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 D[illegible]nent

OIL CONSERVATION DIVISION

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

Form C-101
Revised February 10,1994
Instructions on back
Submit to Appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies
☐ AMENDED REPORT

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

1 Operator Name and Address	2 OGRID Number
TEXACO EXPLORATION & PRODUCTION INC. 205 E. Bender, HOBBS, NM 88240	022351
	3 API Number 30-025-23915

4 Property Code	5 Property Name	6 Well No.
11123	NORTH VACUUM ABO WEST UNIT	20

7 Surface Location

Ul or lot no.	Section	Township	Range	Lot.Idn	Feet From The	North/South Line	Feet From The	East/West Line	County
L	27	17S	34E		1980	SOUTH	660	WEST	LEA

8 Proposed 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
F/P	27/28	17S	34E		2027/707	N/S	1933/613	W/E	LEA

9 Proposed Pool 1	10 Proposed Pool 2
VACUUM ABO NORTH	VACUUM ABO NORTH

11 Work Type Code	12 WellType Code	13 Rotary or C.T.	14 Lease Type Code	15 Ground Level Elevation
D	O	ROTARY	S	4047' GR
16 Multiple	**17 Proposed Depth**	**18 Formation**	**19 Contractor**	**20 Spud Date**
YES	8843'	VACUUM ABO NORTH	DAWSON	8/25/97

21 Proposed Casing and Cement Program

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
11"	8 5/8"	32#	1650'	800 SX	SURF
7 7/8"	5 1/2"	17#	8830'	2700 SX	SURF

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

PLEASE SEE ATTACHED PROCEDURE

Permit Expires 1 Year From Approval Date Unless Drilling Underway

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.

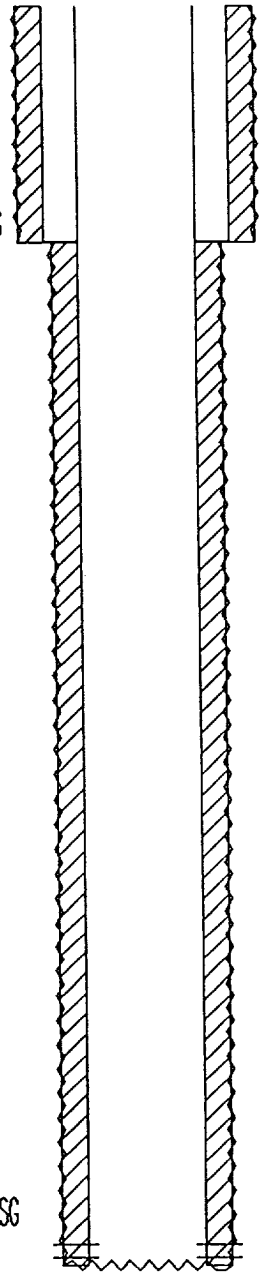
Signature Monte C. Duncan
Printed Name Monte C. Duncan
Title Engr Asst
Date 7/22/97 Telephone 397-0418

OIL CONSERVATION DIVISION

Approved By: ORIGINAL SIGNED BY **CHRIS WILLIAMS** DISTRICT I SUPERVISOR
Title:
Approval Date: Expiration Date:
Conditions of Approval: Attached ☐

DeSoto/Nichols 3-94 ver 1.10

TEXACO E&P INC.
NVAWU No. 20
API# 30 025 23915



0.0 – 1650.0' 8 5/8" OD 32.00#/ft SURF CSG

0.0 – 1650.0' CEMENT 800 sx, circulated

0.0 – 1650.0' 11" OD HOLE

0.0 – 8830.0' 5 1/2" OD 17.00#/ft PROD CSG

1648.0 – 8830.0' CEMENT 1600 sx, TOC by T.S.

1650.0 – 8830.0' 7.875" OD HOLE

8654.0 – 8776.0' PERFS

1980 FSL & 660 FWL
SEC 27, TWN 17S, RANGE 34E
ELEVATION: 4047' GR
COMPLETION DATE: 01-04-72
COMPLETION INTERVALS: 8,654' - 8,776' (ABO)
Former Texaco - NM "D" State NCT-1 No. 6

OVERVIEW

The North Vacuum Abo West Unit # 20 well was drilled in early 1972 as a conventional test of the Abo formation. The well potential 229 BOPD, 9 BWPD and 225 MCFD from Abo perforations 8654'-8658', 8663'-8667', 8672'-8686', 8700', 8711'-8727', 8733', 8742'-8745', 8748'-8749', 8752'-8756', 8760'-8766' and 8770'-8776'. Successful horizontal laterals have been drilled in the NVAWU # 26, #27 and #28 wells. It is proposed to employ this technology on the subject well and drill two +/- 2000 foot horizontal laterals (northeast & southwest) in the Abo formation. The basic well plan is as follows:

a) Lay down rods, pump and tubing. Move pumping unit out of the way.

b) Set a TIW full bore SS-WB-BB permanent packer at +/- 8750'. TIH with space out assembly (+/- 120' drill collars), latch (1.0'), debris sub (2.55') and the 3 degree multi-lateral selective/reentry whipstock (casing collar at +/- 8634', top of window +/- 8619', bottom of window +/- 8626').

c) Drill a short radius curve using an 4-3/4" bit to a measured depth of +/- 8808' (TVD +/- 8752'). The final angle will be 82.1 degrees from vertical.

d) Drill +/- 2000' horizontal section (northeast lateral).

e) Retrieve the whipstock. TIH with a +/- 200' space out assembly (drill collars), latch (1'), debris sub (2.55') and another 3 degree whipstock (casing collar at 8553', top of window +/- 8540', bottom of window +/- 8547').

f) Drill a short radius curve using a 4-3/4" bit to a measure depth of +/- 8712' (TVD +/- 8670'). The final angle will be 74.18 degrees from vertical.

g) Drill a +/- 2000' horizontal section (southwest lateral).

h) Acid frac both horizontal laterals in the well. Place well on submersible pump.

PROPOSED WORK

PRODUCTION HOLE:

1. TOOH and lay down rods, pump and tubing. TIH with a 5-1/2", 17#/ft, TIW full bore packer on wireline and set the top of the packer at +/- 8750'. Correlate the casing collars with the production logs so that the whipstock will be set 5-8' above a casing collar (casing collar at 8634'). TOOH.

2. TIH with the orientation lug and gyro survey tool and tag the packer. Strap the pipe going in the hole. This measurement will be used when setting the whipstock. Accuracy is very important. Check the strap with the wireline measurement. Seat into the riser slot for orientation. Re-set the gyro several times until a consistant azimuth is reached. TOOH.

3. Pick up +/- 120' of space out drill collars, latch debris sub and retrievable whipstock. Tighten to required torques. Lay down the whipstock assembly on the cat walk and back off the spline sleeve (this tool has 72 splines with increments of 5 degrees) on the latch assembly. Stretch a string from the whipstock lug to the compass card at the latch. Orientate the azimuth of the packer slot to the key on the latch assembly. Once the latch assembly has been aligned, orientate the whipstock face to the desired (N44.81E) azimuth. Set the shear pins (5000 #'s per pin) for the required release on the latch.

4. Pick up the whipstock assembly using the lifting clevis. Snub into the rotary and set the space out assembly in the slips. Install the starting mill assembly on the whipstock. TIH slowly (no speed records). Record the weight of the assembly prior to stacking out on the packer. Lower the assembly until weight loss is observed. Do not exceed the shear pin requirements! Pick up and pull 5-8000 pounds to verify the latch is set (do not exceed the shear pin requirements). Shear off the starting mill.

5. Pick up the power swivel and begin circulating. Pick up the drill pipe until the 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 cut out in the casing has been initiated. TOOH.

6. TIH with the metal muncher window mill, string mill and the watermellon 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.

7. 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 Phoenix Drilling Company. Adjust plan to target as necessary. Trip in the hole with Phoenix Drilling's curve building assembly. This will be a 4-3/4" insert bit, 3-3/4" PDM, float sub/orienter combo, 2-flexable monel collars, 2-7/8" 8.7 #/ft P-105 (BTS-6) tubing in the horizontal hole and 2-7/8" AOH drill pipe in the vertical hole).

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

True Vertical Depth	8752'
Measured Depth	8808'
Final Angle	82.1 degrees
Target Azimuth	N 44.81 E
Build Rate	45 degrees/100'

Drill the curve sliding and rotating 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 Phoenix Drilling's lateral assembly. This will be a 4-3/4" insert bit, 3-3/4" articulated motor, float sub/orienter combo, 2 - flexible monel collars, 2-7/8" 8.7 #/ft P-105 (BTS-6) tubing in the horizontal hole and 2-7/8" AOH drill pipe in the vertical hole.

4. Drill +/- 2000' of horizontal hole per the attached Phoenix well plan. **It is highly recommended that a Texaco geologist (Mike Raines) be present on location during the drilling of the entire horizontal section.**

5. Continue drilling the horizontal section per the Texaco Geologist recommendations.

6. Trip out of the hole with the drilling assembly. Set a wireline retrievable bridge plug for 5-1/2", 17 #/ft casing at +/- 8600'. Test the plug to 1000 psi.

7. TIH and retrieve the whipstock. TOOH. TIH with a +/- 200' space out assembly (drill collars), latch, debris sub and another retrievable 3 degree whipstock (top of window at +/- 8540', bottom of window at +/- 8547'). Repeat steps 2-7 (production hole) and steps 1-5 (horizontal hole). Build the curve to estimated target depths and angles as follows:

True Vertical Depth	8670'
Measured Depth	8712'
Final Angle	74.18 degrees
Target Azimuth	224.81 degrees
Build Rate	45 degrees/100'

8. Trip out of hole with the drilling assembly. Set a wireline retrievable bridge plug for 5-1/2", 17 #/ft casing at +/- 8000' Test plug to 1000 psi.

9. Lay down the drill pipe.

10. 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. Trip in the hole with a retrieving head on 2-7/8" tubing. Retrieve the plug. Trip out of the hole and lay down the plug. TIH with tubing and ported subs to within 400 foot of the end of the lateral.

4. Rig up Dowell. Acid frac each Abo horizontal lateral with 120,000 gallons of 20% HCL and gelled water spacers. The acid frac will be done down tubing using ported subs.

5. Flow back immediately. Flow/swab test.

6. Place on pump.

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Energy, Minerals and Natural Resources Department

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Revised February 10,1994
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WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-025-23915	61760	VACUUM ABO NORTH

4 Property Code	5 Property Name	6 Well No.
11123	NORTH VACUUM ABO WEST UNIT	20

7 OGRID Number	8 Operator Name	9 Elevation
022351	TEXACO EXPLORATION & PRODUCTION INC.	4047' GR

10 Surface Location

Ul or lot no.	Section	Township	Range	Lot.Idn	Feet From The	North/South Line	Feet From The	East/West Line	County
L	27	17S	34E		1980	SOUTH	660	WEST	LEA

11 Bottom Hole Location If Different From Surface

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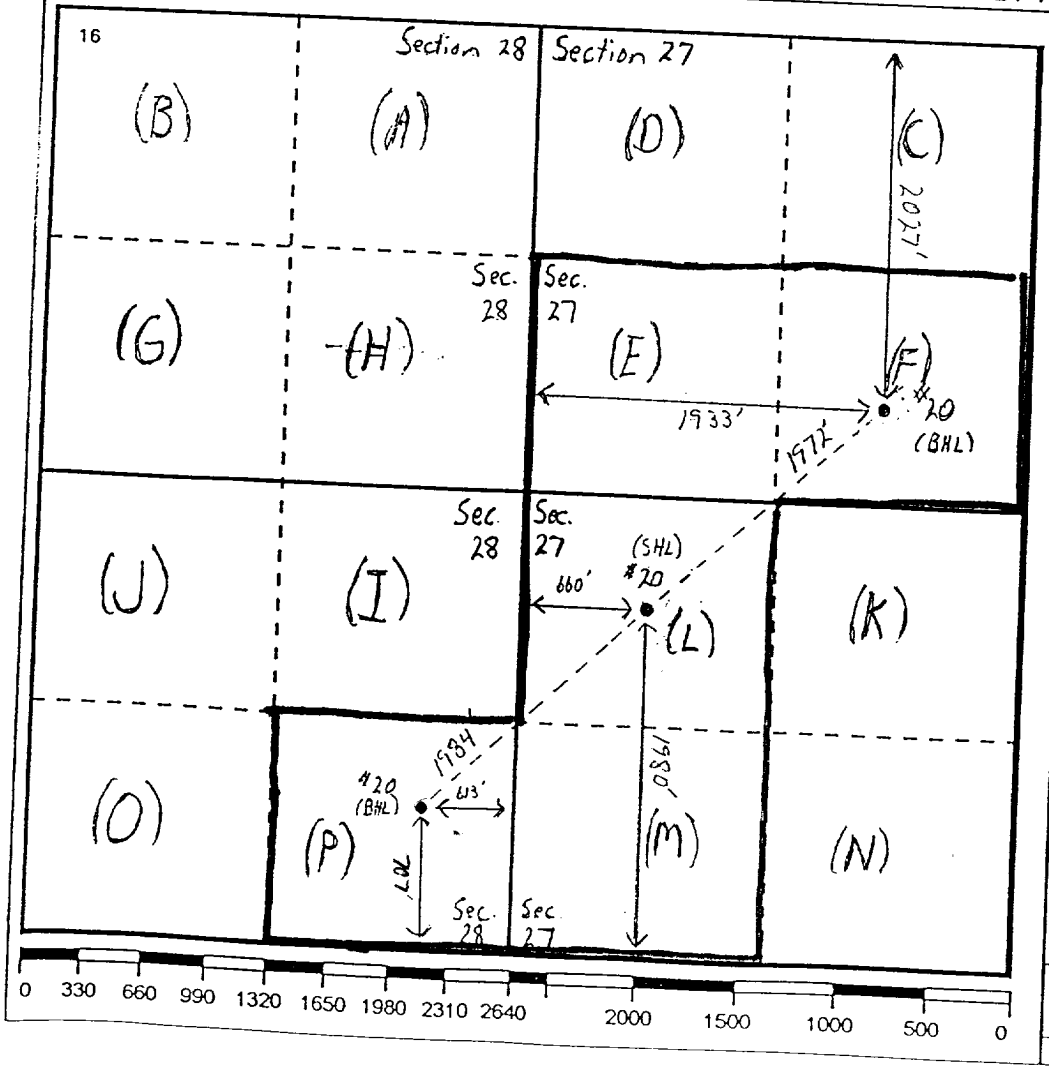
F/P	27/28	17S	34E		2027/707	N/S	1933/613	W/E	LEA

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
200	No		

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



17 OPERATOR CERTIFICATION

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

Signature: Monte C. Duncan

Printed Name: Monte C. Duncan

Position: Engr Asst

Date: 7/22/97

18 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 supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

Signature & Seal of Professional Surveyor

Certificate No.

DeSoto/Nichols 3/94 ver 1.10