

N. M. O. C. C. COPY  
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEYSUBMIT IN TRIPPLICATE\*  
(Other Instr. as on  
reverse side)Form approved.  
Budget Bureau No. 42-R1425.

## APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK  
DRILL ☒ DEEPEN ☐ PLUG BACK ☐

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

2. NAME OF OPERATOR  
Tenneco Oil Company

3. ADDRESS OF OPERATOR  
Box 1031, Midland, Texas

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)\*  
At surface  
660' FNL & 990' FWL  
At proposed prod. zone

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*

10. 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  
800

17. NO. OF ACRES ASSIGNED TO THIS WELL  
160

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

19. PROPOSED DEPTH  
11,500

20. ROTARY OR CABLE TOOLS  
Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)  
3540 GL (Estimated)

22. APPROX. DATE WORK WILL START\*  
Upon approval

23. PROPOSED CASING AND CEMENTING PROGRAM				
SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT

See prognosis and plats attached.

RECEIVED

AUG 19 1965

O. C. C.  
ARTESIA, OFFICE

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, 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.

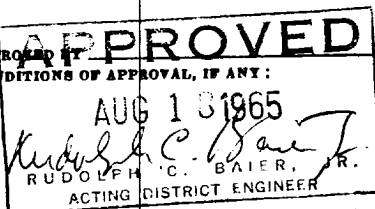
24. SIGNED A.W. Lang TITLE Dist. Prod. Superintendent DATE 8-16-65  
(This space for Federal or State office use)

PERMIT NO. \_\_\_\_\_

APPROVAL DATE \_\_\_\_\_

APPROVED BY  
CONDITIONS OF APPROVAL, IF ANY:

TITLE \_\_\_\_\_



\*See Instructions On Reverse Side

RECEIVED  
AUG 18 1965  
U.S. GEOLOGICAL SURVEY  
ARTESIA, NEW MEXICO

**MEXICO OIL CONSERVATION COMMISS**  
**WELL LOCATION AND ACREAGE DEDICATION PLAT**

Form C-102  
 Supersedes C-128  
 Effective 1-4-65

All distances must be from the outer boundaries of the Section.

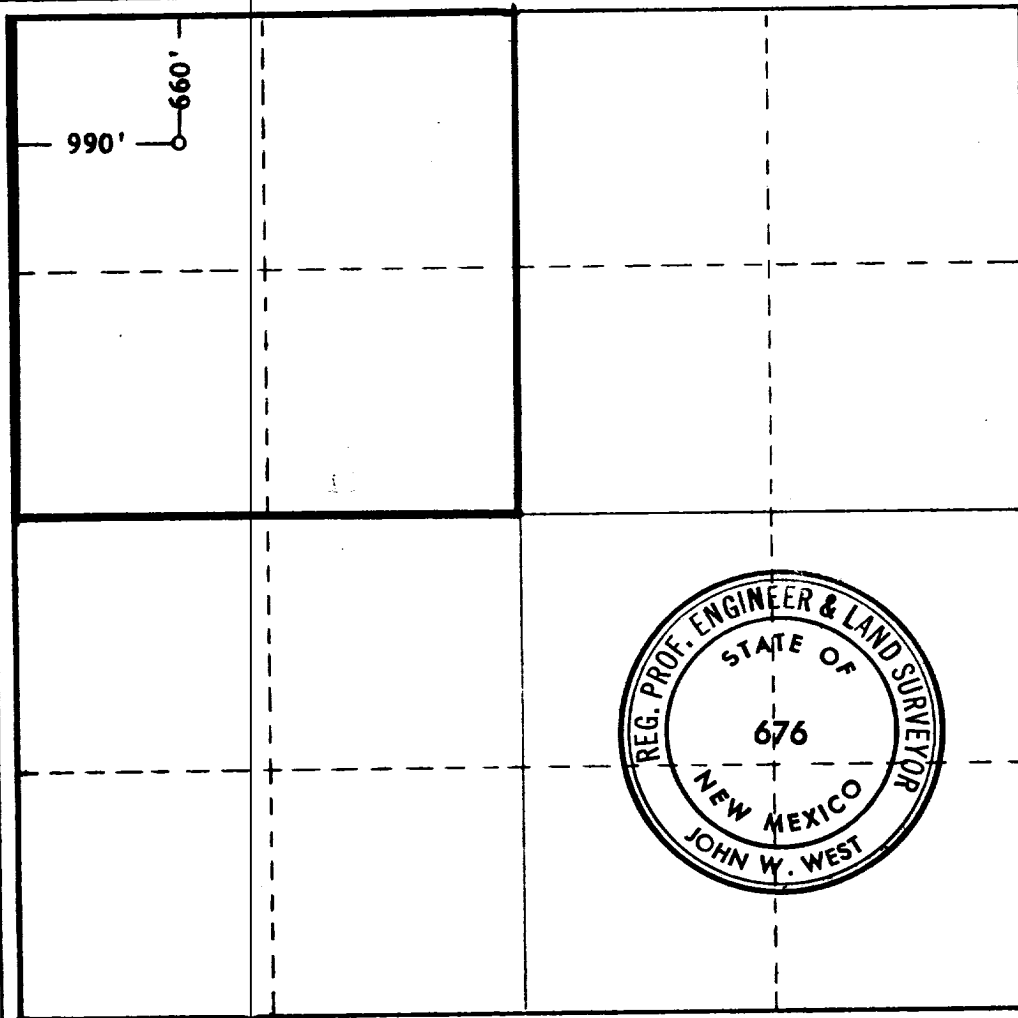
Operator <b>TENNECO OIL COMPANY</b>			Lease <b>JONES B FEDERAL</b>		Well No. <b>4</b>
Unit Letter <b>D</b>	Section <b>26</b>	Township <b>19 SOUTH</b>	Range <b>31 EAST</b>	County <b>EDDY</b>	
Actual Footage Location of Well: <b>660</b> feet from the <b>NORTH</b> line and <b>990</b> feet from the <b>WEST</b> line					
Ground Level Elev. <b>3940 Hgt.</b>	Producing Formation <b>Shinarump</b>	Pool <b>Jack Shinarump</b>		Dedicated Acreage: <b>2.00</b> Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes   ☐ No   If answer is "yes," type of consolidation \_\_\_\_\_

