

AUG - 8 2000

924

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

Carlsbad Field Office  
Carlsbad, NM

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK

DRILL ☒

DEEPEN ☐

b. TYPE OF WELL

OIL  
WELL ☐

GAS  
WELL ☒

OTHER

SINGLE  
ZONE ☒

MULTIPLE  
ZONE ☐

2. NAME OF OPERATOR

Marathon Oil Company

14021

3. ADDRESS AND TELEPHONE NO.

P.O. Box 552 Midland, TX 79702

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)  
At surface

503' FNL & 2310' FWL  
At proposed prod. zone

1473' FNL & 1010' FEL

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) 503'

18. DISTANCE FROM PROPOSED LOCATION\*  
TO NEAREST WELL, DRILLING, COMPLETED,  
OR APPLIED FOR, ON THIS LEASE, FT. \* 2000'

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

G.L. 3698'

16. NO. OF ACRES IN LEASE  
640

19. PROPOSED DEPTH  
8200'

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

320 E/2

20. ROTARY OR CABLE TOOLS

Rotary

22. APPROX. DATE WORK WILL START\*

ASAP

5. LEASE DESIGNATION AND SERIAL NO.

NM-07260 LC 0643918

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

N/A

7. UNIT AGREEMENT NAME

Indian Hills Unit

8. FARM OR LEASE NAME, WELL NO.

Indian Hills Unit

# 27

9. API WELL NO.

30-015-31406

10. FIELD AND POOL, OR WILDCAT

Indian Basin Upper Penn. Assoc.

11. SEC., T., R., M., OR BLK.  
AND SURVEY OR AREA

Sec. 29, T-21-S, R-24-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' / 1400'	785 sx. Circ. to surface
8.75"	7" K-55	23# & 26#	8200'	1400 sx. Circulate

Propose to drill a Upper Penn. Assoc. gas well.

\* Distance from Indian Hills Unit # 27 BHL to the Indian Hills Unit # 14 @ 2300' FSL & 2000' FEL is 1794'.

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

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.

Jerry Fletcher

SIGNED

TITLE Engineer Tech.

DATE 8-3-00

(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:

SILAHY D. BRAY

Assistant Field Manager,  
Lands And Minerals

OCT 27 2000

APPROVED BY

TITLE

DATE

\*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.

APPROVED FOR 1 YEAR



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

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

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

## 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. Assoc.
Property Code	Property Name	Well Number
	INDIAN HILLS UNIT	27
OGRID No.	Operator Name	Elevation
14021	MARATHON OIL COMPANY	3698

#### Surface Location

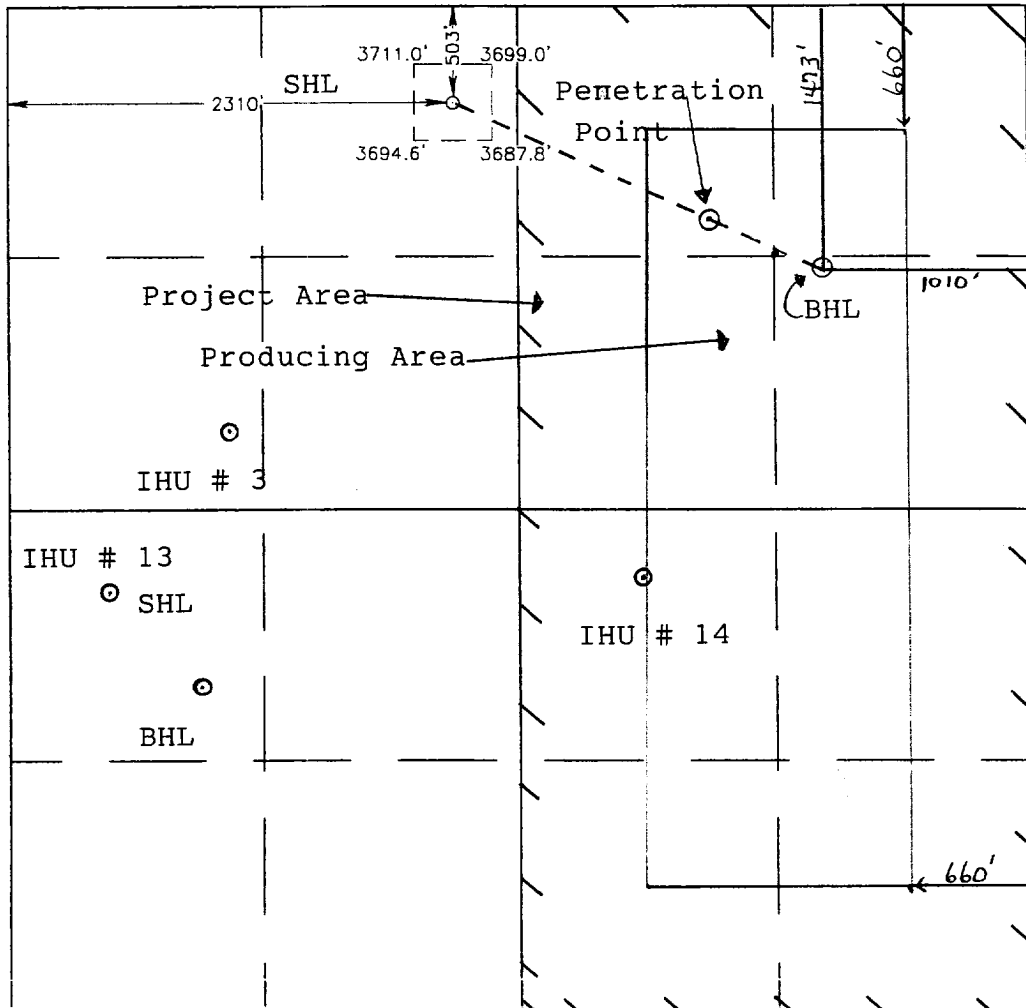

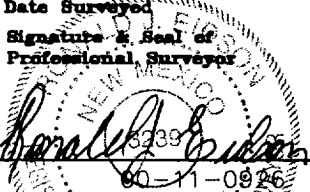
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	29	21 S	24 E		503	NORTH	2310	WEST	EDDY

#### 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
H	29	21 S	24 E		1473	NORTH	1010	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320 E/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

	<h4>OPERATOR CERTIFICATION</h4> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p> Signature</p> <p>Jerry Fletcher Printed Name</p> <p>Engineer Tech. Title</p> <p>8-3-00 Date</p> <h4>SURVEYOR CERTIFICATION</h4> <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>JULY 29, 2000 Date Surveyed</p> <p>Signature &amp; Seal of Professional Surveyor</p> <p> Ronald E. Edson 8/01/00</p> <p>Certificate No. RONALD E. EIDSON 3239 GARY EIDSON 12641 MALON McDONALD 12185</p>
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# Proposed Well Profile

