Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

30-005-60678

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: NM 36643

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Rock Federal

9. WELL NO.: 4

10. FIELD AND POOL, OR WILDCAT: Undes, Abo

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 6, T8S, R23E

12. COUNTY OR PARISH: Chaves

13. STATE: N.Mexico

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 Building, Midland, Texas 79701

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 660' FNL & 1980' FWL
At proposed prod. zone: Same as above

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FEB 26 1980
U.S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 20 miles NW of Roswell

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 660'/2200'

16. NO. OF ACRES IN LEASE: 2115.38

17. NO. OF ACRES ASSIGNED TO THIS WELL: 160

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.: 3200'

19. PROPOSED DEPTH: 3500'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3996.0' GR

22. APPROX. DATE WORK WILL START*: May 15, 1980

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4"	8 5/8"	24#	700	240 sx LW + 100 sx C-Circ to surf.
7 7/8"	4 1/2"	10.5#	3500	310 sx LW + 360 sx 50/50 Poz

Propose to drill surface hole to 700' without BOPs. After cementing 8 5/8" casing at 700' and installing bradenhead, will nipple up 10" API 3000 psi BOPs and drill 7 7/8" hole to total depth of 3500'. Drilling fluid will consist of fresh water and fresh water additions, however, mud weight may increase from 8.8 ppg to as high as 10.2-10.3 ppg due to leaching of salt stringers. After log evaluation, 4 1/2" casing may be run to total depth and cemented (with cement being raised to surface pipe or surface).

Gas sales are not dedicated

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 R. L. Mathis TITLE Regulatory Coordinator DATE February 18, 1980

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE 3-14-80

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

xc: TLS, MEC, JBH, FILE, JWH, USGS, PLE, ACCOUNTING, CENTRAL RECORDS

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	Lease	Well No.
Mesa Petroleum Co.	Rock Federal	4

Unit Letter	Section	Township	Range	County
C	6	8 South	23 East	Chaves

Actual Footage Location of Well:
660 feet from the North line and 1980 feet from the West line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3996.0	Abo	Undesignated	NW/4 160 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

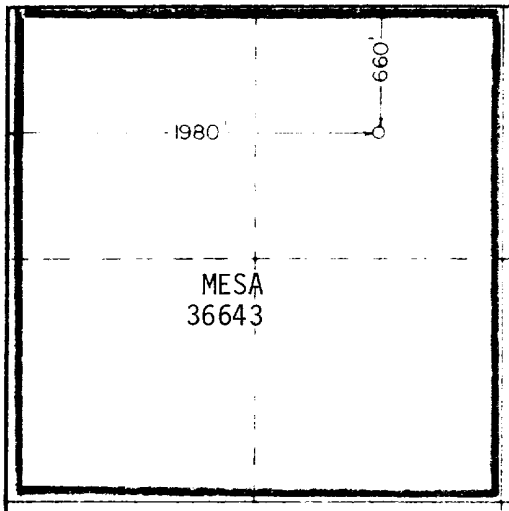
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

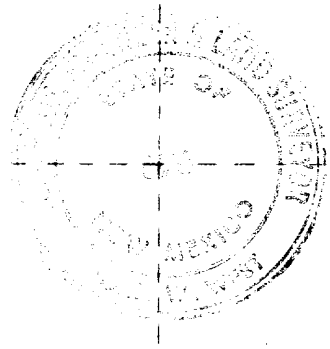
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ 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.





CERTIFICATION

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

R. E. Mathis

Regulatory Coordinator

Mesa Petroleum Co.

February 18, 1980

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
January 8, 1980

Registered Professional Engineer and/or Land Surveyor

Certificate No. JOHN W. WEST 676
PATRICK A. ROMERO 6668
Ronald J. Eidson 3239

0 330 660 990 1320 1650 1980 2310 2640 2000 1500 1000 500 0

United States Department of the Interior

GEOLOGICAL SURVEY

P. O. Drawer U
Artesia, New Mexico 88210

RECEIVED
MAR 1980

March 14, 1980

Mesa Petroleum Company
1000 Vaughn Building
Midland, Texas 79701

Gentlemen:

MESA PETROLEUM COMPANY Rock Fed No. 4 660 FNL 1980 FWL Sec. 6 T.8S R.23E Chaves County Lease No. NM 36643
Above Data Required on Well Sign

Your APPLICATION FOR PERMIT TO DRILL the above-described well to a depth of 3,500 feet to test the Abo is hereby approved subject to compliance with the OIL AND GAS OPERATING REGULATIONS (30 CFR 221) and the following conditions:

1. Drilling operations authorized are subject to compliance with the attached General Requirements for Oil and Gas Operations on Federal Leases, dated July 1, 1978.

