

RECEIVED
 APR 14 1980
 APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

UNITED STATES
 DEPARTMENT OF THE INTERIOR
 GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE*
 (Other instructions on reverse side)

Form approved.
 Budget Bureau No. 42-R1425.

30-045-24334

U.S. GEOLOGICAL SURVEY
 1475 WASHINGTON, D.C.

1. TYPE OF WELL
 DRILL DEEPEN PLUG BACK
 b. TYPE OF WELL
 OIL WELL GAS WELL OTHER
 SINGLE ZONE MULTIPLE ZONE

2. NAME OF OPERATOR
 Marathon Oil Company

3. ADDRESS OF OPERATOR
 P.O. Box 2659, Casper, Wyoming 82602

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
 At surface
 1,610' FSL & 880' FWL Unit L
 At proposed prod. zone

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
 4 miles southwest of Bloomfield, New Mexico

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)
 880'

16. NO. OF ACRES IN LEASE
 640

17. NO. OF ACRES ASSIGNED TO THIS WELL
~~460~~ 5320

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.
 See Item 3 on 13 Pt. Program

19. PROPOSED DEPTH
 6450

20. ROTARY OR CABLE TOOLS
 Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
 5,625' GL

22. APPROX. DATE WORK WILL START*
 7-19-80

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
Please see Item #4 of 10 Point Program for complete casing and cementing program.				

Please see the following attachments:

1. Surveyor's Plat
2. Ten-Point Drilling Program
3. BOP Schematic
4. Thirteen-Point Surface Plan
5. Maps & Diagrams

Janis White

RECEIVED
 MAY 23 1980
 OIL CON. DIV.
 DIST. 3

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 *Bob Cuddy* TITLE District Operations Manager DATE April 10, 1980

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____

CONDITIONS OF APPROVAL, IF ANY:

NMOCC

APPROVED
 DATE
 MAY 21 1980
[Signature]
 DISTRICT ENGINEER

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS"

*See Instructions On Reverse Side

Instructions

General: This form is designed for submitting proposals to perform certain well operations, as indicated, on all types of lands and leases for appropriate action by either a Federal or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office.

Item 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable State or Federal regulations concerning subsequent work proposals or reports on the well.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on this reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal or State agency offices.

Items 15 and 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective production zone.

Item 22: Consult applicable Federal or State regulations, or appropriate officials, concerning approval of the proposal before operations are started.

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-102
Revised 10-1-78

All distances must be from the outer boundaries of the Section.

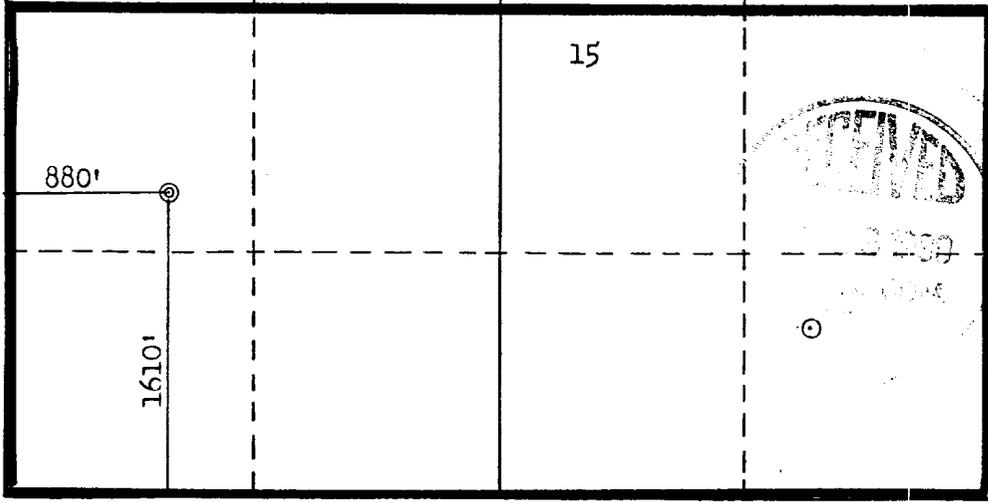
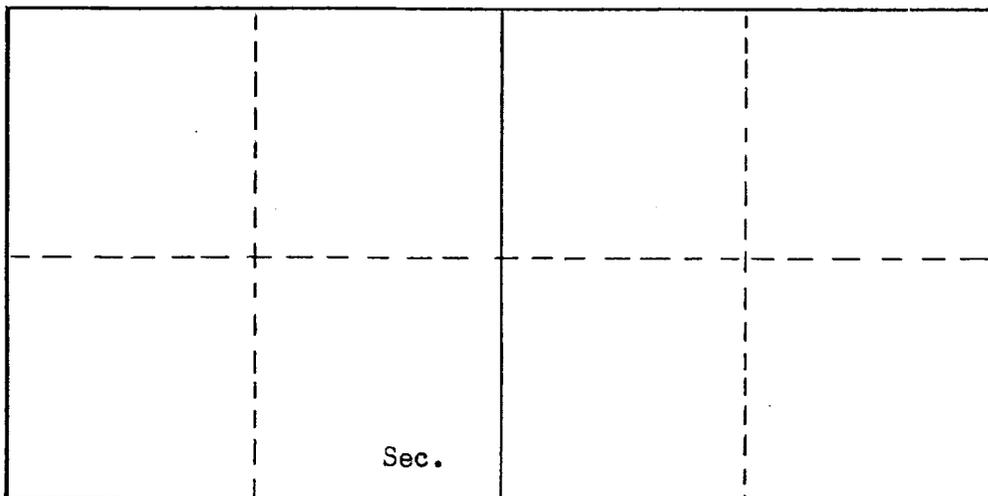
Operator MARATHON OIL COMPANY			Lease OHIO-GOVERNMENT		Well No. 2-E
Unit Letter L	Section 15	Township 28N	Range 11W	County San Juan	
Actual Footage Location of Well: 1610 feet from the South line and 880 feet from the West line					
Ground Level Elev. 5625	Producing Formation Dakota		Pool Basin Dakota		Dedicated Acreage: S 160 320 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 N/A

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.

