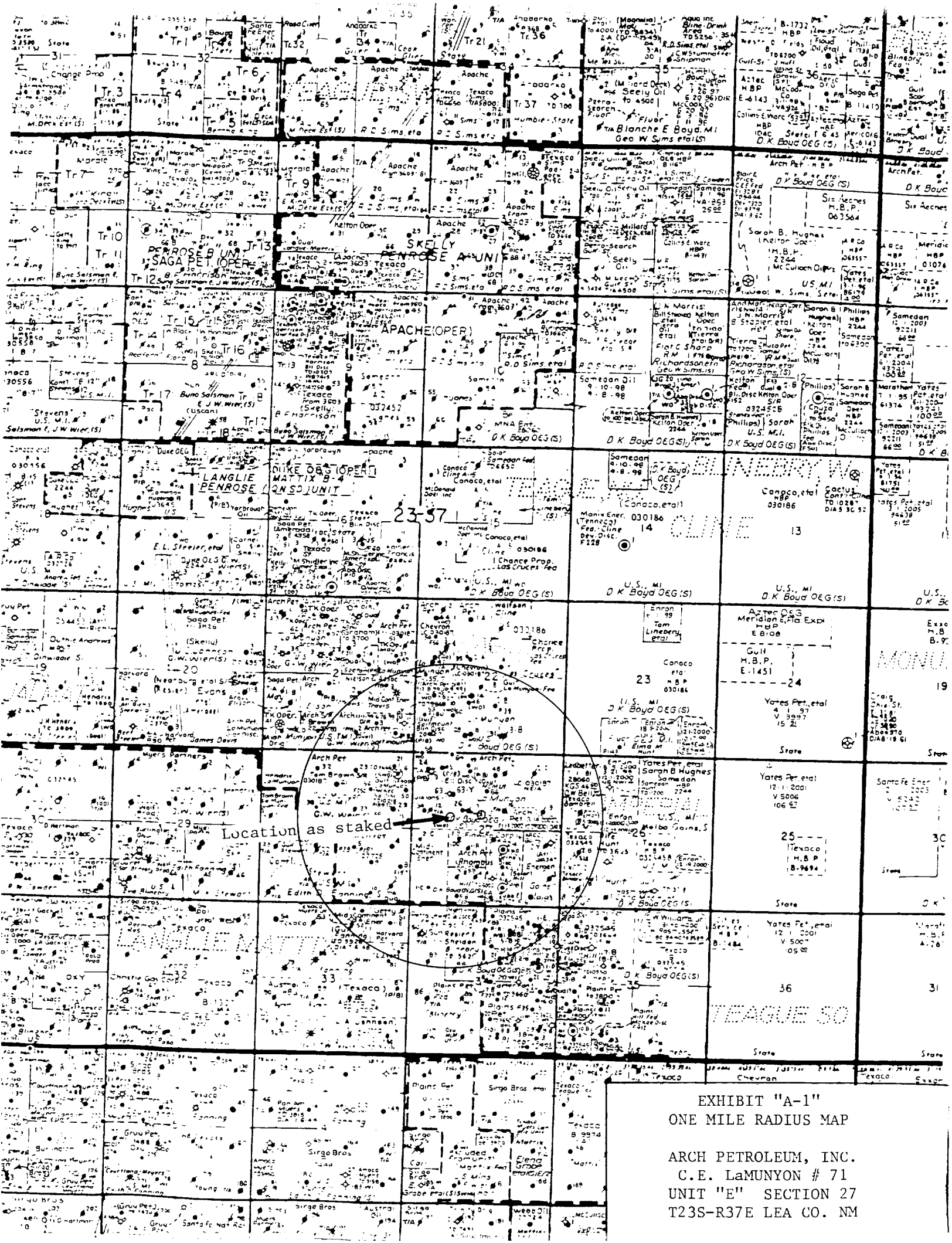
: Joe T Janica

DATE

: 05/04/00

TITLE

: Agent



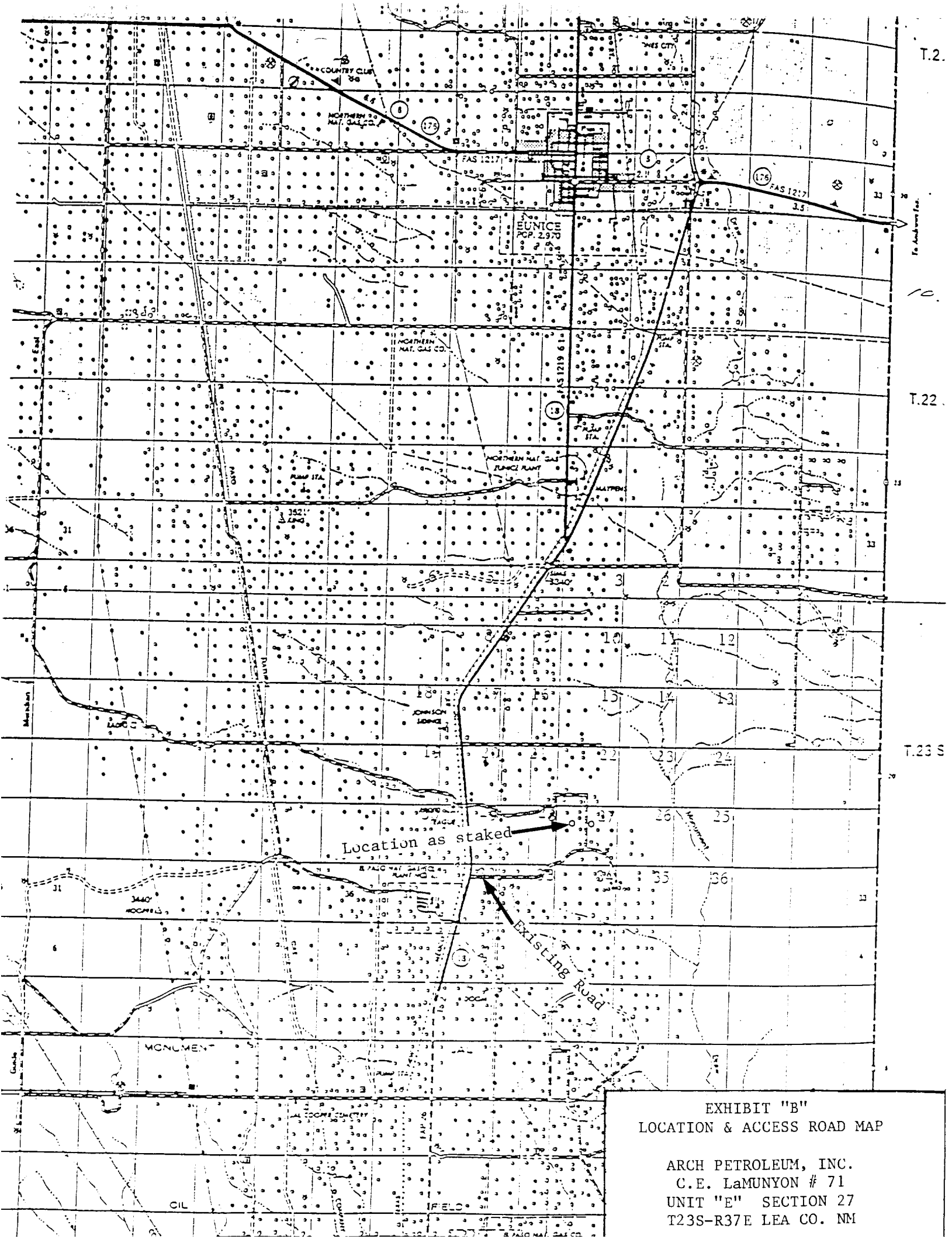