2. Prior to commencing construction of road, pad, or other associated developments, operator will provide the dirt contractor with a copy of the Surface Use Plan and these Conditions of Approval including the attached General Requirements.

3. All access roads will be limited to a 12 foot wide driving surface, excluding turnarounds. Surface disturbance associated with road construction will be limited to 25 feet in width.

4. Submit a Daily Report of Operations from spud date until the well is completed and the Well Completion Report (form 9-330) is filed. The report should not be less than 8" x 5" in size and each page should identify the well.

5. All permanent above-ground structures and equipment shall be painted in accordance with the attached Painting Guidelines. The color used should simulate Sandstone Brown (Federal Standard No. 595A, color 20318 or 30318).

6. Before drilling below the 8-5/8" casing, the blowout preventer assembly will consist of a minimum of two ram type preventers.

7. A kelly cock will be installed and maintained in operable condition.

8. After setting the 8-5/8" casing string and before drilling into the Wolfcamp formation, the blowout preventers and related control equipment shall be pressure tested to rated working pressures. Any equipment failing to test satisfactorily shall be repaired or replaced. This office should be notified in sufficient time for a representative to witness the tests.

9. Notify the Survey by telephone 24 hours prior to spudding well.

10. Notify the Survey in sufficient time to witness the cementing of the 8-5/8" and 4-1/2" casing.

11. Cement behind the 8-5/8" and 4-1/2" casing must be circulated.

12. Please have anyone contacting the Survey in regard to this well to identify the well with all of the information required above for the well sign.

Sincerely yours,

George H. Stewart
Acting District Engineer

DESIGNATION OF OPERATOR

The undersigned is, on the records of the Bureau of Land Management, holder of lease

DISTRICT LAND OFFICE: Artesia, New Mexico
SERIAL NO.: NM-36643

and hereby designates

NAME: Mesa Petroleum Co.
ADDRESS: 1000 Vaughn Building
Midland, Texas 79701

as his operator and local agent, with full authority to act in his behalf in complying with the terms of the lease and regulations applicable thereto and on whom the supervisor or his representative may serve written or oral instructions in securing compliance with the Operating Regulations with respect to (describe acreage to which this designation is applicable):

Township 8 South, Range 23 East
Section 1: W½SW¼, SE¼SW¼, SW¼SE¼
Section 6: Lots 1,2,3,4,5,6,7, S½NE¼, SE¼NW¼, E½SW¼, SE¼
Section 7: Lots 1,2,3,4, E½, E½W½
Section 18: Lots 1, 2, 3, 4, E½, E½W½

It is understood that this designation of operator does not relieve the lessee of responsibility for compliance with the terms of the lease and the Operating Regulations. It is also understood that this designation of operator does not constitute an assignment of any interest in the lease.

In case of default on the part of the designated operator, the lessee will make full and prompt compliance with all regulations, lease terms, or orders of the Secretary of the Interior or his representative.

The lessee agrees promptly to notify the supervisor of any change in the designated operator.

PUBLIC LANDS EXPLORATION, INC.

By: _____
(Signature of lessee)
Robert P. Creson, Vice President
P. O. Box 29119
Dallas, Texas 75229
(Address)

September 20, 1979
(Date)

U. S. GOVERNMENT PRINTING OFFICE 16—55298-3

APPLICATION FOR DRILLING

MESA PETROLEUM CO.
ROCK FEDERAL WELL NO. 4
660' FNL and 1980' FWL of Sec 6, T8S, R23E
CHAVES COUNTY, NEW MEXICO

LEASE: NM 36643
FEBRUARY 18, 1980

In conjunction with Form 9-331 C, Application for Permit to Drill subject well, the following items of pertinent information are submitted in accordance with U.S.G.S. requirements:

1. The geologic surface formation is San Andres.

2. Estimate tops of geologic markers are as follows:

Glorietta	418
Yeso	602
Abo	2688
Wolfcamp (Hueco)	3288

3. The estimated depths at which anticipated water, oil or gas formations are expected to be encountered:

   Water - San Andres at approximately 500'.
   Gas - Yeso at approximately 1000'
   Gas - Abo at approximately 3200'

4. Casing and Blowout Preventer Program

   Surface: 700' of 8 5/8", 24#, K55, ST&C new casing cemented with 240 sx LW + 100 sx "C" or volume sufficient to circulate cement to surface. Will nipple up 10" API 3000 WP bradenhead and install 10" 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.