Dale T. Caddy
Name
D. T. Caddy

Position
District Operations Manager

Company
Marathon Oil Company

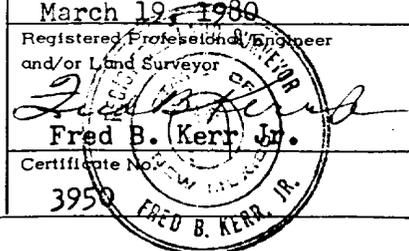
Date
April 3, 1980

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
March 19, 1980

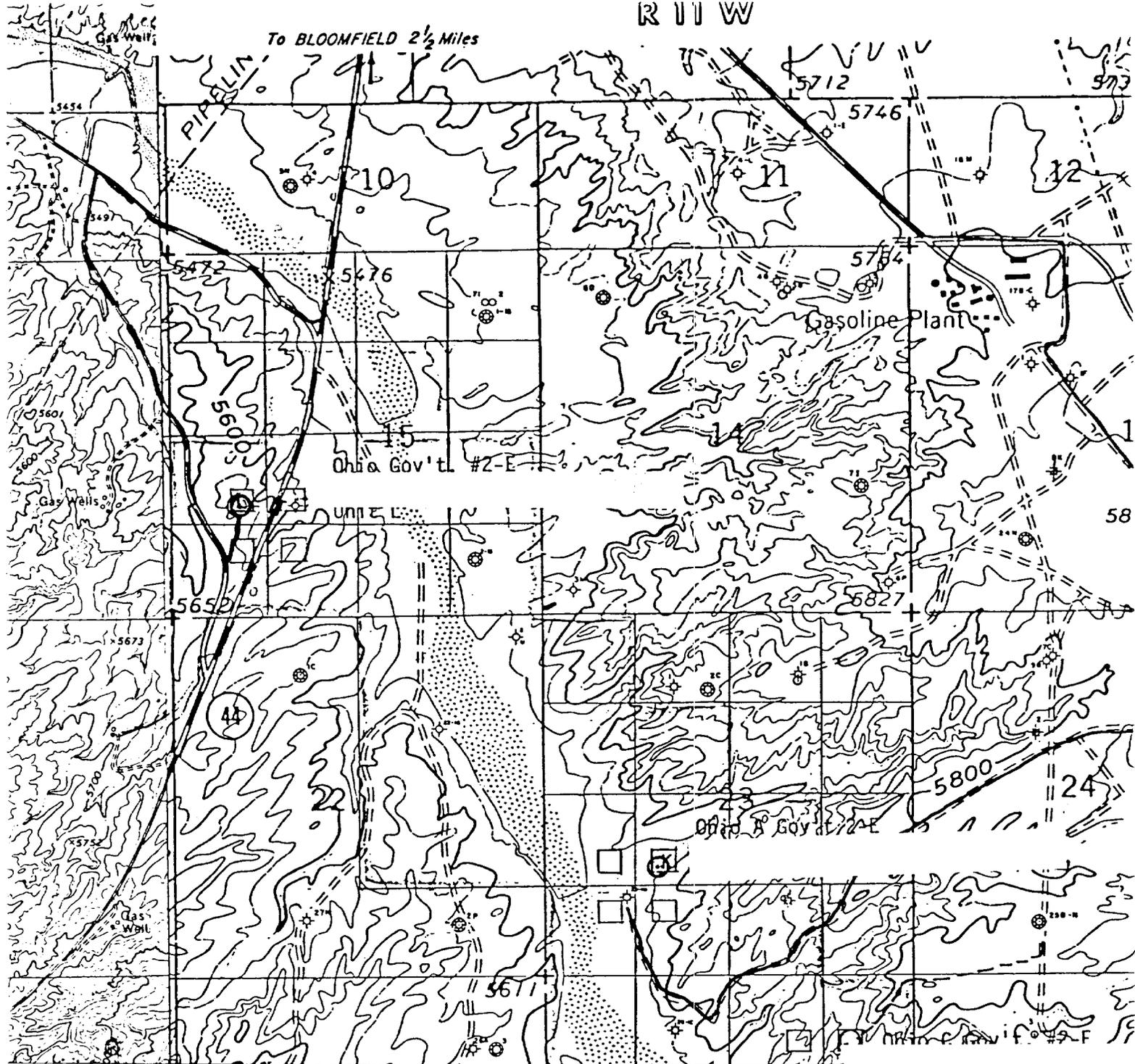
Registered Professional Engineer and/or Land Surveyor
Fred B. Kerr Jr.
Fred B. Kerr Jr.

Certificate No.
3950



R U W

To BLOOMFIELD 2 1/2 Miles



MARATHON OIL COMPANY
DRILLING OPERATIONS PLAN

DATE: April 10, 1980

WELL NAME: Ohio Gov't. #2E

LOCATION: 1,610' FSL & 880' FWL, Unit L, Sec. 15, T28N, R11W, San Juan Co., NM

1. Geologic name of the surface formation:
Nacimiento
2. Estimated tops of important geological markers:

<u>Formation</u>	<u>Depth</u>	<u>Datum</u>	<u>Formation</u>	<u>Depth</u>	<u>Datum</u>
Nacimiento	Surface		Marcos Shale	4,347'	(+1,303')
Farmington	1,015'	(+4,635')	Gallup	5,223'	(+ 427')
Fruitland	1,420'	(+4,230')	Basal Niobrara	5,505'	(+ 145')
Pictured Cliffs	1,657'	(+3,993')	Sanastee	5,661'	(- 11')
Lewis Shale	1,720'	(+3,930')	Greenhorn	6,015'	(- 365')
Cliff house	3,172'	(+2,478')	Graneros	6,075'	(- 425')
Menefee	3,400'	(+2,250')	Dakota	6,190'	(- 540')
Point Lookout	4,008'	(+1,642')	T.D.	6,450'	(- 800')

3. Estimated depths at which oil, water, gas or other mineral bearing formations are expected to be encountered:

<u>Formation</u>	<u>Depth</u>	<u>Datum</u>	<u>Content</u>
Farmington	1,015'	(+4,635')	Gas and Water
Fruitland	1,420'	(+4,230')	Gas and Coal
Pictured Cliffs	1,657'	(+3,993')	Gas and Water
Menefee	3,400'	(+2,250')	Coal
Gallup	5,223'	(+ 427')	Oil
Dakota	6,190'	(- 540')	Gas; Primary objective

4. The Proposed Casing Program:

Casing Design

CASING STRING	HOLE SIZE	INTERVAL	SECTION LENGTH	SIZE (OD)	WEIGHT, GRADE AND JOINT	NEW OR USED	MUD WEIGHT	TENSION LOAD	SF _t	SF _c	SF _b
Conductor	22"	0'-40'	40'	18"	Open	New					
Surface	12-1/4"	0'-550'	550'	9-5/8"	36# K-55	New	13.5	19,800	21.4	5.2	3.0
Intermediate	8-3/4"	0'-1,950'	1,950'	7"	20# K-55	New	13.5	39,000	6.5	1.9	2.0
Production	6-1/4"	0'-1,400'	1,400'	4-1/2"	11.6# K-55	New	9.0	69,265	2.5	6.5	1.3
		1,400'-6,450'	5,050'		10.5# K-55	New	9.0	53,025	2.6	1.3	1.3

Cement Program:

Surface Casing;
 300 sx of Class "B" w/2% CaCl₂. Cement top at surface using 100% excess.

