Form 3160-3
(July 1992)

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

FORM APPROVED
OMB NO. 1004-0136
Expires: February 28, 1995

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

N. M. Oil Cons. Division
811 S. 1st St.
Artesia, NM

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

5. LEASE DESIGNATION AND SERIAL NO.: NM 0 705224

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

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

7. UNIT AGREEMENT NAME: Indian Basin

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

8. FARM OR LEASE NAME, WELL NO.: Indian Basin "E" # 4 (6407)

2. NAME OF OPERATOR: Marathon Oil Company (14021)

9. API WELL NO.: 30-015-32007

3. ADDRESS AND TELEPHONE NO.: P.O. Box 552 Midland, TX 79702 — 915-687-8357

10. FIELD AND POOL, OR WILDCAT: Indian Basin Morrow

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 980' FSL & 1930' FWL
At proposed prod. zone: 980' FSL & 1930' FWL

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec.27, T-21-S, R-23-E

12. COUNTY OR PARISH: Eddy — 13. STATE: N.M.

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 15- miles NW of Carlsbad

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
980'	640	640
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
* 726'	9600'	Rotary

21. ELEVATIONS (Show whether DF,RT, GR, etc.): 3945' G.L.

22. APPROX. DATE WORK WILL START*: ASAP

Carlsbad Controlled Water Basin

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12.25"	9-5/8" K-55	36#	1200'	500 sks. to surface
8.750"	7" K-55	23#, 26#	9600'	1240 sks.

Marathon Oil Company is proposing to drill a straight hole Morrow producer to 9600'.

* The Indian Basin "E" # 1 is 726' Northwest of the Indian Basin "E" # 4 proposed location. "E" # 1 located 1650' FSL & 1650' FWL, Unit Letter "K".

NSL

RECEIVED
SEP 2001
OCD - ARTESIA

DECLARED WATER BASIN
CEMENT BEHIND THE 9 5/8"
CASING MUST BE CIRCULATED

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, 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 Jerry Fletcher TITLE Engineer Tech. DATE 4/27/01

(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:

APPROVED BY /S/ JOE G. LARA TITLE ACTING FIELD MANAGER DATE SEP 21 2001

*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.

APPROVAL FOR 1 YEAR

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II
P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
P.O. BOX 2088, SANTA FE, N.M. 87504-2088

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
		Indian Basin Morrow

Property Code	Property Name	Well Number
	INDIAN BASIN "E"	4

OGRID No.	Operator Name	Elevation
14021	MARATHON OIL COMPANY	3945'

Surface Location

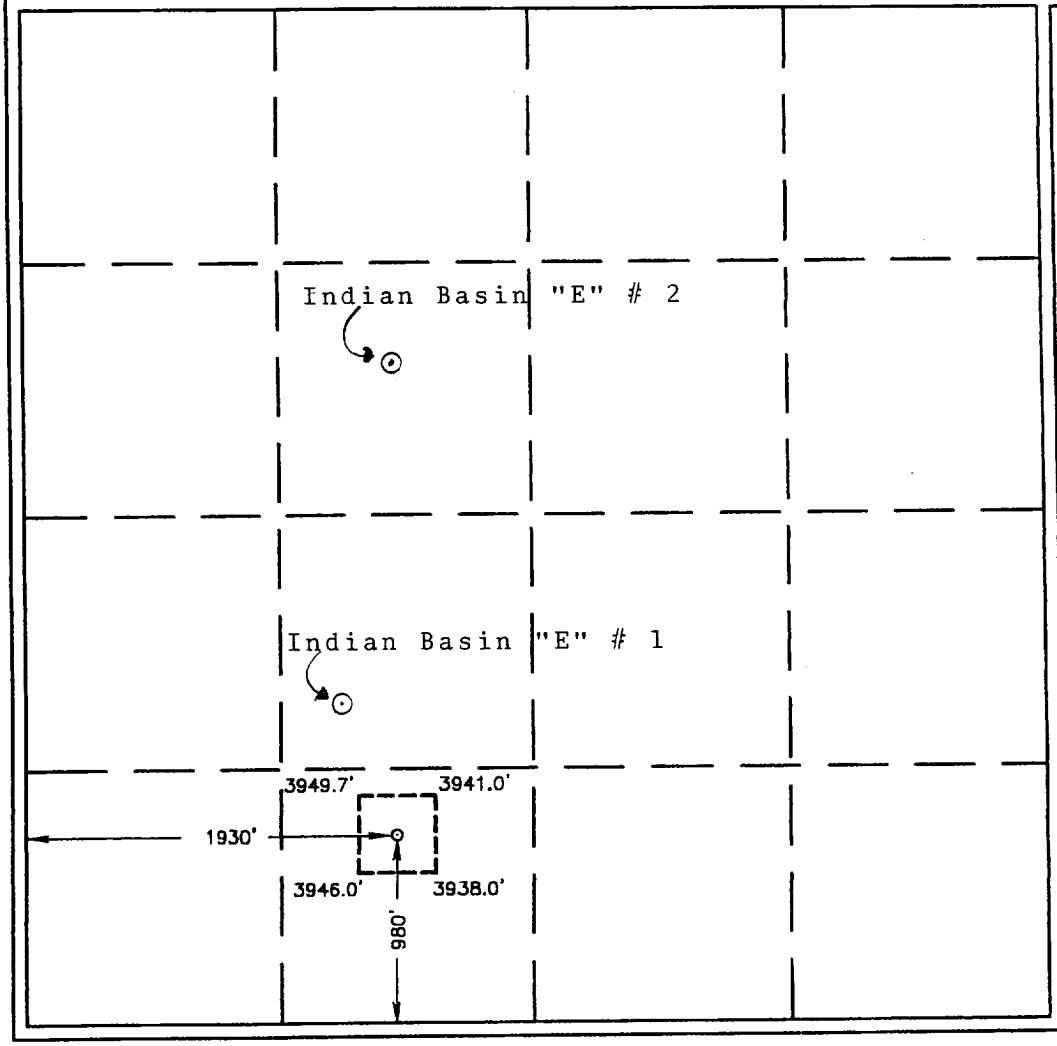
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	27	21-S	23-E		980	SOUTH	1930	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
640			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

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

Signature

Jerry Fletcher
Printed Name

Engineer Tech.
Title

4/24/01
Date

SURVEYOR CERTIFICATION

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 supervison, and that the same is true and correct to the best of my belief.

APRIL 18, 2001
Date Surveyed AWB

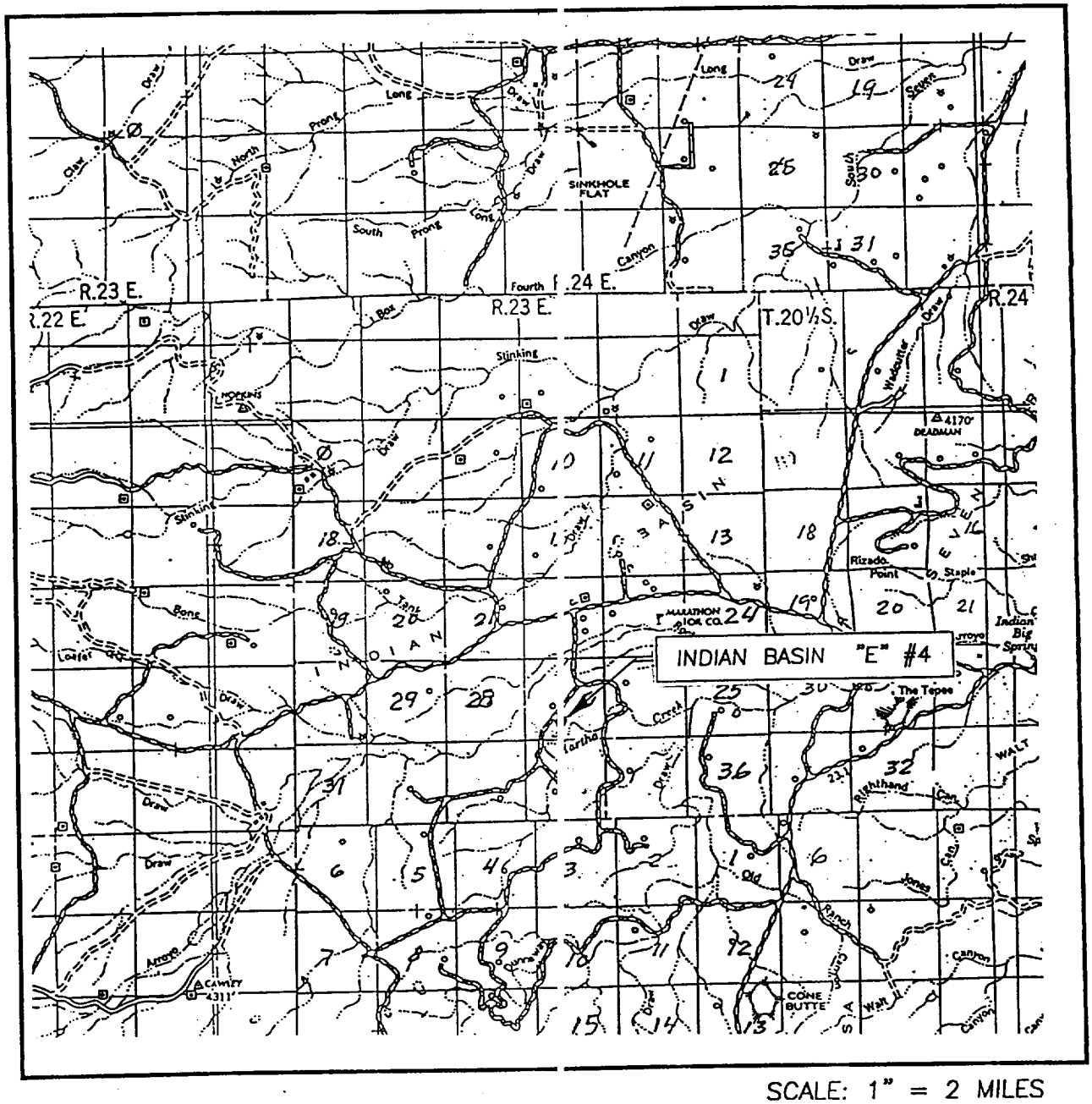
Signature & Seal of Professional Surveyor

Ronald J. Eidson 04/19/01

01-11-0405

Certificate No. RONALD J. EIDSON 3239
GARY EIDSON 12641

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 27 TWP. 21-S RGE. 23-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 980'FSL & 1930'FWL

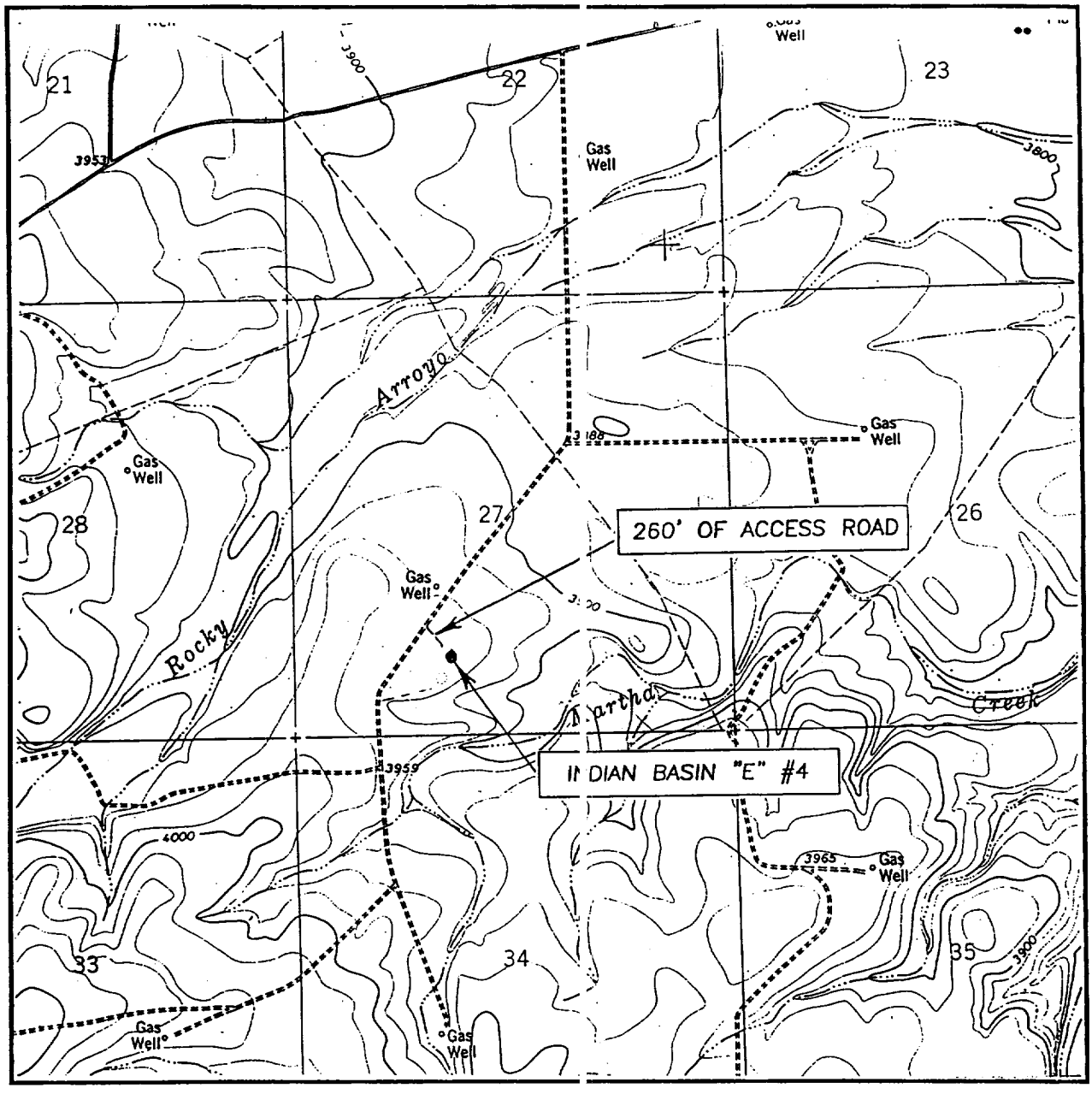
ELEVATION 3945'

OPERATOR MARATHON OIL COMPANY

LEASE INDIAN BASIN "E"

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

LOCATION VERFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: 20'

MARTHA CREEK N.M.

SEC. 27 TWP. 21-S RGE. 23-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 980'FSL & 1930'FWL

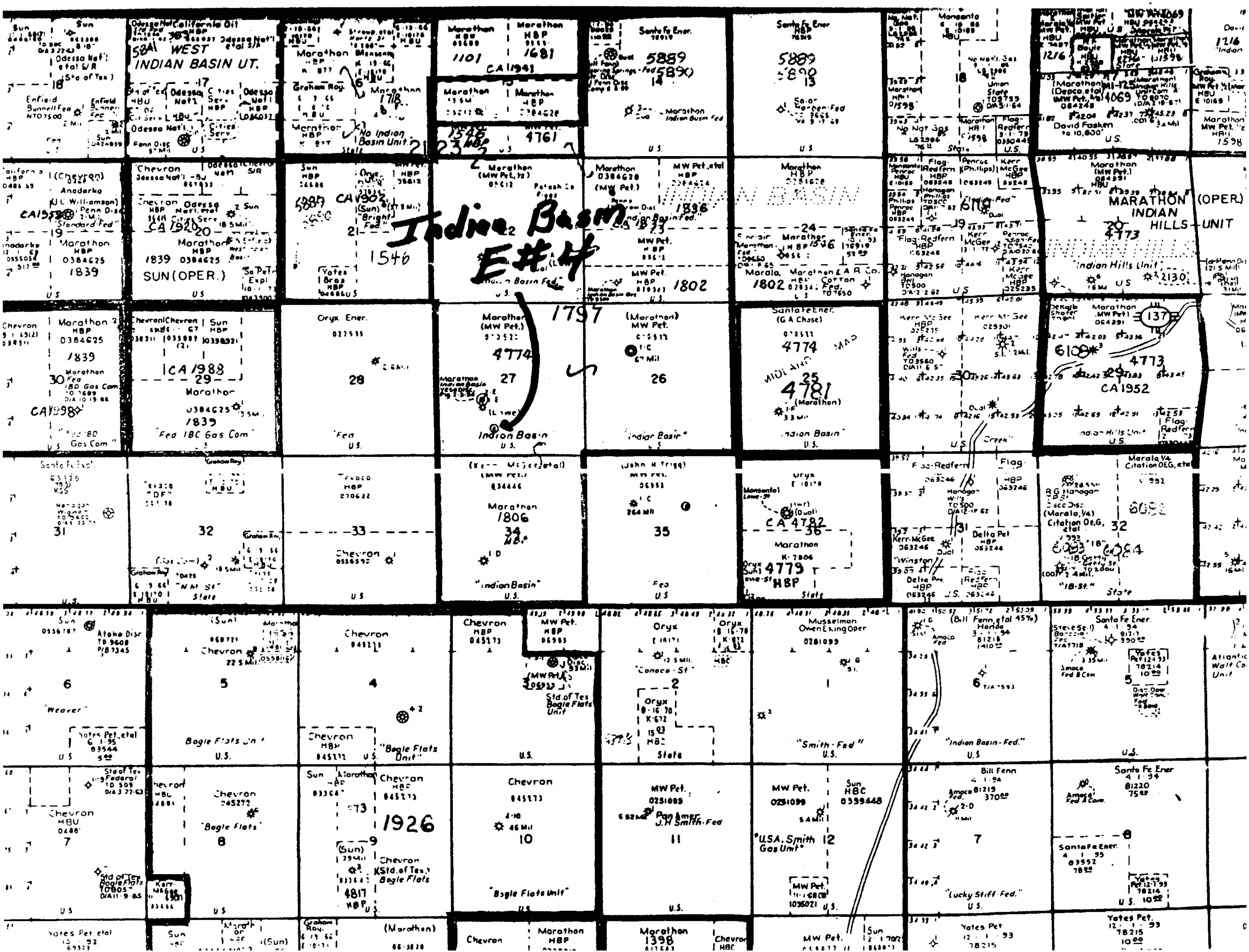
ELEVATION 3945'

OPERATOR MARATHON OIL COMPANY

LEASE INDIAN BASIN "E"

U.S.G.S. TOPOGRAPHIC MAP
MARTHA CREEK N.M.

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



WEST INDIAN BASIN UT.
SUN (OPER.)
MARATHON (OPER) INDIAN HILLS UNIT
"Indian Hills Unit"
INDIAN BASIN
Indian Basin E #4
1797
4774
4781
4773
4761
5889
1681
1101
CA1941
1802
1836
1546
1839
1718
CA1920
CA 1988
CA1952
CA 4782
1806
4779
1926
1398
4817
Fed IBC Gas Com
"Indian Basin"
"Indian Basin-Fed."
"Lucky Stiff Fed."
"Smith-Fed"
"USA Smith Gas Unit"
"Bogle Flats Unit"
"Bogle Flats"
"Weaver"
"Conoco-St"
No Indian Basin Unit
Marathon
Chevron
Oryx
Santa Fe Ener.
Sun
Yates Pet.
Bill Fenn
MW Pet.
Musselman Owen King Oper
Atlantic Wolf Co. Unit
David Fasken
Kerr-McGee
Delta Pet
Odessa Nat'l
Anadarko
Texaco
Atoka Disc
MIDLAND MAP
U.S.
State

130'
RESERVE PIT
130'
H2S Detection Equipment
Wind Direction Indicator
Self Contained Breathing Eq
Briefing Area
MUD LOGGER
PIPE RACKS
CIRCULATING MUD TANKS
PUMPS
SUBSTRUCTURE AND DOGHOUSE
CATWALK
FUEL TANK
WATER TANK
CHEMICAL TOILET
U-Door East- Southeast
210
Access Road Entrance
COMPANY TRAILER
PARKING
300
Prevailing Wind Direction
Southwest
Foot-path for emergency
egress

Thirteen Point Surface Use Plan
MARATHON OIL COMPANY

Indian Basin "E" # 4
Sec. 27,T-21-S, R-23-E
Eddy County, New Mexico

1. Existing Roads: Refer to Vicinity Lease Map.

   a. The proposed wellsite is staked and the surveyor's plat is attached.

   b. To reach the location from Carlsbad, New Mexico: Follow Hwy. 285 North of Carlsbad 11 miles. Turn left on (NM)137. Go 6 miles West. Turn right on Marathon Road (401). Follow (401) 5.1 miles to lease road on South side of road. Turn South follow lease road .8 mile. Turn Right @ "Y" and follow .3 mile to new access road on the East side of road, follow into location.

   c. Existing roads within a one-mile radius (refer to Vicinity Lease Map).

   d. The existing road will be maintained as necessary to provide access during the drilling operation.

2. Planned Access Road: Refer to Vicinity Lease Map.

   Access will be by existing State roads and existing lease roads. Construction plans will require blading and rolling the road and pad. The access road enters the drilling pad on the Southwest corner. The drilling location will have the rig V-door facing East- Southeast.

3. Location of Existing Wells: See Vicinity Lease Map.

4. Location of Existing and Proposed Production Facilities within a one-mile radius:

   a. Existing: There are seven oil and gas wells operated by Marathon and Kerr McGee within a one-mile radius of the proposed location. These locations have production facilities including separators, condensate, oil, water storage tanks. Marathon and Kerr McGee operate a variety of dehydrators, meter runs, and several gathering lines in the one-mile radius.

   b. New Facilities : No new facilities are proposed at this time. The power line and flow line will be permitted on a separate action.

   c. Rehabilitation of disturbed areas no longer needed for operations will be accomplished by grading, leveling and seeding as recommended.

5. Location and Type of Water Supply:

   a. Source: Indian Basin Gas Plant, NE/4 Sec. 23, T-21-S, R-23-E.

   b. The water will be transported by a trucking contractor. No new construction will be required on/along the water route. If Fas-line is used it will be placed along existing roads and or ROW's

   c. No water well will be drilled on this location.

6. Source of Construction Materials:

   a. Construction materials may be obtained from the construction site.

   b. If production is obtained, native materials will be used on the location and for installation of production facilities.

   c. On-site inspection may dictate any changes in location construction.

7. Methods of Handling Waste Material Disposal:

   a. Cuttings - will be deposited in the reserve pit.

   b. Drilling fluids - contained in reserve pit and allowed to evaporate. Free water will be removed and transported to an approved disposal site to accelerate pit drying.

   c. Produced fluids - none anticipated.

   d. A portable chemical toilet will be provided.

   e. Garbage and other waste material - garbage and trash will be stored in a receptacle on location and periodically hauled to an approved sanitary landfill.

   f. After the rig moves out, all materials not necessary for operations will be removed. Pits will be backfilled and leveled. The location will be cleaned of all trash and debris.

8. Ancillary Facilities: Camp facilities will not be required. Portable trailers will be on location to house a company drilling foreman and contract toolpusher.

9. Wellsite Layout:

   a. The wellpad layout shows the drillsite layout as staked. Topsoil will be stockpiled per specifications.

   b. The reserve pit will be fenced on three sides before drilling begins. The fourth side will be fenced when the drilling rig leaves location.

   c. The reserve pit will be lined (8 mil material).

10. Plans for Restoration of the Surface:

   a. Backfilling, leveling, and contouring are planned as soon as all pits have dried. Waste disposal and spoiled materials will be hauled away immediately after drilling is completed. If production is obtained, the unused area will be restored as soon as possible.

b. The soil banked material will be spread over the area. Revegetation will be accomplished by planting mixed grasses as per formula provided by the BLM. Revegetation is recommended for road area, as well as around the drill pad.

c. The reserve pit will be fenced during drilling operations. Fencing will be maintained until leveling and cleanup are accomplished.

d. If any oil is in the pits and is not immediately removed after operations cease, the pit containing the oil or other adverse substances will be flagged overhead or covered with mesh.

e. The rehabilitation operations will begin after the completion rig is removed. Removal of oil or other adverse substances will begin immediately or area will be flagged and fenced. Other cleanup will be done as needed. Planting and revegetation will be done between July 15 and September 15.

f. All efforts will be made to minimize surface disturbances and protect the visual resources along the scenic byway.

11. Other Information:

a. There are no significant archaeological or cultural sites visible in the area of disturbance. A cultural resource survey was performed by Archaeological Consultants Inc. of Roswell.

b. General topography: Shown on Vicinity Lease Map. The terrain at the wellsite is gently rolling hills. Vegetation is primarily sage brush and natural grasses.

c. Animal life: Prairie dogs, domestic livestock, rabbits and native rodents and predators.

d. Dwellings (nearest): Approximately 2 miles.

e. General location: Approximately 15 miles Northwest of Carlsbad, New Mexico.

f. Drainage: Internal

g. Surface Owner: The surface is owned by the Bureau of Land Management.

h. Due to proximity of the location and nearby drainage, Marathon will make every effort to minimize surface disturbance. Please see the location pad and reserve pit dimensions..

12. Operator Representatives:

R. J. Longmire
Drilling, Completion, & Workover Superintendent
P. O. Box 552
Midland, TX 79702
800/351-1417
915/682-1626
915/687-8344 (Direct Line)
915/499-7964 (Pager)

13. Certification:

I hereby certify that I, or someone under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions that presently exist; that the statements made in this plan are, to the best of my knowledge and belief, 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.

4/27/01
Date

D. R Hall for
R. J. Longmire

DRILLING PROGRAM
MARATHON OIL COMPANY
Indian Basin "E" # 4

1. Estimated KB Elevation: 3961' KB

FORMATION	TOP MEASURED	TOP SUBSEA	BASE MEASURED	BASE SUBSEA	FLUID CONTENT
Queen	Surface	+3961'	535'	+3426'	water
San Andres	535'	+3426'	2073'	+1888'	water
Glorietta	2073'	+1888'	2220'	+1741'	
Yeso	2220	+1741'	3710'	-251'	
Bone Spring	3710'	-251'	5860	-1899'	oil gas
Tubb	5860	- 1899'	6010'	-2049'	
Wolfcamp	6010'	-2049'	7385'	-3424'	oil gas
Cisco	7385'	-3424'	7550'	-3589'	
Canyon	7550'	-3589'	8665'	-4704 '	
Atoka	8665'	-4704'	8947'	-4986'	gas
Morrow	8947	-4986'	9600'	-5639'	gas
T.D.	**9600**	**-5639'**	**9600 '**	**-5639'**	

Formation	PSIG	PPG EMW	DEG f	PPM	(obj, marker, etc.)
Bone Springs	1210	8.5		500	marker
Wolfcamp	1680	8.5		5000	marker
Morrow	3460	9.2		0	Objective Pay

2. See (1) above.
If any unexpected water or mineral bearing zones are encountered, they will be reported, evaluated, and protected as circumstances and regulations require.

3. **Pressure Control Equipment**:
4.

9-5/8" Surface: 11" 3M annular tested to 200 psi /2000 psi, 11" 3M dual rams, choke manifold and mud cross, tested to 300# psi/3000#.psi

Auxiliary Equipment:

Surface Hole: Annular or rotating head w/air rig.

Intermediate Hole: N/A

Production Hole: Flow indicator, PVT, H_2S Sensors, air packs, stroke counter, rotating head.

BOP systems will be consistent with API RP 53. Blowout preventers will be installed and pressure tested prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. Casing will be pressure tested before drilling casing cement plugs.

Upper and lower kelly cocks with valve handle and safety valve and subs to fit all drillstring connections in use will be available on rig floor.

Test Frequency

1. When installed.
2. Anytime a pressure seal is broken (test confined only to affected equipment).
3. At least every 20 days.
4. Blind and pipe rams shall be activated each trip but not more than once/day.

4. Casing and Cement Program:

---DEPTH--- FROM	TO	SECTION LENGTH	HOLE SIZE	CSG SIZE	WT. PPF	GRADE	THREADS COUPLINGS	NEW USED
0	1200'	1200	12.25"	9-5/8"	36.00#	K-55	8rd, STC	New
0	4800'	4800'	8.750"	7.00"	23.00#	K-55	8rd, LT&C	New
4800'	9600'	4800 '	8.750"	7.00"	26.00	K-55	8rd, LT&C	New

Casing String	DV Depth	Stg.	Lead Tail	Amt SXS	Type Cement	Yield CF/SX	Wt. PPG.	TOC	Additives
9.625"	none	1	L	350	"C"	2.02	12.4	surf.	5# /Sk.Gilsonite,2% Cacl1/4# cello
9.625"	none		T	150	"C Neat	1.34	14.8	800'	2% Cacl, ¼# cello
7.0"	6300'	1	L	340	Prem.	1.44	13.0	5600'	Foamers, N2
7.0"		2	L	840	Interfill "C"	2.47	11.9		1/4pps Cello,3pps Gilsonite,0.2% Halad 322
7.0		2	T	100	"C" Neat	1.32	14.8	6000'	N/A

Each stage will be preceded by an appropriate mud flush. Actual production hole volumes will be based on caliper volume plus 25% excess

Centralizer Program:
9-5/8"Conventional centralizers. Bottom 3 joints and every fourth joint to surface.

7.0" Conventional centralizers middle of 1st joint, then every joint to 7500', and 1 cent. Every 4th joint thereafter to 9600'

5. Mud Program

---DEPTH---			WEIGHT		WL		VISUAL
FROM	TO	MUD TYPE	(PPG)	VIS	CC	ADDITIVES	MONTR.
0	1200'	fresh water	8.3	28	N/A	Gel, Lime	Reserve
1200'	7800'	fresh	8.5	28-32	N/C	Gel, caustic, H_2S Scavenger	Reserve
7800'	8200'	Cut Brine	9.0	32-36	>20	Gel, Starch, Caustic	Steel Pits
8200'	9600'	Cut Brine	9.0	32-36	> 20	Gel, Starch, Caustic	Steel Pits

Sufficient quantities of additives will be on location to maintain above mud properties for any anticipated well conditions.

6. Logging, Testing & Coring Programs:

LOG/TEST/CORE/MUDLOG/OTHER	--INTERVAL- FROM	TO	REMARKS
DLL/MSFL/GR/CNL/LDT/CAL	TD	5000'	
LDT/CNL/GR/CAL	TD	surf casing	
MUD LOGGER	6000'	TD	ROP, Lithology, Gas Analysis, Chromatograph
NO CORES OR DST'S			