   Production: 3500' of 4 1/2", 10.5#, K55, ST&C new casing cemented with 310 sx LW + 360 sx 50/50 Poz or volume sufficient to raise top of cement to at least 700' (or base of surface casing). Choke, kill and fill lines are indicated on Exhibit I. BOPs will be tested prior to drilling below the 8 5/8" casing. A full opening safety valve, to fit the drill string in use, will be kept on the rig floor at all times. The kelly cock, safety valve, choke and kill lines will be tested at the same time that BOPs tests are run. Operational opening and closing checks on all BOPs will be run on each trip, with daily operational check of pipe rams.

5. Circulating medium and control equipment.

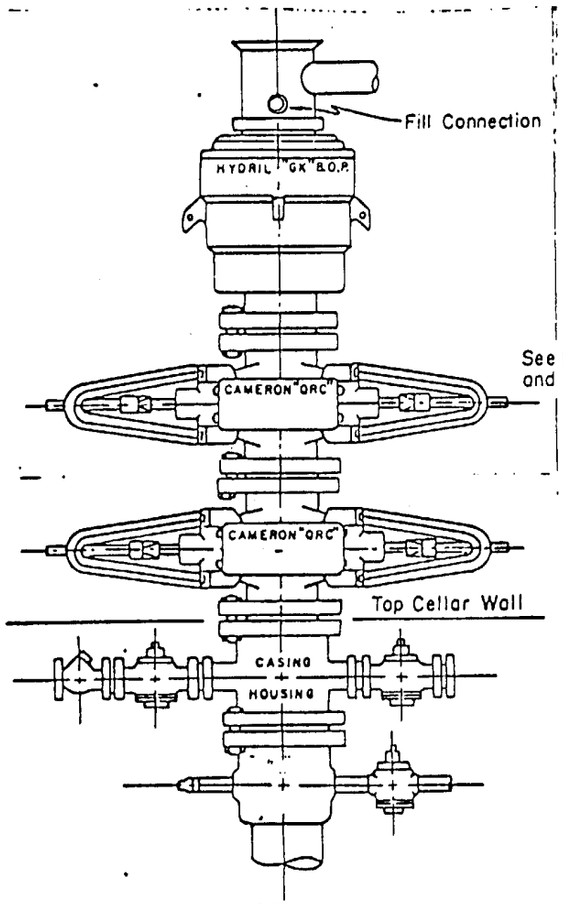
0 - 700'	Use fresh water spud mud with fresh water gel and soda ash or lime treated with lost circulation material (cottonseed hulls, fiber and paper) as hole conditions dictate. If total loss of returns occurs, mix 2 or 3 viscous slugs with LCM and attempt to regain circulation. If unsuccessful, consider drilling without returns to casing point and spot 150 ± bbls viscous slug treated with LCM on bottom to run pipe.
700 - 2700'	Drill out 8 5/8" casing with fresh water circulating reserve pit with additions of caustic soda for pH - 9.0 - 9.5 and chemicals for corrosion control. Mix paper, as needed, to control seepage and/or to sweep hole.
2700 - T.D.	Go through steel pits utilizing above fluid with fine screen shaker and desilter to control solids. Maintain mud weight less than 10 lb/gal with additions of fresh water while keeping chloride - ion concentration of 40,000 - 50,000 + ppm and KCL = 3%. At 2800' mud-up with starch and soda ash to control API water loss to 20-25 cc to T.D. Sea mud and salt water gel will be added to sweep hole or to raise viscosity of system sufficiently to clean hole to run logs and casing.

6. There is no coring program or drill stem tests planned for this well. The logging program will consist of a gamma ray log from total depth to surface. Compensated neutron-density-caliper log and dual laterolog-micro spherically focused log will be run from 700' to total depth.

7. Maximum anticipated bottom hole pressure is 1200 psi at 3300' based upon bottom hole pressure gage on offset well. Mud weight required to offset this pressure is 7.0 ppg. It is probable that leaching of expected salt stringers could increase the mud weight to 10.0 - 10.2 ppg. Bottom hole temperature should not exceed 115°F. No sour gas is expected.