Centralizers: 3
 WOC: 12 hours

Intermediate Casing:

100 sx of Light cement (Halliburton Light or equivalent) w/2% CaCl₂; followed by 100 sx of Class "B" w/2% CaCl₂. Cement top 50' inside surface casing using 20% excess.

Centralizers: 10
 WOC: 12 hours

Production Casing:

1st stage: 105 sx 50-50 Poz-mix w/6% gel, .8% fluid loss reducer, (Halliburton Halad-9 or equivalent) followed by 100 sx neat Class "B", using 20% excess.

2nd stage: 180 sx Light cement (Halliburton Light or equivalent) with 2#/sack ground walnut shells (Halliburton Tuf-Plug or equivalent). Sufficient volume of 2% KCl water will be pumped ahead of slurry to reach surface. Cement top 50' inside intermediate casing, using 20% excess.

Centralizers: 10
 WOC: 12 hours

5. Pressure Control Equipment:

BOP equipment will include a double-ram type preventer equipped with pipe and blind rams and a rotating head (API arrangement SRdG). All equipment will have a 3,000 psi working pressure or greater. Rams, valves, lines and choke manifold will be tested to 750 psi before drilling out from under surface casing. Surface casing will be tested to 750 psi before drilling out. After drilling casing shoe and drilling an additional 5' of hole, a leakoff test will be run. After running the 7" intermediate casing, all BOP equipment and casing will be tested to 2,200 psi. After drilling the casing shoe and making 5' of hole, a leakoff test will be run. The accumulator will be of sufficient size to open and close all components of the BOP system. Daily checks of the equipment will be made and the rams will be operated on trips.

6. Drilling Mud Program:

<u>From</u>	<u>To</u>	<u>Type Mud</u>	<u>Weight</u>	<u>% Oil</u>	<u>Water Loss</u>
0	550'	Native	8.5-9.0	0	No Control
550'	1,950'	Gel-Chem	9.5-13.5*	0	No Control
1,950'	T.D.	Air	---	---	---

*Note: Must be ready to weight up to 13.5 ppg if gas kicks are encountered in the Farmington at 1,017'.

7. Auxillary Equipment Required:

A drilling rate recorder calibrated to record each foot of hole drilled will be available.

A single shot drift indicator will be used.

Mud equipment will include a shale shaker, desander, desilter, gas buster, and/or degasser.

<u>From</u>	<u>To</u>	<u>Maximum Distance Between Surveys</u>	<u>Maximum Deviation From Vertical</u>	<u>Maximum Change Per 100' of Depth</u>
0	550'	100'	1°	1°
550'	T.D.	500'	5°	1°

8. Testing, Logging, Coring and Fracing Program:

DIL, FDC, CAL, SNP logs will be run from T.D. to surface casing shoe. G,R, log will be run from T.D. to surface.

Samples will be taken every 30' from 550' to T.D.

No DST's or cores are planned.

8. Testing, Logging, Coring and Fracing Program (cont'd):

Fracing Program:

After the casing is run and cemented, the zones of interest will be perforated. If stimulation is necessary the well will be fraced with foam (nitrogen and water base fluid). Fracing with volatile liquids is not planned.

See Diagram "E"

9. Abnormal Conditions:

13.5 ppg mud may be required to control Farmington Formation at 1,015'. Normal temperature gradient is expected.

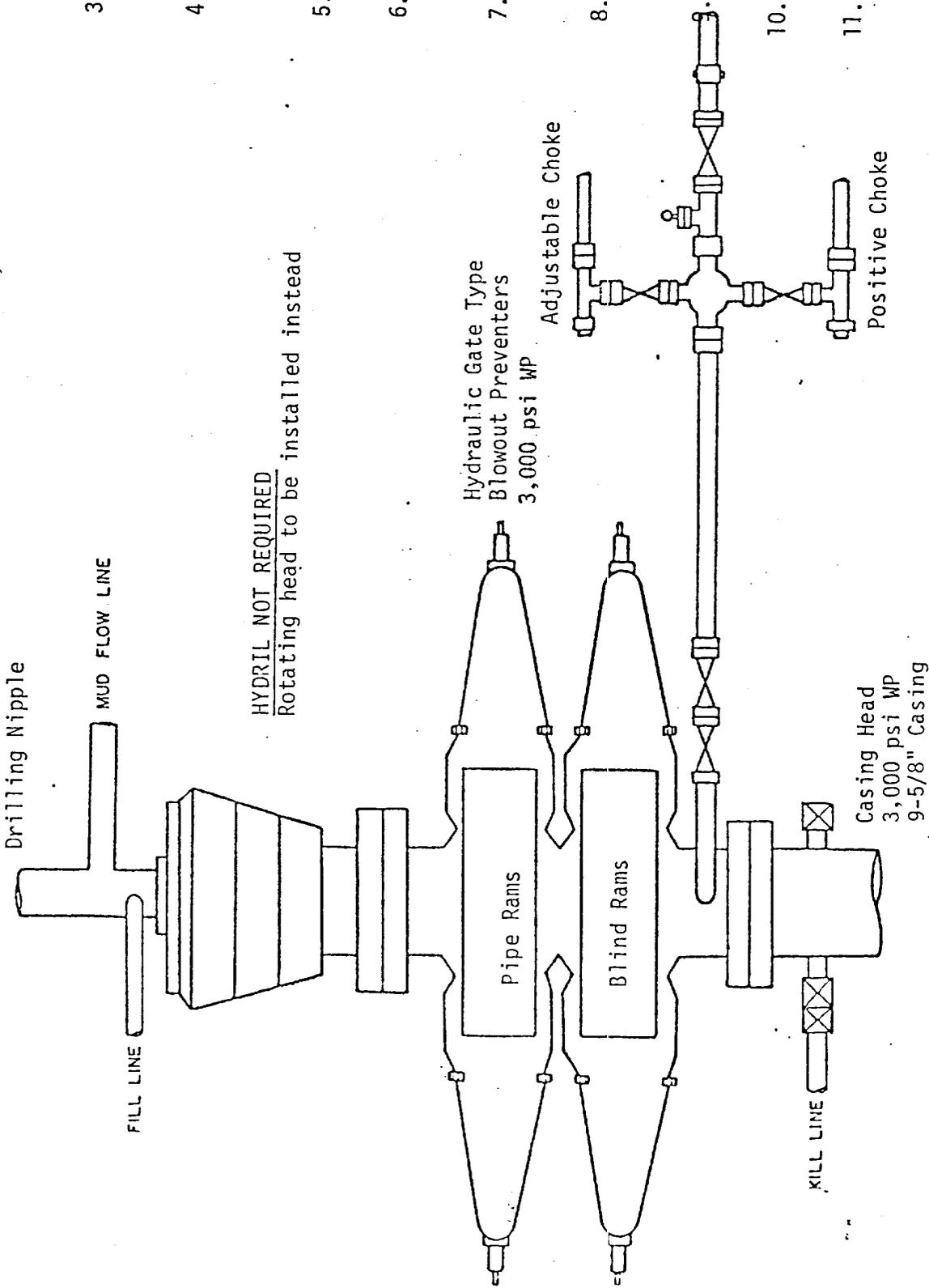
10. Anticipated starting date and duration:

Starting Date: 7-19-80

Duration: 8 days

Name Bali Oaddy
Title Dist. Mgr
Date 4-9-80

Marathon Oil Company
 Ohio Gov't. #2-E
 1610' FSL and 880' FWL
 Unit L, Sec. 15, T28N, R11W
 San Juan Co., New Mexico



1. Blowout preventers, master valve, plug valve and all fittings must be in good condition. Use new API Seal Rings.
2. All fittings (gates, valves, etc.) to be of equivalent pressure rating as preventers. Valves to be flanged and at least 2" unless otherwise specified. Valves next to BOP to be plug type and nominal 3".
3. Equipment through which bit must pass shall be as large as the inside diameter of the casing that is being drilled through.
4. Safety valve (Omsco or equivalent) must be available on rig floor at all times and with proper connections. The I.D. of safety valves should be as great as I.D. of tool joints on drill pipe.
5. Kelly safety valve installed, same working pressure as BOP's.
6. All lines and controls to preventers must be connected and tested before drilling out of surface pipe.
7. BOP's must be fluid operated, complete with accumulator. Controls may be either on floor or ground near steps from rig floor.
8. Fillup line tied to drilling nipple, the connection must be below and approximately 90° to the flow line.
10. Gauge will be installed for testing but removed while drilling.
11. Spool not required, but when side outlet on BOP's is used, it must be below bottom ram.

Casing Head
 3,000 psi WP
 9-5/8" Casing

MARATHON OIL COMPANY
SURFACE USE & OPERATIONS PLAN

DATE: April 10, 1980

WELL NAME: Ohio Gov't. #2-E

LOCATION: 1,610' FSL & 880' FWL, Sec. 15, T28N, R11W, Unit L. San Juan Co., NM

#1 Existing Roads:

A. Proposed well site as staked. (Actual staking should include two each 200-foot directional reference stakes).

See attached Survey Plat

B. Route and distance from nearest town and locatable reference point to where well access route leaves main road.

See attached map Diagram "A".

C. Access road(s) to location color-coded or labeled.

See map Diagram "A" color coded green.

D. If exploratory well, all existing roads within a 3-mile radius (including type of surface, conditions, etc.).

Not applicable

E. If development well, all existing roads within a 1-mile radius of well site.

See Diagram "A".

F. Plans for improvement and/or maintenance of existing roads.

Blade and gravel where needed.

#2 Planned Access Roads:

Map showing all necessary access roads to be constructed or reconstructed, showing:

- | | |
|--|-------------------|
| (1) Width | 16' |
| (2) Maximum grades | .5% |
| (3) Turnouts | None required |
| (4) Drainage design | Ditched & Crowned |
| (5) Location and size of culverts and brief description of any major cuts and fills. | |

There will be no cuts, fills or culverts on access road.

(6) Surfacing material

Gravel where needed.

(7) Necessary gates, cattleguards, or fence cuts.

None required.

(8) (New or reconstructed roads are to be center-line flagged at time of location staking).

New access road is center-line flagged w/hot blue & orange flagging material, and walked 40' on each side by Archeologists from San Juan College, Farmington, NM.

#3 Location of Existing Wells:

Two-mile radius map if exploratory, or 1-mile radius map if development well, showing and identifying existing:

- | | |
|--|-----------------------|
| (1) Water wells | None |
| (2) Abandoned wells | See map Diagram "A". |
| (3) Temporary abandoned wells | None |
| (4) Disposal wells | None |
| (5) Drilling wells | None |
| (6) Producing wells | (See map Diagram "A") |
| (7) Shut-in wells | (See map Diagram "A") |
| (8) Injection wells | None |
| (9) Monitoring or observation wells for other resources. | None |

#4 Location of Existing and/or Proposed Facilities:

A. Within 1-mile radius of location show the following existing facilities owned or controlled by lessee/operator:

- | | |
|--|-----------------------|
| (1) Tank Batteries | (See map Diagram "A") |
| (2) Production Facilities | (See map Diagram "A") |
| (3) Gathering Lines | None |
| (4) Gas Gathering Lines | None |
| (5) Injection Lines (Indicate if any of the above lines are buried). | None |
| (6) Disposal Lines | None |

B. If new facilities are contemplated, in the event of production, show:

- | |
|--|
| (1) Proposed location and attendant lines by flagging if off of well pad.
Adjacent to the road and as close to the proposed drill site as possible without setting on any fill.
See Diagram "B". |
| (2) Dimensions of Facilities
See Diagram "B". |

(3) Construction methods and materials:

Good engineering practices will be used in the construction of these facilities and materials will be obtained through local vendors and contractors.

- B. If new facilities are contemplated, in the event of production, show:
(cont'd)
- (4) Protective measures and devices to protect livestock and wildlife.
Woven wire fences of the pit areas and flagging, if necessary.

- C. Plans for rehabilitation of disturbed areas no longer needed for operations after construction completed.

Restoration of the drill site and tank battery areas will be reshaped to conform with the topography. The top soil will be redistributed at the proper time. The sites will be reseeded as per the recommended seed mixture.