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



**CERTIFICATION**

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

Name *John W. West*  
 Position *Registered Professional Engineer*  
 Company *Tenneco Oil Company*  
 Date *August 14, 1965*

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  
**AUGUST 14, 1965**

Registered Professional Engineer  
 and/or Land Surveyor

*John W. West*  
 Certificate No. **676**

0 330 660 990 1320 1650 1980 2310 2640 2000 1500 1000 500

**MEXICO OIL COMPANY**

**DRILLING PROCEDURE**

**MIDLAND DISTRICT**

**SOUTHWESTERN DIVISION**

**LEASE:** Jones "B" Federal

**WELL:** No. 4

**FIELD:** Lusk Strawn

**STATE:** New Mexico

**LOCATION:** 660' FNL & <sup>990'</sup> ~~660'~~ FWL, Sec. 26, T-19-S, R-31-E, Eddy County, New Mexico

**PROJECTED TD:** 11,500'

**TYPE OF WELL:**

**EST. ELEV.:** 3540' GL

**DRILLING, CASING AND CEMENTING PROGRAM**

1. Drill 17 1/2" hole to 700'± (into Anhydrite).
2. Cement 13 3/8", 48 #/ft., H-40, ST&C casing at 700'± with sufficient 50-50 Incor Pozmix w/2% gel and 2% CaCl<sub>2</sub> and tail in with 100 sx Class "C" w/2% CaCl<sub>2</sub> to circulate. Run bar centralizers on float shoe and bottom two joints. Use a guide shoe and insert float.
3. If float holds, release pressure immediately, center 13 3/8" casing and nipple up as soon as possible. Test casing to 1000 psi for 30 min. and drill out.
4. Drill 11" hole to 4,000'±. NOTE: Loss of circulation may be encountered between 2,800' and 3,500'. If severe at this location, hole may be dry drilled to intermediate casing point. Do not exceed 20,000# bit weight and 60 RPM until first three collars are below casing shoe.
5. At intermediate point, run 8 5/8" casing as follows: 0 - 4000' 32#/ft., J-55, ST&C Use a guide shoe with insert float in second collar. Use weld on bar centralizers on shoe and first two collars. Run a DV Packer at a point below the Yates producing section and above the lost circulation zone. The base of the Yates is estimated at 2600' and the lost circulation zone at 2670' in this well.
6. Cement in two stages as follows:

1st Stage:	200 sx Incor containing 2% CaCl <sub>2</sub>
2nd Stage:	50 sx 50-50 Incor containing 4% CaCl <sub>2</sub>
	followed by sufficient 50-50 Incor
	Pozmix containing 6% gel to reach the
	base of the salt section at approx-
	imately 2230'.
7. If DV tool holds, land casing as cemented, release pressure immediately and nipple up. Run temperature survey after 4 hours. Pressure test DV tool to 1000 psi for 30 min. If o.k., drill out and test 8 5/8" casing to 1000 psi for 30 min. If o.k., drill out with 7 7/8" bit. Do not exceed 20,000 # weight and 60 RPM until first three collars are below casing shoe.
8. Drill 7 7/8" hole to 11,600'±.
9. Run 4 1/2" casing as follows:

0 - 3300':	11.6 #/ft., N-80, LT&C
3300 - 8000':	11.6 #/ft., J-55, ST&C
8000 - 11600':	11.6 #/ft., N-80, LT&C

Use float shoe, differential fill-up collar. Use reciprocating scratchers and centralizers to cover productive interval.

DRILLING, CASING, AND CEMENTING PROGRAM (Cont'd.):

10. Cement with sufficient 50-50 Pozmix S cement with 0.4% HR-4 to cover 1000' above pay zone. Tail in with enough Latex cement to cover 100' above pay zone. Use 2 sx of lime in 10 bbls. water ahead of cement. Add 2 sx sodium bichromate to mud system prior to running casing. Be sure paddle mixer is available for mixing latex cement.
11. If float holds, land casing as cemented, release pressure immediately, nipple up, WOC 8 hrs., run temperature survey, and release rig.