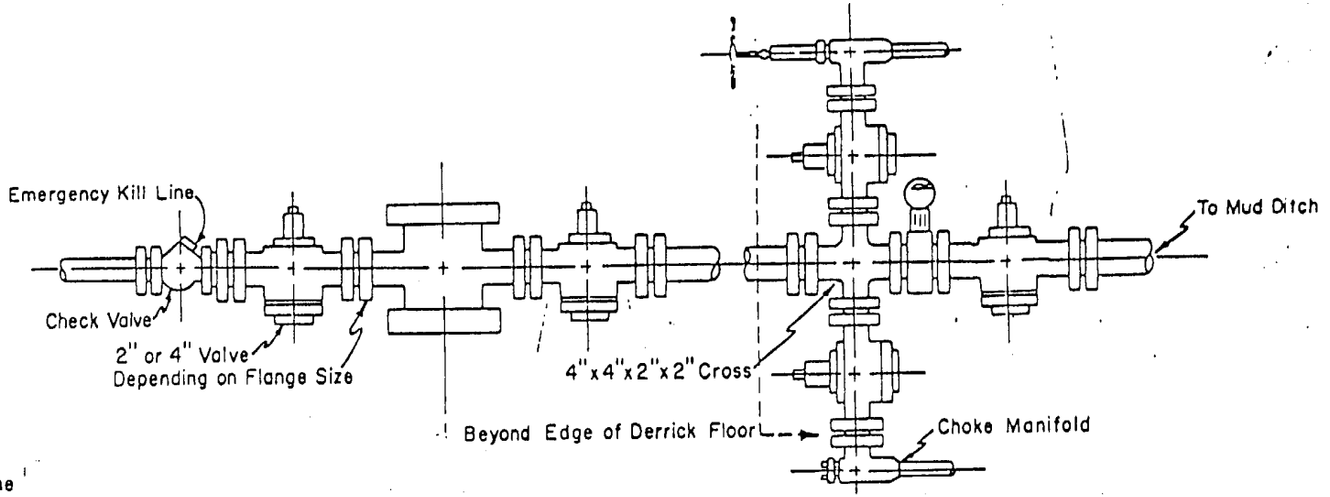
8. Anticipated spud date is May 15, 1980, with completion of drilling operations expected by June 1, 1980. Completion operations (perforations and stimulation) will immediately follow successful drilling operations.

Blow-out Preventers hydril and choke manifold are all 900 Series



See Detail of 4" Flow Line and Choke Assembly

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



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.
PERMIAN BASIN DIVISION

EXHIBIT
I

BLOWOUT PREVENTER SCHEMATIC
for proposed ROCK FEDERAL # 4

BY:
DATE:
DRAWN BY:
SCALE:

MULTI-POINT SURFACE USE AND OPERATION PLAN

MESA PETROLEUM CO.
ROCK FEDERAL WELL NO. 4
660' FNL and 1980' FWL, Sec 6, T8S, R23E
CHAVES COUNTY, NEW MEXICO

LEASE: NM 36643
FEBRUARY 18, 1980

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operational plan in both the actual and post drilling-completion operations.

1. Existing Roads

   A. Exhibit II is a portion of a highway map showing the location of the proposed well as staked. The proposed well is approximately 20 miles northwest of Roswell, New Mexico.

   B. Directions: Travel northwest of Roswell on Highway 285 for 16.6 miles. Turn west through cattleguard and travel approximately 6 miles on an improved existing road. Turn north at the Rock Federal #1 for approximately 1 1/2 miles. The proposed access road will be constructed easterly for approximately 700' to the southwest corner of the proposed drilling location pad from this point.

2. Planned Access Road

   A. Length and Width: The new access road will be 12' wide (16 ROW) and approximately 700' long from the existing gravel road to the edge of the drilling pad. (See Exhibit III for details).

   B. Construction: The new road will be constructed by grading and topping with compacted caliche. The surface will be crowned, with drainage on both sides. (See Exhibit IV).

   C. Culverts, Gates, and Cattleguards: None required.

   D. Cut and Fill: In order for the location to be level, approximately 3' of cut from the north side will be moved to the south side for fill.

3. Location of Existing Wells

   A. Existing wells within a one-mile radius are depicted by Exhibit V.

4. Location of Existing and/or Proposed Facilities

   A. There are no production facilities on this lease at the present time.

   B. If the well proves to be commercial, the necessary production facilities, gas separation-process equipment and tank battery, will be installed on the drilling pad.

