Copy TOOH

Form 9-331 C
(May 1963)

MOCC COPY SUBMIT IN PLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

30-015-22193

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

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

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

2. NAME OF OPERATOR: Mesa Petroleum Co

3. ADDRESS OF OPERATOR: 1000 Vaughn Bldg. Midland, Texas 79701

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JUL 5 1977
O. C. C.
ARTESIA, OFFICE

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1980' FSL & 1980' FEL of Section 20
At proposed prod. zone: Same as above.

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 5½ miles Southeast of Artesia

5. LEASE DESIGNATION AND SERIAL NO.: NM 12690
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT AGREEMENT NAME:
8. FARM OR LEASE NAME: Yates Federal Com
9. WELL NO.: 1
10. FIELD AND POOL, OR WILDCAT: Wildcat Morrow
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 20, T17S, R27E
12. COUNTY OR PARISH: Eddy
13. STATE: New Mexico

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 660'
16. NO. OF ACRES IN LEASE: 440
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.: NA
19. PROPOSED DEPTH: 9800
20. ROTARY OR CABLE TOOLS: Cable & Rotary
21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3384.7 GR
22. APPROX. DATE WORK WILL START*: July 1, 1977

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17½	13-3/8	48	300	350
11	8-5/8	24	1700	600 sx LW + 200
7-7/8	4½	10.5-11.6	9800	600 or sufficient to cover all pay

Propose to drill surface hole to 300' without BOP's. After cementing casing and installing bradenhead, will nipple up 12" API 3000 psi BOP's and drill intermediate hole to 1700'. Will set 8-5/8" casing and cement with volume adequate to raise cement to surface. Will nipple up 12" API 3000 psi BOP's and drill to total depth with cut brine. Maximum mud weight should not exceed 9.3 PPG based upon similar area wells.

Operator's acreage for the subject well has not been dedicated to a gas purchaser.

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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 Michael P. Houston TITLE Division Engineer DATE 6-10-77

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE JUN 28 1977

APPROVED BY Joe D. Lara TITLE ACTING DISTRICT ENGINEER DATE JUN 28 1977

CONDITIONS OF APPROVAL, IF ANY:

THIS APPROVAL IS RESCINDED IF OPERATIONS ARE NOT COMMENCED WITHIN 3 MONTHS.
EXPIRES SEP 28 1977

XC: JLF, MEC, LEC, 6 USGS, JWH, RHN

*See Instructions On Reverse Side

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION AT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
MESA PETROLEUM CO	YATES FED. COM.	1

Unit Letter	Section	Township	Range	County
J	20	17 South	27 East	Eddy

Actual Footage Location of Well:
1980 feet from the South line and 1980 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3384.7	Morrow	~~Undesignated~~ Wildcat	E/2 320 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 Communitization in process.

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.

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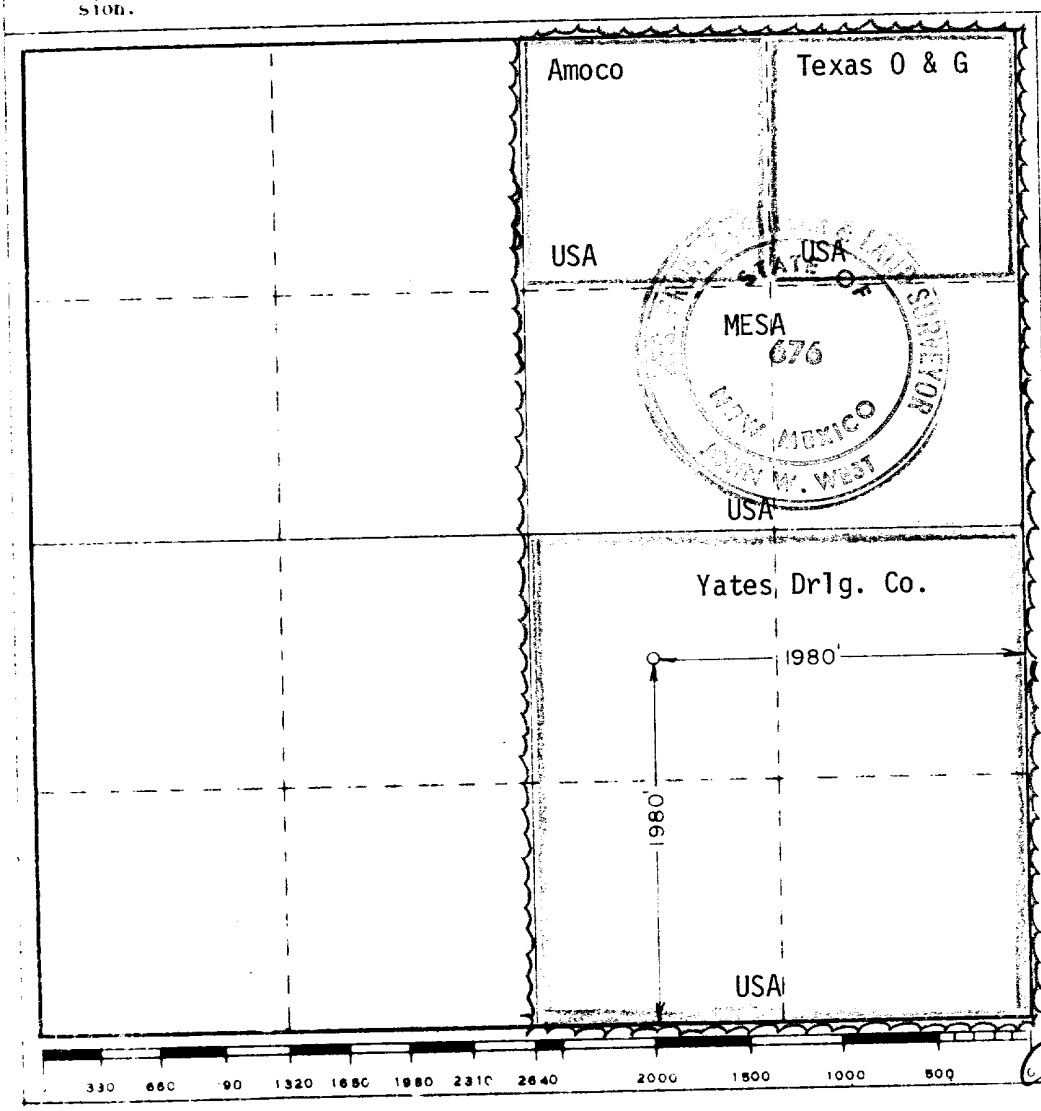
ARTESIA, NEW MEXICO