#5 Location and Type of Water Supply:

- A. Show location and type of water supply either on map or by written description.

The water supply will come from the San Juan River, near Bloomfield, NM, and hauled to the well site by a Jobber.

- B. State method of transporting water, and show any roads or pipelines needed.

Water will be hauled to location by a Jobber.

- C. If water well is to be drilled on lease, so state. (No APD for water well necessary, however, unless it will penetrate potential hydrocarbon horizons).

No water well will be drilled.

#6 Source of Construction Materials:

- A. Show information either on map or by written description.

Construction materials will be native soil or purchased from a Jobber and hauled to the well site by same.

- B. Identify if from Federal or Indian Land.

None

- C. Describe where materials, such as sand, gravel, stone and soil material, are to be obtained and used.

Any needed materials will be purchased from a Jobber and hauled to the well site.

- D. Show any needed access roads crossing Federal or Indian Lands under Item 2.

None.

#7 Methods of handling Waste Disposal:

Describe methods and location of proposed containment and disposal of waste material, including:

- | | |
|----------------------------------|-------------|
| (1) Cuttings | Reserve Pit |
| (2) Drilling fluids | Reserve Pit |
| (3) Produced fluids (oil, water) | Frac Tanks |

#7 Methods of Handling Waste Disposal: (cont'd)

- (4) Sewage Porta Poty
- (5) Garbage and other waste material (Trash pits will be completely contained with small mesh wire to prevent wind scattering trash before being burned or buried).

There will be a 10' x 10' burn pit on the drill site, and it will be fenced.

- (6) Statement regarding proper cleanup of well site area when rig moves out.

At the completion of drilling, the site and surrounding area will be cleaned up and all burnable material will be put in the burn pit and burned. All foreign material will be buried.

#8 Ancillary Facilities:

Identify all proposed camps and airstrips on a map as to their location, area required and construction methods. (Camp center and airstrip center lines to be staked on the ground).

None

#9 Wellsite Layout:

A plat (not less than 1" = 50') showing:

- (1) Cross sections of drill pad with cuts and fills.

See Diagram "C".

- (2) Location of mud tanks, reserve, burn and trash pits, pipe racks, living facilities and soil material stockpiles.

See Diagram "D".

- (3) Rig orientation, parking areas and access roads.

See Diagram "D".

- (4) Statement as to whether pits are to be lined or unlined. (Approval as used in this section means field approval of location. All necessary staking of facilities may be done at time of field inspection). A registered surveyor is not mandatory for such operations.

Pits will not be lined.

#10 Plans for Restoration of Surface:

State restoration program upon completion of operations, including:

- (1) Backfilling, leveling, contouring and waste disposal; segregation of spoils materials as needed.
The drill site will be cleaned and waste material will be put in the trash burn pit, which will be covered at the finish of the drilling operation. The reserve pit will be backfilled as soon as it is dry.
- (2) Revegetation and rehabilitation - including access roads (normally per BLM recommendations).
The top soil will be redistributed and at the proper season the seed mixture of BLM requirements will be drilled planted.

#10 Plans for Restoration of Surface: (cont'd)

- (3) Prior to rig release, pits will be fenced and so maintained until cleanup.

The reserve pit will be fenced on 3 sides during drilling. At the completion of the drilling, all pits will be fenced on the one remaining side.

- (4) If oil on pit, remove oil or install overhead flagging.

If there is oil on the reserve pit, it will be removed or flagged with overhead flagging.

- (5) Timetable for commencement and completion of rehabilitation operations.

Depending upon climatic conditions, restoration should be completed from six months to one year after spud date.

#11 Other Information:

General Description of:

- (1) Topography, soil characteristics, geologic features, flora and fauna. Topo is sagebrush and scrub pine covered hills, occasionally dissected by drainage features.

Flora is sagebrush, scrub pine, wheat grass and short stubby native grasses. Fauna is deer, rabbits, fox, cattle and sheep.

- (2) Other surface use activities and surface ownership of all involved lands.

The drill site and access road are owned by the U.S. Government.

- (3) Proximity of water, occupied dwellings, archeological, historical or cultural sites.

There is no water or occupied dwellings in the area. Archeological services are to be performed by San Juan College, Farmington, NM.

#12 Lessee's or Operator's Representative:

Mr. K.A. Thoma
Marathon Oil Company
P.O. Box 2659
Casper, WY 82602
(307) 235-2511 Ext. 514

- #13 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 Marathon Oil Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