5. Location and Type of Water Supply

A. It is planned to drill the proposed well with fresh water. The water well be obtained from commercial sources and will be trucked to the wellsite over the existing roads and the proposed access road shown on Exhibits II and III.

6. Source of Construction Material

A. Caliche for surfacing the road and the wellsite pad will be obtained from an existing pit in the SE/4,W/2,Sec 12, T8S, R22E, and will be purchased by the dirt contractor from the Federal Government. Top soil from the location will be stockpiled near the location for future rehabilitation use. No surface materials will be disturbed except for those necessary for the actual grading and leveling of the drillsite and access road.

7. Methods of Handling Waste Disposal

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

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

C. All pits will be fenced with normal fencing material to prevent livestock from entering the area.

D. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or separate disposal application will be submitted to the USGS for approval.

E. Current laws and regulations pertaining to the disposal of human waste will be complied with.

F. Trash, waste paper, garbage and junk will be buried in a separate trash pit and covered with a minimum of 24 inches of dirt. All waste material will be contained to prevent scattering by the wind.

G. All trash and debris will be buried or removed from the wellsite within 30 days after finishing and/or completion operations.

8. Ancillary Facilities: None required.

9. Wellsite Layout:

A. Exhibit VI shows the relative location and dimensions of the well pad, reserve pits, and major rig components. The pad and pit area has been staked and flagged.

B. Some leveling of the wellsite will be required. See Exhibit IV for additional details.

C. The reserve pit will be plastic lined.

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. Pits will be filled and location cleaned of all trash and junk to leave the wellsite in an aesthetically pleasing a condition as possible.

B. Any unguarded pits containing fluids will be fenced until they are filled.

C. If the proposed well is non-productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management and the United States Geological Survey will be complied with and will be accomplished as expeditiously as possible. All pits will be filled and leveled within 90 days after abandonment, if drying conditions permit.

11. Other Information:

A. Topography: The land surface in the vicinity of the wellsite is gently sloping to the north.

B. Soil: The topsoil at the wellsite is sandy loam.

C. Flora and Fauna: The vegetative cover consists of Tabosa and other prairie grasses, creosote bush, yucca, cactus, prairie flowers and other miscellaneous desert growth. Jackrabbits were observed in the area and other wildlife in the area probably includes those typical of semi-arid desert land. The area is used for sheep grazing.

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

E. Residences and Other Structures: There are no residences or other structures in the vicinity of the proposed well.

F. Land Use: Sheep grazing.

G. Surface Ownership: The wellsite is on Federal surface.

H. There is no evidence of any major archeaological, historical, or cultural sites in the area. NMAS, Inc. has conducted an archealogical study of this site and provides this report to interested parties.

12. Operator's Representatives:

A. The field representatives responsible for assuring compliance with the approved surface use and operations plan are as follows:

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

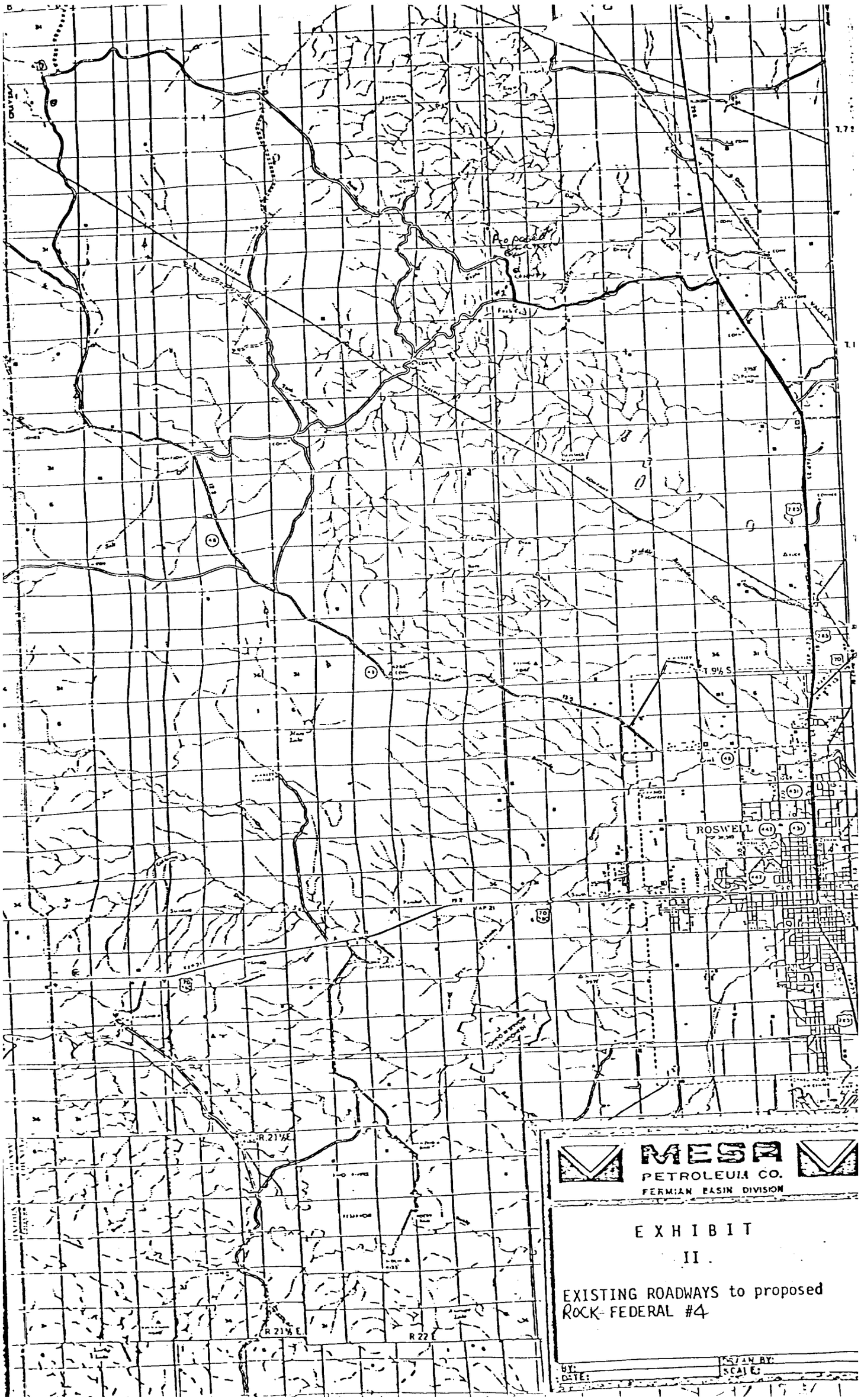
M. P. Houston
1000 Vaughn Building
Midland, Texas 79701
915-683-5391 Office
915-694-3442 Home