CERTIFICATION

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

Michael P. Houston

Name: Michael P. Houston

Position: Division Engineer

Company: Mesa Petroleum Co

Date: 6-10-77

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: April 22, 1977

Registered Professional Engineer and/or Land Surveyor

John W. West

Certificate No. 676

APPLICATION FOR DRILLING
MESA PETROLEUM CO.
YATES FEDERAL COM #1
EDDY COUNTY, NEW MEXICO

In conjunction with permitting subject well for drilling Section 20, Township 17 South, Range 27 East, Eddy County, New Mexico, Mesa Petroleum Co submits the following:

1. The geologic surface formation series is Permian Guadalupian.

2. The estimated tops of geologic markers are as follows:

Queen	625'
San Andres	1350'
Glorietta	2660'
Tubb	4090'
Abo	4790'
Wolfcamp	6025'
Canyon	7810'
Strawn	8420'
Morrow	8910'
Chester	9410'

3. The depth at which water, oil, or gas are expected is:

625'	Water-Queen
1350'	Water-San Andres
2850'	Oil - Yeso
8700'	Gas - Atoka
9000	Gas - Morrow

4. Casing and Blowout Preventer Program:

Surface: 300' of 13-3/8" 48# H-40 ST&C new casing cemented with 350 sacks or sufficient to circulate cement to surface. Will nipple up 12" API 3000 WP bradenhead and install 12" API 3000 psi WP BOP stack (consisting of 1 pipe ram, 1 blind ram, and 1 bag type BOP) to drill 11" intermediate hole.

Intermediate: 1700' of 8-5/8" 24# K-55 new casing cemented with 800 sacks so as to circulate cement to the surface. Will install 12" API 3000 x 10" API 3000 psi WP casinghead spool and nipple up 12" API 3000 psi WP BOP stack (consisting of 1 pipe ram, 1 blind ram, and 1 bag type BOP) to drill 7-7/8" hole to total depth.

4. Prod: 9800' of 4½" 10.5 & 11.6# K-55 & N-80 to total depth. Casing will be cemented with 600 sacks or sufficient volume to cover all pay intervals.

Choke, kill, and fill lines are indicated on Exhibit VI. BOP's will be tested with rig pumps prior to drilling below top of Wolfcamp.

5. Circulating Medium and Control equipment.

0-300'	Drill 17½" hole with fresh water spud mud, while circulating through a small portion of the lines reserve pit. Mud weight 8.6-9.2 PPG with 45-85 viscosity.
300-1700'	Drill 11" hole with saturated brine water and periodically "sweep" hole with flosal pills. Saturated brine is necessary to prevent leaching salt sections and encouraging hole enlargement. Circulate through a controlled portion of lined reserve pit. Mud weight 10.0-10.3 PPG with 28-32 viscosity.
1700-6000'	Drill 7-7/8" hole with fresh water while circulating through reserve pit. At 6,000', will return to steel pits and utilize pit volume totalizer and flowline sensor, to monitor drilling conditions. Mud weight 8.5-9.2 PPG with 28-34 viscosity.
6000-9800'	Start adding brine water, while circulating through steel pits. Will continue to utilize pit level and flowline sensors to monitor drilling operations. Will add drilling choke and mud-gas separator to assist in controlling drilling conditions. Mud weight 9-10 PPG as required with 32-36 viscosity.

A full opening safety valve, to fit the drill string in use, will be kept on the rig floor at all times. Kelly cock, safety valve, choke and kill lines will be tested at same time that BOP tests are run. A float will be run in the drill string just above the bit to further aid in safety.

6. There is no coring program planned for this well. It is probable that a drillstem test will be run in the Yeso (2850'-3100') and Atoka (8700'-9000') and Morrow (9000'-9250'). The logging program will consist of a gamma ray-log from total depth to surface. Neutron-density-caliper logs will be run from 1700' total depth.

7. Maximum anticipated bottom hole pressure is 4500 psi at approximately 9500' based on offset well data. Mud weight required to offset this pressure is 9.2 PPG. Bottom hole temperature should not exceed 150° F. No sour gas is expected.

8. Anticipated spud date is July 1, 1977. Anticipated rotary starting date is July 10, 1977, with completion of drilling operations expected by August 20, 1977. Completion operations (perforating and stimulating) will immediately follow the drilling operations.

XC: JLF, MEC, LMC, RHN, JWH, 6 USGS 6-8-77

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ARTESIA, NEW MEXICO

SURFACE USE AND OPERATIONS PLAN
MESA PETROLEUM CO
YATES FEDERAL COM #1

The following information and plan is submitted for the subject well by Mesa Petroleum Co.

1. Existing roads in the vicinity of planned well are shown on attached Exhibit I. As shown, the planned well is approximately 6 miles east-southeast of Artesia, New Mexico. The subject well can be reached by traveling 5 miles east of Artesia on U.S. highway 82, then turn south on paved road and travel approximately 1 mile. At this point, the subject location will be about 3/8 mile east, across gentle sloping terrain.

2. The planned access road is depicted by attached Exhibit II. Grading, and topping with caliche, is all that is planned for the proposed access road. The access road will be 12 feet in width (20' ROW width). A typical cross section is shown by Exhibit III. There will be no culverts set because primary drainage for this immediate area is in an east to west direction. Elevation change from existing road to proposed location is about 25 feet in 3/8 mile as indicated by Exhibit V. There are no fences between the present roadway and the proposed location, therefore, cattleguards or gates will not be necessary.

3. Exhibit II illustrates all well within a one mile radius.

4. If the subject well proves commercial, gas separation-process equipment and tank battery will be located on the subject well's drilling pad.

5. Both fresh and brine water utilized to drill the subject well will be hauled to location by truck transport over the existing and proposed access road. The source for brine water is near Carlsbad, New Mexico. Fresh water is located approximately 2 miles northwest of the proposed location and is alongside of US 82.

6. Top soil from the location proper will be stock piled near the location for future re-habilitation use. No surface materials will be disturbed except those necessary for the actual grading - leveling of the drill site and access road. (See Exhibit III). With the exception of the 6" caliche top coat (compacted), all construction materials will be of local origin. Caliche to be used for topping the roadway and location, is located approximately 1½ miles northwest of the proposed location in an existing open pit (SE/4 SE/4 Sec 7, T17S, R27E). The caliche will be transported over the existing and proposed access roadways.

7. Drill cuttings will be accumulated in the earthen reserve pit which will also be plastic lined. After the pit has sufficiently dried following drilling operation, the solids accumulation will be buried. Trash and garbage will be contained in an earthen pit and buried once drilling operations are completed. Sewage will be collected in a pit at least 6' deep below an outside latrine; suitable chemicals will be added to aid decomposition of the waste material. The pit will be back filled following completion of drilling operations. All pits will be fenced with normal fencing material to prevent livestock from entering the area.

8. No ancillary facilities will be constructed.

9. Rig layout and cross section of the planned drilling site are shown on Exhibits III and IV. The reserve pits will be lined with plastic material.

10. Following completion of drilling operations, all pits will be filled and the area surrounding the location will be leveled or returned to its natural grade. Top soil will be stored near the drillsite and utilized to rehabilitate the location once drilling operations have ceased. If the proposed well is not commercial, the drillsite and new access roadway will be graded to conform to original topography, top soil spread, and the entire location re-seeded. We will re-seed with seed type (and quantities) as recommended by the BLM. All re-seeding will be done with reasonable effort to establish a more attractive soil stabilizing growth of vegetation than what previously existed at the site. Re-seeding will take place at the first opportunity following completion of operations in accordance with the recommended seasonal seeding periods.

11. The area around the drilling site has a gradual sloping trend to the west. See the attached archaeological report for natural vegetation in the area. Domestic livestock are grazed in the area. The surface at the location (and ROW for access roadway) are federally owned.

12. The Mesa Petroleum Co. representatives responsible for conducting this drilling operation are:

J. W. Hart
P. O. Box 1756
Hobbs, New Mexico 88240
(505) 393-4425 Office
(505) 393-4317 Residence

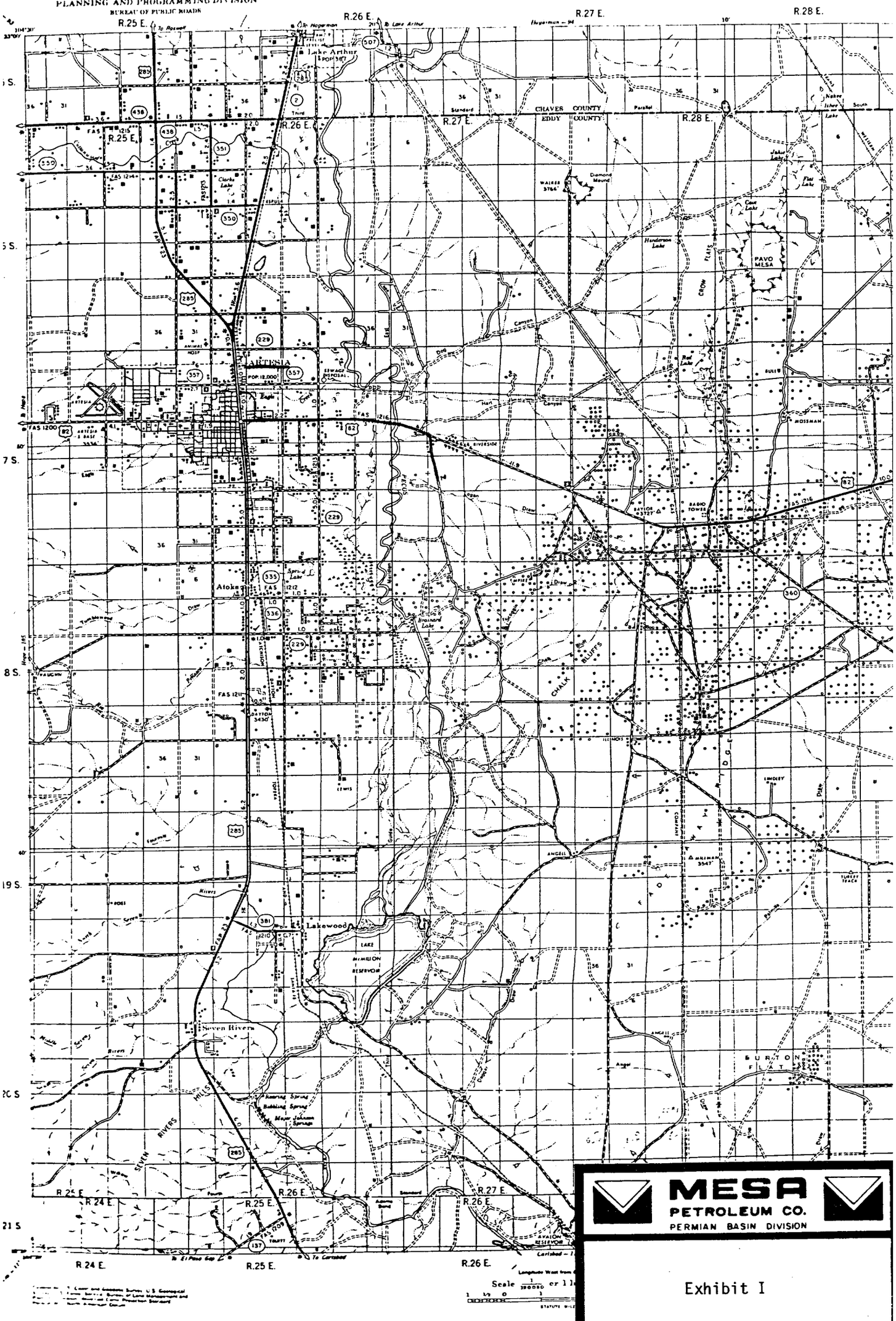
M. P. Houston
1000 Vaughn Bldg.
Midland, Texas 79701
(915) 683-5391 Office
(915) 694-3442 Residence

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 be best of my knowledge, true, and correct; and that work associated with the operations proposed herein will be performed by Mesa Petroleum Co and its' contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

Michael P. Houston
Michael P. Houston, Div. Engineer

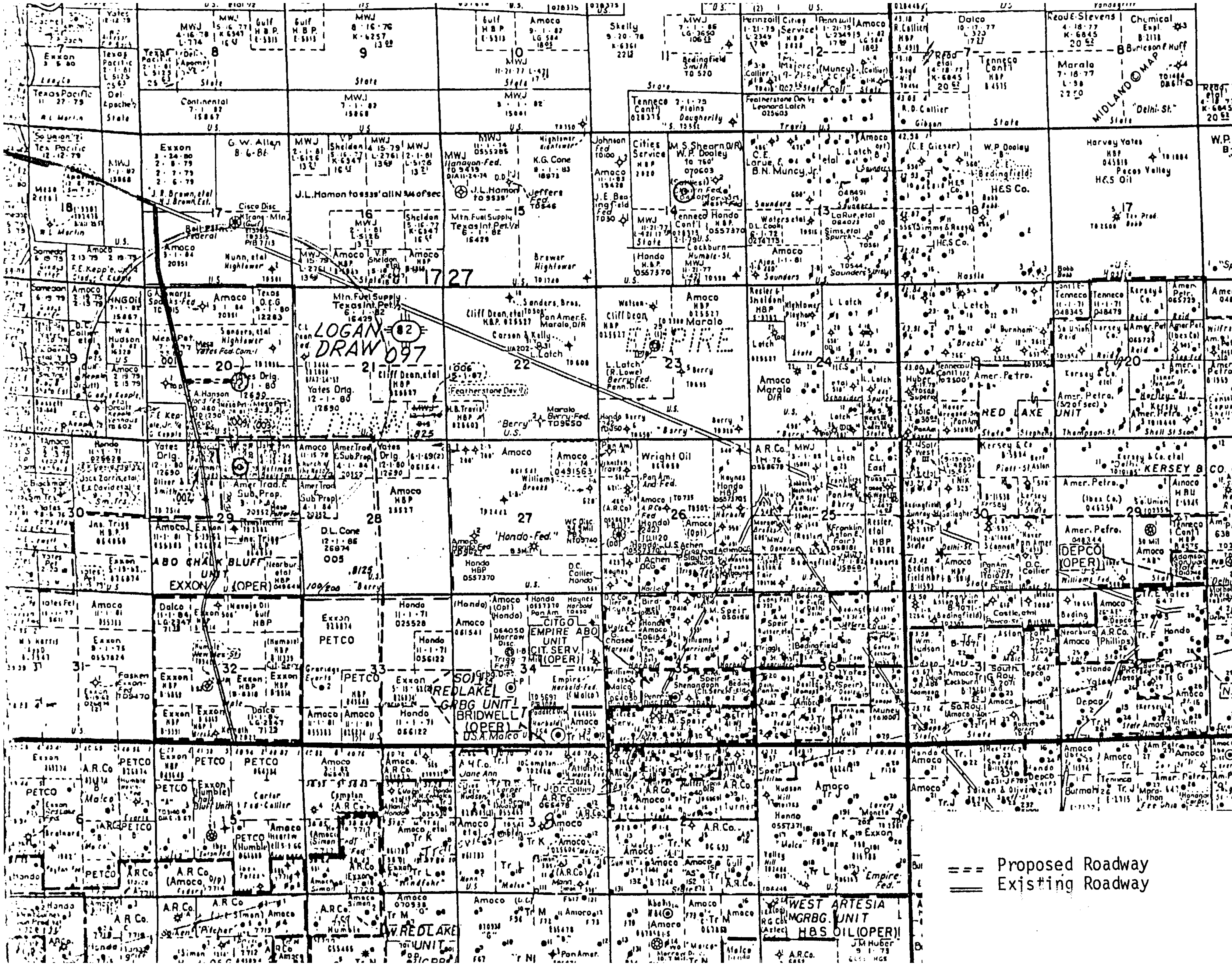
XC: JLF, MEC, LMC, RHN, JWH, 6 USGS
6-8-77



MESA PETROLEUM CO.
PERMIAN BASIN DIVISION

Exhibit I

Scale 1" = 3 Miles



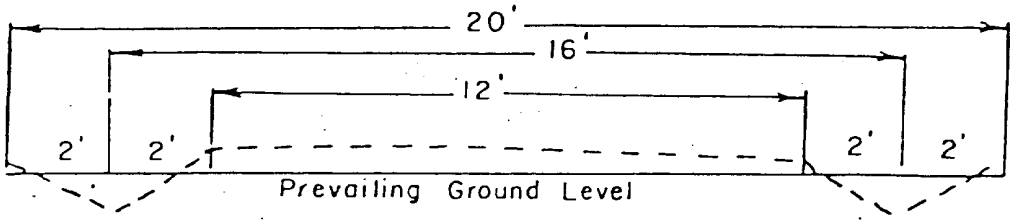
=== Proposed Roadway
═══ Existing Roadway

MESA PETROLEUM CO.
PERMIAN BASIN DIVISION

Exhibit II

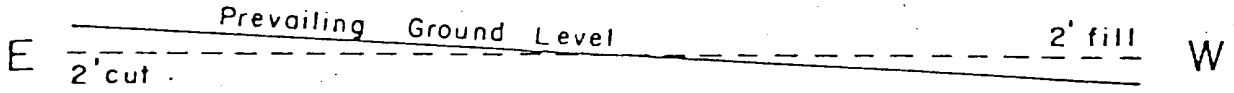
Scale 1" = 4000'

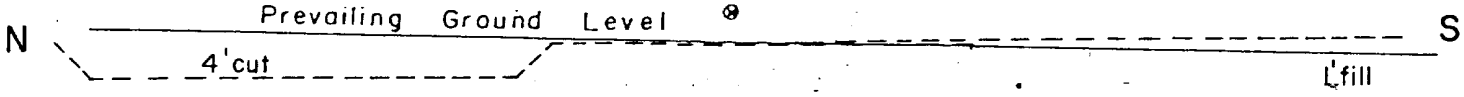
BY:	DRAWN BY:
DATE	SCALE:



ROADWAY CROSS SECTION

Horizontal Scale 1" = 4'





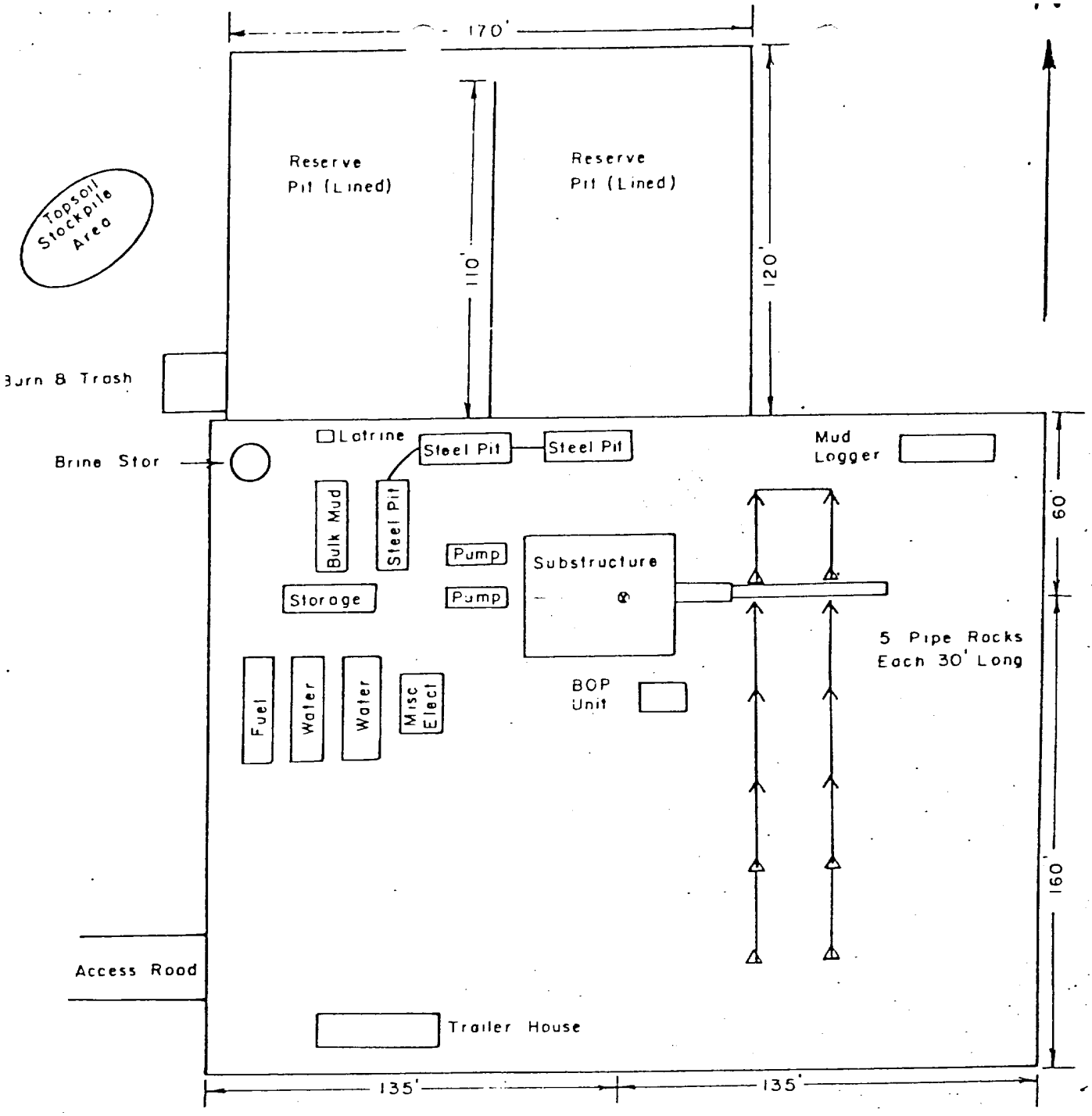
LOCATION CROSS SECTION

Horizontal Scale 1" = 50'

MESA PETROLEUM CO.
PERMIAN BASIN DIVISION

Exhibit III

BY
DATE
DRAWN BY
SCALE

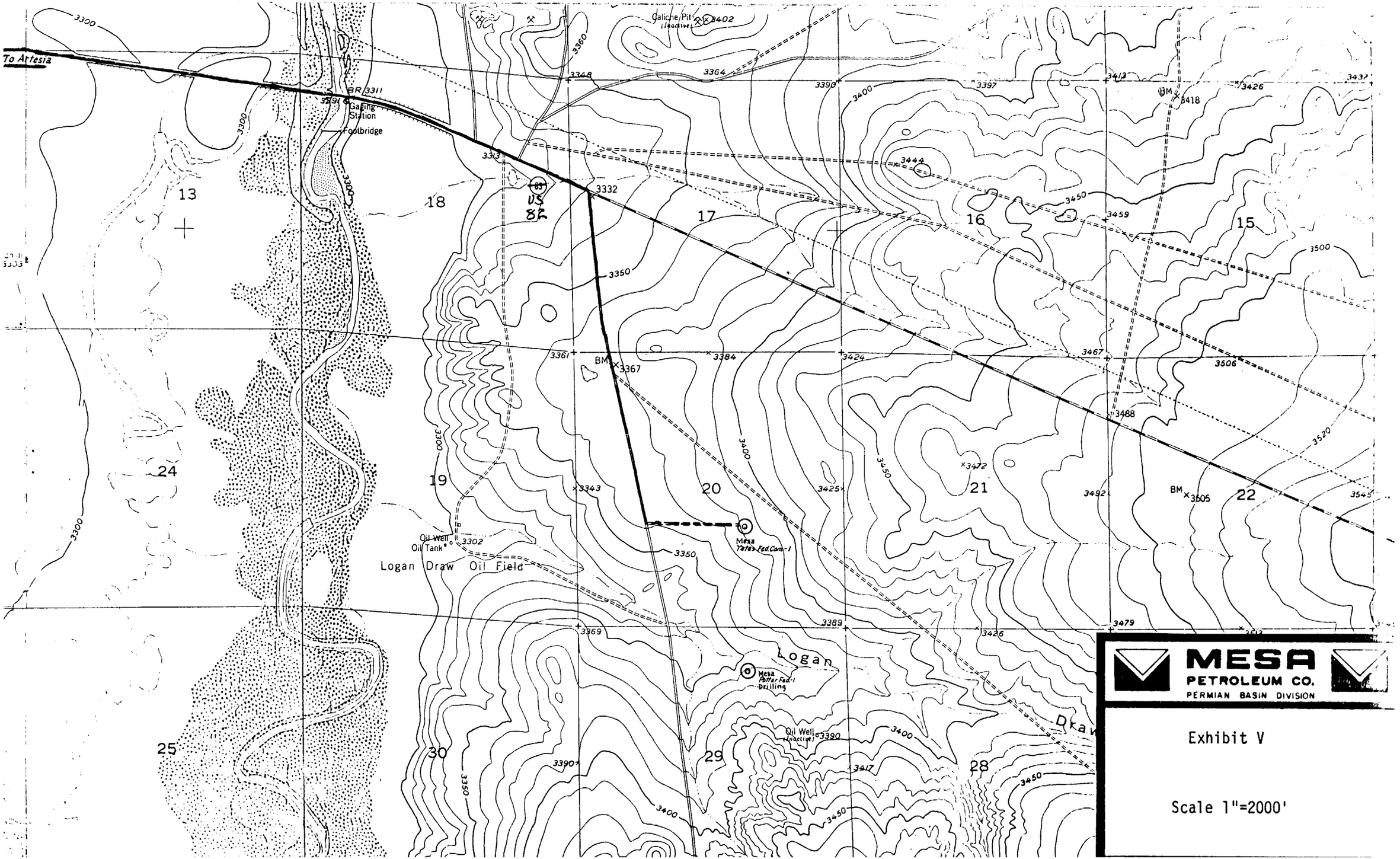


MESA
PETROLEUM CO.
PERMIAN BASIN DIVISION

EXHIBIT IV

BY
DATE

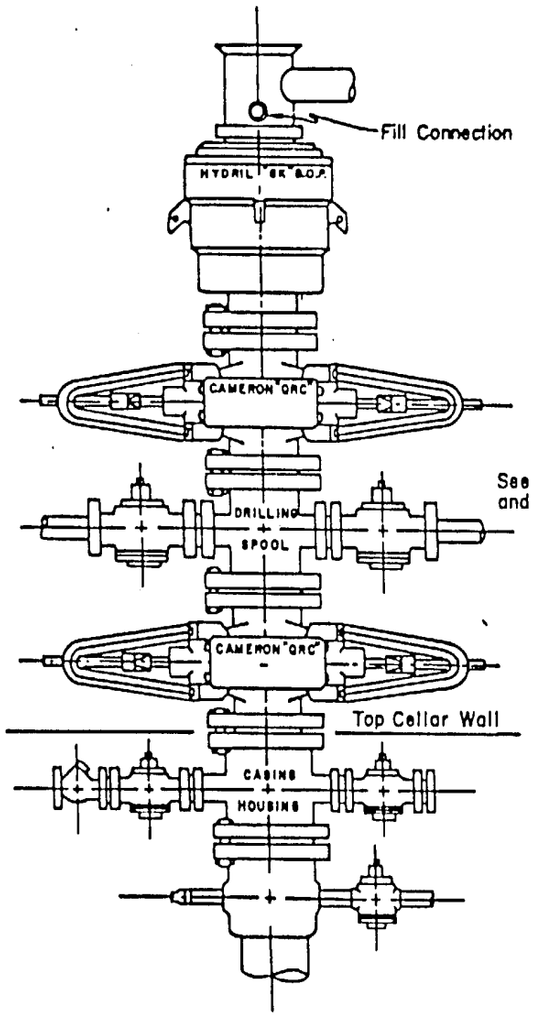
DRAWN BY V.J.R.
SCALE 1 = 50



MESA
PETROLEUM CO.
PERMIAN BASIN DIVISION

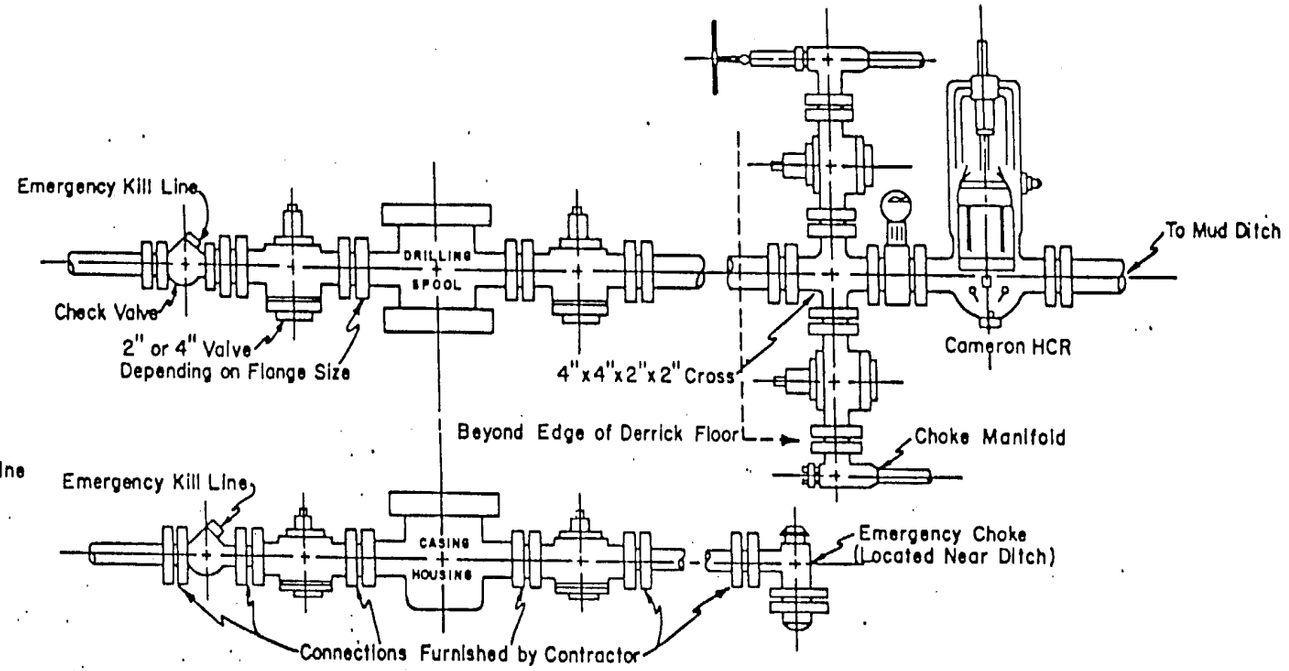
Exhibit V

Scale 1"=2000'



3,000 PSI WORKING PRESSURE
BLOW-OUT PREVENTER HOOK-UP

Blow-out Preventers hydril and choke manifold are all 1500 Series



3,000 PSI WORKING PRESSURE
KILL, CHOKE, AND FILL CONNECTIONS

DETAIL OF 4" FLOW LINE CHOKE ASSEMBLY

Minimum assembly for 3,000 PSI working pressure will consist of three preventers. The bottom and middle preventers may be Cameron.

MESA PETROLEUM CO.
EXHIBIT VI

Archaeological Clearance Report
for
Mesa Petroleum Company

by

Eduardo A. Mimiaga

Submitted by

Dr. J. Loring Haskell
Operations Director and
Principal Investigator
Agency of Conservation Archaeology
Eastern New Mexico University
Portales

24 May 1977

INTRODUCTION

An archaeological reconnaissance was completed recently by the Agency of Conservation Archaeology, Eastern New Mexico University, for Mesa Petroleum Co. in Eddy County, New Mexico. The area will be impacted by the construction of 2 drill locations and access rights-of-way. This project was completed under Federal Antiquities Permit No. 77-NM-021.

The project was administered by Mr. Michael Houston, representative for Mesa Petroleum Company, and Dr. J. Loring Haskell, Operations Director and Principal Investigator, Agency of Conservation Archaeology, Eastern New Mexico University, Portales.

The reconnaissance was completed by Eduardo A. Mimiaga on 18 May 1977.

SURVEY TECHNIQUE

The archaeologist accomplished the survey by walking a zigzag pattern the length and breadth of the proposed right-of-way and a series of parallel zigzag corridors across the proposed drill locations. These techniques permitted optimal conditions for the observation of primary and secondary impact areas.

Proposed Access and Drill Location for Mesa Petroleum Co. - Yates Federal Com. No. 1

Location:

The proposed access right-of-way is 12 ft wide and extends 1,760 ft from an existing road passing through:

$S\frac{1}{2}$, Section 20, T17S, R27E, NMPM, Eddy County, New Mexico (BLM).

The proposed drill locality measures 400 ft by 400 ft and is located in:

$NW\frac{1}{4}SE\frac{1}{4}$ Section 20, T17S, R27E, NMPM, Eddy County, New Mexico (BLM).

Map Reference: USGS Spring Lake Quadrangle, 7.5 Minute Series.

Terrain

Local terrain consists of a gently sloping hillside with sandy soils containing caliche and gypsum inclusions.

Floristics

The local plant community consists of Prosopis juliflora, Larrea tridentata, Ferocactus coveillii, Scleropogon brevifolius, Tridens pulchellus and Muhlenbergia porterii.

Cultural Resources

No cultural resources were recorded during this reconnaissance.

Recommendations

ACA recommends clearance for the proposed access right-of-way and drill locality and suggests that construction proceed without modification of existing plans.

Proposed Access and Drill Location for
Mesa Petroleum Co. - Cone Federal Com. No. 1

Location:

The proposed access right-of-way is 12 ft wide and extends 150 ft from an existing road passing through:

$SE\frac{1}{4}NW\frac{1}{4}$ Section 28, T17S, R27E, NMPM, Eddy County, New Mexico (BLM).

The proposed drill locality measures 400 ft by 400 ft and is located in:

$SE\frac{1}{4}NW\frac{1}{4}$ Section 28, T17S, R27E, NMPM, Eddy County, New Mexico (BLM).

Map Reference: USGS Spring Lake Quadrangle, 7.5 Minute Series.

Terrain

Locally, terrain consists of a steep hill characterized by outcroppings of caliche. Adjacent to this geomorphic feature is a deep narrow draw. Soils are sandy and contain caliche inclusions.

Floristics

The local plant community consists of Prosopis juliflora, Larrea tridentata, Scleropogon brevifolius, Tridens pulchellus, and Gutierrezia sarothrae.

Cultural Resources

No cultural resources were recorded during this reconnaissance.

Recommendations

ACA recommends clearance for the proposed access right-of-way and drill locality and suggests that construction proceed without modification of existing plans.