4-9-80
Date

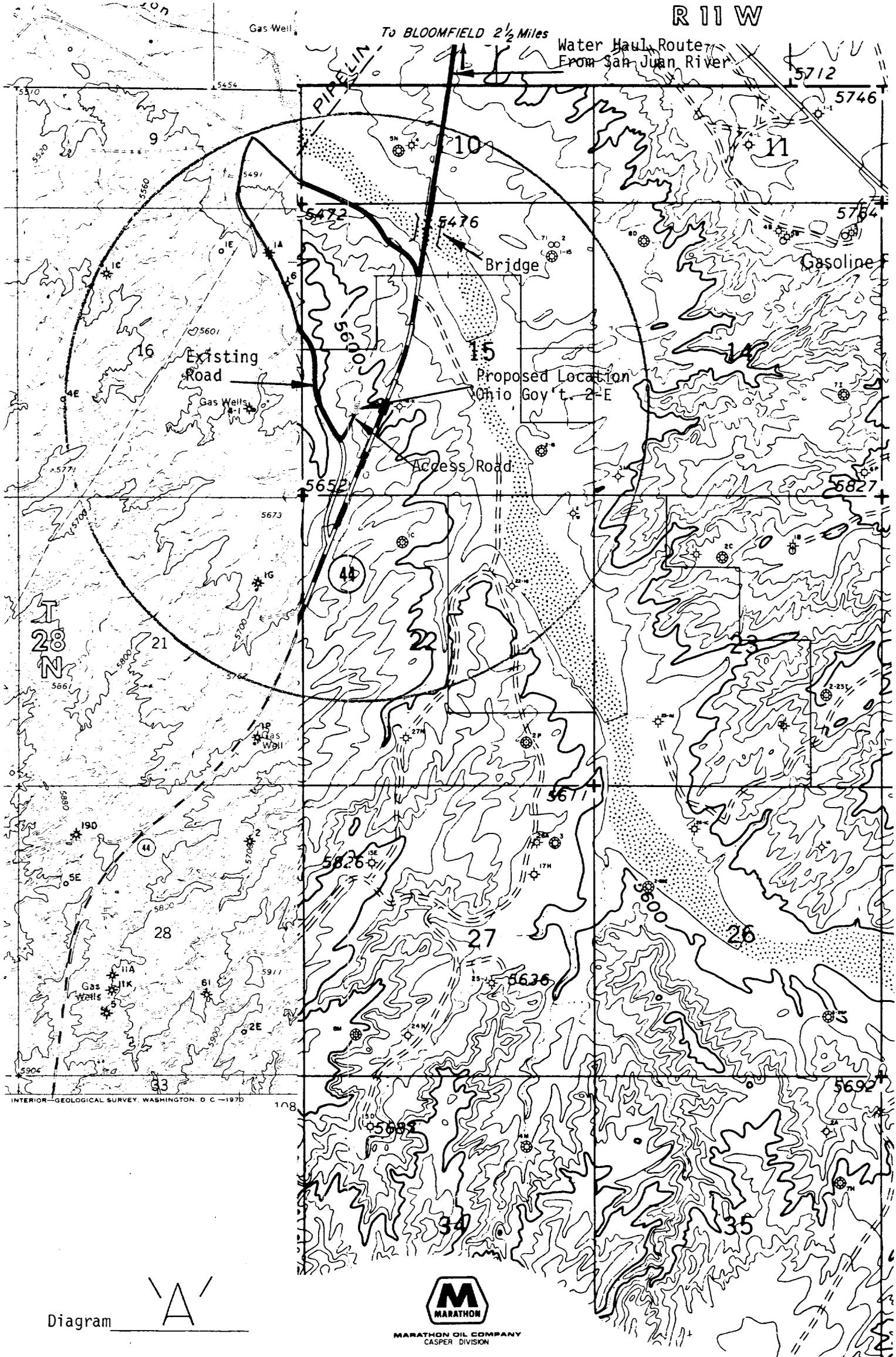
Bale J. Cobby
Name

Dist. Mgr.
Title

R 11 W

To BLOOMFIELD 2 1/2 Miles

Water Haul Route
From San Juan River



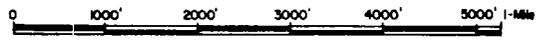
INTERIOR GEOLOGICAL SURVEY, WASHINGTON, D. C. - 1970

Diagram



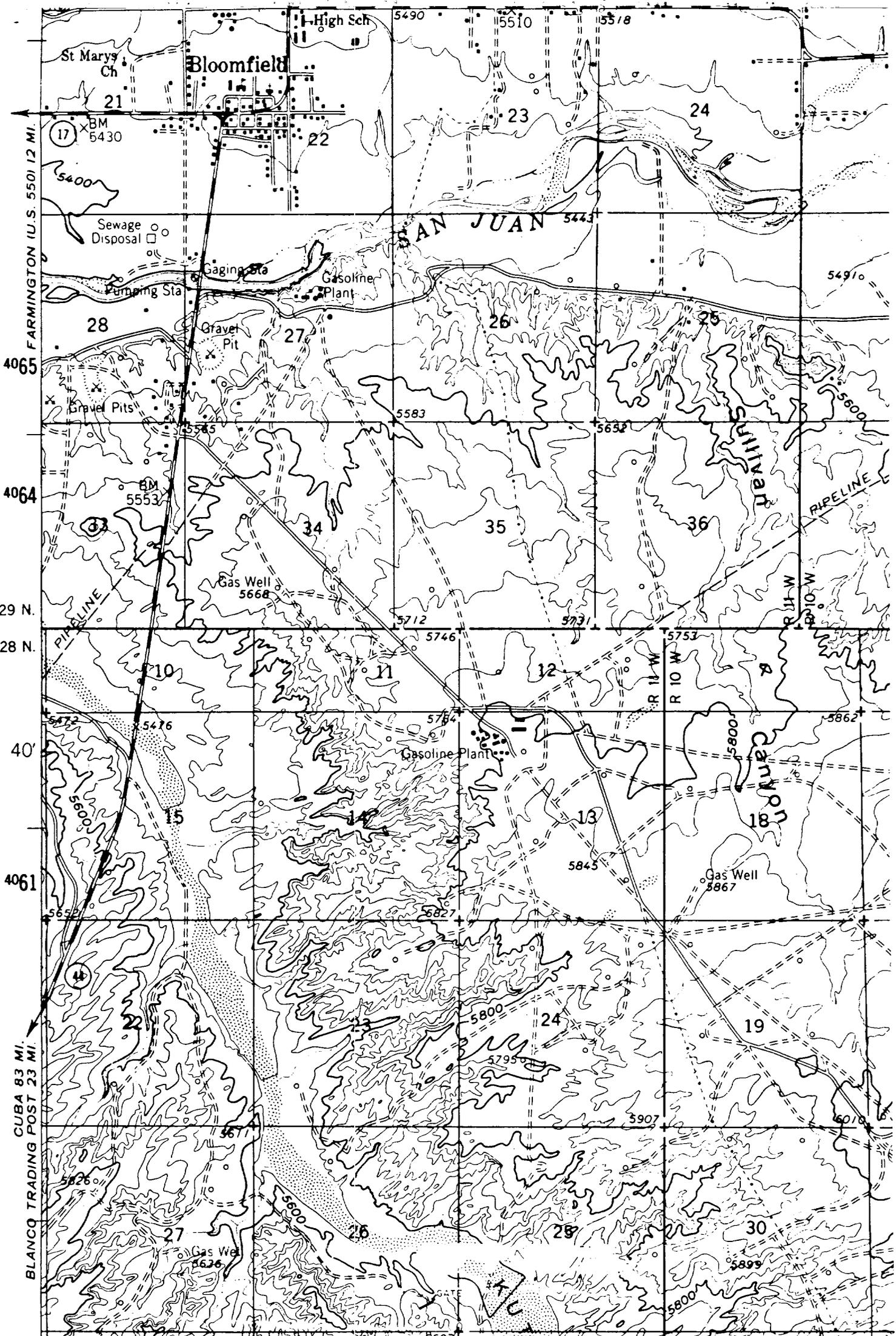
MARATHON OIL COMPANY
CASPER DIVISION

KUTZ CANYON FIELD
SAN JUAN COUNTY, NEW MEXICO
SURFACE FACILITY MAP



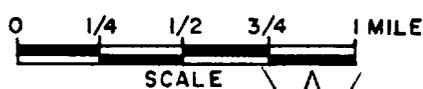
LEGEND

- PRODUCING OIL WELL
- ⊙ PRODUCING GAS WELL
- ⊖ SHUT IN WELL
- ⊕ ABANDONED DRILL HOLE
- ⊗ INJECTION WELL
- FLOW LINES
- 88 TANK AND/OR TREATER INSTALLATIONS