<b>Report Date:</b> August 3, 2000	<b>Survey / DLS Computation Method:</b> Minimum Curvature / Lubinsk
<b>Client:</b> Marathon Oil Company	<b>Vertical Section Azimuth:</b> 116.340°
<b>Field:</b> Eddy County, NM	<b>Vertical Section Origin:</b> N 0.000 ft, E 0.000 ft
<b>Structure / Slot:</b> Indian Basin / Indian Hills Unit #27	<b>TVD Reference Datum:</b>
<b>Well:</b> Indian Hills Unit #27	<b>TVD Reference Elevation:</b> 3698.0 ft relative to
<b>Borehole:</b> Indian Hills Unit #27	<b>Sea Bed / Ground Level Elevation:</b> 0.000 ft relative to
<b>UW/AP#:</b>	<b>Magnetic Declination:</b> 9.140°
<b>Proposal Name / Modified Date:</b> Rev 1 / August 3, 2000	<b>Total Field Strength:</b> 49588.788 nT
<b>Tort / AHD / DDI / ERD ratio:</b> 20.000° / 2186.96 ft / 4.660 / 0.265	<b>Magnetic Dip:</b> 60.309°
<b>Grid Coordinate System:</b> NAD27 New Mexico State Planes, Eastern Zone, US Feet	<b>Declination Date:</b> August 03, 2000
<b>Location Lat/Long:</b> N 32 9 16.621, W 104 14 52.902	<b>Magnetic Declination Model:</b> BGGM 1999
<b>Location Grid N/E Y/X:</b> N 419981.400 ftUS, E 526399.600 ftUS	<b>North Reference:</b> Grid North
<b>Grid Convergence Angle:</b> +0.04539979°	<b>Total Corr Mag North -&gt; Grid North:</b> +9.095°
<b>Grid Scale Factor:</b> 0.99990989	<b>Local Coordinates Referenced To:</b> Structure Reference Point

Station ID	MD (ft)	Incl (°)	Azlm (°)	TVD (ft)	VSec (ft)	N/S (ft)	E/W (ft)	Closure (ft)	at Azlm (°)	DLS (°/100ft)	TF (°)
Tie-In	0.00	0.00	116.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	100.00	0.00	116.34	100.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	200.00	0.00	116.34	200.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	300.00	0.00	116.34	300.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	400.00	0.00	116.34	400.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	500.00	0.00	116.34	500.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	600.00	0.00	116.34	600.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	700.00	0.00	116.34	700.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	800.00	0.00	116.34	800.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	900.00	0.00	116.34	900.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	1000.00	0.00	116.34	1000.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	1100.00	0.00	116.34	1100.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	1200.00	0.00	116.34	1200.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF

KOP (computed)	1300.00	0.00	116.34	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	1400.00	0.00	116.34	1400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	1500.00	0.00	116.34	1500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	1600.00	0.00	116.34	1600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	1700.00	0.00	116.34	1700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	1800.00	0.00	116.34	1800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	1900.00	0.00	116.34	1900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	1904.61	0.00	116.34	1904.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	116.3MTF
	2000.00	2.86	116.34	1999.96	2.38	-1.06	2.13	2.38	116.34	3.00	116.3MTF	0.0	
	2100.00	5.86	116.34	2099.66	9.99	-4.43	8.95	9.99	116.34	3.00	0.0		
EOC	2200.00	8.86	116.34	2198.82	22.80	-10.12	20.43	22.80	116.34	3.00	0.0		
	2300.00	11.86	116.34	2297.18	40.78	-18.10	36.55	40.78	116.34	3.00	0.0		
	2400.00	14.86	116.34	2394.46	63.89	-28.35	57.26	63.89	116.34	3.00	0.0		
	2500.00	17.86	116.34	2490.40	92.06	-40.85	82.50	92.06	116.34	3.00	0.0		
	2571.27	20.00	116.34	2557.82	115.18	-51.11	103.22	115.18	116.34	3.00	0.0		
	2600.00	20.00	116.34	2584.81	125.00	-55.47	112.02	125.00	116.34	0.00	0.0		
	2700.00	20.00	116.34	2678.78	159.21	-70.65	142.67	159.21	116.34	0.00	0.0		
	2800.00	20.00	116.34	2772.75	193.41	-85.82	173.32	193.41	116.34	0.00	0.0		
	2900.00	20.00	116.34	2866.72	227.61	-101.00	203.97	227.61	116.34	0.00	0.0		
	3000.00	20.00	116.34	2960.69	261.81	-116.17	234.63	261.81	116.34	0.00	0.0		
	3100.00	20.00	116.34	3054.66	296.01	-131.35	265.28	296.01	116.34	0.00	0.0		
	3200.00	20.00	116.34	3148.63	330.22	-146.53	295.93	330.22	116.34	0.00	0.0		
	3300.00	20.00	116.34	3242.60	364.42	-161.70	326.58	364.42	116.34	0.00	0.0		
	3400.00	20.00	116.34	3336.57	398.62	-176.88	357.23	398.62	116.34	0.00	0.0		
	3500.00	20.00	116.34	3430.53	432.82	-192.06	387.88	432.82	116.34	0.00	0.0		
	3600.00	20.00	116.34	3524.50	467.02	-207.23	418.53	467.02	116.34	0.00	0.0		
	3700.00	20.00	116.34	3618.47	501.23	-222.41	449.18	501.23	116.34	0.00	0.0		
	3800.00	20.00	116.34	3712.44	535.43	-237.59	479.83	535.43	116.34	0.00	0.0		
	3900.00	20.00	116.34	3806.41	569.63	-252.76	510.48	569.63	116.34	0.00	0.0		
	4000.00	20.00	116.34	3900.38	603.83	-267.94	541.13	603.83	116.34	0.00	0.0		
	4100.00	20.00	116.34	3994.35	638.03	-283.12	571.78	638.03	116.34	0.00	0.0		
	4200.00	20.00	116.34	4088.32	672.24	-298.29	602.43	672.24	116.34	0.00	0.0		

