

# Union Oil Company of California

205 EAST WASHINGTON AVENUE

LOVINGTON, NEW MEXICO

UNIT OPERATOR  
SOUTH CAPROCK QUEEN UNIT

May 10, 1963

Mr. A. L. Porter, Jr.  
Secretary-Director  
New Mexico Oil Conservation Commission  
P. O. Box 871  
Santa Fe, New Mexico

Re: Expansion of Waterflood Project Area,  
South Caprock Queen Unit, Chaves  
County, New Mexico (Case No. 2032,  
Orders R-1729 and R-1729-A)

Dear Mr. Porter:

The Union Oil Company of California, as Operator of the South Caprock Queen Unit in Chaves County, hereby requests administrative approval for the expansion of the waterflood project area and approval to convert an additional six wells in the project area to water injection service. In addition permission is sought to drill a new well for the purpose of completion as a water injection well. This request is submitted pursuant to the provisions of Rule 701-E, paragraph 5, of the Rules and Regulations of the New Mexico Oil Conservation Commission.

The wells proposed for conversion to water injection service are as follows:

1. Tract 11, Well 3-4, located in NE $\frac{1}{4}$  of NW $\frac{1}{4}$ , Sec. 4, T-15-S, R-31-E, NMPM.
2. Tract 11, Well 5-4, located in SW $\frac{1}{4}$  of NW $\frac{1}{4}$ , Sec. 4, T-15-S, R-31-E, NMPM.
3. Tract 8, Well 11-4, located in NE $\frac{1}{4}$  of SW $\frac{1}{4}$ , Sec. 4, T-15-S, R-31-E, NMPM.
4. Tract 2, Well 15-4, located in SW $\frac{1}{4}$  of SE $\frac{1}{4}$ , Sec. 4, T-15-S, R-31-E, NMPM.
5. Tract 10, Well 3-9, located in NE $\frac{1}{4}$  of NW $\frac{1}{4}$ , Sec 9, T-15-S, R-31-E, NMPM.
6. Tract 6, Well 15-17, located in SW $\frac{1}{4}$  of SE $\frac{1}{4}$ , Sec 17, T-15-S, R-31-E, NMPM.

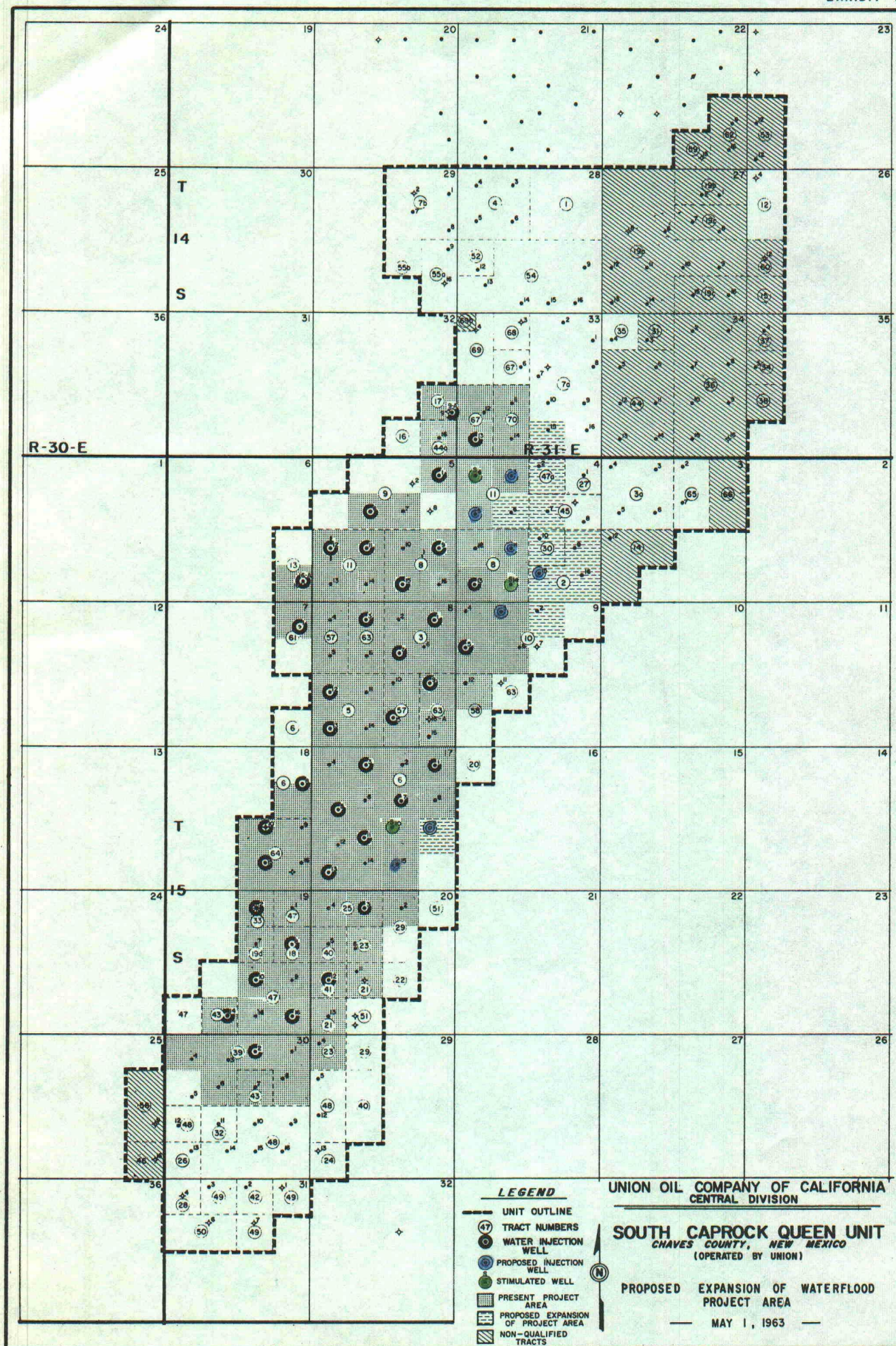
The new well proposed for completion as a water injection well is:

Tract 6, Well 9-17 located in NE $\frac{1}{4}$  of SE $\frac{1}{4}$  Section 17, T-15-S, R-31-E, NMPM.

Water injection commenced in the South Caprock Queen Unit on May 23, 1961. Ten wells situated along the contact between the gas cap and the oil zone were placed on injection at that time. The purpose of this initial pattern was to prevent the migration and loss of recoverable secondary oil into the gas cap. Since May, 1961, the project area has been expanded six times. These expansions are listed below:

1. April, 1962 - Administrative Order No. WFX-102. (Seven new injection wells).
2. August, 1962 - Administrative Order No. WFX-116. (Five new injection wells).
3. December, 1962 - Administrative Order No. WFX-124. (Six new injection wells).
4. January, 1963 - Administrative Order No. WFX-127. (Three new injection wells).
5. March, 1963 - Administrative Order WFX-134 (Four new injection wells).
6. May, 1963 - Administrative Order WFX-136 (One new injection well).







## NEW MEXICO OIL CONSERVATION COMMISSION

## EXHIBIT II

## GAS-OIL RATIO REPORT

OPERATOR Union Oil Company of California POOL Caprock Queen (South Caprock Queen Unit)  
ADDRESS 205 E. Washington, Lovington, N.M. MONTH OF April and May, 1963  
SCHEDULED TEST \_\_\_\_\_ COMPLETION TEST \_\_\_\_\_ SPECIAL TEST X (Check One)  
(See Instructions on Reverse Side) (Tests to verify waterflood stimulation)

Lease	Well No.	Date of Test	Producing Method	Choke Size	Test Hours	Daily Allowable Bbls.	Production During Test			GOR Cu. Ft. Per Bbl.
							Water Bbls.	Oil Bbls.	Gas MCF	
		1963								
1. Tract 11	4-4	4-4	P	-	24	5	0	8	TSTM	-
Tract 11	4-4	5-8	P	-	24	5	0	24	TSTM	-
2. Tract 8	14-4	4-15	P	-	24	3	4	3	TSTM	-
Tract 8	14-4	5-4	P	-	24	3	0	20	TSTM	-
3. Tract 6	10-17	4-23	P	-	24	5	3	2	TSTM	-
Tract 6	10-17	5-3	P	-	24	5	40	44	TSTM	-

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60 degrees F. Specific gravity base will be 0.60.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission. In accordance with Rule 301 and Appropriate Pool Rules.

(I certify that the information given is true and complete to the best of my knowledge.)

Date May 8, 1963

Union Oil Company of California

By Richard H. Butler  
Richard H. Butler  
Unit Engineer

Title

SOUTH CAPROCK QUEEN UNIT  
Chaves County

EXHIBIT 111  
5-10-63

CASING DATA FOR PROPOSED INJECTION WELLS

<u>Tract</u>	<u>Well</u>	<u>I.D.</u>	<u>E.T.D.</u>	<u>Perforations</u>
2	15-4	3 1/70	3164	3132-3142
8	11-4	3 1/50	3150	Open Hole 3134-3150
10	3-9	3 1/83	3183	3164-3169
11	3-4	3 1/75	3143	3133-3138
11	5-4	3 1/80	3150	3136-3145
6	15-17	3203	3170	3161-3165

SURFACE CASING

<u>Tract</u>	<u>Well</u>	<u>Size</u>	<u>Setting Depth</u>	<u>Cement, Sacks</u>	<u>Circ?</u>	<u>Grade Pipe</u>	<u>Weight, Lbs/Ft</u>	<u>Age Years</u>	<u>Condition</u>
2	15-4	8 5/8"	196'	150	Yes	J-55	28	8	New
8	11-4	8 5/8"	338'	275	Yes	J-55	24	8	New
10	3-9	8 5/8"	310'	200	Yes	J-55	24	8	New
11	3-4	10 3/4"	323'	225	Yes	H-40	41	10	Good
11	5-4	10 3/4"	316'	250	Yes	H-40	41	10	Good
6	15-17	8 5/8"	318'	200	Yes	J-55	24	4	New

OIL STRING

<u>Tract</u>	<u>Well</u>	<u>Size</u>	<u>Setting Depth</u>	<u>Cement Sacks</u>	<u>Grade Pipe</u>	<u>Weight Lbs/Ft</u>	<u>Age Years</u>	<u>Condition</u>
2	15-4	5 1/2"	3164'	100	J-55	14	8	New
8	11-4	5 1/2"	3134'	325	J-55	14	8	New
10	3-9	5 1/2"	3183'	175	J-55	14	8	New
11	3-4	5 1/2"	3174'	150	J-55	15.5	8	New
11	5-4	5 1/2"	3179'	150	J-55	15.5	8	New
6	15-17	4 1/2"	3202'	300	J-55	9.5	4	New

SOUTH CAPROCK QUEEN UNIT  
PROPOSED DRILLING PROGRAM  
INJECTION WELL  
Tract 6, Well No. 9-17

Reason for Drilling:

Well is a direct offset to a stimulated project area producing well (Tract 6, Well 10-17). The well is necessary in order to close a five-spot group of wells and provide a back-up in this particular portion of the reservoir.

Approximate Location of New Well:

1980' from South line and 1300' from East line, Section 17, T-15-S, R-31-E, NMPM.

Proposed Total Depth: 3200'

Estimated Top of Queen Sand: 3150'

Proposed Casing Program: (All new pipe)

8 5/8" c 320' w/300 sax (to circ)  
4 1/2" c 3200' w/200 sax

Estimated ETD: 3170'

Estimated Perforations: 3155' - 3165'

Proposed Tubing:

2" J-55 plastic lined tubing with tension packer on bottom, set just above the perforations. Annulus to be filled with inhibited water for corrosion protection.

# Union Oil Company of California

205 EAST WASHINGTON AVENUE



LOVINGTON, NEW MEXICO

UNIT OPERATOR  
SOUTH CAPROCK QUEEN UNIT

May 10, 1963

Mr. Frank Irby  
Chief of Water Rights Division  
State Engineer's Office  
State Capitol Building  
Santa Fe, New Mexico

Re: Casing Data on Proposed Injection  
Wells, South Caprock Queen Unit,  
Chaves County, New Mexico

Dear Mr. Irby:

Attached please find a copy of an application submitted by the Union Oil Company of California to the New Mexico Oil Conservation Commission requesting administrative approval to expand our waterflood project in the South Caprock Queen Unit. This expansion will include the conversion of an additional six producing wells to water injection service and drilling one new water injection well. The application is in accordance with the provisions of Rule 701-E of the Rules and Regulations of the New Mexico Oil Conservation Commission.

Exhibit III of the attached application is a table of casing information on the six wells to be converted to injection service. Exhibit IV is a summary of the completion techniques to be used in the proposed new injection well. All seven wells will be completed with plastic-lined tubing and tension packers set just above the perforations or open hole in the Queen Sand. The annulus between the casing (oil string) and the tubing will then be filled with an inhibited water for protection against corrosion. The maximum anticipated surface injection pressure for the seven wells will be 1000 PSIG.

Data on the age, grade and condition of the various casing strings in the six wells to be converted are tabulated in Exhibit III.

If you are in agreement with this proposal, we would appreciate your so notifying the Secretary-Director of the New Mexico Oil Conservation Commission as soon as possible. Thank you for your consideration of this matter.

Very truly yours,

Richard H. Butler  
Unit Engineer

RHB:am  
Attachments (4)  
cc: Mr. A. L. Porter, Jr. (3)



STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS  
STATE ENGINEER

May 28, 1963

ADDRESS CORRESPONDENCE TO:  
STATE CAPITOL  
SANTA FE, N. M.

Mr. A. L. Porter, Jr.  
Secretary-Director  
Oil Conservation Commission  
Santa Fe, New Mexico

Dear Mr. Porter:

Reference is made to the application of Union Oil Company of California submitted on May 10, 1963 which seeks administrative approval for the expansion of their South Caprock Queen Unit waterflood project which involves seven wells. Reference is also made to a letter addressed to me on May 10, 1963 with reference to the same subject, a copy of which was forwarded to you.

In view of Mr. Butler's statement in his letter to me "All seven wells will be completed with plastic-lined tubing and tension packers set just above the perforations or open hole in the Queen Sand. The annulus between the casing (oil string) and the tubing will then be filled with an inhibited water for protection against corrosion. The maximum anticipated surface injection pressure for the seven wells will be 1000 PSIG," it appears that no threat of contamination to the fresh waters which may exist in the area will occur. Therefore, this office offers no objection to the granting of this application.

Very truly yours,

S. E. Reynolds  
State Engineer

By: *Frank E. Irby*  
Frank E. Irby  
Chief  
Water Rights Division

FEI/ma  
cc-Union Oil Co. of California  
F. H. Hennighausen