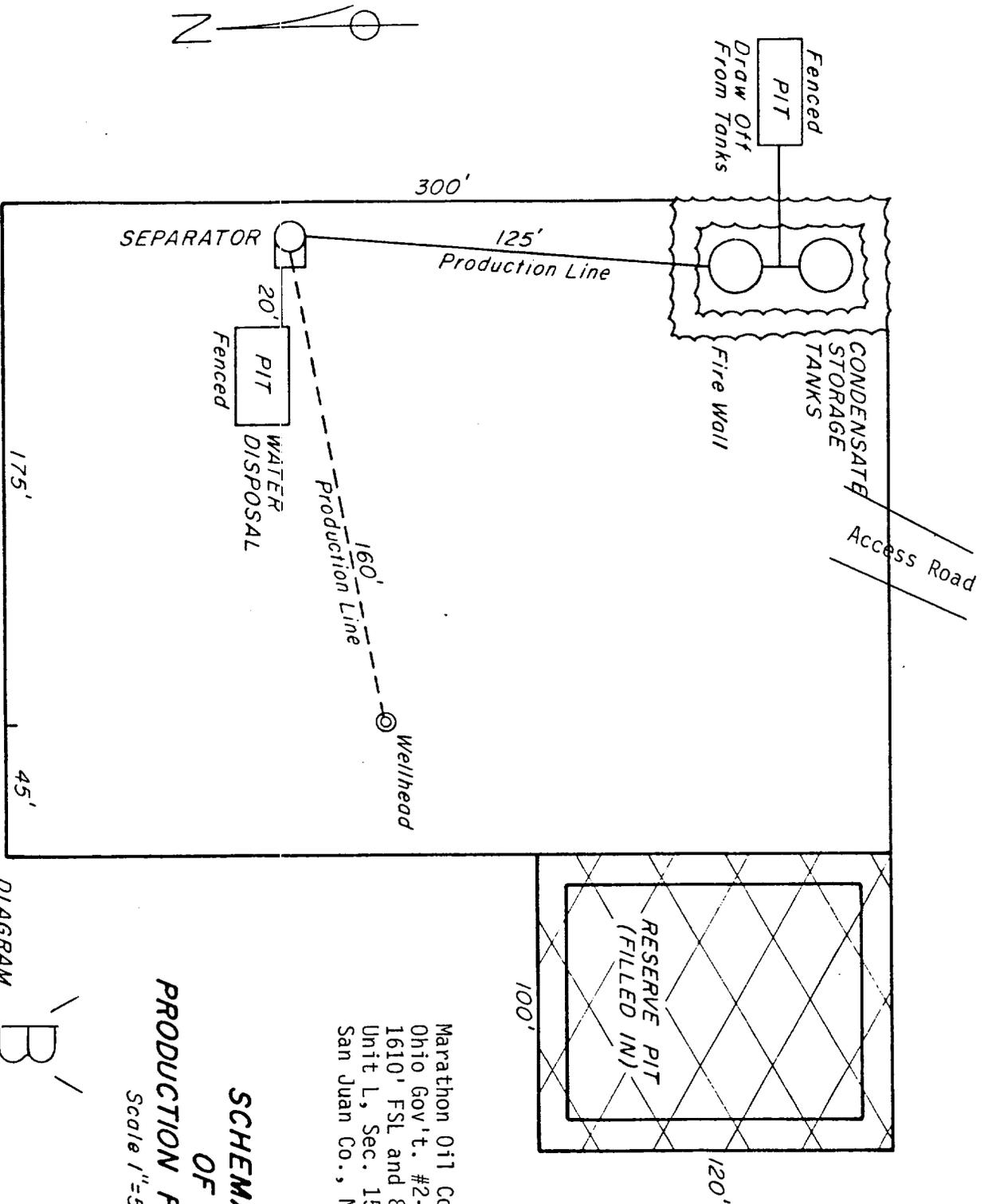
KUTZ CANYON FIELD

SAN JUAN COUNTY, NEW MEXICO



Part of Diagram



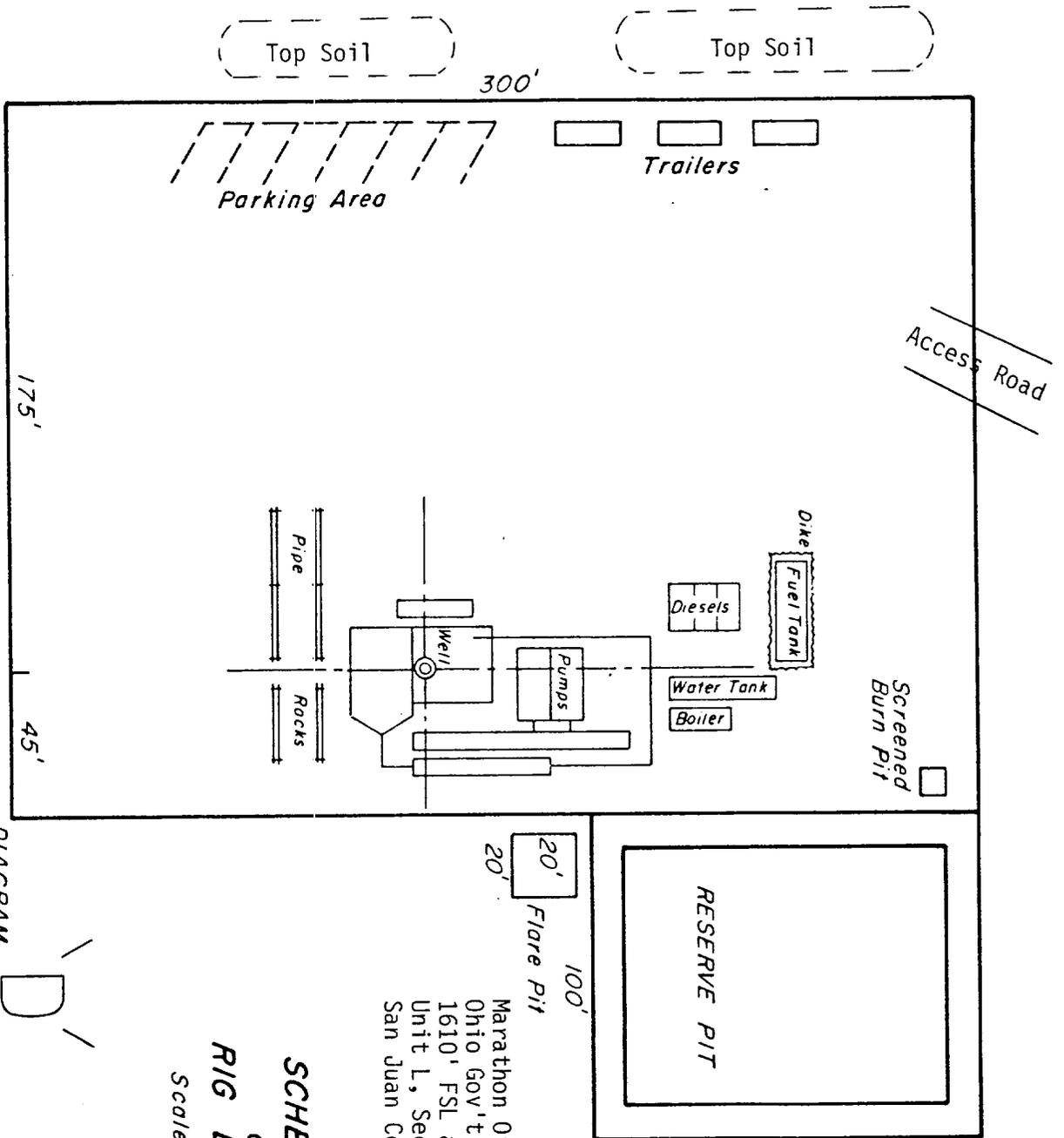


Marathon Oil Company
 Ohio Gov't. #2-E
 1610' FSL and 880' FWL
 Unit L, Sec. 15, T28N, R11W
 San Juan Co., New Mexico

SCHMATIC
OF
PRODUCTION FACILITIES
 Scale 1"=50'

DIAGRAM