	4300.00	20.00	116.34	4182.29	706.44	-313.47	633.08	706.44	116.34	0.00	0.0
	4400.00	20.00	116.34	4276.26	740.64	-328.65	663.73	740.64	116.34	0.00	0.0
	4500.00	20.00	116.34	4370.23	774.84	-343.82	694.38	774.84	116.34	0.00	0.0
	4600.00	20.00	116.34	4464.20	809.04	-359.00	725.03	809.04	116.34	0.00	0.0
	4700.00	20.00	116.34	4558.17	843.25	-374.18	755.68	843.25	116.34	0.00	0.0
	4800.00	20.00	116.34	4652.13	877.45	-389.35	786.33	877.45	116.34	0.00	0.0
	4900.00	20.00	116.34	4746.10	911.65	-404.53	816.98	911.65	116.34	0.00	0.0
	5000.00	20.00	116.34	4840.07	945.85	-419.71	847.63	945.85	116.34	0.00	0.0
	5100.00	20.00	116.34	4934.04	980.05	-434.88	878.28	980.05	116.34	0.00	0.0
	5200.00	20.00	116.34	5028.01	1014.26	-450.06	908.93	1014.26	116.34	0.00	0.0
	5300.00	20.00	116.34	5121.98	1048.46	-465.24	939.58	1048.46	116.34	0.00	0.0
	5400.00	20.00	116.34	5215.95	1082.66	-480.41	970.24	1082.66	116.34	0.00	0.0
	5464.50	20.00	116.34	5276.56	1104.72	-490.20	990.00	1104.72	116.34	0.00	0.0
	5500.00	20.00	116.34	5309.92	1116.86	-495.59	1000.89	1116.86	116.34	0.00	0.0
	5600.00	20.00	116.34	5403.89	1151.06	-510.77	1031.54	1151.06	116.34	0.00	0.0
	5700.00	20.00	116.34	5497.86	1185.27	-525.94	1062.19	1185.27	116.34	0.00	0.0
	5800.00	20.00	116.34	5591.83	1219.47	-541.12	1092.84	1219.47	116.34	0.00	0.0
	5900.00	20.00	116.34	5685.80	1253.67	-556.30	1123.49	1253.67	116.34	0.00	0.0
	6000.00	20.00	116.34	5779.77	1287.87	-571.47	1154.14	1287.87	116.34	0.00	0.0
	6100.00	20.00	116.34	5873.74	1322.07	-586.65	1184.79	1322.07	116.34	0.00	0.0
	6200.00	20.00	116.34	5967.70	1356.28	-601.83	1215.44	1356.28	116.34	0.00	0.0
	6300.00	20.00	116.34	6061.67	1390.48	-617.00	1246.09	1390.48	116.34	0.00	0.0
	6400.00	20.00	116.34	6155.64	1424.68	-632.18	1276.74	1424.68	116.34	0.00	0.0
	6500.00	20.00	116.34	6249.61	1458.88	-647.36	1307.39	1458.88	116.34	0.00	0.0
	6600.00	20.00	116.34	6343.58	1493.08	-662.53	1338.04	1493.08	116.34	0.00	0.0
	6700.00	20.00	116.34	6437.55	1527.29	-677.71	1368.69	1527.29	116.34	0.00	0.0
	6800.00	20.00	116.34	6531.52	1561.49	-692.89	1399.34	1561.49	116.34	0.00	0.0
	6900.00	20.00	116.34	6625.49	1595.69	-708.06	1429.99	1595.69	116.34	0.00	0.0
	7000.00	20.00	116.34	6719.46	1629.89	-723.24	1460.64	1629.89	116.34	0.00	0.0
	7100.00	20.00	116.34	6813.43	1664.09	-738.42	1491.29	1664.09	116.34	0.00	0.0
	7200.00	20.00	116.34	6907.40	1698.30	-753.59	1521.94	1698.30	116.34	0.00	0.0

Cross Hardlines

	7300.00	20.00	116.34	7001.37	1732.50	-768.77	1552.59	1732.50	116.34	0.00	0.0
	7400.00	20.00	116.34	7095.34	1766.70	-783.95	1583.24	1766.70	116.34	0.00	0.0
	7500.00	20.00	116.34	7189.31	1800.90	-799.12	1613.89	1800.90	116.34	0.00	0.0
	7600.00	20.00	116.34	7283.27	1835.10	-814.30	1644.54	1835.10	116.34	0.00	0.0
Target	7617.80	20.00	116.34	7300.00	1841.19	-817.00	1650.00	1841.19	116.34	0.00	0.0
	7700.00	20.00	116.34	7377.24	1869.31	-829.48	1675.19	1869.31	116.34	0.00	0.0
	7800.00	20.00	116.34	7471.21	1903.51	-844.65	1705.85	1903.51	116.34	0.00	0.0
	7900.00	20.00	116.34	7565.18	1937.71	-859.83	1736.50	1937.71	116.34	0.00	0.0
	8000.00	20.00	116.34	7659.15	1971.91	-875.01	1767.15	1971.91	116.34	0.00	0.0
PBHLTD	8100.00	20.00	116.34	7753.12	2006.11	-890.18	1797.80	2006.11	116.34	0.00	0.0
	8200.00	20.00	116.34	7847.09	2040.32	-905.36	1828.45	2040.32	116.34	0.00	0.0
	8300.00	20.00	116.34	7941.06	2074.52	-920.53	1859.10	2074.52	116.34	0.00	0.0
	8400.00	20.00	116.34	8035.03	2108.72	-935.71	1889.75	2108.72	116.34	0.00	0.0
	8500.00	20.00	116.34	8129.00	2142.92	-950.89	1920.40	2142.92	116.34	0.00	0.0
PBHLTD	8600.00	20.00	116.34	8222.97	2177.12	-966.06	1951.05	2177.12	116.34	0.00	0.0
	8628.77	20.00	116.34	8250.00	2186.96	-970.43	1959.87	2186.96	116.34	0.00	0.0

Survey Error Model: (No Error Model Selected)

# Schlumberger



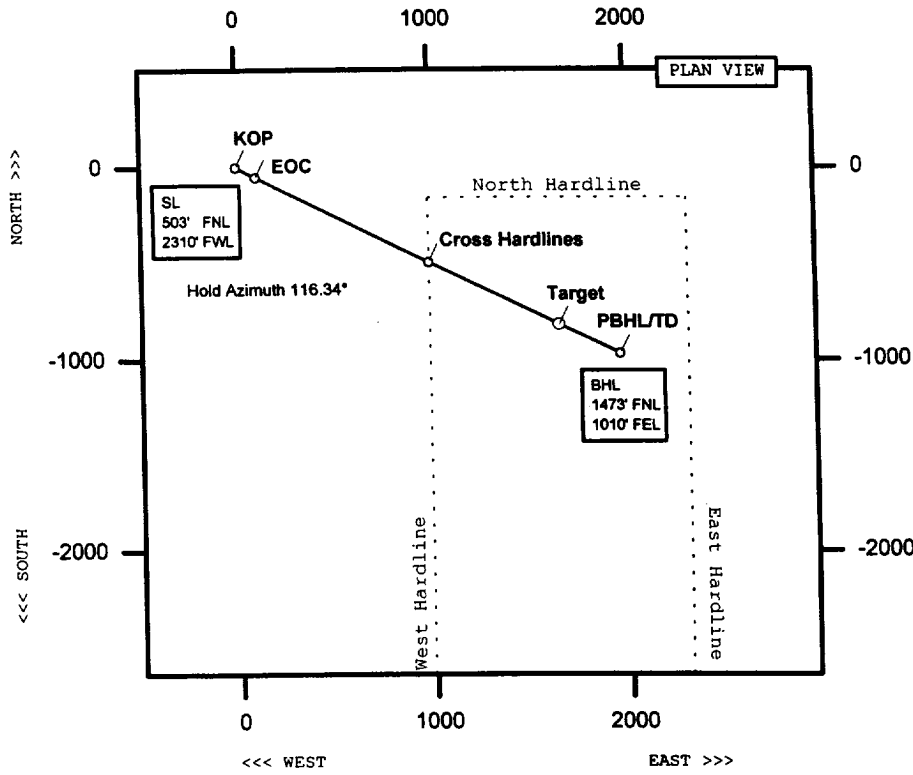
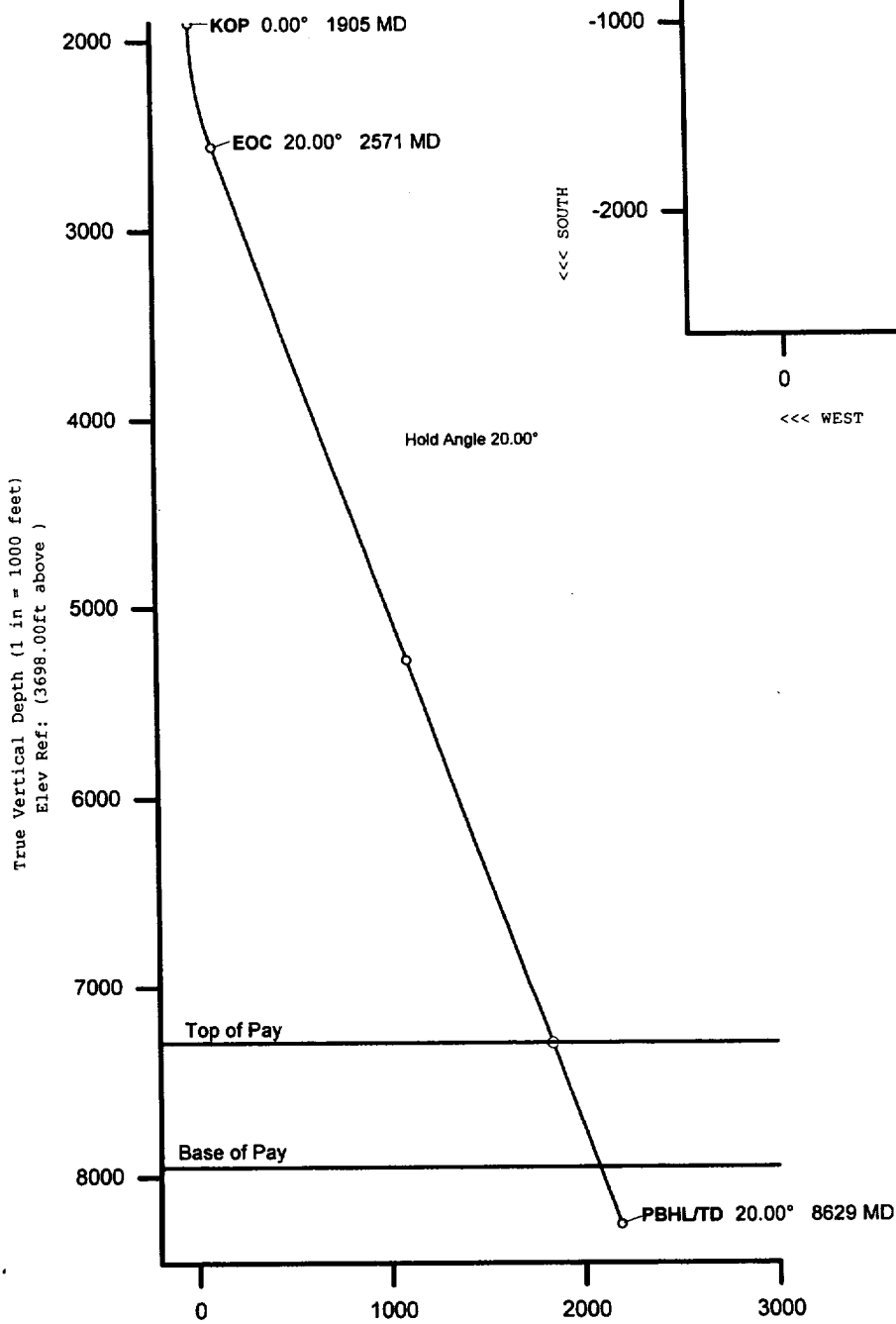
# Marathon Oil Company

WELL Indian Hills Unit #27	FIELD Eddy County, NM	STRUCTURE Indian Basin
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Grid North  
Tot Corr ( E 9.09° )  
Mag Dec ( E 9.14° )  
Grid Conv ( E 0.05° )

Vertical Section View

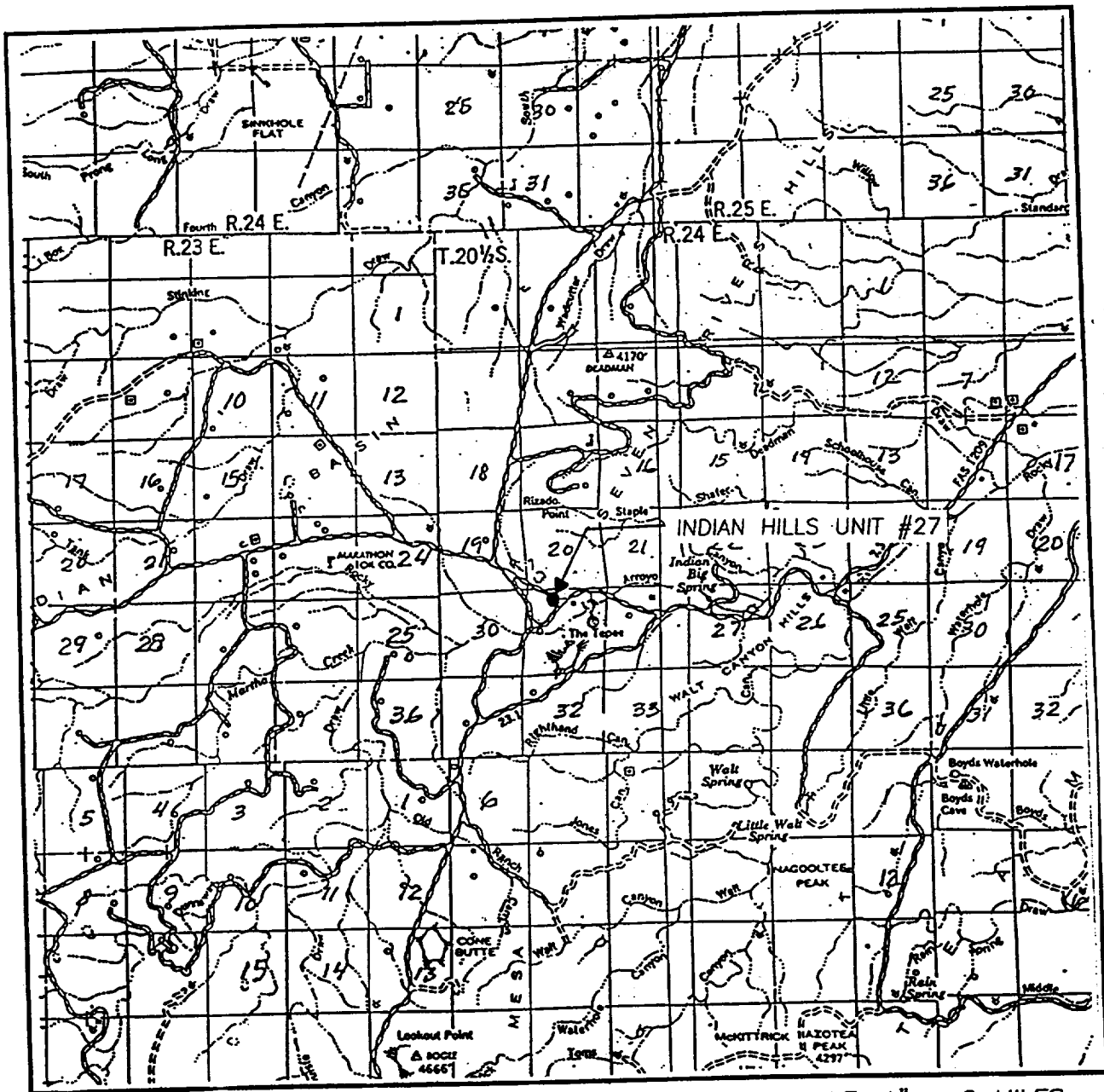


Quality Control  
Date Drawn: 03-Aug-2000  
Drawn by: Ernie Fontenot  
Checked by: \_\_\_\_\_  
Client OK: \_\_\_\_\_

Vertical Section Departure at 116.34 deg from (0.0, 0.0). (1 in = 1000 feet)



# VICINITY MAP

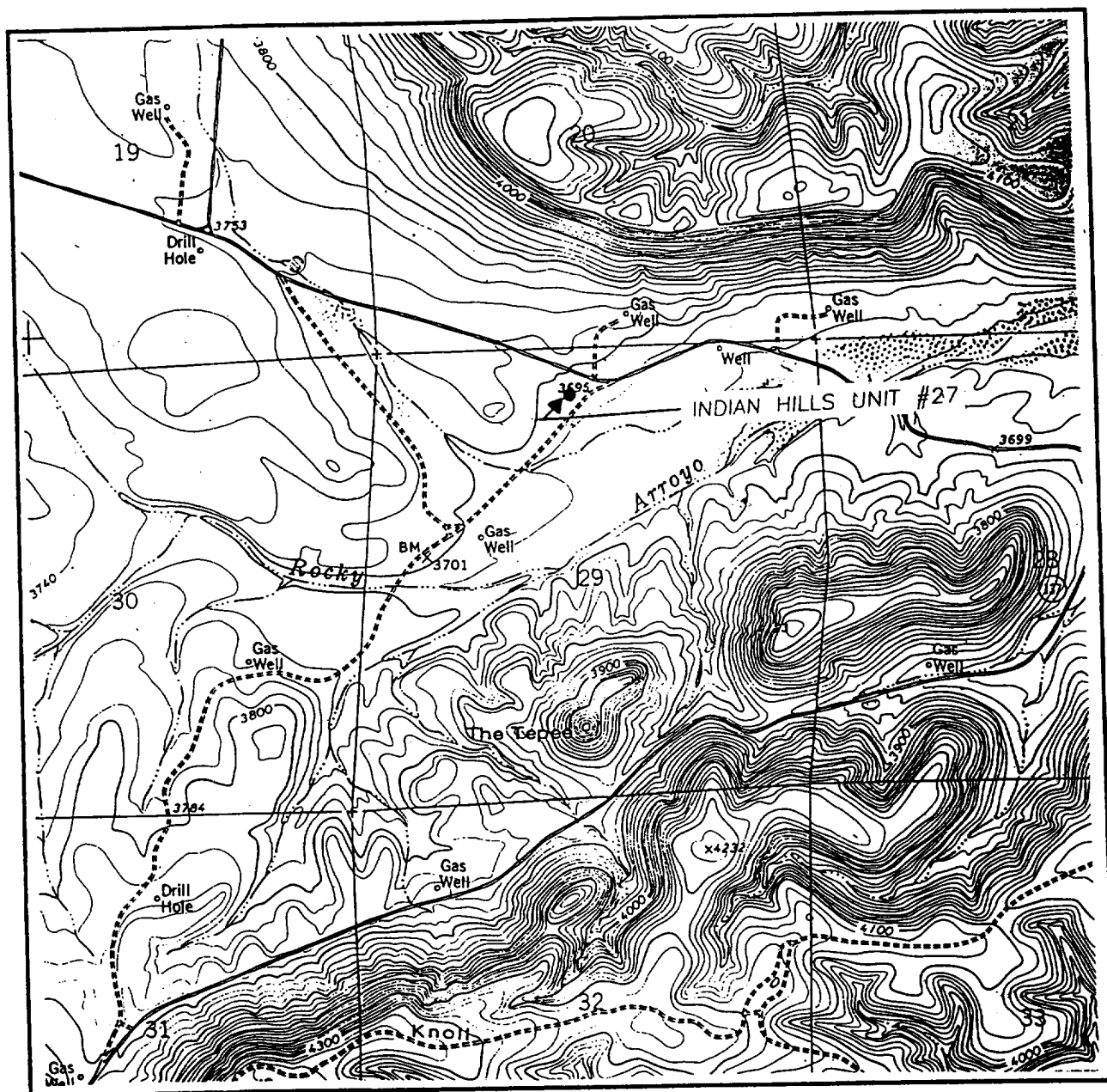


SCALE: 1" = 2 MILES

SEC. 29 TWP. 21-S RGE. 24-E  
 SURVEY N.M.P.M.  
 COUNTY EDDY  
 DESCRIPTION 503' FNL & 2310' FWL  
 ELEVATION 3698  
 OPERATOR MARATHON OIL COMPANY  
 LEASE INDIAN HILLS UNIT

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

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
MARTHA CREEK - 20'

SEC. 29 TWP. 21-S RGE. 24-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 503' FNL & 2310' FWL

ELEVATION 3698

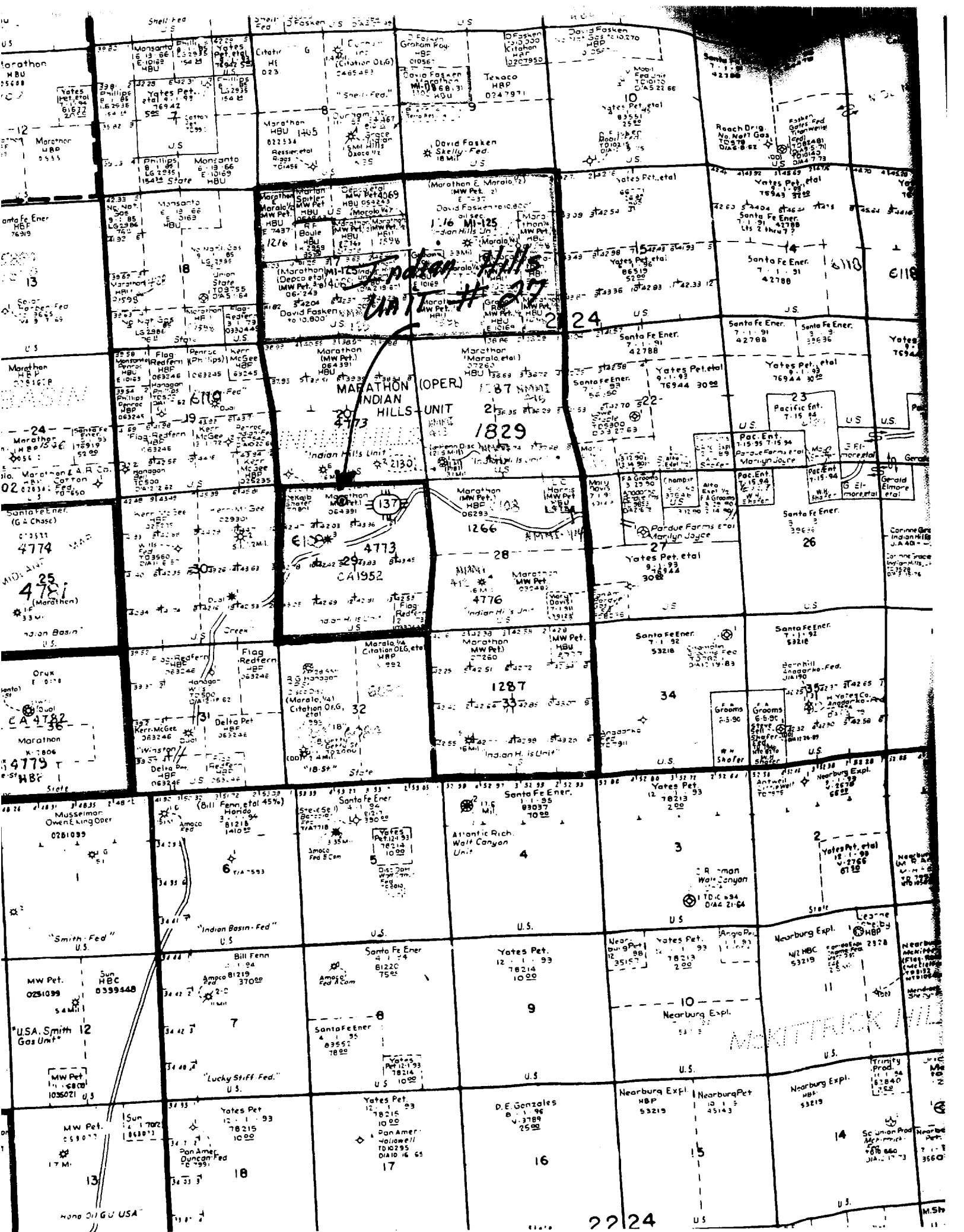
OPERATOR MARATHON OIL COMPANY

LEASE INDIAN HILLS UNIT

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**

**Indian Hills Unit # 27**  
**Sec. 29, T-21-S, R-24-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) 1.4 miles to existing lease road on South side of road. Turn directly South 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 Northeast corner. The drilling location will have the rig V-door facing North.

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 Santa Fe within a one-mile radius of the proposed location. These locations have production facilities including separators, condensate, oil, water storage tanks. Marathon and Santa Fe operate a variety of dehydrators, meter runs, and several gathering lines in the one-mile radius.
- b. New Facilities : The proposed location will have 2 new gas sales lines tied into existing production equipment.
- 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**  
**Indian Hills Unit # 27**

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.

**A. P. D. (cont.)**  
**Thirteen Point Surface Use Plan**  
**Indian Hills Unit # 27**

- 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 Patsy Lyman
- 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

**A. P. D. (cont.)**  
**Thirteen Point Surface Use Plan**  
**Indian Hills Unit # 27**

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.

2 August 2000  
Date

R. J. Longmire  
R. J. Longmire

**DRILLING PROGRAM**  
**MARATHON OIL COMPANY**  
**Indian Hills Unit # 27**

1. Estimated KB Elevation: 3713' 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	+3713'	650'	+3063'	water
San Andres	650'	+3463'	2250'	+1463'	water
Glorietta	2250'	+1463'	2355'	+1358'	
Delaware	3300'	+413'	4300'	- 587'	
Bone Spring	4300'	-587'	5950'	-2237'	oil gas
Wolfcamp	5950'	-2237'	7520'	-3807'	oil gas
B/Permian Shale	7520'	-3807'	7530'	-3817'	
U. Penn	7530'	-3817'	8200'	-4487'	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 psi /2000 psi, 11" 3M dual rams, choke manifold and mud cross, tested to 300#/3000#.

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 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.



**A. P. D. (cont.)**  
**Thirteen Point Surface Use Plan**  
**Indian Hills Unit # 27**

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--- <u>FROM</u> <u>TO</u>		<u>SECTION</u> <u>LENGTH</u>			<u>HOLE</u> <u>SIZE</u>	<u>CSG</u> <u>SIZE</u>	<u>WT.</u> <u>PPF</u>	<u>GRADE</u>	<u>THREADS</u> <u>COUPLINGS</u>	<u>NEW</u> <u>USED</u>
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
<u>Casing String</u>	<u>DV Depth</u>	<u>Stg.</u>	<u>Lead Tail</u>	<u>Amt SXS</u>	<u>Type Cement</u>		<u>Yield CF/SX</u>	<u>Wt. PPG.</u>	<u>TOC</u>	<u>Additives</u>
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"	6400'	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 20% excess.*

**A. P. D. (cont.)**  
**Thirteen Point Surface Use Plan**  
**Indian Hills Unit # 27**

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			

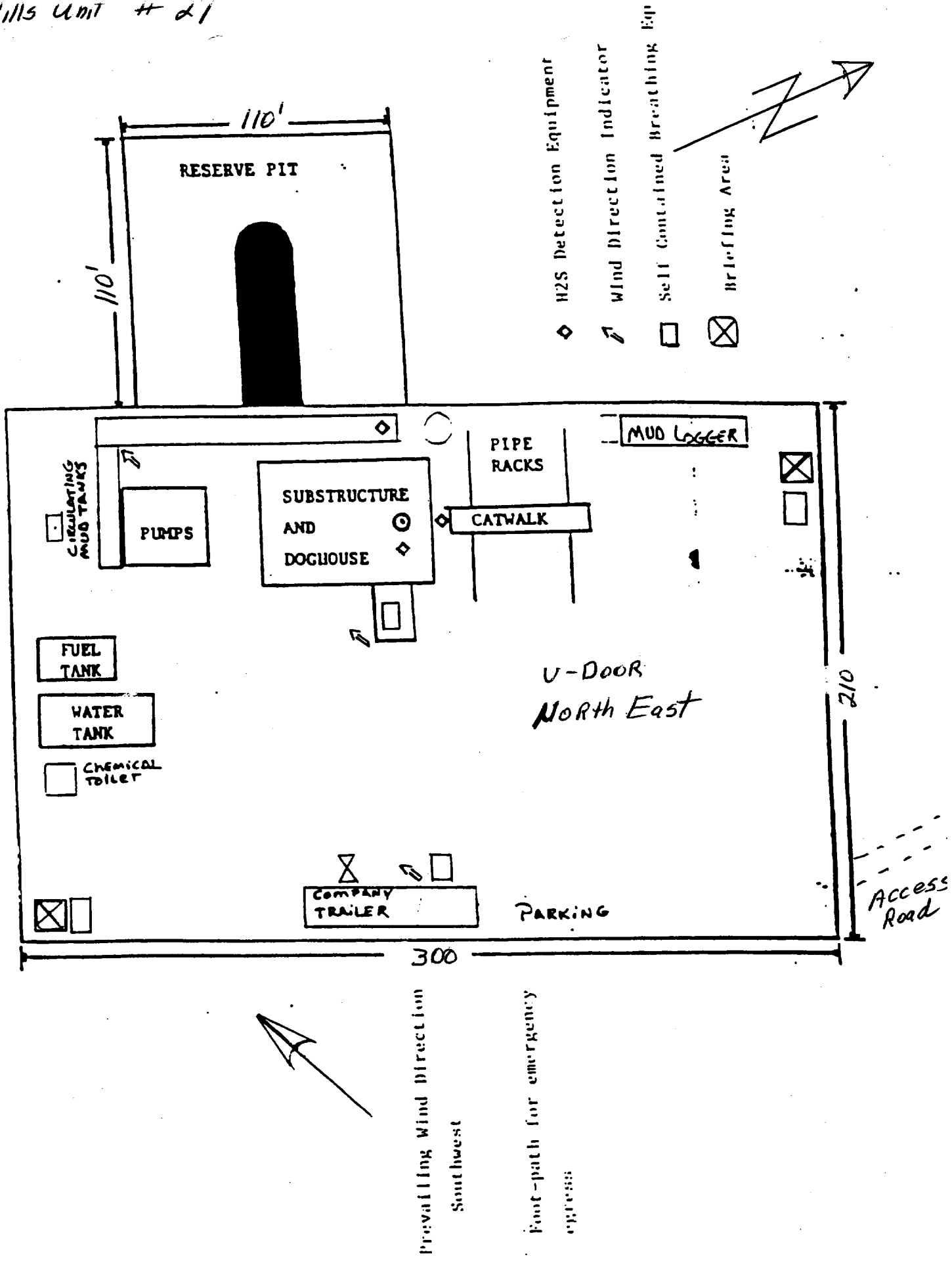
7. Abnormal Pressures, Temperatures or Potential Hazards:

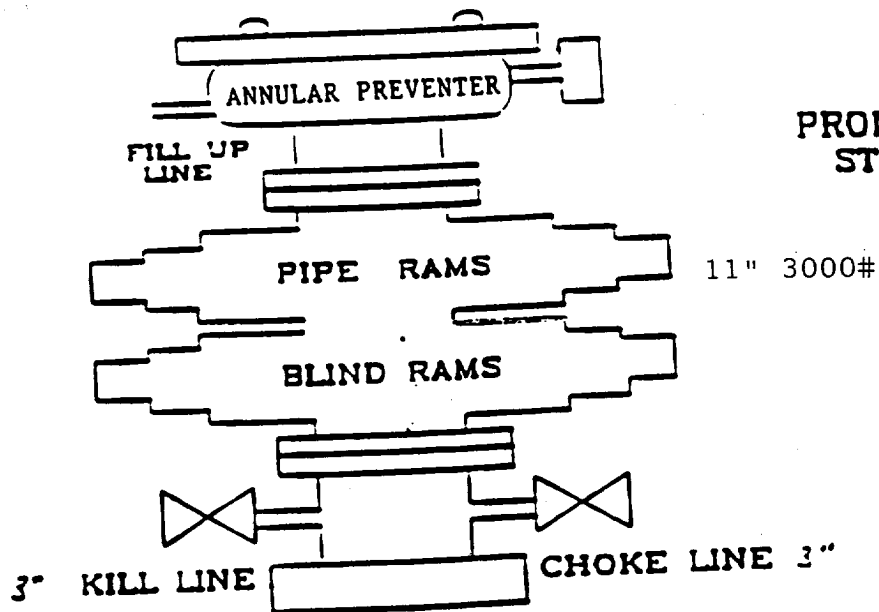
None anticipated. Possible H<sub>2</sub>S in Cisco & Upper Penn. See H<sub>2</sub>S Drilling Operations Plan.

8. Other Information:

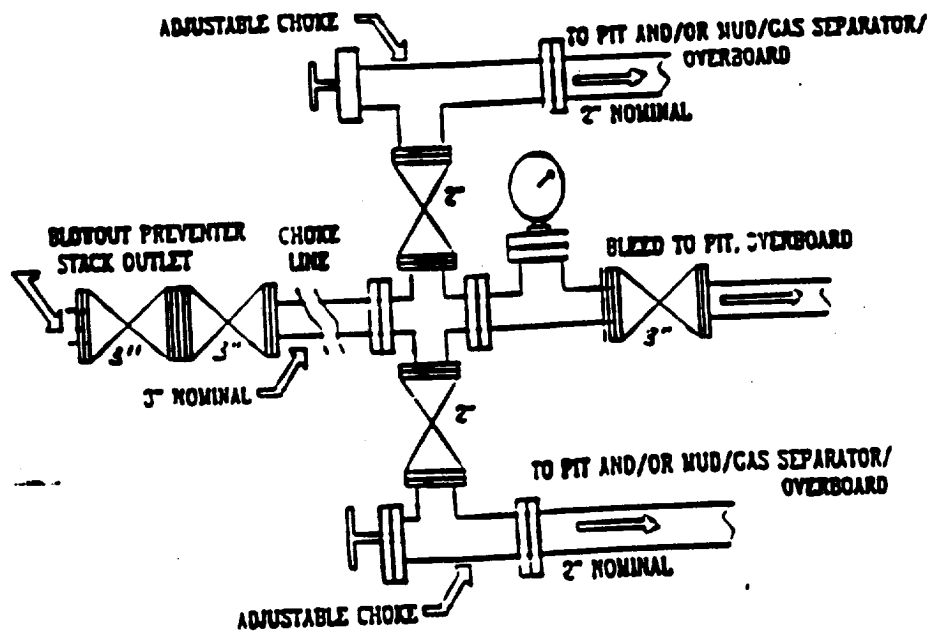
Anticipated Starting Date: As soon as possible.

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





**PRODUCTION  
STACK**



# 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. 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 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

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB NO. 1004-0135  
Expires: November 30, 2000

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

BLM-CARLSBAD

SUBMIT IN TRIPLICATE - Other instructions on reverse side

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

Marathon Oil Company

3a. Address

P.O. Box 552 Midland, TX 79702

3b. Phone No. (include area code)

1-800-351-1417

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec. 29, T-21-S, R-24-E

503' FNL & 2310' FWL

1473' FNL & 1010' FEL BHL

5. Lease Serial No.

NM-07260

6. Indian, Alutian, or Tribe Name

N/A

7. If Unit or CA/Agreement, Name and/c

Indian Hills Unit

8. Well Name and No.

Indian Hills Unit # 27

9. API Well No.

10. Field and Pool, or Exploratory Area

Indian Basin Upper

Perm. Assoc.

11. County or Parish, State

Eddy N.M.

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☒ Notice of Intent  
☐ Subsequent Report  
☐ Final Abandonment Notice

TYPE OF ACTION

- |  |   |  |   |
|--|---|--|---|
| <input type="checkbox"/> Acidize                 | <input type="checkbox"/> Deepen           | <input type="checkbox"/> Production (Start/Resume) | <input type="checkbox"/> Water Shut-Off |
| <input type="checkbox"/> Alter Casing            | <input type="checkbox"/> Fracture Treat   | <input type="checkbox"/> Reclamation               | <input type="checkbox"/> Well Integrity |
| <input type="checkbox"/> Casing Repair           | <input type="checkbox"/> New Construction | <input type="checkbox"/> Recomplete                | <input type="checkbox"/> Other          |
| <input checked="" type="checkbox"/> Change Plans | <input type="checkbox"/> Plug and Abandon | <input type="checkbox"/> Temporarily Abandon       |   |
| <input type="checkbox"/> Convert to Injection    | <input type="checkbox"/> Plug Back        | <input type="checkbox"/> Water Disposal            |   |

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 day following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the final site is ready for final inspection.)

Marathon Oil Company is proposing to run larger casing to accomodate bigger pump size.

Please see attachment for New casing and cement data.

14. I hereby certify that the foregoing is true and correct

Name (Printed/Typed)

Jerry Fletcher

Title

Engineer Tech.

Date

10-04-00

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by: (ORIG. SGD.) GARY GOURLEY

PETROLEUM ENGINEER

Date

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

OCT 06 2000

Title 18 U.S.C. Section 1001, and Title 43 U.S.C. Section 1212, 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.

## Indian Hills Unit #27

### 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:

<u>--DEPTH--</u> <u>FROM TO</u>		<u>SECTION</u> <u>LENGTH</u>	<u>HOLE</u> <u>SIZE</u>	<u>CSG</u> <u>SIZE</u>	<u>WT.</u> <u>PPF</u>	<u>GRADE</u>	<u>THREADS</u> <u>COUPLINGS</u>	<u>NEW</u> <u>USED</u>
0	1200'	1200'	17.50"	13-3/8"	54.50#	K-55	8rd, STC	New
0	4800'	4800'	12.25"	9-5/8"	40#	K-55	8rd, LT&C	New
4800'	8200'	4000'	12.25"	9-5/8"	43.5	L-80	8rd, LT&C	New

<u>Casing</u> <u>String</u>	<u>DV</u> <u>Depth</u>	<u>Stg.</u>	<u>Lead</u> <u>Tail</u>	<u>Amt</u> <u>SXS</u>	<u>Type</u> <u>Cement</u>	<u>Yield</u> <u>CF/SX</u>	<u>Wt.</u> <u>PPG.</u>	<u>TOC</u>	<u>Additives</u>
13-3/8"			L	100	"C"	7.15	9.5		Dia Seal
13-3/8"			L	100	Thixset	1.52	14.0		Thixset
13-3/8"			L	746	Lite	2.02	12.4	surface	2% cacl2
13-3/8"			T	300	PremPlus	1.34	14.8		
9-5/8"	6400'	1	L	350	" "	2.18	9.2		N2
9-5/8"		1	T	700	" "	1.44	13.0		N2
9-5/8"		2	L	1360	Interfill "C"	2.47	11.9		Flocele
9-5/8"		2	T	200	PremPlus	1.32	14.8		Neat

### Pressure Control Equipment:

13-3/8" Surface: 13-5/8" 3M annular tested to 300#/3000#, 13-5/8" 3M dual rams, choke manifold and mud cross, tested to 300#/3000#.

### Auxiliary Equipment:

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

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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.



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTN.M. Oil Cons. Division  
811 S. 1<sup>st</sup> Street  
Artesia, NM 88210-2834FORM APPROVED  
OMB NO. 1004-0135  
Expires: November 30, 2000

## SUNDRY NOTICES AND REPORTS ON WELLS

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Lease Serial No.

NM-07260

6. If Indian, Allottee or Tribe Name

N/A

7. If Unit or CA/Agreement, Name and/  
Indian Hills Unit8. Well Name and No.  
Indian Hills Unit # 27

9. API Well No.

10. Field and Pool, or Exploratory Area  
Indian Basin Upper  
Perm. Assoc.

11. County or Parish, State

Eddy N.M.

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☐ Oil Well ☒ Gas Well ☐ Other

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## TYPE OF SUBMISSION

- ☒
- Notice of Intent
- 
- ☐
- Subsequent Report
- 
- ☐
- Final Abandonment Notice

## TYPE OF ACTION

- |  |   |  |   |
|--|---|--|---|
| <input type="checkbox"/> Acidize                 | <input type="checkbox"/> Deepen           | <input type="checkbox"/> Production (Start/Resume) | <input type="checkbox"/> Water Shut-Off |
| <input type="checkbox"/> Alter Casing            | <input type="checkbox"/> Fracture Treat   | <input type="checkbox"/> Reclamation               | <input type="checkbox"/> Well Integrity |
| <input type="checkbox"/> Casing Repair           | <input type="checkbox"/> New Construction | <input type="checkbox"/> Recomplete                | <input type="checkbox"/> Other          |
| <input checked="" type="checkbox"/> Change Plans | <input type="checkbox"/> Plug and Abandon | <input type="checkbox"/> Temporarily Abandon       |   |
| <input type="checkbox"/> Convert to Injection    | <input type="checkbox"/> Plug Back        | <input type="checkbox"/> Water Disposal            |   |

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zone. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 day following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the final site is ready for final inspection.)

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Please see attachment for New casing and cement data.

14. I hereby certify that the foregoing is true and correct

Name (Printed/Typed)

Jerry Fletcher

Title

Engineer Tech.

Date

10-04-00

## THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by (ORIG. SGD.) GARY GOURLEY

PETROLEUM ENGINEER

Date

OCT 06 2000

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

Title 18 U.S.C. Section 1001, and Title 43 U.S.C. Section 1212, 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.

## Indian Hills Unit #27

### 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'	17.50"	13-3/8"	54.50#	K-55	8rd, STC	New
0 4800'	4800'	12.25"	9-5/8"	40#	K-55	8rd, LT&C	New
4800' 8200'	4000'	12.25"	9-5/8"	43.5	L-80	8rd, LT&C	New

Casing String	DV Depth	Stg.	Lead Tail	Amt SXS	Type Cement	Yield CF/SX	Wt. PPG.	TOC	Additives
13-3/8"			L	100	"C"	7.15	9.5		Dia Seal
13-3/8"			L	100	Thixset	1.52	14.0		Thixset
13-3/8"			L	746	Lite	2.02	12.4	surface	2% cacl2
13-3/8"			T	300	PremPlus	1.34	14.8		
9-5/8"	6400'	1	L	350	" "	2.18	9.2		N2
9-5/8"		1	T	700	" "	1.44	13.0		N2
9-5/8"		2	L	1360	Interfill "C"	2.47	11.9		Flocele
9-5/8"		2	T	200	PremPlus	1.32	14.8		Neat

### Pressure Control Equipment:

13-3/8" Surface: 13-5/8" 3M annular tested to 300#/3000#, 13-5/8" 3M dual rams, choke manifold and mud cross, tested to 300#/3000#.

### 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.