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

Feb. 19, 1980
Date

Michael P. Houston
Michael P. Houston
Operations Manager

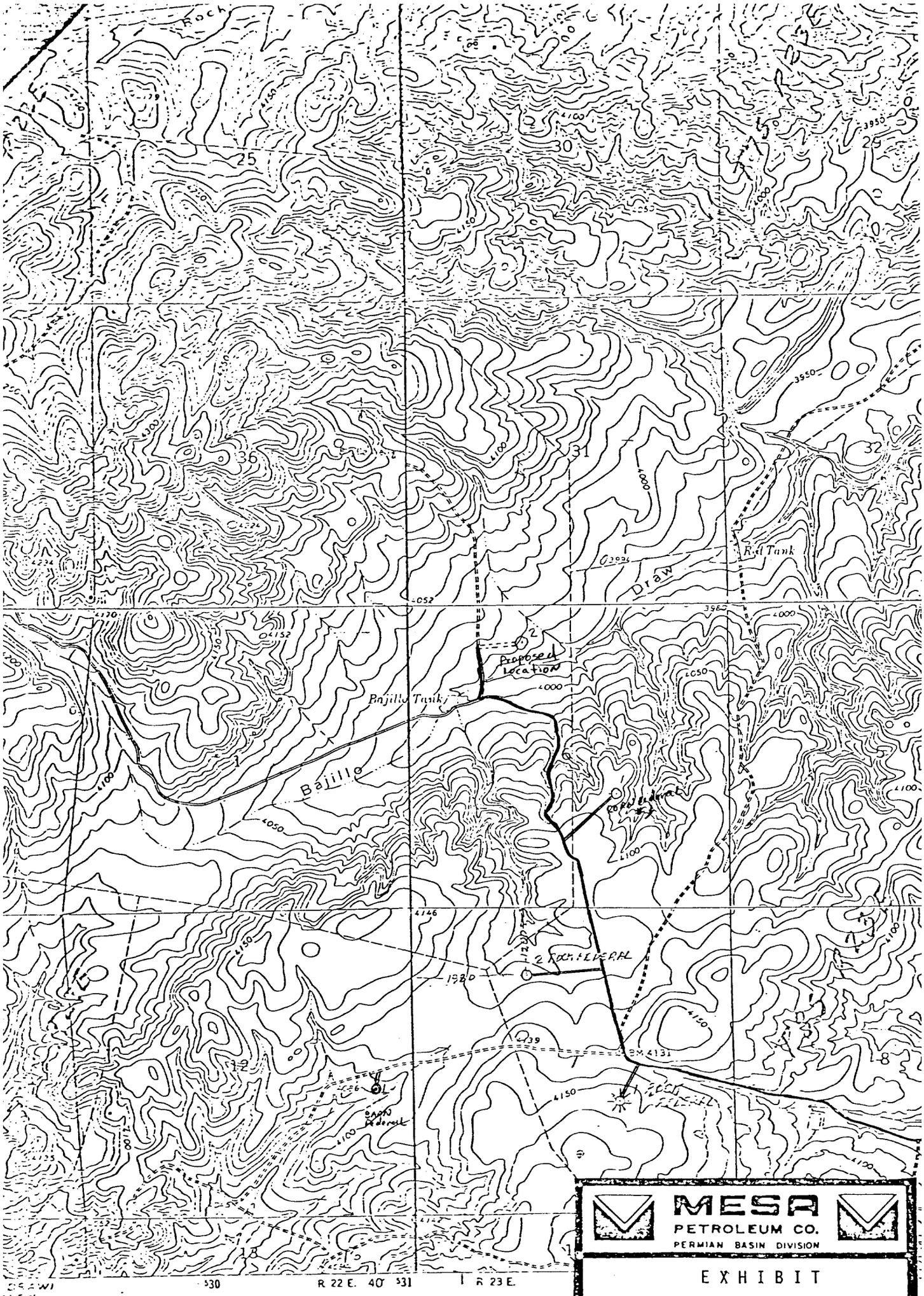


MESA PETROLEUM CO.
PERMIAN BASIN DIVISION

EXHIBIT
II.

EXISTING ROADWAYS to proposed
ROCK-FEDERAL #4

DRAWN BY:
DATE:
SCALE:



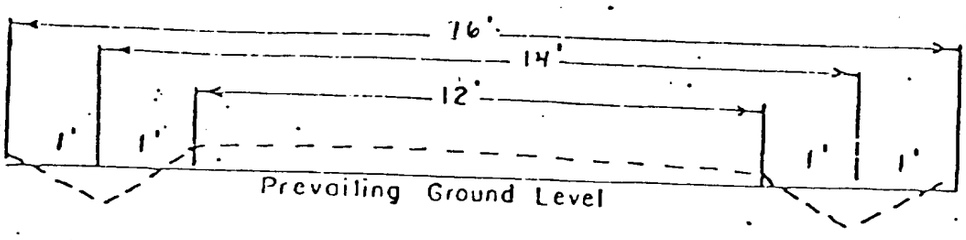
MESA PETROLEUM CO.
PERMIAN BASIN DIVISION

EXHIBIT
III

TOPOGRAPHIC FEATURES for the
Proposed ROCK FEDERAL # 4

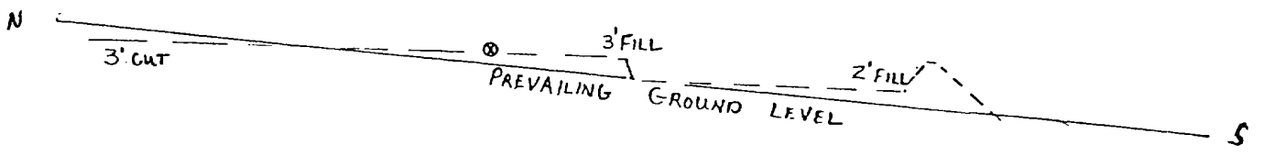
BY:	DRAWN BY:
DATE	SCALE:

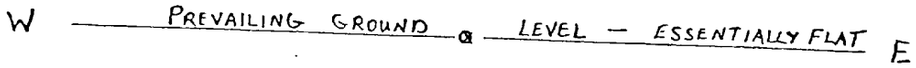
ROCK HO



ROADWAY CROSS SECTION

Horizontal Scale 1" = 4'





LOCATION CROSS SECTION

Horizontal Scale 1" = 50'