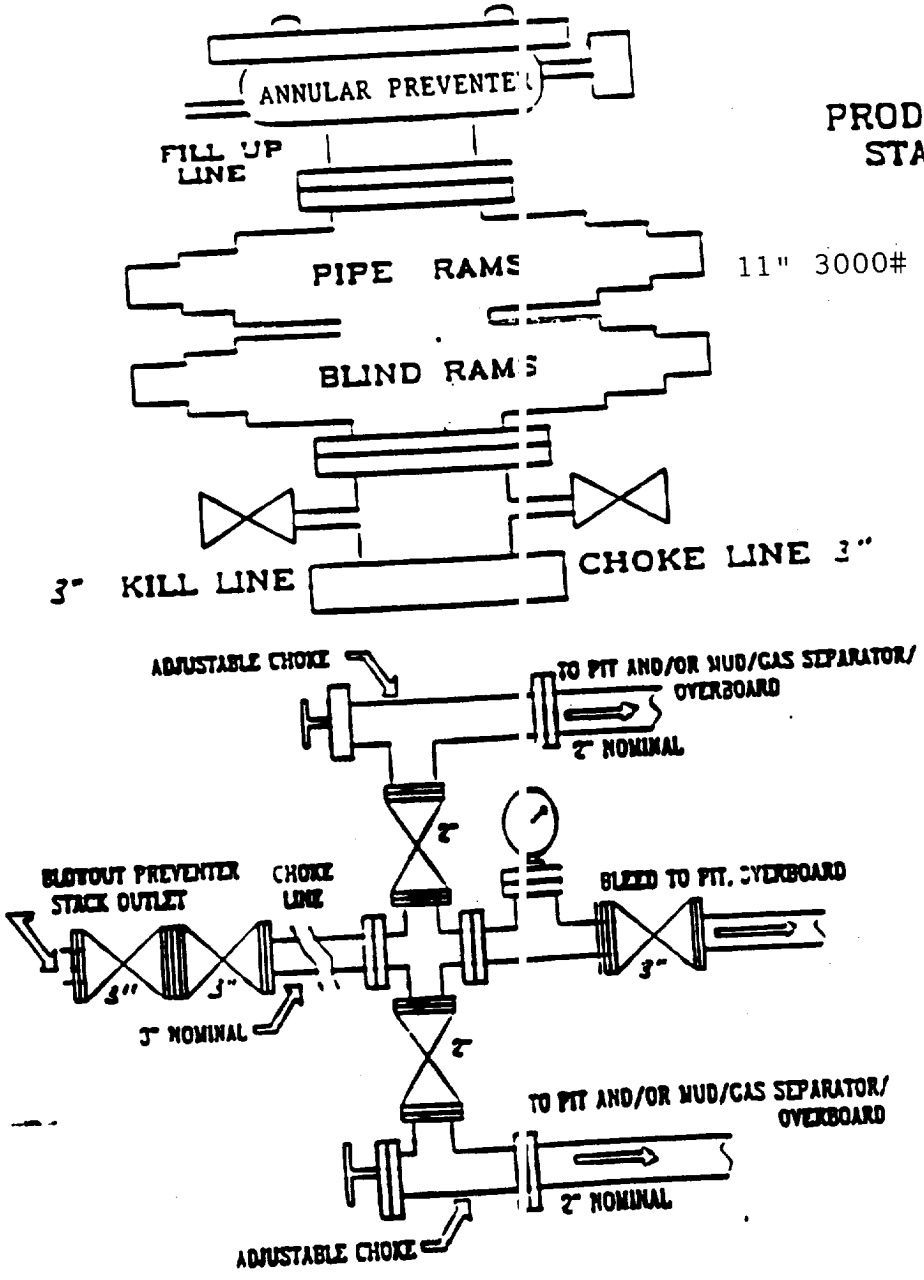
7. Abnormal Pressures, Temperatures or Potentia Hazards:

None anticipated. Possible H_2S in Cisco & Upper Penn. See H_2S Drilling Operations Plan.

8. Other Information:

Anticipated Starting Date: As soon as possible.

Duration of Well: drilling - 25 days, completion 10 days.



PRODUCTION STACK

11" 3000#

MARATHON OIL COMPANY

H2S DRILLING OPERATIONS PLAN

I. HYDROGEN SULFIDE TRAINING

All contractors and subcontractors employed by Marathon Oil Company will receive or have received training from a qualified instructor within the last twelve months in the following areas prior to commencing drilling operations on this well.

1. The hazards and characteristics of hydrogen sulfide (H2S)
2. Safety precautions
3. Operations of safety equipment and life support systems

In addition, contractor supervisory personnel will be trained or prepared in the following areas:

1. The effect of H2S on metal components in the system. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-down procedures when drilling or reworking a well, blowout prevention and well control procedures, if the nature of work performed involves these items.
3. The contents and requirements of the contingency plan when such plan is required.

All personnel will be required to carry documentation of the above training on their person.

II. H2S EQUIPMENT AND SYSTEMS

1. Safety Equipment

The following safety equipment will be on location.

A. Wind direction indicators as seen in attached diagram.

B. Automatic H2S detection alarm equipment (both audio and visual).

C. Clearly visible warning signs as seen on the attached diagram. Signs will use the words "POISON GAS' and "CAUTION" with a strong color contrast.

D. Protective breathing equipment will be located in the dog house and at briefing areas as seen in the attached diagram.

2. WELL CONTROL SYSTEMS

A. Blowout Prevention Equipment

Equipment includes but is not limited to:

a. pipe rams to accomodate all pipe sizes
b. blind rams
c. choke manifold
d. closing unit

Auxillary equipment added as appropriate includes:

a. annular preventor ✓
b. rotating head ✓
c. mud- gas separator ✓
d. flare line and means of ignition ✓
e. remote operated choke ✓

B. Communication

The rig contractor will be required to have two-way communication capability. Marathon Oil Company will have either land-line or mobile telephone capabilities.

C. Mud Program

The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight, safe drilling practices, and the use of H2S scavengers when appropriate will minimize hazards when penetrating H2S bearing zones.

D. Drill Stem Test intervals are as follows:

DST No. 1 _____ft to _____ ft.
DST No. 2 _____ft to _____ ft.
DST No. 3 _____ft. to _____ ft.

Drill Stem Testing Safety Rules are attached.

III. WELL SITE DIAGRAM

A complete well site diagram including the following information is attached.

1. Rig orientation
2. Terrain
3. Briefing areas
4. Ingress and egress
5. Pits and flare lines
6. Caution and danger signs
7. Wind indicators and prevailing wind direction