EXHIBIT "B"  
LOCATION & ACCESS ROAD MAP

ARCH PETROLEUM, INC.  
C.E. LaMUNYON # 71  
UNIT "E" SECTION 27  
T23S-R37E LEA CO. NM



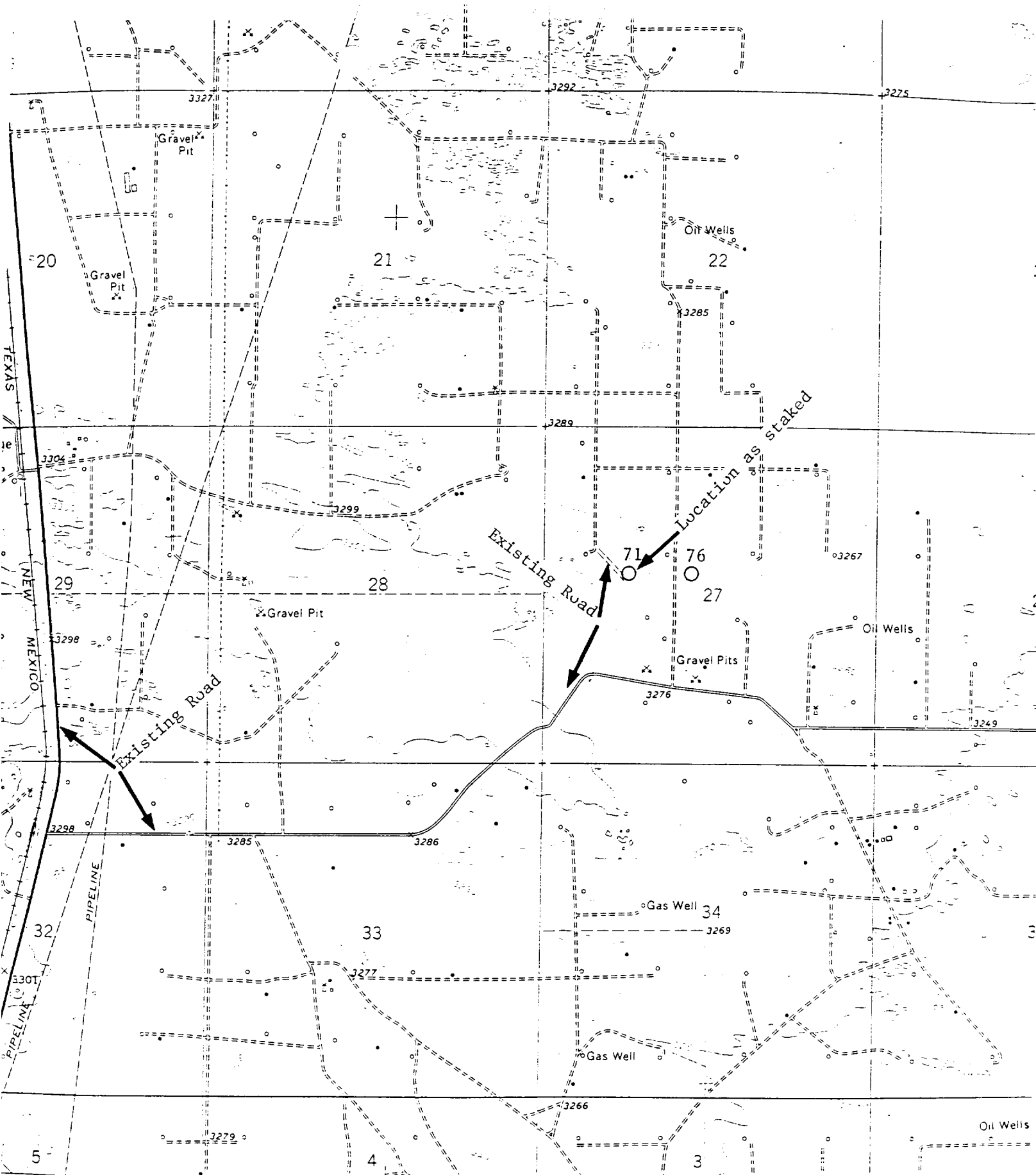
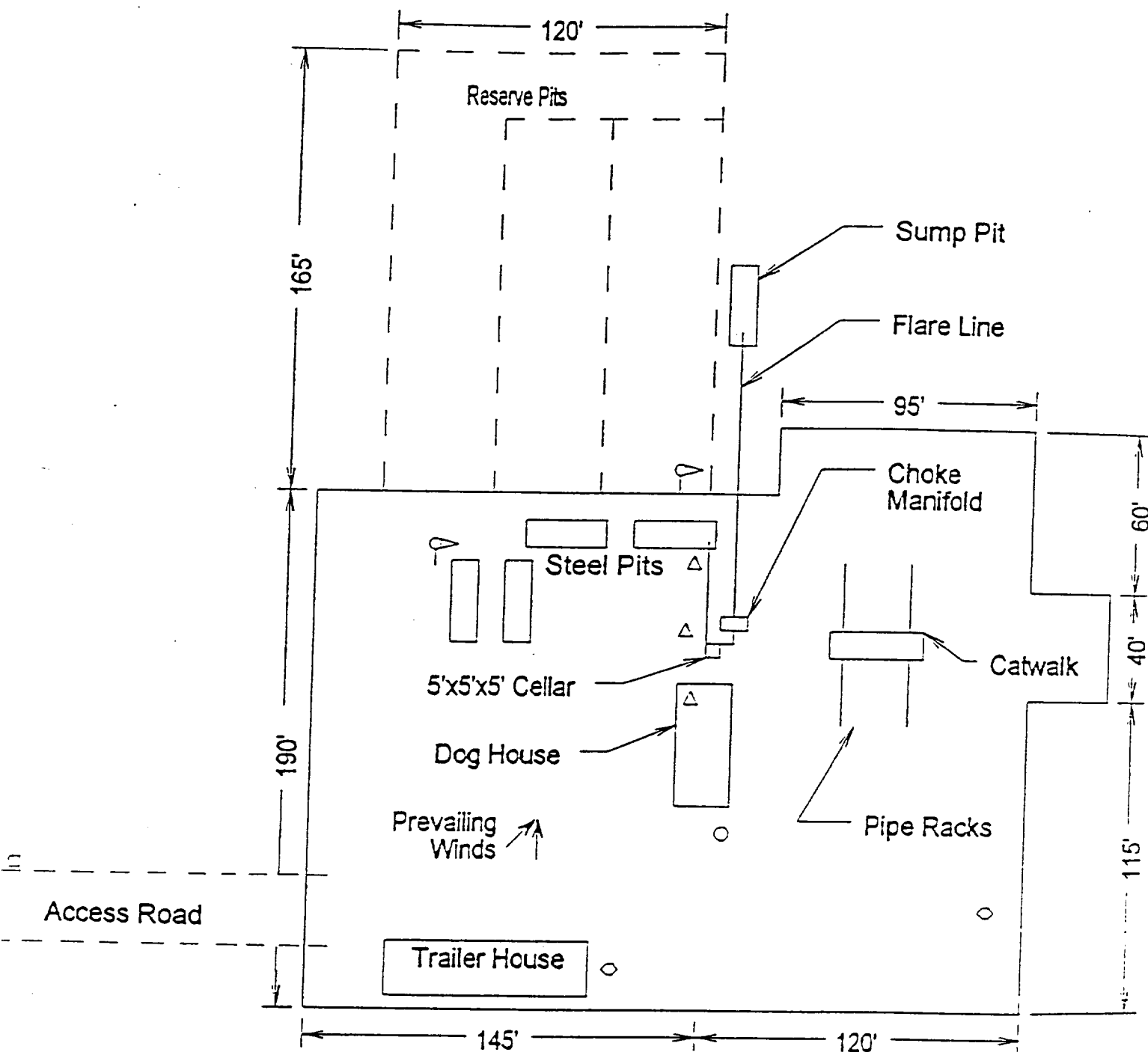


EXHIBIT "C"  
TOPOGRAPHIC MAP SHOWING  
ROADS & DIRECTIONS TO

ARCH PETROLEUM, INC.  
C.E. LaMUNYON # 71  
UNIT "E" SECTION 27  
T23S-R37E I.E.A. CO. NM



- ⌋ Wind Direction Indicators  
(wind sock or streamers)
- △ H2S Monitors  
(alarms at bell nipple and shale shaker)
- Briefing Areas
- Remote BOP Closing Unit
- Sign and Condition Flags

EXHIBIT "D"  
RIG LAY OUT PLAT

ARCH PETROLEUM, INC.  
C.E. LaMUNYON # 71  
UNIT "E" SECTION 27  
T23S-R37E LEA CO. NM

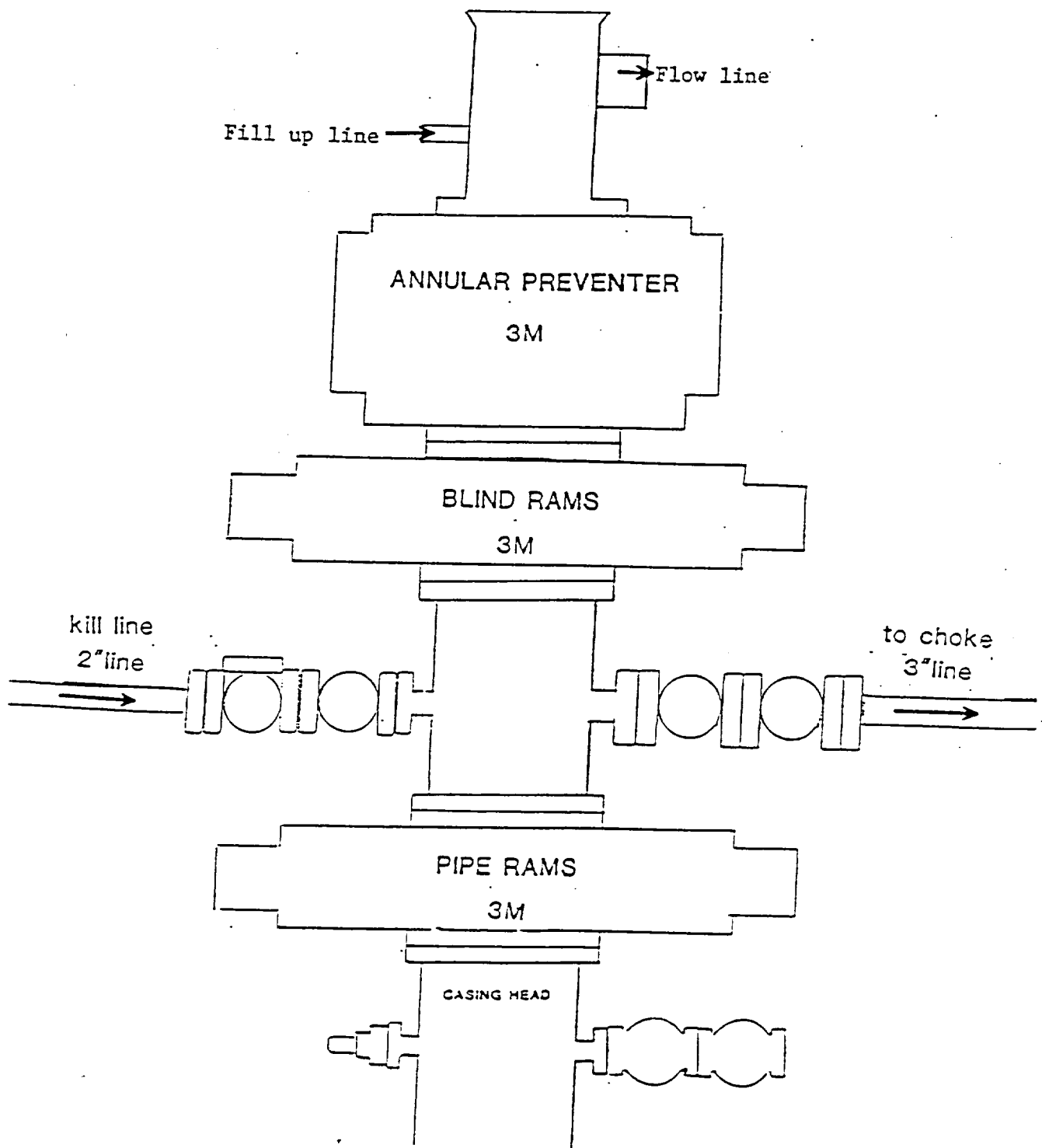
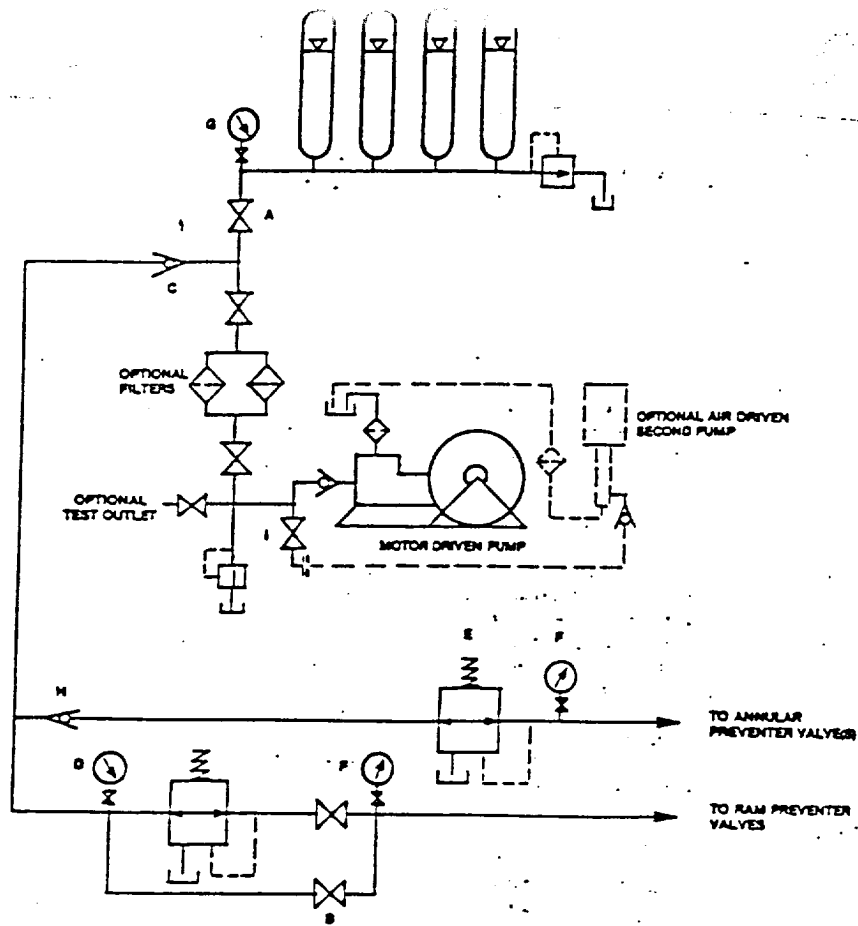


EXHIBIT "E"  
SKETCH OF B.O.P. TO BE USED ON

ARCH PETROLEUM, INC.  
C.E. LaMUNYON # 71  
UNIT "E" SECTION 27  
T23S-R37E LEA CO. NM



HAND ADJUSTABLE CHOKE

POGO PRODUCING CO  
3M CHOKE MANIFOLD

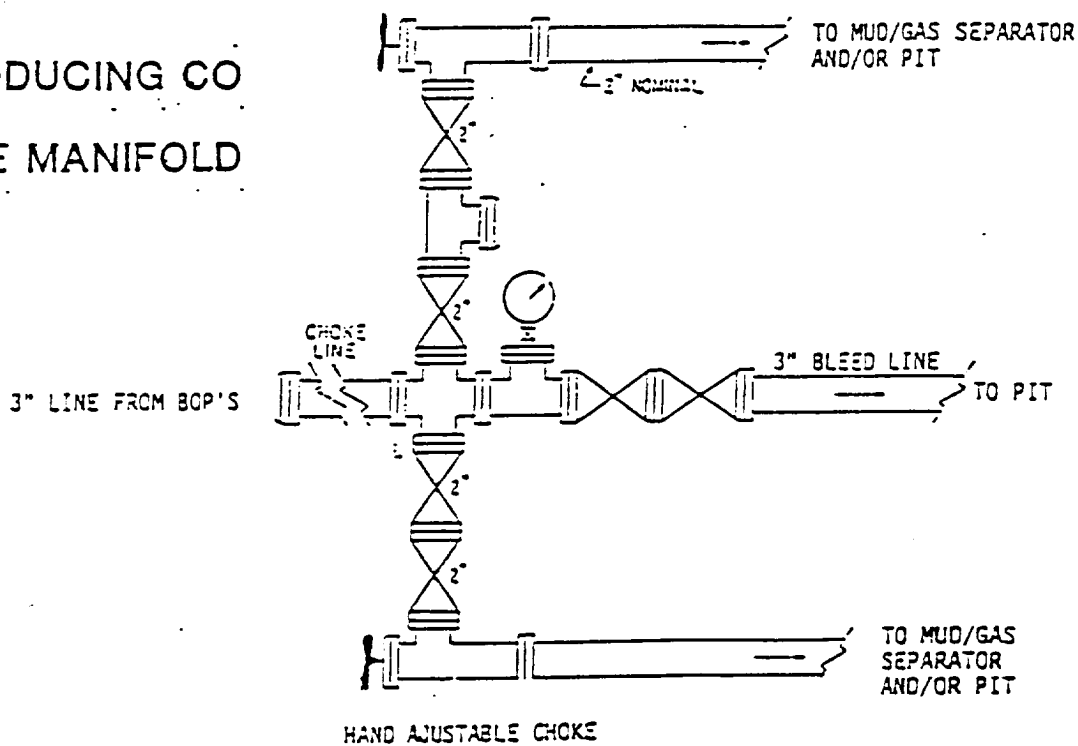


EXHIBIT "E-1"  
CHOKE MANIFOLD & COLSING UNIT

ARCH PETROLEUM, INC.  
C.E. LaMUNYON # 71  
UNIT "E" SECTION 27  
T23S-R37E LEA CO. NM