1. Surface Hole: 0 - 700'±: Spud mud with viscosity as needed to clean hole. Use fiber for loss of circulation, if needed.
2. Intermediate: 700-4000'±: Use saturated brine water. Add water to maintain minimum viscosity needed. If hole gives trouble, lower water loss to 20 cc to run casing.  
NOTE: If severe loss of circulation is encountered below 2800', hole will be dry drilled using fresh water to intermediate point. Drilling should not be stopped to combat loss of circulation. If necessary to clean hole before running casing, hole can be cleaned using a slug of mud with sufficient viscosity to move cuttings into caverns.
3. Below Intermediate: 4000-11300'± - Clear water treated with surfactant, some treatment with paper may be required to reduce losses. Lime should be added to keep pH above 10 for corrosion control. If necessary to weight up to control any kicking formation, use brine water to weight up system. Do not mud up until 11,300' is reached.
4. 11300' - T.D.: Use low solids, CMC system with the following properties:

Weight	8.6 - 8.9
Viscosity	38-42 seconds
Water Loss	10-15 cc

Add chemicals and materials as needed to maintain good hole condition to T.D.

#### BLOWOUT PREVENTERS

1. Use Series 900 blowout preventers as per Company specifications.
2. When nipping up, test blowout preventer and manifold to full working pressure with cold water, or as specified by Company representative.
3. Operate blowout preventers at least once each day, or as Company representative requires.
4. An extra set of drill pipe rams will be required on location at all times while drilling or completing.
5. All choke manifolds, lines and valves will be located at the side of and away from substructure.

#### DRILL PIPE MEASUREMENTS

1. Drill Pipe will be tallied at all coring, testing, logging and casing points.
2. Strap drill pipe at all casing, testing, coring, logging, points and at T.D.

### SOLE DEVIATION

1. Deviation surveys shall be taken on every trip or every 500', whichever is first. All straight hole surveys will accompany AAODC tour sheet reports.
2. Deviation should not change more than  $1\frac{1}{2}^{\circ}$  in any 100'. If deviation exceeds  $2^{\circ}$  per 100', hole shall be plugged back and straightened.

3. Maximum deviation shall be allowed as follows:

0 - 500	$\frac{1}{2}^{\circ}$	4000 - 6000	$4^{\circ}$
500 - 1000	$1^{\circ}$	6000 - 8000	$5^{\circ}$
1000 - 2000	$2^{\circ}$	8000 - 10000	$6^{\circ}$
2000 - 4000	$3^{\circ}$	10000 - 12000	$7^{\circ}$
		12000 - 14000	$8^{\circ}$

### DRILLING TIME

1. A recorder with torque, hook load, and rate of penetration will be used.
2. Record 1' drilling time on recorder from surface to T.D..
3. Record 10' drilling time from surface to T.D. on Company forms.

### LOGGING

1. Gamma Ray Sonic Caliper from T.D. to base of intermediate casing.
2. Dual induction-laterolog through sections as specified by wellsite geologist.

### SAMPLES

1. Two sets of 10' samples will be caught, washed, sacked, and labeled in bundles of 100' from surface to T.D.
2. Circulating and additional samples will be obtained as directed.
3. Quart samples will be obtained of all fluids recovered on DST.

CORES      None Anticipated

DRILL STEM TESTS      Tests to be taken at direction of wellsite geologist.

<u>FORMATION TOPS</u>	Top Anhydrite	700'	1st Sand	8340'
	Top Salt	850'	2nd Sand	9100'
	Base Salt	2230'	3rd Sand	9890'
	Top Yates	2430'	Wolfcamp Lime	10520'
	Top Seven Rivers	2660'	Cisco Shale	10700'
	Delaware	4700'	Strawn Lime	11400'
	Bone Springs	7090'	T.D.	11500'

MISCELLANEOUS

1. The AAODC Daily Drilling Report will be filled out completely and neatly each 8-hour tour. One clear and legible copy will be mailed daily to Tenneco Oil Company.
2. A daily report sheet and a cost sheet will be furnished by the operator for the well. The contractor's tool pusher will keep these forms current and complete. The daily cost, total cumulative cost and cumulative mud cost will be given daily along with the Tenneco morning report. At the conclusion of the well, the cost forms will be mailed to Tenneco Oil Company, P.O. Box 1031, Midland, Texas.
3. The morning report shall be called to Tenneco's Midland office as soon after 8:00 C.S.T. each weekday morning as practical. Phone number is MU 3-4621, area code 915.
4. For notifications at other than office hours, call:

LOGGING:

Frank Collins MU 2-1985  
B. E. Desadier MU 4-5390

EMERGENCIES:

Carl Rathburn OX 4-0151  
A. R. Gibson MU 4-7545  
A. W. Lang MU 2-3010

PREPARED BY:

A. R. Gibson

APPROVED BY:

A. R. GibsonB. E. Desadier  
B. E. DesadierA. W. Lang  
A. W. Lang