

CASE 3853: Application of TENNECO
OIL COMPANY FOR A WATERFLOOD
EXPANSION, LEA COUNTY.

Case Number

3853

Application
Transcripts.

Small Exhibits

ETC.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3853
Order No. R-3444-A

APPLICATION OF TENNECO OIL COMPANY
FOR A WATERFLOOD EXPANSION, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on September 4, 1968, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 12th day of September, 1968, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That by Order No. R-3444, dated July 3, 1968, the applicant, Tenneco Oil Company, was authorized to institute a waterflood project in the Mesa Queen Unit Area, Mesa-Queen Pool, by the injection of water into the Queen formation through twelve injection wells in Sections 16, 17, and 20, Township 16 South, Range 32 East, NMPM, Lea County, New Mexico.

(3) That the applicant now seeks amendment of Order No. R-3444 to delete the water injection wells previously authorized in the NE/4 SW/4 of said Section 16 and the NW/4 NW/4 of said Section 20, and to authorize for water injection two wells located in the NW/4 SE/4 of Section 16 and SW/4 NW/4 of Section 20.

-2-

CASE No. 3853

Order No. R-3444-A

(4) That the applicant further seeks an administrative procedure whereby said project could be expanded to include additional lands and injection wells in the area of the said project as may be necessary in order to complete an efficient injection pattern; that said administrative procedure should provide for administrative approval for conversion to water injection in exception to the well response requirements of Rule 701 E-5 of the Commission Rules and Regulations.

(5) That approval of the subject application will not violate correlative rights and should increase the efficiency of the Mesa Queen Waterflood Project and result in greater ultimate recovery of oil, thereby preventing waste.

IT IS THEREFORE ORDERED:

(1) That Order (1) of Order No. R-3444 is hereby amended to read in its entirety as follows:

"(1) That the applicant, Tenneco Oil Company, is hereby authorized to institute a waterflood project in its Mesa Queen Unit Area, Mesa-Queen Pool, by the injection of water into the Queen formation through the following-described wells in Township 16 South, Range 32 East, NMPM, Lea County, New Mexico:

WELL	No.	Unit	Section
Tenneco-Mesa Queen Unit	- 2	NW/4 NE/4	16
Tenneco-Mesa Queen Unit	- 1	NE/4 NW/4	16
Tenneco-Mesa Queen Unit	- 6	SW/4 NW/4	16
Tenneco-Mesa Queen Unit	- 16	NW/4 SE/4	16
Tenneco-Mesa Queen Unit	- 9	SE/4 NE/4	16
Tenneco-Mesa Queen Unit	- 5	SE/4 NE/4	17
Tenneco-Mesa Queen Unit	- 4	SW/4 NE/4	17
Tenneco-Mesa Queen Unit	- 18	SE/4 SW/4	17
Tenneco-Mesa Queen Unit	- 11	NE/4 SW/4	17
Tenneco-Mesa Queen Unit	- 10	NW/4 SW/4	17
Tenneco-Mesa Queen Unit	- 20	SE/4 SE/4	17
Tenneco-Mesa Queen Unit	- 24	SW/4 NW/4	20 "

(2) That Order (2) of Order No. R-3444 is hereby amended to read in its entirety as follows:

"(2) That the subject waterflood project is hereby designated the Tenneco Mesa Queen Waterflood Project and shall be governed by

-3-

CASE No. 3853

Order No. R-3444-A

the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations;

PROVIDED HOWEVER, that the Secretary-Director of the Commission may approve expansion of the Tenneco Mesa Queen Waterflood Project to include such additional lands and injection wells in the area of said project as may be necessary to complete an efficient water injection pattern; that the showing of well response as required by Rule 701 E-5 shall not be necessary before obtaining administrative approval for the conversion of additional wells to water injection."

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


DAVID F. CARGO, Chairman


GORTON B. HAYS, Member


A. L. PORTER, Jr., Member & Secretary

esr/

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

September 13, 1968

C Mr. Charles White
White, Gilbert, Koch & Kelly
Attorneys at Law
Post Office Box 787
Santa Fe, New Mexico

O Dear Sir:

Reference is made to Commission Order No. R-3444-A, recently entered in Case No. 3853, approving the revision of Tenneco's Mesa Queen Waterflood Project.

P Additional water injection shall be through the two newly authorized water injection wells, each of which shall be equipped with tubing set in a packer approximately 50 feet above the uppermost perforation. The casing-tubing annulus shall be loaded with an inhibited fluid and left open or equipped with a pressure gauge to facilitate detection of tubing, casing, or packer leakage.

Y As to allowable, our calculations indicate that when all of the presently authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 1008 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less.

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe office of the Commission and the appropriate district proration office.

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

-2-

Mr. Charles White
White, Gilbert, Koch & Kelly
Attorneys at Law
Post Office Box 737
Santa Fe, New Mexico

September 13, 1968

both of the aforementioned Commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

Your cooperation in keeping the Commission so informed as to the status of the project and the wells therein will be appreciated.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/DW/ir

cc: Oil Conservation Commission
Hobbs, New Mexico

Mr. D. E. Gray
State Engineer Office
Santa Fe, New Mexico

GOVERNOR
DAVID F. CARGO
CHAIRMAN

State of New Mexico
Oil Conservation Commission



LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

P. O. BOX 2088
SANTA FE

September 12, 1968

Mr. Charles White
White, Gilbert, Koch & Kelly
Attorneys at Law
Post Office Box 787
Santa Fe, New Mexico

Re: Case No. 3853
Order No. R-3444-A
Applicant:

Tenneco Oil Company

Dear Sir:

Enclosed herewith is a copy of the above-referenced Commission order recently entered in the subject case. Letter pertaining to conditions of approval and maximum allowable to follow.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x
 Artesia OCC _____
 Aztec OCC _____
 State Engineer x

Other _____

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3790
Order No. R-3444

APPLICATION OF TENNECO OIL COMPANY
FOR A WATERFLOOD PROJECT, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on June 26, 1968,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this _____ day of July, 1968, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

- (1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.
- (2) That the applicant, Tenneco Oil Company, seeks permis-
sion to institute a waterflood project in its Mesa Queen Unit Area,
Mesa-Queen Pool, by the injection of water into the Queen formation
through twelve injection wells in Sections 16, 17, and 20, Town-
ship 16 South, Range 32 East, NMPM, Lea County, New Mexico.
- (3) That the wells in the project area are in an advanced
state of depletion and should properly be classified as "stripper"
wells.
- (4) That the proposed waterflood project should result in
the recovery of otherwise unrecoverable oil, thereby preventing
waste.
- (5) That the subject application should be approved and the
project should be governed by the provisions of Rules 701, 702,
and 703 of the Commission Rules and Regulations.

-2-
CASE No. 3790
Order No. R-3444

IT IS THEREFORE ORDERED:

(1) That the applicant, Tenneco Oil Company, is hereby authorized to institute a waterflood project in its Mesa Queen Unit Area, Mesa-Queen Pool, by the injection of water into the Queen formation through the following-described wells in Township 16 South, Range 32 East, NMPM, Lea County, New Mexico:

WELL	No.	Unit	Section
Tenneco-Mesa Queen Unit	- 2	NW/4 NE/4	16
Tenneco-Mesa Queen Unit	- 1	NE/4 NW/4	16
Tenneco-Mesa Queen Unit	- 6	SW/4 NW/4	16
Tenneco-Mesa Queen Unit	- 15-16	NE/4 SW/4 NW SE	16 --
Tenneco-Mesa Queen Unit	- 9	SE/4 NE/4	16
Tenneco-Mesa Queen Unit	- 5	SE/4 NE/4	17
Tenneco-Mesa Queen Unit	- 4	SW/4 NE/4	17
Tenneco-Mesa Queen Unit	- 18	SE/4 SW/4	17
Tenneco-Mesa Queen Unit	- 11	NE/4 SW/4	17
Tenneco-Mesa Queen Unit	- 10	NW/4 SW/4	17
Tenneco-Mesa Queen Unit	- 20	SE/4 SE/4	17
Tenneco-Mesa Queen Unit	- 22	NW/4 NW/4	20 --

(2) That the subject waterflood project is hereby designated the Tenneco Mesa Queen Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

GUYTON B. HAYS, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

esr/

Case 3853
Hear. 9-4-68
Rec. 9-8-68.

Grant Dennee permission to
substitute 2 injection wells for
2 which was approved in R-3444.
as follows.

Mesa unit #16 for #15
" " #24 for #22
#16 located 2310/S+E Sec. 16-16S-32E.
#24 " 1650/N, 660/W 20-16S-32E.
Injection to be in Queen Jane area
approved in R-3444

Thud. R.

(2)

September 4, 1968 Examiner Hearing
(Case 3852 continued)

Docket No. 26-68

Range 34 East, Lea County, New Mexico, in such a manner as to produce oil from the Abo, Middle Pennsylvanian and Morrow formations, Vacuum Field, through parallel strings of tubing.

CASE 3651: (Reopened)

In the matter of Case No. 3651 being reopened pursuant to the provisions of Order No. R-3315, which order created the North Morton Permo-Pennsylvanian Pool, Lea County, New Mexico, and established 80-acre spacing units for said pool for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 3853:

Application of Tenneco Oil Company for a waterflood expansion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the expansion of its Mesa Queen Waterflood Project, Mesa-Queen Pool, by the conversion to water injection of two additional wells located in the SW/4 NW/4 of Section 20 and the NW/4 SE/4 of Section 16, both in Township 16 South, Range 32 East, Lea County, New Mexico. Applicant further seeks an administrative procedure whereby said project could be expanded to include additional lands and injection wells as may be necessary to complete an efficient injection pattern.

CASE 3854:

Application of Sinclair Oil & Gas Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Yates formation in the perforated interval from 3636 feet to 3700 feet in its Ballard DE Federal Well No. 6 located in Unit L of Section 22, Township 20 South, Range 34 East, Lynch Field, Lea County, New Mexico.

CASE 3431: (Reopened):

In the matter of Case No. 3431 being reopened pursuant to the provisions of Order No. R-3100-A to permit Sinclair Oil & Gas Company to show cause why its W. H. Turner Well No. 1 located in Unit L of Section 29, Township 21 South, Range 37 East, Lea County, New Mexico, a dual completion in the Drinkard and Blinbry Oil Pools, should not be completed in accordance with the provisions of Rule 112-A of the Commission Rules and Regulations.

CASE 3855:

Application of Sunray DX Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Seven Rivers formation in the interval from approximately 3693 feet to 3733 feet in its H. D. Greer Well No. 1 located in Unit C of Section 21, Township 22 South, Range 36 East, South Eunice Pool, Lea County, New Mexico.



TENNECO OIL COMPANY • P. O. BOX 1031 • 1800 WILCO BUILDING • MIDLAND, TEXAS 79701

August 7, 1968

Self handling
Case 3853

New Mexico Oil Conservation Commission
Mr. A. L. Porter, Jr., Secretary Director
P. O. Box 2088
Santa Fe, New Mexico

Gentlemen:

Tenneco requests administrative approval to convert the following Mesa Queen Unit wells in the Mesa Queen Field, Lea County, New Mexico, to water injection service.

UNIT WELL NO. 24: Located in the SW/4 of NW/4 Section 20, Unit Tract No. 15, T-16-S, R-32-E (Formerly Coastal States Mesa Gulf No. 1-E)

UNIT WELL NO. 16: Located in the NW/4 of SE/4 Section 16, Unit Tract No. 9, T-16-S, R-32-E (Formerly Antweil Humble State No. 1-J)

The above wells will be converted to injection instead of converting Unit Well No. 15 located in the NE/4 of the SW/4 of Section 16, Unit Tract No. 5b (formerly Tenneco's Mobil State No. 3-K) and Unit Well No. 22 located in the NW/4 of NW/4 of Section 20, Unit Tract No. 14 (formerly Shell's Decleva State No. 1-D) as was originally specified in Case No. 3790 and Commission Order No. R-3444 approving the Tenneco Mesa Queen Waterflood Project which became effective on August 1, 1968. Unit Wells No. 15 and 22 will probably be converted to injection later in the life of the flood.

In compliance with Statewide Rule 701, three copies of the following are enclosed:

1. A plat showing the unit boundary, the existing unit wells, those wells proposed for injection under Order No. R-3444, and the additional two wells desired to be converted which are the subject of this letter.
2. Logs of Unit Wells No. 24 and 16 with completion intervals marked and the proposed new perforations in Well No. 24.

68 AUG 8 AM 8 31

DOCKET MAILED

Date 8/22/68

TENNECO OIL COMPANY

August 7, 1968

3. Diagrammatic sketches of the proposed injection wells showing all casing strings, amount of cement used, intervals to be injected into, tubing, type and location of packer, and other pertinent information.

Please note on the log and schematic diagrams that we prepose to perforate an additional zone in Unit Well No. 24 prior to converting the well to injection. These new perforations are opposite a transition zone of porosity containing both oil and water. Water injection will be into both the present and new perforations below a packer on 2-3/8" tubing. The required forms will be filed with the Commission prior to the workover. No additional perforations are required in Unit Well No. 16.

We will appreciate your administrative approval of this application as soon as possible.

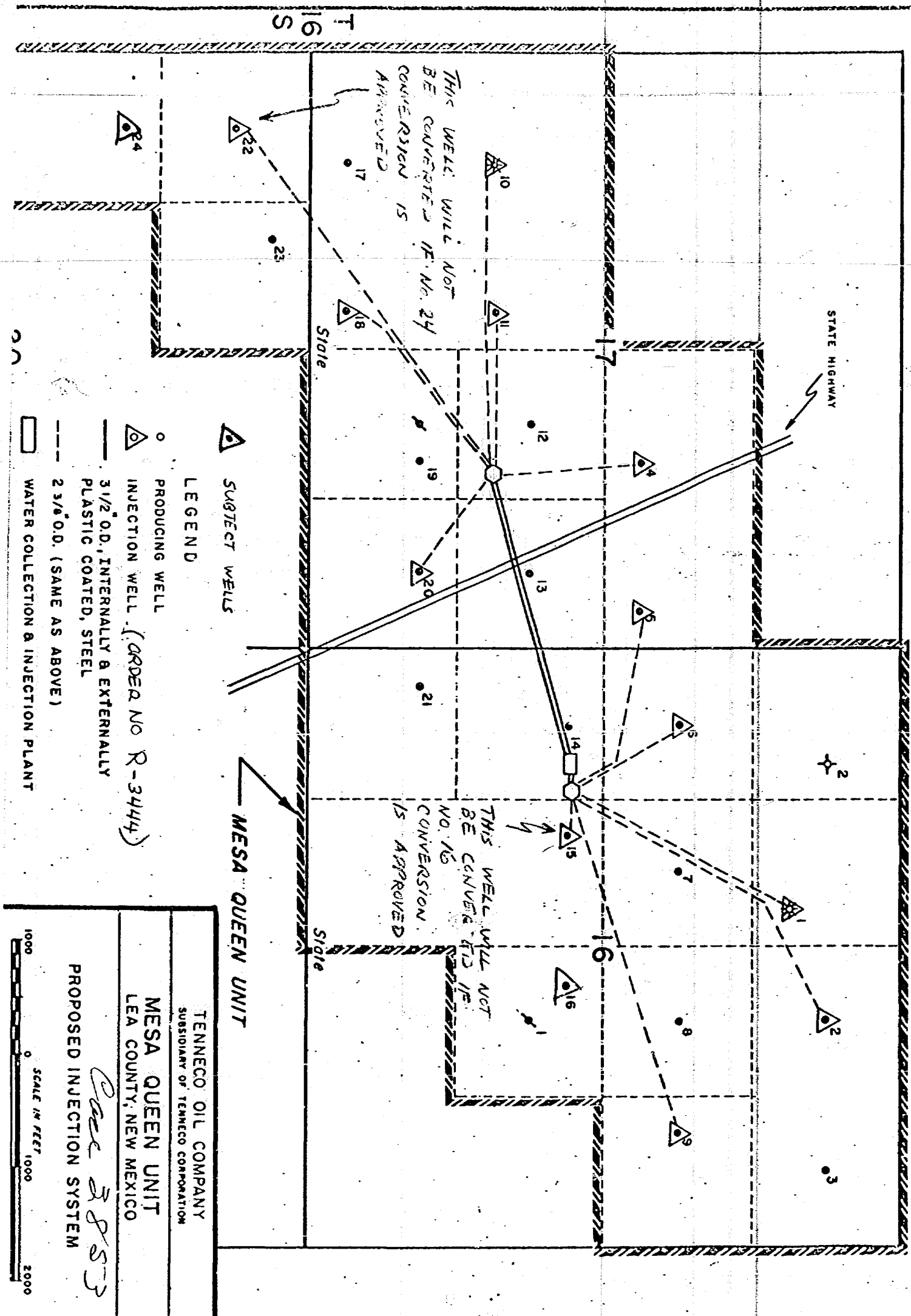
Very truly yours,

TENNECO OIL COMPANY

J. J. Carnes
for J. J. McDonald
District Superintendent

WVP:cw

Enclosures



ELEV. 4363'

8-5/8" C @ 326' w/200 Sx.

Est. top cement 2200'

Annulus loaded with corrosion
inhibited fluid

Fresh water to be injected down
tubing at 300 - 600 BOPD with
approx. 1000 - 1500 PSIG surface
injection pressure

Seating nipple
2-3/8", 4 7/8", J-55 tbg. on tension
packer at 3350'

Top Queen Sand 3403'
Pay Queen Sand

3403 } Existing Perforations
3408 }

3412 } Proposed New Perforations
3420 }

PBTD 3464'

4-1/2" C @ 3464' w/200 Sx.

TD 3465'

Completed 6-29-65 from 3403 - 3408
IPP 48 BOPD after 200 gallons acid

TENNECO OIL COMPANY
SUBSIDIARY OF TENNECO CORPORATION

MESA QUEEN UNIT WELL NO. 24

Case 2852

PROPOSED PRODUCING WELL TO BE
CONVERTED TO INJECTION
1650' FNL & 660' FWL
Sec. 20 T-16-S R-32-E
MESA QUEEN FIELD, LEA CO., N. M.

MESA QUEEN UNIT WELL No. 24

SCHUMBERGER COMPANY COASTAL STATE GAS PRODUCING COMPANY WELL MESA GULF # 1 FIELD MESA QUEEN COUNTY LEA STATE NEW MEXICO LOCATION 660' FROM W/L 1650' FROM N/L Sec. 20 Twp. 16S Rge. 32E Permanent Datum: GL Elev. 4353.4 Log Measured From: XB 10' Ft. Above Perm. Datum Elev.: KB 4363.4 Drilling Measured From: KB D.F. 4353.4	
Date 6-24-65 Run No. ONE Depth - Driller 3427 Depth - Logger 3418 8th Log Interval 3413 Top Log Interval 0 Casing - Driller 8 5/8" 326 Casing - Logger 7 7/8"	Type Fluid in Hole SALT GEL STARCH Dens. 10.2 35 pH Fluid Loss 1 12ml Source of Sample P11 R _h to Meas. Temp. 04 91°F R _h to Meas. Temp. 045 69°F R _h to Meas. Temp. 04 90°F Source, Ref. R _h R _h to BHT 04 90°F Time Since Circ. 4 HOURS Max. Rec. Temp. 90 Equip. Location 3701 HOBBS Recorded By LEFLER Witnessed By MR. STATION

West Texas Electrical Log Service
Dallas 2, Texas

REFERENCE W6392H



4363
930
3427

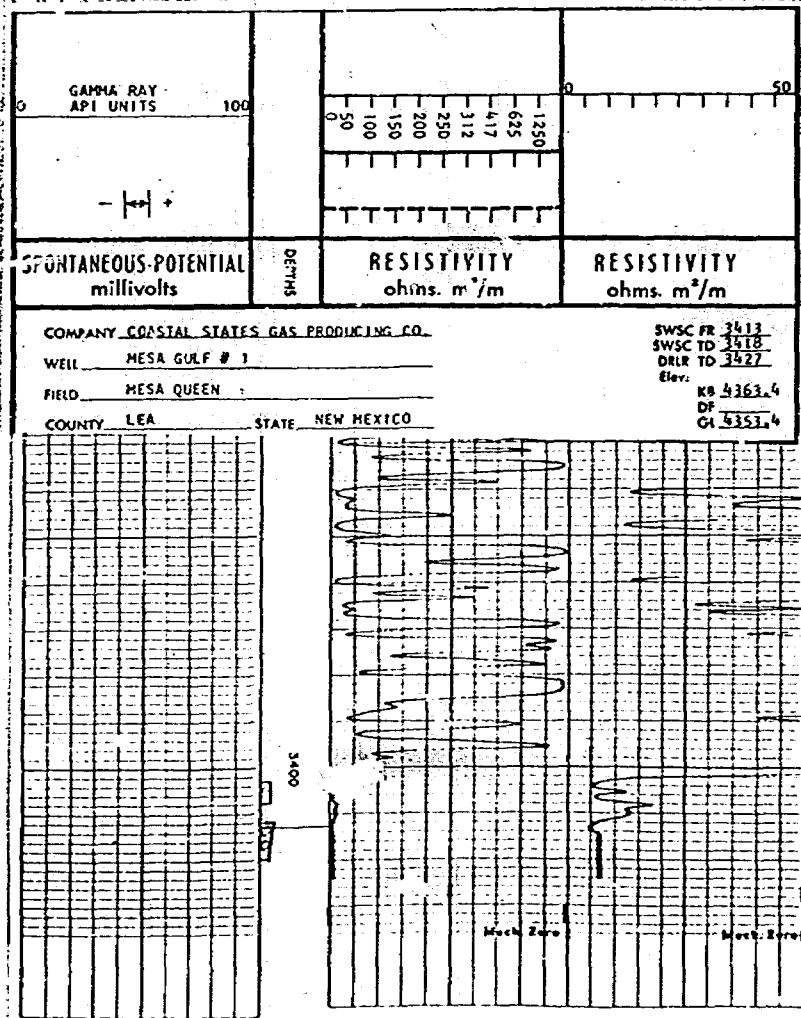
COMPLETION RECORD

SPUD DATE

COMP DATE

OST RECORD

CASING RECORD



EXISTING PERFORATIONS 3403-3408
PROPOSED NEW PERFORATIONS 3412-3420

Case 3853

ELEV. 4350'

8-5/8" C @ 375' w/200 Sx.

Est. top cement 2000'

Annulus loaded with corrosion
inhibited fluid

Fresh water to be injected down
tubing at 300 - 600 BWPD with
approx. 1000 - 1500 PSIG surface
injection pressure.

Seating nipple
2-3/8", 4.7#, J-55 tubing on tension
packer at 3360'

Top Queen Sand 3401'
PAY: Queen Sand

3412'
3416' Perforations

PBTD 3486'

5-1/2" C @ 3503' w/150 Sx.

TD 3503'

Completed 4-14-64
Acidized with 250 Gallons
IPF 47 BOPD + 32 BWPD

TENNECO OIL COMPANY
SUBSIDIARY OF TENNECO CORPORATION

MESA QUEEN UNIT
WELL NO. 16

PROPOSED PRODUCING WELL TO BE
CONVERTED TO INJECTION
2310' FS & EL Sec. 16 T-16-S, R-32-E
MESA QUEEN FIELD, LEA CO., N. M.

Case 3853

MESA QUEEN UNIT

WELL NO. 16

COUNTY LEA FIELD MESA QUEEN LOCATION 2110' FROM S/L 2110' FROM E/L COUNTY LEA STATE NEW MEXICO LOCATION 2110' FROM S/L 2110' FROM E/L Sec. 16 Twp. 16S Rge. 32E Permanent Datum: GL Elev. 4350 Log Measured From: KB 10 Ft. Above Perm. Datum Drilling Measured From: KB Date 4-13-64 Run No. 045 Depth—Driller 3500 Depth—Logger 3503 Rim Log Interval 3496 Top Log Interval 0 Casing—Driller 328 @ 328 Casing—Logger 328 Bit Size 7 7/8" Type Fluid in Hole SALT Dens. Visc. 10.4 36 pH Fluid Loss 6 7 m Source of Sample B. @ Meas. Temp. 045 @ 75 °F R. @ Meas. Temp. @ °F R. @ Meas. Temp. @ °F Source R. @ R. @ B. @ RHT @ °F Time Since Circ. 2 HOURS Max. Rec. Temp. °F Equip. Location 2519 HOBBS Recorded By WILSON Witnessed By VETETO		COMPANY MORRIS R. ANTHEIL WELL HUMBLE STATE # 1 FIELD MESA QUEEN COUNTY LEA STATE NEW MEXICO LOCATION 2110' FROM S/L 2110' FROM E/L Other Services: Elev. K.B. 4350 D.F. 4340 G.I. 4340	

Reproduced By
 West Texas Electrical Log Service
 Dallas 2, Texas

REFERENCE W43021



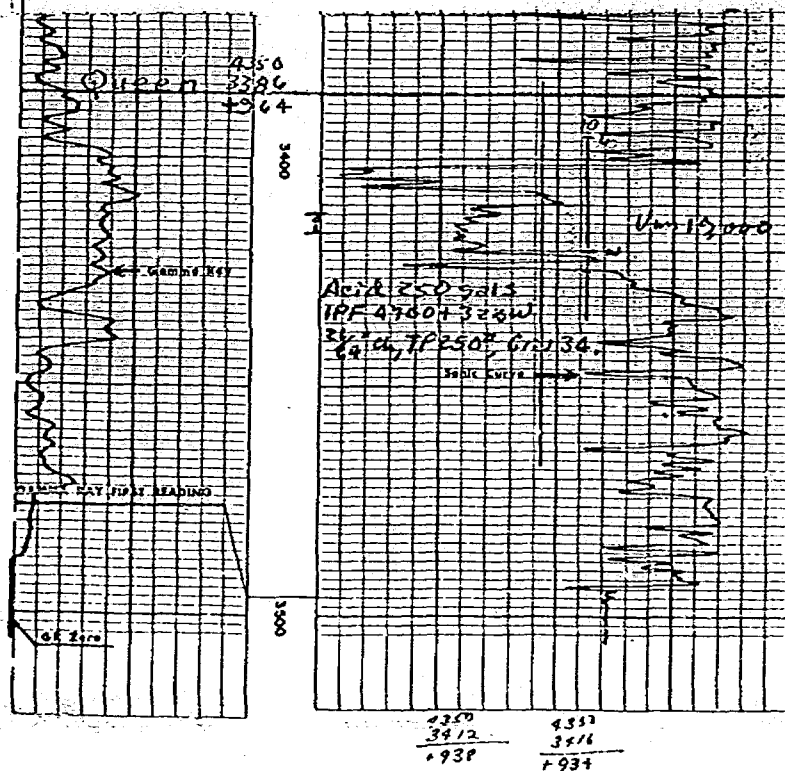
12 COMPLETION RECORD

SPUD DATE

COMP DATE

OST RECORD

PERFORATIONS 3412-3416



0 125 250 125 250 GAMMA RAY API UNITS		100 70 50 100 70 50 INTERVAL TRANSIT TIME MICROSECONDS PER FOOT	
COMPANY MORRIS R. ANTHEIL WELL HUMBLE STATE # 1 FIELD MESA QUEEN COUNTY LEA		SWSR # 3436 SWSR TO 3503 DRLE TO 3502 Elev. 4350	

Call 3853

dearnley-meier reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMMS BLDG. • P. O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO



BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
September 4, 1968

EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil Company
for a waterflood expansion, Lea
County, New Mexico.

Case 3853

BEFORE: Elvis A. Utz
Examiner

TRANSCRIPT OF HEARING

MR. UTZ: The hearing will come to order, please.

Case 3853.

MR. HATCH: Case 3853. Application of Tenneco Oil Company for a waterflood expansion, Lea County, New Mexico.

MR. WHITE: Charles White of White, Gilbert, Koch and Kelly, Santa Fe, New Mexico, appearing on behalf of the Applicant. We have one witness to be sworn.

(Witness sworn.)

(Whereupon, Applicant's Exhibits 1 through 5, inclusive, were marked for identification.)

MR. UTZ: Are there any other appearances? If there are none, you may proceed.

WALTER V. PALMER

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. WHITE:

Q Mr. Palmer, will you state your full name for the record, by whom you are employed and in what capacity.

A My name is Walter Palmer. I'm employed by Tenneco Oil Company as a petroleum engineer.

Q Have your professional qualifications previously been accepted by this Commission as a matter of record?

A They have.

Q Will you briefly state what the petitioner seeks by the application?

A Tenneco appeared in Case Number 3790, hearing held June the 26th, 1968, requesting approval of the Mesa-Queen water-flood project. The Commission issued Order R-3444 dated July 3rd, 1968, approving same project.

The present hearing seeks to amend Order R-3444 substituting Unit Wells Numbers 16 and 24 in lieu of injection wells Number 15 and 22.

Q Do you also seek administrative approval to expand the area and add additional wells?

A Yes.

MR. WHITE: If the Examiner, please, at this point, we ask that you take administrative notice of the record in Case Number 3790.

MR. UTZ: I will do so.

Q Will you refer to Exhibit 1 and explain the exhibit, please?

A Exhibit 1 is a plat of the Mesa-Queen Unit showing the location of the producing and injecting wells. Also shown in red are the subject wells, Number 16 and 24.

Q Will you point out the injection wells 15 and 22?

A Injection Well Number 22 is the direct north offset to Well Number 24. Injection Well Number 15 is the direct west offset to the well shown in red, Number 16. They were the original wells intended for injection on the first application, 22 and 15.

Q Why does Tenneco want this substitution and what brought about the application?

A On the original application, Wells Number 16 and 24 were single wells and single tracts operated by single operators and it was not known whether they would join the unit; therefore, they were not designated as injection wells. Subsequently, those tracts have joined the unit and it is desirable to use them as injectors instead of Wells 15 and 22.

Q Will this substitution affect the water project in any way?

A It will improve the aerial sweep efficiency of the water injection pattern.

Q What is the present status of wells, 24 and 16?

A 24 and 16 are both marginal, submarginal producers.

Q Will you refer to Exhibit 2 and explain your diagrammatic sketch?

A Exhibit 2 is a schematic diagram of Unit Well Number 16, one of the wells we would like to convert to injection, showing the location of the casing and the number of sacks of cement used to cement that casing. Five and a half inch was cemented

at 3530 with 150 sacks. Estimated top of the cement, 2000 feet. Fresh water to be injected down the tubing at 300 to 600 barrels of water per day and approximately 1,000 to 1500 pounds per square inch pressure below a tubing packer set approximately 50 feet above the top of the perforations. Injection will be down two and three-eighths tubing and the annulus will be loaded with corrosion inhibited fluid, and the pressure gauge set at the surface annulus or left open to observe for any leaks.

MR. UTZ: Two inch tubing?

THE WITNESS: Two and three-eighths inch.

Q What type of packer will you use and what will be its location?

A Be a tension-type packer about 50 feet above the top of the perforation as shown in the diagram.

Q Will you refer to Exhibit 3 and explain that, please?

A Exhibit 3 is a schematic diagram of the other well, Unit Well Number 24, showing the same type of thing that I explained on the other diagram.

Q Same type installation?

A Yes, exactly the same type installation. The only difference here between, in Well Number 24 is we propose some new perforations and some additional Queen porosity. It will be the same type of completion with the annular corrosion inhibited fluid and the packer 50 feet above the top of the perforations

and two and three-eighths inch tubing.

Q In your opinion, will this proposed installation effectively segregate the injected water from the other zones?

A Yes, it should.

Q Will you refer to Exhibit Number 4 and 5, respectively?

A Exhibit Number 4 is a sonic gamma-ray log of Well Number 16, showing the perforated interval. And Exhibit Number 5 is the same thing for Unit Well Number 24, also showing the perforated interval and the proposed new perforations.

Q Proposed new perforations are 3412, 3420?

A That's right, sir.

Q Does that conclude your testimony?

A I believe that's all I have.

Q Were these exhibits prepared by you or under your direction?

A They were.

MR. WHITE: At this time, we offer Exhibits 1 through 5 and that concludes our direct.

MR. UTZ: Without objection, Exhibits 1 through 5 will be entered into the record in this case.

(Whereupon, Applicant's Exhibits Numbers 1 through 5, inclusive were entered in evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Palmer, is it your intention to set a pressure gauge at the surface in the annulus?

A Yes, sir. We'll either do that or leave it open. Most probably use a pressure gauge.

Q And this is just plain tubing, uncoated tubing?

A Yes, sir.

Q Injecting fresh water?

A Fresh water purchased from Double Eagle Corporation of Roswell. The injected water will be treated with an oxygen scavenger for corrosion.

MR. UTZ: Are there any other questions of the witness? He may be excused. Statements in this case? The case will be taken under advisement.

I N D E X

<u>WITNESS</u>	<u>PAGE</u>
WALTER V. PALMER	
Direct Examination by Mr. White	2
Cross Examination by Mr. Utz	7

E X H I B I T S

<u>Number</u>	<u>Marked for Identification</u>	<u>Received in Evidence</u>
Applicant's Exhibits 1 through 5	2	6

9

Witness my Hand and Seal this 4th day of October, 1968.

Notary Public

February 10, 1971.

Received by me on Sept 11, 1968
Eustace, Examiner
 New Mexico Oil Conservation Commission

R-32-E

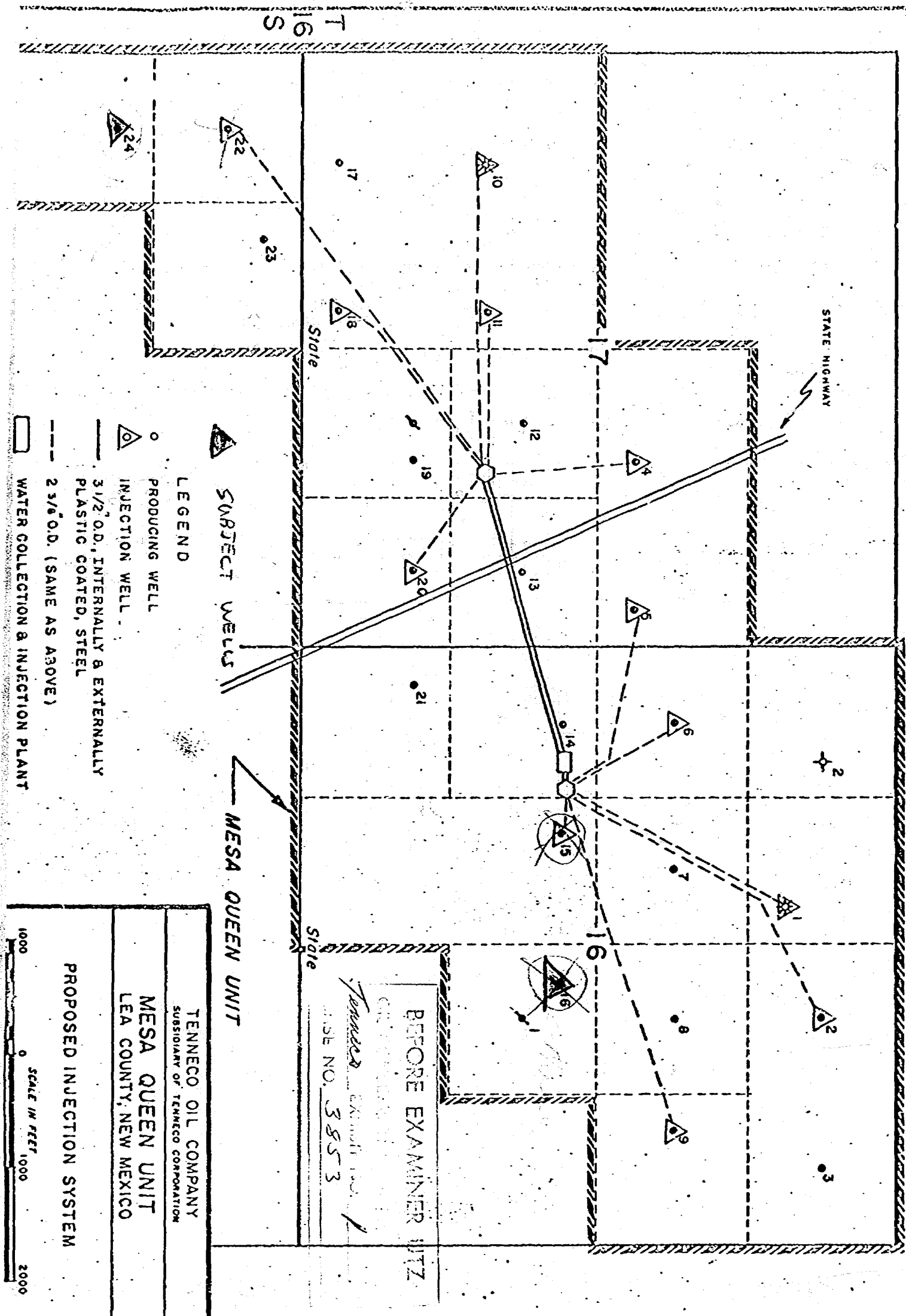


EXHIBIT 1
CASE 3853

ELEV. 4350'

8-5/8" C @ 375' w/200 Sx.

Est. top cement 2000'

Annulus loaded with corrosion
inhibited fluid

Fresh water to be injected down
tubing at 300 - 600 BWPD with
approx. 1000 - 1500 PSIG surface
injection pressure.

Seating nipple
2-3/8", 4.7#, J-55 tubing on tension
packer at 3360'

Top Queen Sand 3401'
PAY: Queen Sand

3412'
3416' Perforations

PBTD 3486'

5-1/2" C @ 3503' w/150 Sx.

TD 3503'

Completed 4-14-64
Acidized with 250 Gallons
IPF 47 BOPD + 32 BWPD

TENNECO OIL COMPANY
SUBSIDIARY OF TENNECO CORPORATION

MESA QUEEN UNIT
WELL NO. 16

PROPOSED PRODUCING WELL TO BE
CONVERTED TO INJECTION
2310' FS & EL Sec. 16 T-16-S, R-32-E
MESA QUEEN FIELD, LEA CO., N. M.

EXHIBIT 2

CASE 3853

BEFORE EXAMINER: UTZ

Witness

2

CASE NO. 3853

ELEV. 4363'

8-5/8" c @ 326' w/200 Sx.

Est. top cement 2200'

Annulus loaded with corrosion inhibited fluid

Fresh water to be injected down tubing at 300 - 600 BOPD with approx. 1000 - 1500 PSIG surface injection pressure

Seating nipple
2-3/8", 4 7/8", J-55 tbg. on tension packer at 3350'

Top Queen Sand 3403'
Pay Queen Sand

3403
3408 Existing Perforations
3412
3420 Proposed New Perforations

PBTD 3464'

TD 3465'

4-1/2" c @ 3464' w/200 Sx.

Completed 6-29-65 from 3403 - 3408
IPP 48 BOPD after 200 gallons acid

TENNECO OIL COMPANY
SUBSIDIARY OF TENNECO CORPORATION

MESA QUEEN UNIT WELL NO. 24

PROPOSED PRODUCING WELL TO BE
CONVERTED TO INJECTION
1650' FNL & 660' FWL
Sec. 20 T-16-S R-32-E
MESA QUEEN FIELD, LEA CO., N. M.

EXHIBIT 3

CASE 3853

OFFICE EXAMINER 117

Tenneco

3853

3

UNIT WELL No 16

SCHUMBERGER COMPANY MORRIS R. ANTHELL WELL HUMBLE STATE # 1 FIELD MESA QUEEN COUNTY LEA STATE TEXAS LOCATION 2310' FROM S/L 2310' FROM E/L Sec. 16 Twp. 16S Rge. 32E Permanent Datum: GL Elev. 4340 Log Measured From: KB Ft. Above Perm. Datum Drilling Measured From: KB Other Services: Elev. K.B. 4350 D.F. 4350 G.I. 4350 Date 4-13-64 Run No. ONE Depth—Driller 3500 Depth—Logger 3503 Birm. Log Interval 3496 Top Log Interval 0 Casing—Driller @ 328 Casing—Logger 328 Bit Size 7 7/8" Type Fluid in Hole SALT Dens. Visc. 10.5 36 pH Fluid Loss 6 1 7 ml Source of Sample R ₁ @ Meas. Temp. 1,045. 75. °F R ₂ @ Meas. Temp. °F R ₃ @ Meas. Temp. °F R ₄ @ Meas. Temp. °F Source R ₁ R ₂ R ₃ R ₄ Time Since Cte. 2 HOURS Max. Rec. Temp. °F Equip. Location 2519 THOBBS Recorded By WILSON Witnessed By VETETO	
---	--

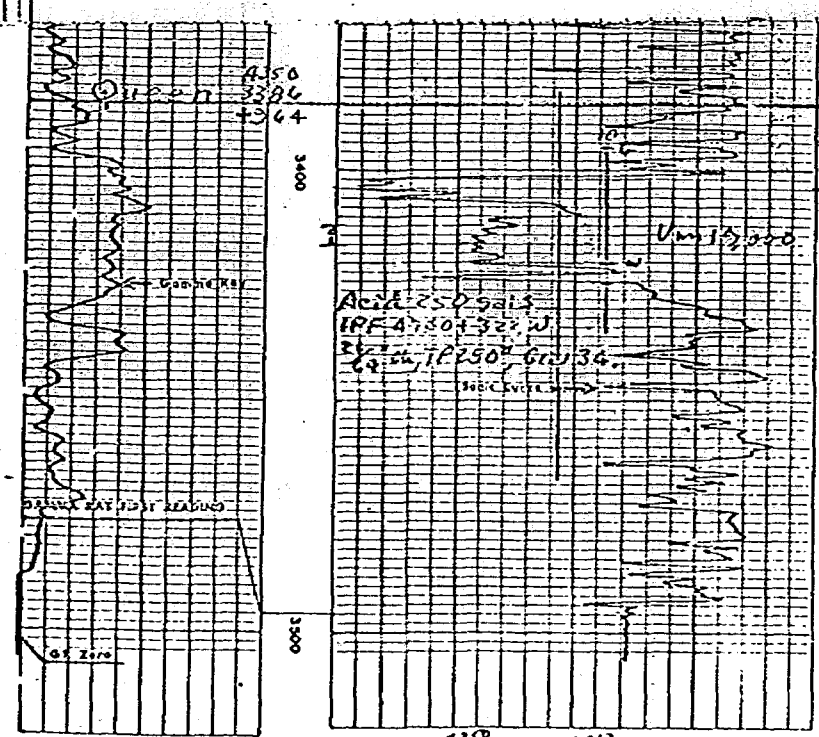
Reproduced By
West Texas Electrical Log Service
 Dallas 2, Texas

REFERENCE W4302L



12 COMPLETION RECORD

SPUD DATE
 COMP DATE
 DST RECORD



BEFORE EXAMINER UTZ
 TENSICO EXHIBIT NO. 4
 CASE NO. 3853

EXHIBIT 4
 CASE 3853

0 125	100 70	NO
125 250		
GAMMA RAY IN UNITS COMPANY MORRIS R. ANTHELL WELL HUMBLE STATE # 1 FIELD MESA QUEEN		INTERVAL TRANSIT TIME MICROSECONDS PER FOOT SWSC 11-24-64 SWSC 10-13-64 CRF 10-13-64 E.L.

UNIT No 24

SCHLUMBERGER

COUNTY FIELD LOCATION WELL COMPANY	LEA	COASTAL STATES GAS PRODUCING	
	MESA GULF # 1	COMPANY	
	MESA QUEEN	WELL	
	LEA	STATE NEW MEXICO	
	LOCATION	660' FROM W/L 1650' FROM N/L	Other Services MILL
	Sec. 20	Twp. 16S	Rge. 32E
Permanent Datum		GL	Elev. 4353.4
Log Measured From		KB	10' Ft. Above Perm. Datum
Drilling Measured From		KB	Elev. K.B. 4361.5 D.F. 4351.4
Date	6-24-65		
Run No.	ONE		
Depth - Driller	3427		
Depth - Logger	3418		
Ann. Log Interval	3413		
Top Log Interval	0		
Casing - Driller	8 5/8" 326		
Casing - Logger			
Bit Size	7 7/8"		
Type Fluid in Hole	SALT GEL		
Dens. / Visc.	10.2 / 35		
pH / Fluid Loss	- / 12 ml		
Source of Sample	PIT		
R ₁ 4 Meas. Temp.	0.4 91°F		
R ₂ 4 Meas. Temp.	0.45 62°F		
R ₃ 4 Meas. Temp.	- 9°F		
Source, Pur. R ₁	H		
R ₁ 4 BHT	0.4 90°F		
Time Since Curing	4 HOURS		
Max. Rec. Temp.	90		
Equip. Location	7701 HOBBBS		
Recorded by	LEFLER		
Witnessed by	MR. STATION		

West Texas Electrical Log Service

Dallas 2, Texas

REFERENCE W6392H


 4363
 3427
 3418

COMPLETION RECORD

SPUD DATE

COMP DATE

DST RECORD

CASING RECORD

BEFORE EXAMINER UTZ

CONSERVATION - MAMMISTON

Inneco Exhibit NO. 5

CASE NO. 3853

EXHIBIT 5
CASE 3853PROPOSED NEW PERFS
3412-3420