

Bureau of Land Management  
Received  
AUG - 8 2000  
BUREAU OF LAND MANAGEMENT

UNITED STATES DEPARTMENT OF THE INTERIOR  
N. M. Oil Conservation Division  
811 S. 1st  
ARTESIA, NM 88210-2834

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

**APPLICATION FOR PERMIT TO DRILL OR DEEPEN**

1a. TYPE OF WORK: Carlsbad, N.M.

b. TYPE OF WELL:  
OIL WELL ☐ GAS WELL ☒ OTHER ☐  
SINGLE ZONE ☒ MULTIPLE ZONE ☐

2. NAME OF OPERATOR: Marathon Oil Company

3. ADDRESS AND TELEPHONE NO.:  
P.O. Box 552 Midland, TX 79702 1-800-351-1417

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.):  
At surface: 415' FNL & 1201' FWL  
At proposed prod. zone: Same As Above Unit A

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE:  
15-miles N.W. of Carlsbad N.M.

15. DISTANCE FROM PROPOSED\* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 415'

18. DISTANCE FROM PROPOSED LOCATION\* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. \* 3142'

19. PROPOSED DEPTH: 8200'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.):  
G.L. 4245'

22. APPROX. DATE WORK WILL START\*: ASAP

5. LEASE DESIGNATION AND SERIAL NO.: 033647A

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

7. UNIT AGREEMENT NAME: 21068

8. FARM OR LEASE NAME, WELL NO.: Mershon Gas Com. # 2

9. API WELL NO.: 30-015-31404

10. FIELD AND POOL, OR WILDCAT: Indian Basin Field  
Upper Perm.

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 21, T-22-S, R-23-E

12. COUNTY OR PARISH: Eddy

13. STATE: N.M.

23. PROPOSED CASING AND CEMENTING PROGRAM

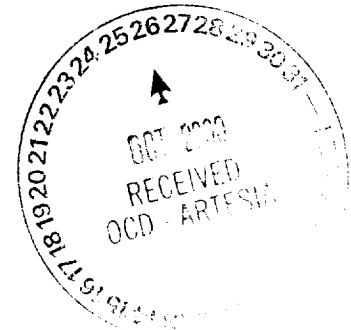
SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12.25"	9-5/8" K-55	36#	1200'	785 sks. to surface
8.75"	7" K-55	23# & 26#	8200'	1400 sks. to surface

Propose to drill A Upper Perm. Gas Well.

NSL-

OCD-

Operator to notify NMOCD time of spud & time to witness 9 5/8" casing



\* Distance from Mershon Gas Com. # 2 to the Mershon Gas Com. # 1 @ 990' FNL & 990' FEL Sec. 21, T-22-S, R-23-E is 3142'.

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 7-31-00  
(This space for Federal or State office use)

PERMIT NO. \_\_\_\_\_ APPROVAL DATE \_\_\_\_\_

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

CONDITIONS OF APPROVAL, IF ANY: AS/LARRY D. BRAY

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE 007 2000

\*See Instructions On Reverse Side

Assistant Field Manager,  
Lands And Minerals

APPROVED FOR 1 YEAR

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.

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

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

DISTRICT III  
1000 Rio Braxos 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.

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

OIL CONSERVATION DIVISION

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
		Indian Basin Upper Penn.
Property Code	Property Name	Well Number
	MERSHON GAS COM	2
OGRID No.	Operator Name	Elevation
14021	MARATHON OIL COMPANY	4245

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
XA	21	22 S	23 E		415	NORTH	1201	WEST	EDDY

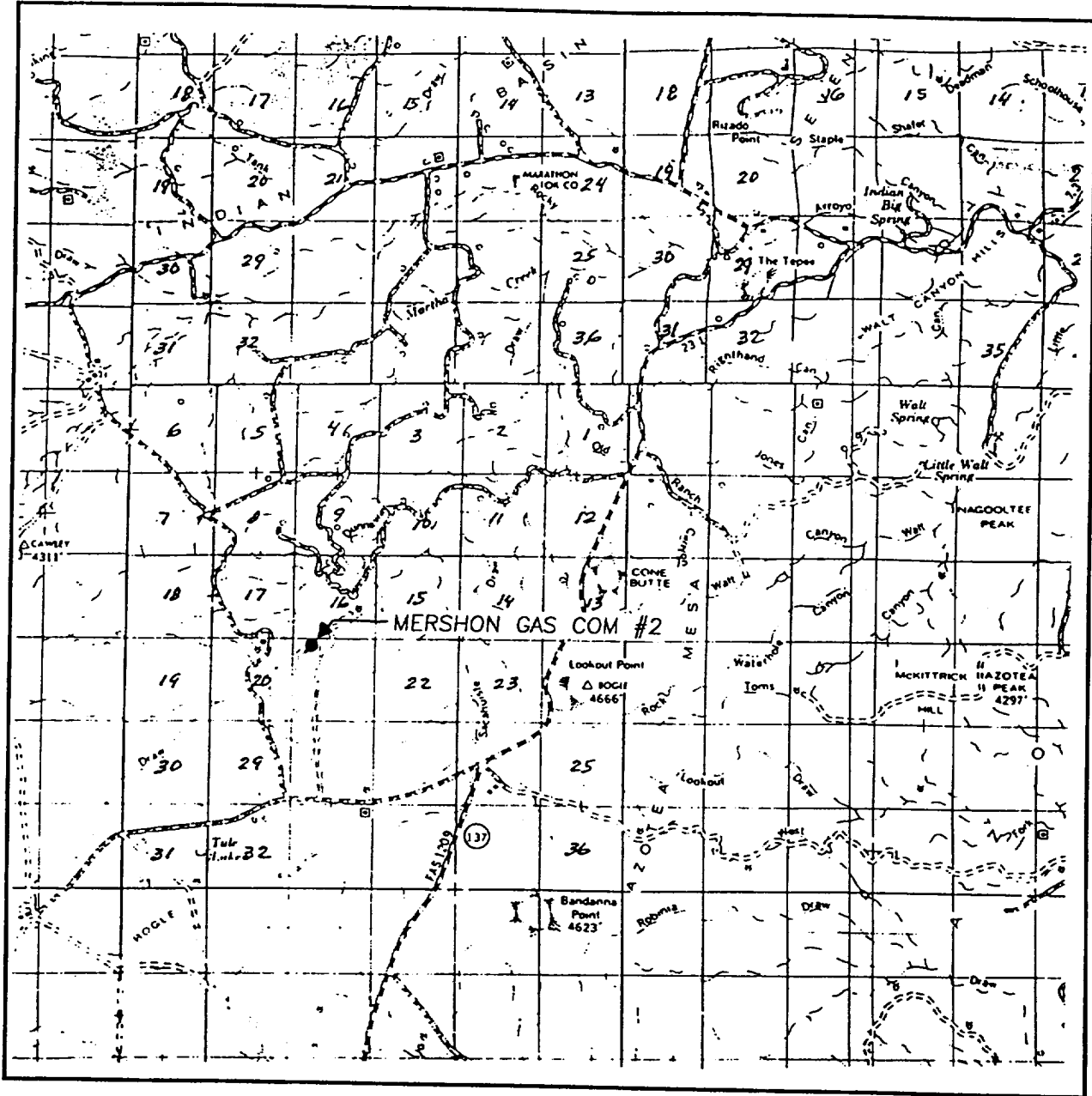
Bottom Hole Location If Different From Surface

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.						
320 N/2									

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

	<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p></p> <p>Signature</p> <p>Jerry Fletcher</p> <p>Printed Name</p> <p>Engineer Tech.</p> <p>Title</p> <p>7-26-00</p> <p>Date</p>
	<p><b>SURVEYOR CERTIFICATION</b></p> <p>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 belief.</p> <p>JUNE 1, 2000</p> <p>Date Surveyed</p> <p>LMP</p> <p>Signature &amp; Seal of Professional Surveyor</p> <p></p> <p>90-11-0689</p> <p>Certificate No. RONALD J. EDSON 3239 GARY EDSON 12641 MACON-McDONALD 12185</p>

# VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 21 TWP. 22 RGE. 23

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 415' FNL & 1201' FWL

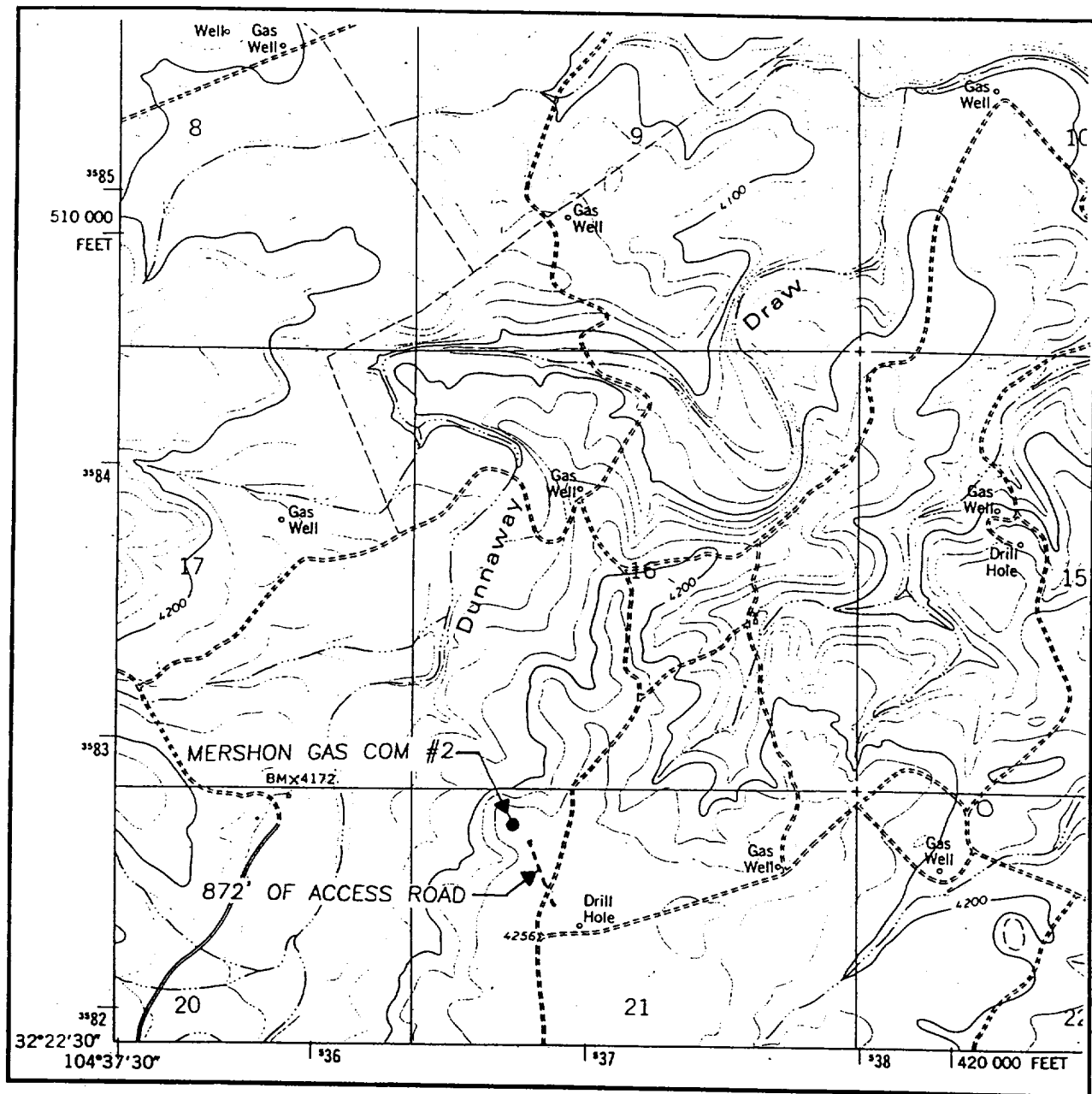
ELEVATION 4245

OPERATOR MARATHON OIL CO.

LEASE MERSON GAS COM

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

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
MARTHA CREEK, N.M. - 20'

SEC. 21 TWP. 22 RGE. 23

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 415' FNL & 1201' FWL

ELEVATION 4245

OPERATOR MARATHON OIL CO.

LEASE MERSHON GAS COM

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

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

**Thirteen Point Surface Use Plan**  
**MARATHON OIL COMPANY**

**Mershon Gas Com. # 2**  
**Sec. 29, 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. Take left "Y" at Marathon Road and Hwy. 137, Follow 8.8 miles to CR-405 on the right. Turn right travel 2-miles to lease road on the right.Go 1.7 miles to new access road on the left, then 872' 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.

A new 872" access road will be built into location . 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 a V-door facing east.

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 several oil and gas wells operated by Marathon , Kerr McGee, Texaco, and Chevron 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, Texaco and Chevron 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 well will be evaluated before construction of any new facilities.
- 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.
- c. No water well will be drilled on this location.

**A. P. D. (cont.)**  
**Thirteen Point Surface Use Plan**  
**Mershon Gas Com. # 2**

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.

**A. P. D. (cont.)**  
**Thirteen Point Surface Use Plan**  
**Mershon Gas Com. # 2**

- 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

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.

A. P. D. (cont.)  
Thirteen Point Surface Use Plan  
Mershon Gas Com. # 2

AUGUST 1, 2000  
Date

R. J. Longmire  
R. J. Longmire

**DRILLING PROGRAM**  
**MARATHON OIL COMPANY**  
**Mershon Gas Com. # 2**

1. Estimated KB Elevation: 4261' KB

<u>FORMATION</u>	<u>-----TOP-----</u>		<u>-----BASE-----</u>		<u>FLUID CONTENT</u>
	<u>MEASURED</u>	<u>SUBSEA</u>	<u>MEASURED</u>	<u>SUBSEA</u>	
Queen	Surface	+4261'	650'	+3611'	water
San Andres	650'	+3611'	2250'	+2011'	water
Glorietta	2250'	+2011'	2355'	+1906'	
Delaware	3300'	+961'	4300'	- 39	
Bone Spring	4300'	-39'	5950'	-1689'	oil gas
Wolfcamp	5950'	-1689'	7520'	-3259'	oil gas
B/Permian Shale	7520'	-3259'	7530'	-3269'	
U. Penn	7530'	-3269'	8200'	-3939'	gas, oil, water

<u>FORMATION</u>	<u>---EST PSIG</u>	<u>SBHP--- PPG EMW</u>	<u>EST DEG f</u>	<u>SBHT PPM</u>	<u>H2S</u>	<u>---SIGNIFICANCE--- (obj, marker, etc.)</u>
Bone Springs	1210	8.5			500	marker
Wolfcamp	1680	9.0				marker
B/Permian Shale	1810	9.0				objective pay
U. Penn	2050	9.0			5000	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#/2000#, 11" 3M dual rams, choke manifold and mud cross, tested to 200#/2000#.

Auxiliary Equipment:

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

Intermediate Hole: N/A

Production Hole: Flow indicator, PVT, H<sub>2</sub>S Sensors, air packs, stroke counter, rotating head.

BOP systems will be consistent with API RP 53. Blowout preventers will be installed and 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. Preventers and 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.

**A. P. D. (cont.)**  
**Thirteen Point Surface Use . . . an**  
**Mershon Gas Com. # 2**  
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---		SECTION		HOLE	CSG	WT.		THREADS		NEW
FROM	TO	LENGTH		SIZE	SIZE	PPF	GRADE	COUPLINGS		USED
0	1200'	1200'		12.25"	9-5/8"	36#	K-55	8rd, STC		New
0	4800'	4800'		8.75"	7-0"	23#	K-55	8rd, LT&C		New
4800'	8200'	3400'		8.75"	7-0"	26#	K-55	8RD LT&C		NEW
Casing	DV		Lead	Amt	Type		Yield	Wt.		
String	Depth	Stg.	Tail	SXS	Cement		CF/SX	PPG.	TOC	Additives
9-5/8"	none	1	L	100	Thix-set		1.52	14.0	surf.	1.0% thix-set A
9-5/8"		1	T	485	prem.p.		2.02	14.8	surf	2% cacl;.5lb/Flocele
9-5/8"			T	200	prem.p.		1.34	14.8	surf	2% cacl
7"	5400'	1	L	250	"H" Foamed		2.13	9.2	6400	Foamed N2
7"		1	T	350	"H" Foamed		1.44	13.0	7000'	Foamed N2
7"		2	L	700	Interfill "C"		2.47	14.0	Surf.	Flocele 1/4#/sk
7"		2	T	100	"C" Neat		1.32	14.8	5900'	5# gilsonite / sk.

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

**A. P. D. (cont.)**  
**Thirteen Point Surface Use**  
**Mershon Gas Com.# 2**

Centralizer Program:

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

7" Conventional centralizers middle of 1<sup>st</sup> joint, then every joint to 7500', and 1 cent. Every 4<sup>th</sup> joint thereafter to **8200'**

5. Mud Program

<u>---DEPTH---</u>		<u>MUD TYPE</u>	<u>WEIGHT</u>		<u>WL</u>		<u>ADDITIVES</u>	<u>VISUAL MONTR.</u>
<u>FROM</u>	<u>TO</u>		<u>(PPG)</u>	<u>VIS</u>	<u>CC</u>			
0	1200'	fresh water	8.3	28	N/A		Gel, Lime	Reserve
1200'	5000'	fresh	8.5	28-32	N/C		Gel, caustic, H <sub>2</sub> S Scavenger	Reserve
5000'	7000'	fresh	8.5	32-36	N/C		Gel, caustic, H <sub>2</sub> S Scavenger	Reserve
7000'	8200'	fresh	8.5	32-36	<20		Gel, caustic, H <sub>2</sub> S Scavenger	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:

<u>LOG/TEST/CORE/MUDLOG/OTHER</u>	<u>--INTERVAL--</u>		<u>REMARKS</u>
	<u>FROM</u>	<u>TO</u>	
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 Potential Hazards:

None anticipated. Possible H<sub>2</sub>S in Cisco & Upper Penn. See H<sub>2</sub>S Drilling Operations Plan.

8. Other Information:

Anticipated Starting Date: As soon as possible.

Duration of Well: drilling - 18 days, completion - 10 days.

**DRILLING PROGRAM**  
**MARATHON OIL COMPANY**  
**Mershon Gas Com. # 2**

1. Estimated KB Elevation: 4261' KB

<u>FORMATION</u>	<u>-----TOP-----</u>		<u>-----BASE-----</u>		<u>FLUID CONTENT</u>
	<u>MEASURED</u>	<u>SUBSEA</u>	<u>MEASURED</u>	<u>SUBSEA</u>	
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Bone Spring	4300'	-39'	5950'	-1689'	oil gas
Wolfcamp	5950'	-1689'	7520'	-3259'	oil gas
B/Permian Shale	7520'	-3259'	7530'	-3269'	
U. Penn	7530'	-3269'	8200'	-3939'	gas, oil, water

<u>FORMATION</u>	<u>---EST</u>	<u>SBHP---</u>	<u>EST</u>	<u>SBHT</u>	<u>H2S</u>	<u>---SIGNIFICANCE---</u> <u>(obj, marker, etc.)</u>
	<u>PSIG</u>	<u>PPG EMW</u>				
Bone Springs	1210	8.5			500	marker
Wolfcamp	1680	9.0				marker
B/Permian Shale	1810	9.0				objective pay
U. Penn	2050	9.0			5000	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:**

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

Auxiliary Equipment:

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

Intermediate Hole: N/A

Production Hole: Flow indicator, PVT, H<sub>2</sub>S Sensors, air packs, stroke counter, rotating head.

BOP systems will be consistent with API RP 53. Blowout preventers will be installed and 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. Preventers and 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.

**A. P. D. (cont.)**  
**Thirteen Point Surface Use and**  
**Mershon Gas Com. # 2**

<b>5. <u>Mud Program</u></b>							
<b>---DEPTH---</b>							
<b>FROM</b>	<b>TO</b>	<b>MUD TYPE</b>	<b>WEIGHT (PPG)</b>	<b>VIS</b>	<b>WL CC</b>	<b>ADDITIVES</b>	<b>VISUAL MONTR.</b>
0	1200'	fresh water	8.3	28	N/A	Gel, Lime	Reserve
1200'	5000'	fresh	8.5	28-32	N/C	Gel, caustic, H <sub>2</sub> S Scavenger	Reserve
5000'	7000'	fresh	8.9	32-36	N/C	Gel, caustic, H <sub>2</sub> S Scavenger	Reserve
7000'	8200'	fresh	8.9	32-36	<20	Gel, caustic, H <sub>2</sub> S Scavenger	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:**

<b><u>LOG/TEST/CORE/MUDLOG/OTHER</u></b>	<b>--INTERVAL--</b>		<b><u>REMARKS</u></b>
	<b><u>FROM</u></b>	<b><u>TO</u></b>	
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			

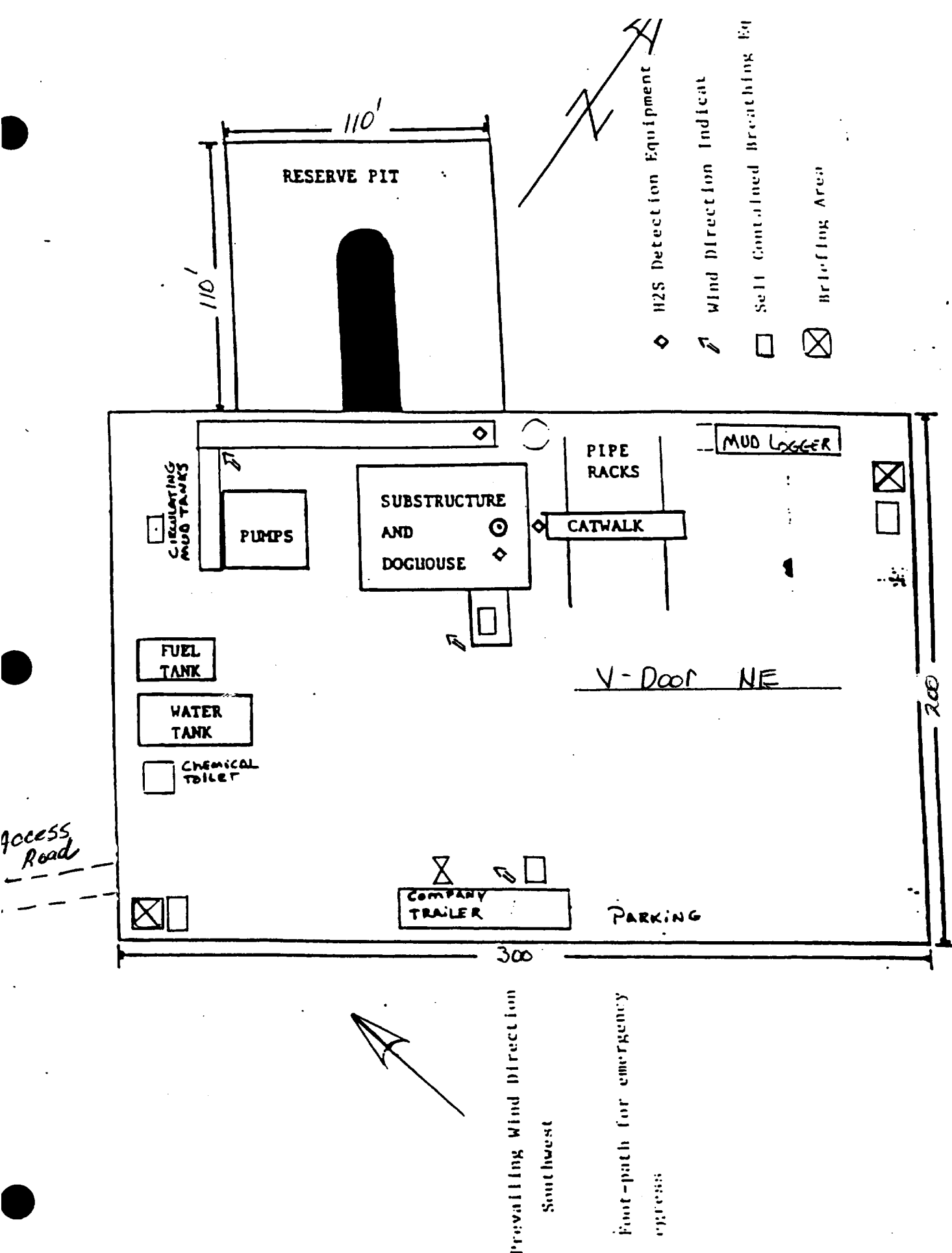
**7. Abnormal Pressures, Temperatures or Potential Hazards:**

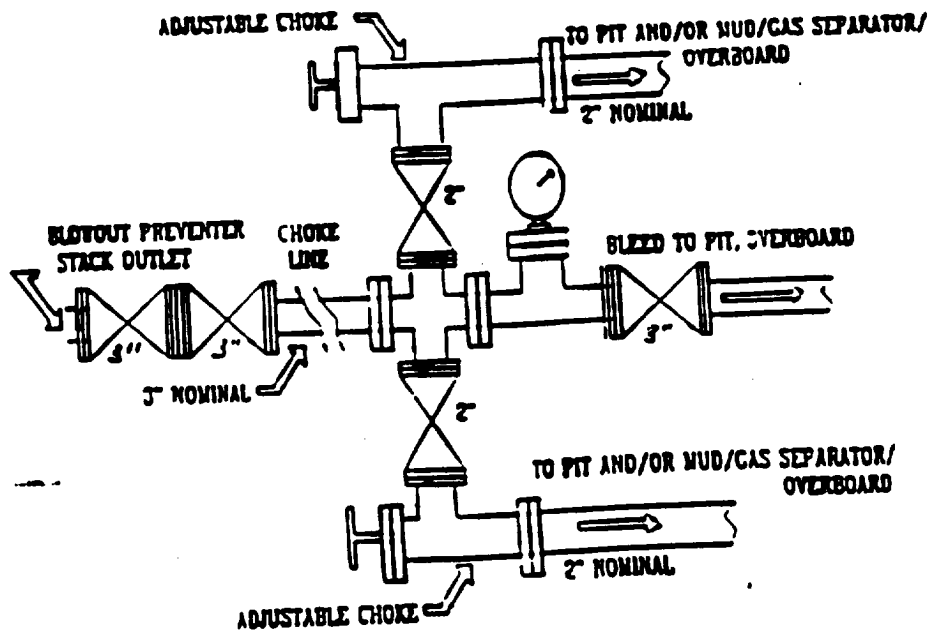
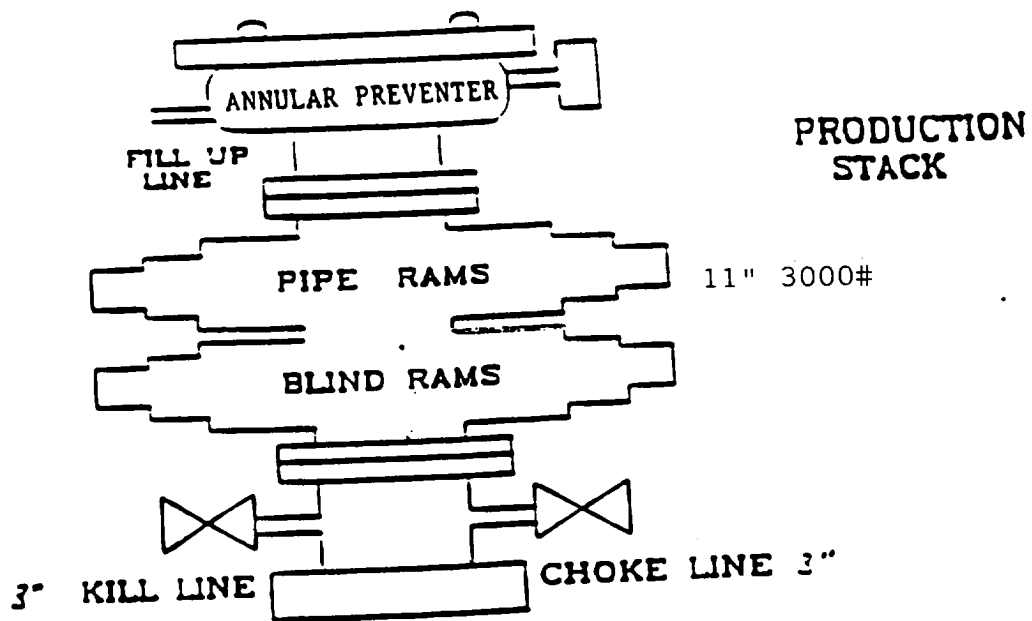
None anticipated. Possible H<sub>2</sub>S in Cisco & Upper Penn. See H<sub>2</sub>S Drilling Operations Plan.

**8. Other Information:**

Anticipated Starting Date: As soon as possible.

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





# 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 (H<sub>2</sub>S)
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 H<sub>2</sub>S 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. H<sub>2</sub>S 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 H<sub>2</sub>S 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 H<sub>2</sub>S circulated to surface. Proper mud weight, safe drilling practices, and the use of H<sub>2</sub>S scavengers when appropriate will minimize hazards when penetrating H<sub>2</sub>S 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