MESA PETROLEUM CO.
PERMIAN BASIN DIVISION

EXHIBIT IV

LOCATION CONSTRUCTION

Scale : As Noted

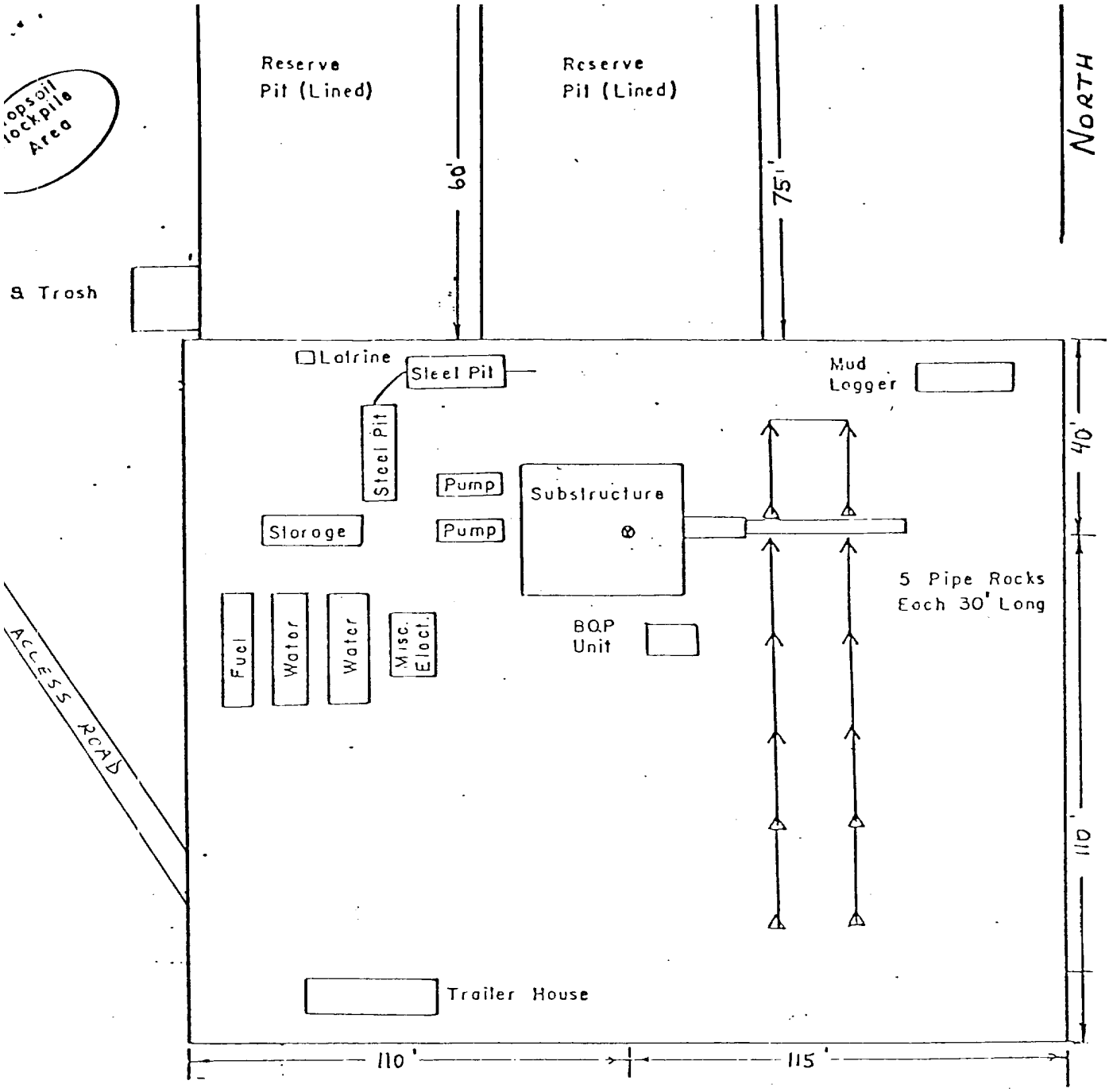
DATE 9-17-79

MESA PETROLEUM CO.
PERMIAN BASIN DIVISION

EXHIBIT

V

1 MILE RADIUS LAND MAP for proposed
ROCK FEDERAL #4



MESA
PETROLEUM CO.
PERMIAN BASIN DIVISION

EXHIBIT VI

DRILL SITE ORIENTATION

BY:
DATE:
DRAWN BY:
SCALE: