

DISTRICT I

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

DISTRICT II

P.O. Box Drawer DD, Artesia, NM 88211-0719

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV

P.O. Box 2088, Santa Fe, NM 87504-2088

State of New Mexico

Energy, Minerals and Natural Resources Department

Form C 10

Revised February 10, 1999

Instructions on back

Submit to Appropriate District Office

State Lease - 6 Copie

Fee Lease - 5 Copie

☐ AMENDED REPORT

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address TEXACO EXPLORATION & PRODUCTION INC. 205 E. Bender, HOBBS, NM 88240		² OGRID Number 022351
⁴ Property Code 11032	⁵ Property Name NEW MEXICO DF STATE COM	³ API Number 30-015-29284
		⁶ Well No. 3

⁷ Surface Location

UI or lot no	Section	Township	Range	Lot.Idn	Feet From The	North/South Line	Feet From The	East/West Line	County
G	32	21-S	23-E		2000	NORTH	1650	EAST	EDDY

⁸ Proposed Bottom Hole Location If Different From Surface

UI or lot no	Section	Township	Range	Lot.Idn	Feet From The	North/South Line	Feet From The	East/West Line	County
A	32	21-S	23-E		1200	NORTH	1050	EAST	EDDY
⁹ Proposed Pool 1 CISCO					¹⁰ Proposed Pool 2				

¹¹ Work Type Code P	¹² WellType Code G	¹³ Rotary or C.T. ROTARY	¹⁴ Lease Type Code S	¹⁵ Ground Level Elevation 4059' GR
¹⁶ Multiple No	¹⁷ Proposed Depth 6980'TVD	¹⁸ Formation CISCO	¹⁹ Contractor	²⁰ Spud Date 1/10/00

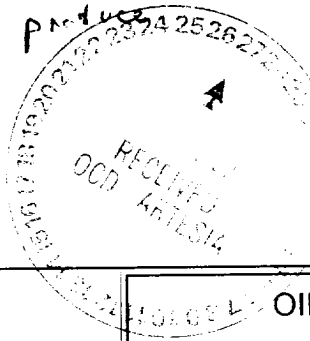
²¹ Proposed Casing and Cement Program

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
12 1/4"	9 5/8"	24#	1500'	650 SX, CIRC 15	SURFACE
7 7/8"	7"	26#	6920'	1050 SX, CIRC 201	SURFACE
				DV TOOL @ 3600'	

²² Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

TEXACO INTENDS TO DRILL A HORIZONTAL RE-ENTRY USING A CONVENTIONAL RIG. THE OVERVIEW AND INTENDED PROCEDURE IS ATTACHED. *NSL order needed to produce B66*

NSL#



²³ I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature

Printed Name

J. Denise Leake

Title Engineering Assistant

Date 12/20/99

Telephone 397-0405

OIL CONSERVATION DIVISION

Approved By:

ORIGINAL SIGNED BY TIM W. GUM
DISTRICT H SUPERVISOR

Title:

Approval Date: 1-3-00 Expiration Date: 1-3-01

Conditions of Approval:

Attached

Drill only B66

OVERVIEW

The New Mexico "DF" State Com #3 well was drilled in late 1996 as a test of the Cisco Dolomite formation. After setting casing, 55 feet of open hole was drilled with air at a rate of 25 feet per hour. The zone potential for 0 BOPD, 0 BWPD and 3134 MCFD. It is proposed to drill a single $\pm 1000'$ (VS) horizontal lateral in this formation employing air to drill this well as under balanced or close to balance as possible (BHP projected at less than 500 psi). The basic well plan is as follows:

- a) Kill well. TOOH with tubing and packer. Run a bit and scraper to $\pm 6900'$ (bottom of 7" at 6920'). TOOH. TIH with a CIBP and set at $\pm 6811'$. TOOH.
- b) TIH with a 3 degree bottom set whipstock (top of window $\pm 6843'$, bottom of window $\pm 6850'$) and set at a 36.9 degree azimuth.
- c) Drill a short radius curve using a 4-3/4" bit to a measured depth of $\pm 7052'$ (TVD $\pm 6980'$). The final angle will be 88.7 degrees from vertical.
- d) Change the hole over to air. Drill $\pm 873'$. End point will be 7925' MD, 7000' TVD, 800' north, 600' east, 36.9 degree azimuth.
- e) Depending on productivity, a coiled tubing acid wash may be needed. Place well on production.

PARTIAL LOST IN HOLE INSURANCE FOR THE DOWNHOLE MOTOR AND MWD IS INCLUDED WITH THE DAILY RATE FROM SCIENTIFIC DRILLING.

PROPOSED WORK

PRODUCTION HOLE:

1. Kill well. TOOH with the tubing and packer. TIH with a bit and scraper to 6900' (bottom of 7" at 6920'). TOOH. TIH with a CIBP and set at $\pm 6811'$. TIH and circulate the hole with fresh water and pressure test the casing and CIBP to 1000 psi. TOOH. TIH with a Smith 3 degree bottom set retrievable whipstock, starting mill, orienting sub and drill pipe. Stop at a point 5-10' above the CIBP, reciprocate pipe and rig up a wireline to run the gyro. Take a gyro reading and determine the direction of the whipstock face. Rotate the pipe as needed to achieve the required direction. Reciprocate and lower the pipe to within one foot of the CIBP and take another gyro reading. Rotate pipe again if needed to achieve the required direction (36.9 degrees). This step may need to be repeated several times until confident the whipstock is oriented in the correct direction.
2. Lower drill pipe to set the whipstock. The weight indicator will jump indicating lower plunger shear pin is sheared (3600 #'s) and the whipstock is set. Continue setting down to shear the starting mill bolt (20,000 #'s). The weight indicator will jump again indicating the bolt is sheared. Commence milling operations.
3. Pick up the power swivel and begin circulating. Pick up drill pipe until starting mill has cleared the whipstock and start rotation. Lower the drill pipe slowly until the torque gauge suggest the starting mill is contacting the casing. Adjust weight and speed until satisfied with the penetration rate. Mill to a predetermined depth that will assure the setting lug is completely removed and a cutout in the casing has been initiated. TOOH.
4. TIH with the bi-mill. Resume milling operations and mill until the complete assembly has cleared the casing. Pick up and lower the string several times without rotation to assure a good clean window has been obtained. Circulate the hole clean. TOOH.
5. Inspect the mill on the surface. If extreme wear is evident, consideration should be given to repeating the above step.



HORIZONTAL PRODUCTION HOLE:

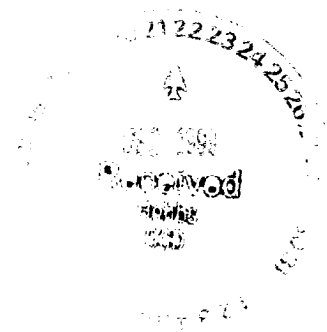
1. Rig up Scientific Drilling. Adjust plan to target as necessary. Trip in the hole with Scientific Drilling's curve building assembly. This will be a 4-3/4" insert, 3-3/4" PDM, float sub/orienter combo, 2-flexable monel collars and 2-7/8" AOH drill pipe.

2. Build curve to estimated target depths and angles as follows:

True Vertical Depth	6980'
Measured Depth	7052'
Final Angle	88.7 degrees
Target Azimuth	36.9 degrees
Build Rate	44 degrees/100'

Drill the curve sliding as necessary to stay on target. It is recommended that after each slide, the bit be pulled back and washed through the slide. Once the curve is built, rotate through the curve section noting tight spots and fill. Make at least one short trip prior to tripping out of the hole.

3. Trip in the hole with Scientific Drilling's lateral assembly. This will be a 4-3/4" insert or PDC bit , 3-3/4" motor, float sub/orienting combo, 2 - flexible monel collars and 2-7/8" AOH drill pipe. Change the hole over to air.
4. Drill $\pm 873'$ of hole per the attached well plan. Keep bottom hole pressures as low as possible. Formation gas contains 0.6 mole percent H₂S.
5. Continue drilling the horizontal section per the Texaco Engineer recommendations.
6. Clean the hole up and then pump enough 2% KCl water to yield 600psi bottom hole hydrostatic pressure. Trip out of the hole with the drilling assembly. TIH and set a Baker packer with a plug in the on-off tool at $\pm 6800'$. Test packer to 1000 psi.
7. Lay down the drill pipe. Nipple down the BOP stack. Install a manual 3000 psig BOP equipped with blind rams and 2-7/8" pipe rams. Release the rig. Rig down and move out rotary tools.



COMPLETION PROCEDURE:

1. Back drag the location and set pulling unit anchors.
2. Move in and rig up a pulling unit.
3. TIH with tubing and circulate packer fluid into annular area. Tie into packer and swab fluid level down to packer. Pull equalizing prong and plug.
4. Swab well on production.
5. Rig up Dowell and acid stimulate (Foam Mat) with 23,000 gallons of 15% HCl if needed.
6. Flow back immediately. Flow test.

POTENTIAL PROBLEMS:**Production Hole:**

- a) No problems anticipated.

Horizontal Production hole:

- a) Loss circulation material and/or other plugging agents are not to be used in this portion of the hole.
- b) The horizontal lateral will be drilled with air. Care should be taken to minimize bottom hole pressures in order to drill the lateral under balanced (BHP is expected to be less than 500 psi),
- c) Hydrogen sulfide is expected, and H₂S detection equipment is to be installed.

MUD PROGRAM:

<u>Interval</u>	<u>Type</u>	<u>Weight</u>	<u>Viscosity</u>	<u>Remarks</u>
Curve	Fresh Water	8.4 ppg	35	Raise visc. with starch and gel
Horizontal	Air			BHP to be minimized

EVALUATION PROGRAM**Coring:**

No cores are anticipated.

Mud Loggers:

No mud logging is anticipated.

Horizontal Hole Logs:

No logs are anticipated.

CASING PROPERTIES

<u>PIPE</u>	<u>DEPTH</u>	BURST		COLLAPSE		ORIG. TEST	
		<u>Rated (75%)</u>	<u>Rated (75%)</u>	<u>Rated (75%)</u>	<u>Rated (75%)</u>	<u>PRESSURE</u>	
9-5/8", 36#/ft, WC50	0'-1500'	3200	2400	1930	1447	1000	
7", 26#/ft, S-95	0'-6920'	8600	6450	7800	5850	2500	

NM DF Stele Com No.3

KB A071

Measured
Depth

6800

6850

6900

6950

7000

7050

7100

7150

7200

TK1500 6830(-2759)

KOP $\approx 6850' \pm$

Drill NNE

(-2774)

Open
Hole
6820-7003

(-2869)

(-2869)

Vert
Section

100

250

400

500

600

700

800

900

1000

400' N
300' E
o

800' N
600' E

Orifi

6

50 SHEETS
22-141
100 SHEETS
22-142
200 SHEETS
22-144