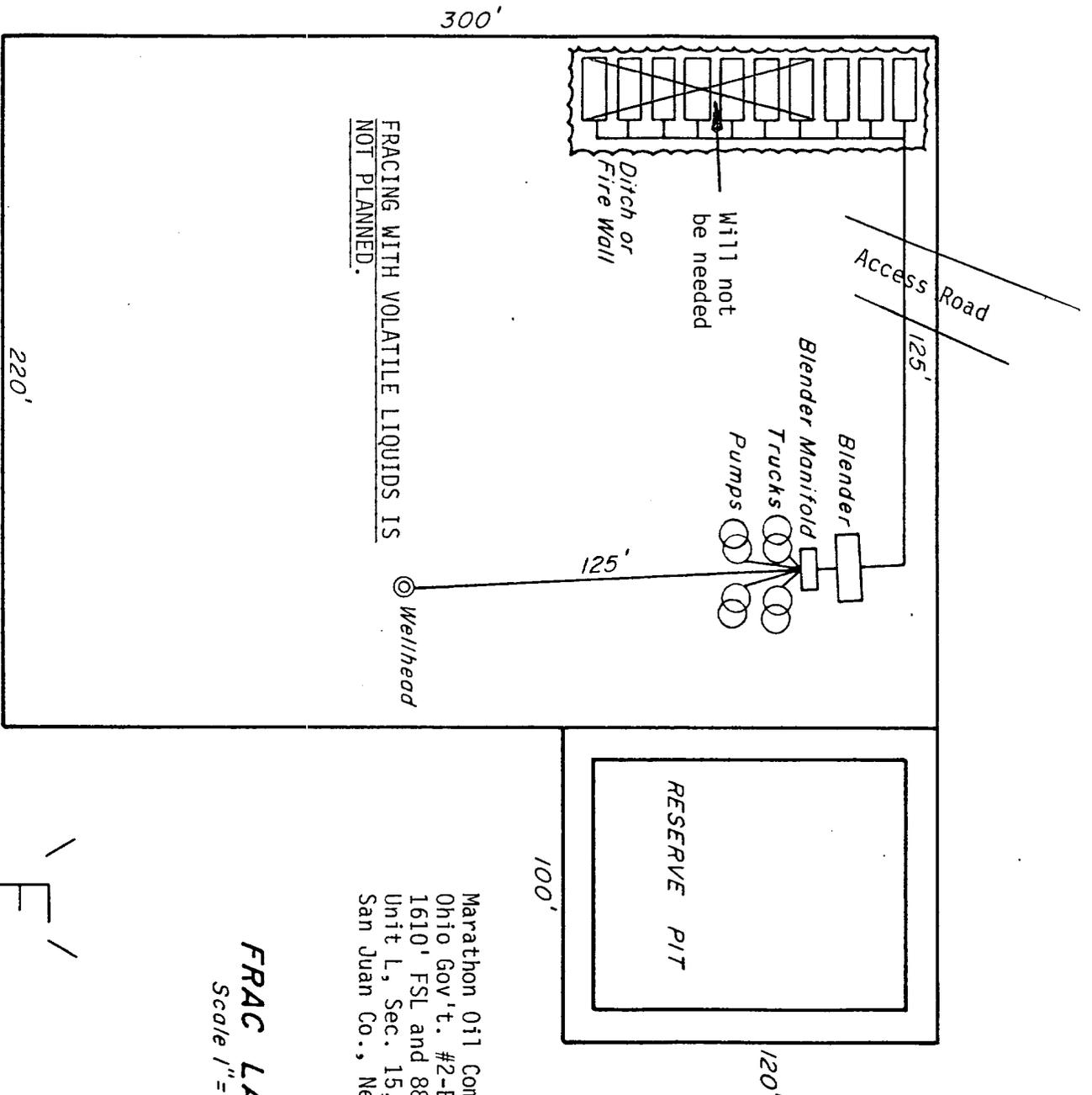
B



Marathon Oil Company
 Ohio Gov't. #2-E
 1610' FSL and 880' FWL
 Unit L, Sec. 15, T28N, R11W
 San Juan Co., New Mexico

SCHMATIC
 of
RIG LAYOUT
 Scale 1" = 50'





Marathon Oil Company
Ohio Gov't. #2-E
1610' FSL and 880' FML
Unit L, Sec. 15, T28N, R11W
San Juan Co., New Mexico

FRAC LAYOUT
Scale 1" = 50'

DIAGRAM